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LUMBERMAN'S
HAND BOOK
EDITION OF 1894

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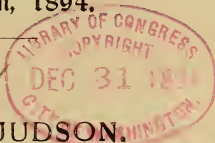
HAND BOOK

OF

INSPECTION AND GRADING.

—
New Edition, 1894.
—

BY W. B. JUDSON.



—
Northwestern
Lumberman
CHICAGO.

1894

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LUMBER INSPECTION.

One of the most difficult tasks in the domain of lumber literature is the putting upon paper of a description of those various divisions or grades which are found to prevail in different localities. Surveying, as it is known in Maine and some other localities, Inspection, as it is termed in Albany and the West, consists of fixing a value to each individual piece of lumber. Inasmuch as no two are exactly alike, it is impossible to establish an arbitrary rule for the guidance of the Inspector, and, as a consequence, the individual judgment must determine the value of each, from a consideration of its general character, and the uses to which it can be put in house building or manufacture.

As the judgment of men varies as much as each piece of lumber from its fellow, it becomes very difficult for one to see the value and character of a board exactly as it is seen by all others, and hence it is well nigh impossible to prescribe what shall constitute a board of any particular grade. If it be perfect in all other respects, it may not be of equal value with another equally, but no more, perfect board, in that it is of a more glassy, brash and tough texture, less straight and free in grain, and wholly unfit for the finer uses to which its fellow may be well suited. All these and many other considerations enter into the proper and judicious assorting and valuing of lumber, and must be determined according to the judgment and experience of the Inspector.

But, while no arbitrary rule can be established, it was determined early in the history of the trade that one could be applied to the general characteristics of lumber, which would guide both the buyer and seller in determining the value of a given piece. While these general characteristics applied to the distributions between the manufacturer and the consumer in the infancy of the trade; while but a comparatively small quantity was produced, and consumption kept pace with production; when the demand increased and it was found necessary

to build mills in the forest at a distance from the consumer, middlemen became necessary, and at various points in the country immense depots were established, to which the mill product could be shipped, and whence it could be distributed. But the still increasing population, moving further and further from the points of supply, necessitated another set of distributors, and the first began to confine their trade to selling, at wholesale, to the latter as retailers.

Now, the rules that had guided the mill man in selling to his customers required modification, and to prevent too great an advance in price the retailer was compelled to obtain his compensation through a division into grades, and this system of grading has advanced to its present status, which may be almost classed among the fine arts, yet marked by as great a variance as there are individual judgments to determine it.

Albany, N. Y., after Bangor, Me., and Port Deposit, Md., early became the most important center of the lumber trade of the country, and promulgated a system of Inspection, or sorting into qualities, which soon superseded the early rule of Surveying, which was simply straight measure, or the determining of the number of feet, regardless of quality. In this connection it may properly be said that, in the early days of lumber manufacture, it was the aim and custom of the producer to cut only the better class of trees, and it is within the memory of those now living, when the grades now known as Selects, Fine Common, or Picks, were the poorest which found their way to market as Common, and that which now comprises the bulk of the lumber handled was considered as only fit to be sold at the mill, and such of it as by accident found its way to market was sold for what it would bring, often not realizing the cost of transportation. The growth of the trade, however, soon admonished the manufacturer that he must be more conservative with his timber, and the shipments and sale of Coarse Common, which included all between the present grade of Selects and Culls, was undertaken.

The fast depleting forests and the increased consumption throughout the country, especially of the lower grades, soon demonstrated that consumers were utiliz-

ing the cheaper product for cutting-up lumber, and that doors, sash and other building material could be made equally well from this grade as from the higher priced qualities. Albany now began to select out the nicer Common below the Fine Common grade, and Pickings became a favorite in that district.

If the wholesaler could make Pickings out of the Common, the retailer, equally fertile in resources, could make other qualities, and so subdivisions, such as A and B Selects, B Box, B Stock, 8-inch Flooring, and a hundred other designations came in vogue. These are, one and all, but subdivisions of the old and well-known Albany grades, Clear, Fourths, Box, Common, and Culls, more particularly of the Common. The designations given are uniform, but, as before remarked, the selection varies widely, and an A Select in one yard may be bought as a Third Clear, or A Box, or even as a B Box, in another.

Hardwood inspection has very generally followed the lines of the Boston market, in which a fair and practical system has long been in vogue, backed by state legislative enactments and interpreted and enforced by a most efficient system of inspection. It is doing but justice to the Boston method to say that the further other systems have departed from it the less respect have they commanded.

Chicago was one of the first markets outside of New England to adopt a complete hardwood grading, and other later systems have been largely modeled on it.

The wonderful increase in the number of lumber exchanges, associations, etc., all over the country has correspondingly increased the number of inspections, until their very number and differences seem about to compel an attempt at greater uniformity. An example of this is the organization of the National Association of Hardwood Lumber Manufacturers, which, as this book goes to press, is trying to perfect an inspection which will be acceptable to all manufacturers and all markets.

This little book aims to present every existing rule of inspection, and every state law which bears on the subject. Some of the rules are but little used, but all are significant, and it is hoped their compilation will meet the approval of the trade.

SAGINAW WHITE PINE LUMBER INSPECTION.

The accepted rules governing inspection of lumber on the Saginaw river are reported to the publisher as follows:

First Clear is not less than eight inches in width, and is free from imperfections, the term clear implying freedom from defects.

Second Clear not less than eight inches in width, at which it must be so nearly perfect as to fall but a trifle short of first clear. As the width increases a large range of defects may be allowed, so that at twelve inches wide a piece may have two knots of inch diameter, or two narrow saps on one side; at sixteen inches wide, especially if the piece is more than one inch thick, two knots may be allowed, or one knot and one sap not over one and one-half inches in width; at twenty inches in width the two knots may be larger, or the saps may widen to one and one-half inches.

Third Clear is supposed to admit of three defects, but up to ten inches knots should not exceed three-quarters of an inch in diameter, or sap not exceed three-quarters of an inch on one side. With increasing width knots may increase to three in number, not exceeding in size one inch each, or sap equal to one and a half inches in width on two edges of one side. With narrower saps a small knot showing on the face side might be allowed, but as a rule the three upper grades demand one perfect face. As in all other markets, the Inspector is supposed to exercise a wide range of judgment in the inspection of the three uppers. A plank two inches thick and thirty inches wide will admit of a more lenient judgment as regards defects in size and number than a piece of half that size or of one inch thick.

A piece of soft cork pine, of free grain and generally

handsome appearance, must not be judged with equal harshness with a piece of glassy texture, tough grain and unfavorable appearance.

An experienced Inspector will in all cases judge of a piece of lumber from the standpoint of the location of its defects and the general utility of the piece. While not more than three defects should as a rule be included in the three upper grades, no one would deny that a wide plank with even five knots located near one side, or even some of these showing through to the face, but where, perhaps, four-fifths of the plank is "clear as a hound's tooth," is deserving of classification in this grade. In reality, the inspection of lumber in uppers consists in defining what constitutes third clear, as, in practice, first and second clear is ignored, and the number and character of the defects which may be passed in third clear determines the character of the three uppers. But in Saginaw and some other markets the term "good" is used in designating the upper grades, and purchases are sometimes made in "good," "selects," "fine common," common and culls; yet, unless these terms are specified, the quality "good" in common use will include not only the three uppers, but as well the next grade below, or selects.

Selects.—This term allows of four defects in a piece of lumber—four knots the size of from a dime to a quarter of a dollar, according to the size of the piece, or two saps on one side which, twelve inches wide, should not exceed three inches in the aggregate, or embrace more than one-quarter the sap side, the heart side being the face. With increasing width the proportion of sap may increase, or with narrow saps the face side may have some knots. The general description of this grade, however, is of a class of lumber which has defects of such a character as, while condemning it for the three uppers, yet mark it as suited for many or most uses to which the three uppers may be put, the fact that it is usually combined under the term good, with the three uppers, showing it to be more nearly allied to them than to the lower grades. The dividing grade between the three uppers and common was originally known as fourths, and the designations were good, fourths, common and culls.

When, however, it became incorporated with the three uppers, and was included in that designation (as it has practically become), the grade selects, which had hitherto classed with the common, was admitted to the code, and consisted of what had hitherto been looked upon as raising the common to a higher standard of excellence. A board twelve inches long, with a perfect heart side, and the bright sap covering half or more of the sap side, would be a select.

Fine Common, also sometimes known as select common, or select box, or, where the designation is thoroughly known, box, is a grade of lumber suitable for finishing purposes, yet having too much sap on one side, or too many knots on the other, to admit its entry to the grade of selects. Fine common is usually taken from the lumber cut next to the outside of the log, sometimes known as sap boards, the general character of which is to give one face side, while the other is largely covered with sap, which, if properly piled so as to dry without mould, is adapted to a large proportion of the finer work where one side only is exposed to view. With this point in mind, the Inspector will allow knots in this grade proportioned to the size of the piece. If the sap is narrow, the face may have one or two small knots, but, except in wide lumber, the rule is observed, "one side a face." Pieces below eight inches in width are seldom accepted in this grade, and at that width the defect is in sap, which may embrace not more than one-third the sap side, and must not run on to the face side; or a board of that width may have a good sap side, nearly, if not wholly, clear of knots, and with one or two small knots on the heart side. In larger pieces a board or plank having too many defects for the grade of selects, and yet approaching almost to the requirements of that grade, is included in the fine common. A board sixteen inches wide, one inch thick, with five knots the size of one inch, and no other defect, would be classed as fine common. The same piece at one and one-half or two inches thick would probably, by most Inspectors, be classed as selects. Shaky lumber is not admitted in this or the upper grades.

Strips, First Clear, are six inches wide and one inch

thick, and free from all imperfections, and are known as clapboard or siding strips. The term siding strips should not be confounded with "sidings" lumber cut from the side of a log, in distinction from the stock, or lumber cut from the square log.

Strips, Second Clear.—Six inches wide, one inch thick, and may have two small, sound knots, or, if no knots, then sap equal to one inch in width on one edge of one side.

Strips, Third Clear.—Six inches wide, one inch thick, and may have three small, sound knots, and upon one side, in addition, sap equal to two inches in width. All strips in these three grades must be free from rot, split or shake.

Norway Strips answering to the description of first and second clear, and ten feet or more in length, are included in this grade when sold as Norway.

Strips, Flooring and Fencing include all strips not as good as third clear, yet free from rot and split. Flooring strips must be of full thickness and width, except where a narrower width is desired, when they may be of the uniform width of three, four or five inches. All knots in flooring strips must be of a sound character. Fencing strips include all coarse grade strips not good enough for flooring, and above the grade of culls, or strips not up to the standard thickness, and their inspection is less rigid than the other grades.

Common.—The term common includes all boards, plank, scantling, strips, joist, timber and lumber not otherwise defined, which does not come up to the standard of select box, but is of a generally sound character, well manufactured, of full thickness, and free from large, loose knots or imperfections which involve or weaken the piece for substantial building purposes. Worm holes and small rot streaks, in extent not materially to damage the piece for the uses in which its size is usually employed, belong to this quality. One straight split, not more than one-quarter the length of the board, may be allowed. Auger holes (almost unknown in Saginaw) are to be excluded by measuring in even feet between the holes. No lumber under ten feet in length is considered as merchantable in this or the better grade.

Shipping Culls.—Unsound knots, or knots which affect the strength of the piece, black or mouldy sap, unsound hearts, bad splits, badly sawed lumber in wedges or tarves (uneven edges), where the piece is not available for coarse use, and all lumber not up to the grade of common, is included in this grade.

Saginaw lumber is always manufactured in twelve, fourteen and sixteen feet lengths (with an exceptional log of other lengths) in all grades, except dimension stuff, where lengths are cut to suit the sizes demanded, but the sidings from such logs are usually cut off to the twelve, fourteen and sixteen foot standard.

The thicknesses of the Saginaw lumber, as usually cut, are one inch, one and a quarter, one and a half and two inches, but with some three inch in coarse plank for road or paving purposes, or in extra nice stocks for thick uppers or deals. All lumber is manufactured in parallel widths, and many mills employ cut-off tables for reducing all lengths to uniformity.

The coarser grades are almost uniformly cut one inch thick, the better grades almost invariably in the one and one-half and two inch thickness.

LOG SCALING.

The first thing a log scaler determines is the length of the log, then its quality or grade, which must be determined by the defects visible to the eye. These consist of crooks, knots, punks, hollows, etc. Looking at both ends of the log, he ascertains whether there is any hollow, or ring rot, and if the butt is free from shake. Having settled these points, he lays his rule on the narrowest diameter of the small end of the log. If it is crooked, he takes his diameter (always inside the bark) from a point which allows the saw to pass through the log, fully removing the slab. If the butt is hollow, he adds three inches to the diameter of the hollow, multiplies the size by itself, and deducts from the gross measurement. If it is a shaky log, he allows for that in determining the quality. If it has not been properly square-buttend, he makes a memorandum, so that the expense of butting can be charged to the seller, or logger, unless in the bargain he is instructed to deduct enough from the measure-

ment to cover the cost. A log cannot be considered merchantable until it is fully prepared for market. If it is very knotty, he lowers its grade accordingly, if he is grading in quality. If the knots are large, black or rotten, he is to determine the class in which the log belongs by the damage caused by the defects. If the defect is ring rot, he should take no account of the log at all, as it is not worth the expense of handling in a majority of cases. If a log is less than twenty-four feet long, it should be measured at the end. Over that length it is usually measured in the middle by calipers. In very long timber it is sometimes customary to measure at lengths of twelve, fourteen or sixteen feet. This, however, is a matter of agreement between buyer and seller. Dead timber is always measured inside the decayed or black stained sap. In many hardwood sections the sap is always excluded from the diameter of the log. Bright sap in pine, hemlock, poplar, whitewood, basswood and spruce is always measured. Diameters are always to be taken inside of the bark the smallest way of the smallest end of the log.

MICHIGAN SHINGLE IN- SPECTION.

PINE AND CEDAR.

The Michigan Shingle Manufacturers' and Wholesale Dealers' Association has no authorized system of grades, but the rules given below represent the thoroughly established custom among its members and govern inspection of all shingle manufacturers along the eastern lines of railroad, the eastern part of the state and a part of the western shore. Two thicknesses of 18-inch shingles are made, the standard being 5 butts to 2¼ inches, the other 5 butts to 2 inches. Sixteen-inch shingles are made 5 butts to 2 inches.

18-inch XXXX must be 18 inches long, strictly

clear, free from all imperfections, and 5 butts to 2¼ inches in thickness.

The above rule also governs pine 18-inch thin butt shingles, 5 butts to 2 inches thick.

18-inch No. 2, or C. B., must be strictly clear for a distance of 6 inches from butt, and balance of shingle may have defects, but must be of merchantable quality and 5 butts to 2¼ inches in thickness.

16-inch XXXX must be 16 inches long, strictly clear and free from all imperfections, and 5 butts to 2 inches in thickness.

16-inch No. 2, or C. B., must be 16 inches long and 5 inches clear from butt. Balance of shingle may have defects, but must be of merchantable quality and 5 butts to 2 inches in thickness.

16-inch Star A Star must be strictly clear, with the 8-inch clear butts packed together, 5 butts to 2 inches in thickness.

The thick butts are frequently designated by the term "Standards."

Culls, or No. 3, may have knots or other defects in any part of the shingle.

ALBANY, N. Y., WHITE PINE INSPECTION.

This was originally divided into five qualities, viz.: Clear, Fourths, Box or Selects, Common and Culls. Clear, or the three uppers, was subdivided into three grades, First, Second and Third. The rules given below accurately represented the customs of the Albany market in 1879, when they were prepared, and are given herewith because of their historic value, and because of the light they throw on the fundamental principles which still govern the market. The change in demand and in methods of handling in the various yards has so

affected grading below Fourths, and so many different customs prevail, that no set of rules can harmonize the prevailing differences.

First Grade.—A First Clear board shall be perfect in all respects, free from wane, knot, rot, shake or check, not less than twelve feet long and eight inches wide (in any case), unless a very wide and thick piece, when a minimum length of ten feet may be allowed.

Second Grade.—Not less than twelve feet in length, unless very wide and thick, with not more than two defects, *i. e.*, two sound knots which could be covered by a York shilling (dime), or sap equal to one inch on one side, or one knot and one sap; not less than ten inches wide, well manufactured, and free from rot, shake or check.

Third Grade.—Not less than twelve feet long, unless very wide and thick, and ten inches wide, free from rot, shake or check, when three defects might be allowed—either three knots which a York shilling would cover, or two saps an inch wide, with one small knot. If very wide, the defects might be allowed slightly to increase, but not so as to injure the general character of the piece. These three grades are included in one, and designated Clear or Good.

Fourths.—Not less than twelve feet long and twelve inches wide, with not exceeding four defects at that width, *viz.*: If free from sap, four sound knots on the heart side not larger than a dime; if free from knots, two saps which must not exceed two inches on each edge, and must be bright. At the minimum width, one face must be perfect. With increasing width, latitude may be allowed to the extent of the sap.

Select Box.*—Not less than twelve feet in length and eight inches in width in any case. Must, if narrow, have one perfect face, and may have small knots, not exceeding five, in a width of fourteen inches or more. Sap may meet on one end, for not more than one-fifth the length, or two saps may be allowed on sap side, but must have at least three inches of heart wood between;

* In the early days of the trade, the grade Select was known as Box, while Sound Common was known as Merchantable,

sap must be bright; must be free from rot, shake and checks.

Box or Common.—All sound lumber free from knots, shaky hearts, rot, shake and worm holes which is below the grades before named, shall be classed as Box or Common.

Pickings.—A grade of common which in its general character will dress one side clear, or has no great number of small knots, but is suitable for finishing lumber. (A good fine common, but indifferent select.)

Culls.—Will not hold water, shaky, rotten, coarse knots, black and mouldy sap. If very rotten, embracing more than one-eighth of the board, it becomes a scoot, refuse or mill cull. Market culls must be good enough to make hog pens, board fences or roof boards.

Scoots, Refuse or Mill Culls.—Lumber that is not worth removing from the mill, and is fit only to be burned.

CHICAGO CARGO INSPEC- TION.

Rules for Measuring and Inspecting Pine Lumber,
Adopted and Revised by the Lumberman's Exchange
of Chicago, 1878-'82-'86-'89-'90.

SECTION I.

First Clear White Pine Lumber shall be not less than twelve inches in width, and no imperfections allowed unless fourteen inches wide and upwards; will then allow imperfections equal to sap, one inch on one side, extending the whole length of the piece, on pieces fourteen inches wide and well manufactured, but the face side must be perfect; as width increases will allow larger imperfections in proportion to the width, but not imperfections enough to decrease the value below the above described piece.

SECTION II.

Second Clear White Pine Lumber shall be not less than eleven inches wide, and perfect up to eleven inches in width; will then allow imperfections equal to *sap*, one inch on one side of the whole length of the piece, if well manufactured; as width increases will allow other or larger imperfections in proportion to the width, but not imperfections enough to decrease the value below the above described piece.

SECTION III.

Third Clear White Pine Lumber shall be not less than nine inches in width, and perfect up to ten inches; will then allow imperfections equal to *sap*, one inch on one side of the whole length of the piece, if well manufactured. The imperfections in this quality shall not exceed *one hundred per cent* over those allowed in *second clear*.

SECTION IV.

Select White Pine Lumber shall include all lumber of poorer quality than *third clear*, the imperfections of which shall not exceed *one hundred per cent* over those allowed in *third clear*.

SECTION V.

Clear White Pine Flooring shall be one inch thick, six inches wide and no imperfections.

SECTION VI.

Second Clear White Pine Flooring shall be in thickness and width same as *clear flooring*, and will allow of one small *knot* or *sap*, three-quarters ($\frac{3}{4}$) of an inch on one side, with clear face.

SECTION VII.

Common White Pine Flooring shall be of the width and thickness of *first and second clear flooring*, and may have three small sound *knots* with *sap* one inch on one side, but if less than three *knots* then *sap* equal to two inches on one side, and shall be free from rots, splits and shakes.

Four-inch Flooring Strips equal in quality to *first and second clear flooring*, shall be classed as *common six inch flooring*.

SECTION VIII.

Common Pine Lumber includes *all* boards, plank, joists, scantling, timber, fencing and four-inch strips, that are of a generally sound character, well manufactured, and not included in the foregoing qualities.

Boards and Plank should be square edged, full thickness, and have no large loose *knots* or bad *shakes*. In wide boards, twelve inches and over, will allow a straight split one-sixth (1-6) the length of the piece, when otherwise sound.

Fencing should be of good sound character—pieces that will not break easily, six inches wide and one inch thick.

Scantling, Joists and Timber should not have imperfections that would weaken the piece so that it cannot be used for substantial building purposes, and uniform in width and thickness. Timber should be measured at the small end, and if much wane on the piece, reasonable allowance made for it.

Norway Pine Lumber shall be classed as *common* lumber, unless otherwise agreed upon.

Cargoes of Piece Stuff or Timber containing over twenty-five per cent Norway shall not be considered standard, and alledge boards and inch lumber in cargoes of piece stuff shall be subject to special agreement.

SECTION IX.

All badly stained white pine lumber that is otherwise better than common, shall be inspected into a lower grade than when bright and free from stain.

SECTION X.

All lumber described in the foregoing Rules of Inspection shall not be less than one inch in thickness and not less than twelve feet long.

SECTION XI.

Culls.—A quality that cannot be received into any of the foregoing; consisting of even lengths of ten feet and upwards, and so imperfect as not fit for ordinary uses without waste.

Mill Culls.—Refuse lumber.

SECTION XII.

All cargoes sold under *straight measure* shall consist of lumber twelve feet and over; and where, by imperfection of manufacture, such lumber is reduced in grades so as not to answer the purpose for which it was intended, it shall be measured at only one-half ($\frac{1}{2}$) the amount in the piece for which it was intended. And all pieces containing auger holes, if fourteen feet in length and over, and bored only at the ends, shall be measured in full, excluding two feet in length of the piece; if bored in the center it shall be measured for only one-half ($\frac{1}{2}$) the amount in the piece. All lumber less than twelve feet, when no special contract has been made, shall be measured in even lengths. *Mill Culls* excluded in all cases. All boards and strips to be at least one inch thick; joists or scantling, two or three inches thick,

SHINGLES.

SECTION XIII.

All pine and cedar shingles shall be not less than sixteen inches in length, and three-eighths inch thick at the butt, and shall be classed and known as follows:

Clear.—The first grade is to be denominated Clear, and to consist of shingles not less than three inches in width; all to be absolutely perfect.

Extra A.—The second grade is to be denominated Extra A, and this shall consist of shingles not less than three inches wide, and with the butt clear for ten inches of the length.

Standard A.—The third grade is to be denominated Standard A, and not to be less than eight inches clear from the butt, and not less than three inches wide.

Shaded A.—The fourth grade is to be denominated Shaded A, the shingles to be clear for a distance of not less than five inches from the butt.

No. 1.—The fifth grade is to be denominated No. 1, and to include everything poorer than Shaded A, but to be made of sound timber, with no unsound knots in the butt.

Culls.—Are a quality manufactured from *winding, worm-eaten, shaky or dry rot* timber, badly manufactured or less than sixteen inches in length.

Packing and Count.—It is recommended that one-fourth ($\frac{1}{4}$) *M* bunches to be packed in bands twenty inches in length, with twenty-five courses; one-half ($\frac{1}{2}$) *M* bunches in twenty-five inch bands with forty courses. Shingles shall always be full count, and pay shall be collected only for the number of shingles actually delivered, regardless of the pretended number contained in each package or bundle; or in other words, there shall be exacted in every instance for one thousand shingles the equivalent of one thousand pieces four inches wide.

LATH.

SECTION XIV.

No. 1.—Should be four feet (no more no less) in length, not less than three-eighths $\frac{3}{8}$ of an inch thick, and one and one-half ($1\frac{1}{2}$) inches wide, free from shakes, rot, wane or worm holes.

No. 2.—Same length as No. 1, may be less than three-eighths ($\frac{3}{8}$) of an inch thick, and must be not less than one and one-quarter ($1\frac{1}{4}$) inches wide; will admit of wane and worm holes not to exceed ten pieces in a bundle of one hundred.

Cull.—All that will not pass in the above-named qualities.

INSTRUCTIONS TO INSPECTORS AND MEASURERS.

It is understood that where the term *strips* is used in the sale of cargoes, the said strips shall be six inches in width, unless otherwise specified. All tapering pieces of lumber to be measured one-third ($\frac{1}{3}$) the distance from the narrow end, when twelve inches and over in width at the center, and when less than twelve inches wide in center, to be measured at the narrow end; all lumber to be measured in even lengths (except culls), from twelve to thirty feet inclusive in length, and above that length timber shall be counted for what it will measure.

Culls commence ten feet in length and then measure the same as other qualities. Manufacture should be taken into consideration in all qualities, and if badly manufactured should reduce the grade.

Pieces of lumber that have auger holes near the ends

should be measured for length between the holes, if twelve feet and over, and what it so measures to be called in its proper quality; if auger holes in the center as well as at the ends, should go into *culls* and be measured full.

Inspectors and Measurers are instructed that the rule herein given, as to width and thickness, is the standard width and thickness for merchantable lumber of each grade. But when some slight deviation, either in width or thickness, should occur by accidental manufacture, so long as it will not hinder the lumber from being used for the purpose for which it was intended, such lumber shall not be reduced in grade on account of such deviation—it being the purpose of the foregoing Rules of Inspection to grade lumber so that the grades sold on the Lumber Market and out of the yards shall be the same.

Inspectors and Measurers inspecting or measuring any cargo of lumber shall have full charge of the unloading of the lumber—so far as determining how fast the lumber shall be delivered off the vessel.

In no case shall *mill-culls* be considered a quality for the purpose of increasing the inspection fees.

Inspectors shall be required to draw six shingles from each end of each half-thousand bunch, and three shingles from each end of each quarter-thousand bunch, and to put their brand on each bunch.

After the Chief Inspector or Measurer has received his instructions from both buyer and seller, given together, no attention shall be paid to any different instruction or suggestion from either party, given singly.

When either Inspector or Measurer has been ordered on a cargo of lumber, and they should be delayed in doing the work, either from want of dock or any other cause that might have been avoided by either buyer or seller, then, and in that case the actual damages arising from such delay shall be added to the fees for measuring or inspecting such lumber.

All Inspectors who inspect lumber by grades under the foregoing rules in this market, shall mark the quality upon all lumber so inspected when required.

Inspectors or Measurers shall call out in quantities of not over sixty feet (in ordinary cases) and be answered back by their tallyman distinctly.

No Journeyman Inspector or Measurer or any other person licensed by the Lumbermen's Exchange of Chicago, for the purpose of inspecting or measuring lumber, shall be directly or indirectly interested in the business of buying or selling lumber, either for himself or other parties, nor shall any one so licensed by this Exchange receive other than customary compensation for inspecting or measuring such lumber; and no person shall, directly or indirectly, offer to such Journeyman Inspector or Measurer, or other persons licensed by this Exchange, any sum of money or gratuity other than the fees established by custom of the Chicago Lumber Market.

The Chief Inspector shall keep the original tally sheets, with date, name of vessel, names of buyer and seller, and the names of Inspectors or Measurers, and tallyman, at their offices for at least one year, and the said tally sheet shall at all times be accessible to any of the parties interested therein.

Chief Inspectors or Measurers are required to include the entire cargo in their certificate, including lumber, lath, shingles, posts, etc.

CHICAGO YARD GRADING OF PINE.

Grading, as practiced in the wholesale and retail yards of Chicago, though systematic, in a general sense, and reduced almost to an art, is carried on without any rules formulated and declared by the authority of an association or committee. They have been evolved in the course of trade, beginning with a few simple grades in the early days of the business, when lumber was altogether brought to this market by the cargo, until now they number about thirty in general classification as to quality, with numerous subdivisions as to size, thickness and nomenclature. Since there are no written and authorized rules for grading, each dealer is a law unto himself in respect to his own grades, but all follow a system that has become practically established, with such variations as seem necessary in the changing con-

ditions of trade. Lumber is sold from this market to be shipped to every state in the Union. The demand differs in separate sections and localities. The dealers here endeavor to make their grading conform to a great variety of requirement. Hence there are shades of difference in grading, but all are based on the same general qualities, and effected by a system well understood in every yard. Chicago grading is as distinctive and pronounced in character as that of any market in the country. This result has been secured by many years of experience, which has developed a school of inspectors and sorters, the members of which are nearly unerring in their judgment. Yet there will be some variation in the grades of different yards, which is often the result of intention for the purpose of catering to the special wants of customers, as has been intimated.

Following are a series of observations that indicate with reasonable clearness the system of grading as it prevails in the yards of Chicago. They are the work of an experienced lumberman, who spent some time in a personal investigation of the subject:

First Clear.—Shall be not less than twelve inches in width and twelve feet long (except that in some yards ten-foot pieces are admitted in the upper grades, the majority adhering to the twelve-foot standard), and with no imperfection unless the piece is fourteen inches or over in width; will then allow imperfections equal to sap one inch on one side, extending the whole length of the piece, but the face must be perfect. As the width increases, will allow larger imperfections in proportion to the width.

Second Clear.—Shall be not less than ten inches wide, and must be perfect up to eleven inches. Above eleven inches, imperfections may be allowed equal to sap one inch on one side of the whole length of the piece, if well manufactured. With increasing width will allow other and larger imperfections in proportion to the width, but not imperfections enough to decrease its value beyond the standard of a twelve-inch piece of above description.

Third Clear.—Shall be not less than twelve inches in width (except as below), and perfect up to ten inches; will then allow imperfections equal to sap one inch on

one side of the whole length of the piece, if well manufactured. This grade, however, is subject to modification in that while it is mainly the equivalent of Albany Thirds and Selects, it may generally be found to combine the grades of A Box, A Stock and eight-inch A, varying from standard inspection by allowing a minimum width of nine inches and a length of twelve feet. In yard grading, knots as big as a half dollar may be allowed in a fair-sized piece, as to general location and effect upon the use of the board. Smaller knots, as high as five in number, or bright sap on each edge of one side, two inches in width. In narrow boards, one face must be nearly perfect, except eight-inch A, where the general rule applies, modified by the width. A stocks usually refers to twelve inch, but may apply to ten-inch stocks when so specified.

B Box and A Stocks.—Usually range in price with Third Clear. Eight-inch A, although of the same general quality, ranges from \$3 to \$5 lower in price. Ten-inch stocks in all grades usually range \$2 below twelve inch.

A Select, B Stock, Eight Inch A and B.—These are all of about one grade, and are taken from Third Clear and Selects, which may be called "line boards," between the two grades.

A Select.—Is properly a grade below, although some claim to make it equal to Third Clear. In this grade, some yards will allow shake, where the use and general value of the piece is not seriously impaired thereby. As a rule, however, no shake is admitted. Knots may be allowed according to size of board and location of knots, but seldom both knots and shake. Widths may run from eight inch upward. Sap may be allowed equal to two inches on one side of a nine-inch piece, increasing with the width. The term "Box" is applied to all grades, where the width makes the lumber suitable for cornice and shelving, or wagon-box boards, from which latter the Chicago use of the term is derived. Sample boards may be described as follows: A board twelve feet long, twelve inches wide, had one knot the size of a dime, one cat-face knot, two saps on one side, of which one is narrow, running the whole length, the other three inches at one end, tapering out at four feet. Some call this a fair, others a good, A Select.

B Box.—Is 13 inches wide and over. A board 17 inches wide, 16 feet long, with five or six medium knots; another 16 inches wide, two saps of two inches each on one side, and 10 small knots on the other, were seen in a pile of B Box, but were criticised by other graders.

B Stock.—Is usually 12 inch, but may include 10-inch stocks. Eight-inch B is of parallel width ($7\frac{1}{2}$ to 9) up to grade, in proportion to width.

B Select.—In general character is a sap board; if narrow, one side may be half covered with sap, no knots on the face. Such a board may be from 7 to 10 inches. At 10 to 14 inches, some knots and less sap. This class makes good "one side" lumber for finishing boards, and in general, knots may be allowed of a character not to injure the board for finishing purposes or for cutting up. A sample board 7 inches wide had bright sap nearly covering one side, the other a face. Another of 13 inches had but four inches of meat on the sap side; the sap came through to the face, and there were two small knots on the face. Another of 9 inches had sap covering one end for five feet; sap ran slightly on to the face of the board. B Selects on wider pieces may combine some considerable shake at the ends, if the center is good, or on center if the ends are good.

The sap in this grade should be judged in the matter of color by its surroundings. While a black sap is scarcely allowable, a simple discoloration will not condemn the piece if all other requisites are present. A piece of fair width with one clean face to work would admit of a blacker sap on the outside of cut. In this grade also may be admitted a class of soft wide lumber, with large or even loose knots, where the cuts between the knots may give a large proportion of finishing lumber. Such lumber is often found where the rules of regular and strict inspection would condemn a piece to the grade of cull, yet where the piece is of especial value for cutting up. This grade is substantially the same as the Fine Common of the Saginaw Valley.

Common.—All good sound lumber, 10 feet long and upwards, however knotty, if the knots are tight and sound and not coarse enough to weaken the board, are included in this grade. Also sap boards, when the sap

is fairly bright. Boards free from rot and shake, which involve their usefulness, are common boards. Lumber which will make a water-tight roof is in all markets included in this grade. Splits or checks, if straight and not of an extent or nature to materially injure the board, are generally allowable. Bad splits and checks, especially when not straight, will always condemn a board of any grade to a lower one, according to the effect upon its usefulness. The same is true of waney edges. The lumber must be of full standard thickness and well manufactured. Worm-holes may be permitted in this grade in number and character proportioned to the size of the piece, but as a rule wormy lumber should be excluded as Culls. Custom has allowed common plank, measuring $1\frac{7}{8}$ inch thick, to be measured as if full 2 inch. A few worm-holes are not objectionable in dimension stuff, unless enough in number to weaken the piece, or of a generally unsightly character.

C Box is a grade of 13 inches wide and over, with small, sound knots.

D Box is simply good, wide Common.

Neither of these last two pretend to any grading above Common; except that their widths adapt them to special uses.

Stock Boards.—A class of lumber sawed of a uniform width of 10, 12 and 14 inches. It is graded the same as other lumber, but its uniformity marks it as of superior utility for ripping into flooring, siding, etc., or for manufacturers requiring large quantities of certain widths for special work. The lower grades are mainly used as barn boards or for coarse sheathing, and other similar purposes.

Other Varieties.—Norway mixed with other lumber uniformly classes as Common, but when in lots by itself may be graded in a manner similar to white pine, the designation "Norway" indicating its distinctness from white pine.

Flooring, siding and ceiling are graded according to the general rules applying to wider lumber, modified to suit the decreased width, but are measured as the piece was in the rough.

First and Second Clear Strips and Siding.—No. 1 is perfect in thickness, width and quality. No. 2 will allow of a narrow, bright sap on one side, or one or two small, sound knots. The two are usually combined.

A, or First Common.—If free from sap may have two or three small, sound knots, or bright sap $\frac{1}{2}$ or $\frac{3}{4}$ inch.

B, or Second Common, may have three or four medium size, sound knots, or bright sap of 1 to $1\frac{1}{4}$ inches.

C, or Third Common, may have two to six medium knots, or 2 to 3 inches of sap, or both sap and knots to equal these.

Flooring, A or First, should have one face nearly clear, with but one or two small, sound knots; the other may have more knots or sap.

B, or Second, may have two to four sound, medium knots, and bright sap equal to 1 or $1\frac{1}{4}$ inches.

C, or Third, will allow of three to six small, sound knots, or $1\frac{1}{2}$ to 2 inches bright sap.

Fencing Flooring is good, common flooring from selected fencing, and may have a large number of small, sound knots, but the general character of the piece is such as to make a good floor, practically free from shake and loose knots.

Fencing, No. 1 or Common.—Sound knots, not to weaken the piece; may have considerable sap. No. 2: Black sap, coarse knots, shaky or otherwise defective, yet not so as to prevent its use as coarse fencing. Four-inch lumber of any grade should have one-third less imperfections than is allowed on 6-inch widths. Norway of the same general quality is scrutinized much more closely than white pine.

Deck Plank is lumber suitable for decking for vessels, and is usually 3, 4, 5 and 6 inches wide and 3 to 4 inches thick, and the greater the length the more valuable is it considered. No lot averaging under 25 to 30 feet in length is properly classed as decking. This should be almost wholly free from sap, must be free from shake, but may have any reasonable number of small, sound, red knots. It is sometimes used $2\frac{1}{2}$ inches in thickness.

Culls.—Unsound lumber, loose knots, bad, black

knots, or large, coarse knots, loose or shaky hearts, un-edged or waney and badly shaky lumber, black sap stain, especially if mouldy; all wormy lumber, rotten streaks, or ends badly manufactured as to thickness, wedge boards or tarved lumber (thick on one edge and thin on the other), or boards which won't hold water. All the above properly belong in Culls, and when unfit to be used as roofing to nail shingles on, or is generally unsightly in appearance, it is known as "Scoots," Refuse, or Mill Culls, and has no quotable value.

Lengths.—In some yards 10 feet is the standard of length, and all lumber is measured in even figures of 10, 12, 14, 16 and 18 feet. Odd lengths are unknown, unless in special orders and in lumber of over 20 feet. Until within the last two years 12 feet was the minimum of length in a merchantable piece of lumber, and most yards yet adhere to this rule. All lumber of less than 10 feet is unsalable, except when in quantities, as it is often found in irregular lengths at gang saw mills, when it is known as "clips." This is sometimes sorted as to quality, but has no classification. It is usually sold as a bulk, either by the pile or by straight measure, and is often of a desirable character for builders.

Widths and Thickness.—The wider a board is the more latitude is allowed for defects. This remark applies generally to lengths, widths and thickness, although, as a rule, unless a board holds plump to an intended thickness, it is measured to the next standard below. In dimension or bill stuff, such as joist, scantling or timber, a variance in thickness is almost universally allowed by dealers and consumers, although strict rules of inspection demand full sizes in all respects.

In wholesale markets a board measuring $\frac{1}{2}$ inch or more over a certain width is measured at the next lower number. In retailing, however, the half inch is properly counted, while in some markets the "give and take" principle is observed; that is, if a full half inch or over, it is called at the next higher figure; if not full half inch, it is called back to the last full figure.

The following table shows the average weights obtained in the actual shipment from Chicago of 20,000,000 feet of pine lumber during an entire season:

	POUNDS.
1, 1¼ and 1½-inch, surfaced one side.....	2,102
The same, surfaced two sides.....	2,068
2-inch, surfaced one side.....	2,000
White pine flooring, dressed and matched.....	1,800
Hard pine flooring.....	2,366
Ship lap, 8-inch.....	1,711
Ship lap, 10-inch.....	1,725
Ship lap, 12-inch.....	1,855
White pine, ¾-inch ceiling.....	786
Hard pine, ¾-inch ceiling.....	900
Siding.....	800
Piece stuff, rough.....	2,560
Piece stuff, surfaced one side and one edge.....	2,210
Thin clear, surfaced one side.....	1,380
¾ ceiling.....	1,120
Rough boards.....	2,524
Hard pine fencing.....	2,910
4-inch flooring, dressed and matched.....	1,793
6-inch fencing.....	2,433
Pine shingles.....	248
Cedar shingles.....	203
Dry lath.....	502

CHICAGO HARDWOOD INSPECTION.

**Revised Rules for Wholesale Inspection by Car or Cargo,
as Officially Adopted by the Lumbermen's Association
of Chicago, November 1, 1894.**

RULES GOVERNING INSPECTORS.

RULE 1.—Inspectors must be governed in their inspection and measurement of lumber by the official printed rules as adopted and revised from time to time by this association.

RULE 2.—Inspectors shall receive all orders for inspecting lumber from the secretary of the association, either

by telephone, telegram or otherwise, and during business hours must keep him fully advised as to their whereabouts.

RULE 3.—No inspector shall be allowed to inspect or measure lumber outside of the corporate limits of the city of Chicago without written permission of the secretary.

RULE 4 —Inspectors shall not inspect or measure lumber for any person, firm or corporation not members of this association without written permission of the secretary.

RULE 5.—Inspectors shall receive pay for their services by the person, firm or corporation buying the lumber which they have been assigned to inspect.

RULE 6 —Inspectors shall not be allowed to buy or sell lumber or engage in any business appertaining to the lumber trade.

RULE 7.—Inspectors must obtain and use blank certificates and tally sheets which have been approved by the association for their use. The secretary will supply these free upon application, and no other certificate or tally sheet will be recognized as valid.

RULE 8.—Inspectors shall make out and sign two or three certificates, if requested, for each lot of lumber inspected and measured and deliver them, together with the tally sheets for same, to the secretary of the association. Returns to be made each evening of work finished, either car or cargo lots. The secretary will officially stamp the certificates and return them to the inspector or to the buyer of the lumber. The tally sheet shall be numbered to correspond with the numbers on the certificates and kept on file in the office of the association. No certificates will be accepted or recognized as valid without the impression of the official seal of the association stamped thereon.

RULE 9.—Inspectors shall not be allowed to continue work for any one person, firm or corporation for a longer consecutive period of time than one day, or the length of time it takes to finish inspecting one distinct lot of lumber, unless permission is granted him to do so by the secretary of the association

RULE 10.—When complaints are made relating to the

correctness of inspection and measurement of lumber and a re-inspection is called for, it will be ordered by the secretary if thought advisable.

RULE 11.—Inspectors must keep a piece tally of all lumber inspected and measured by them.

RULE 12.—When lumber is for any particular reason badly damaged, or is by nature of unusually inferior quality, the inspector shall make a memorandum on the back of his tally sheet setting forth the nature of the defects. And when lumber is inspected and measured according to any other than standard inspection, he shall note the fact likewise and make a memorandum of the rules governing in such case.

GENERAL INSTRUCTIONS AND EXPLANATIONS.

Inspectors of lumber must measure and inspect lumber as they find it, of full length and width (except as to wane, which must be measured out or inspected in a lower grade), making no allowance for the purpose of raising grade.

Inspectors must use their best judgment, based upon these rules for their guidance.

The Standard Knot shall not exceed $1\frac{1}{4}$ inches in diameter, and must be of sound character.

Splits are always more or less damage to lumber, and the nature of the split and the kind of lumber under consideration must be taken into account before assignment to proper grade can be made. Except in the case of lumber cut for specific purposes, a straight split extending not to exceed the width of the board in length shall be admitted into the grade of firsts and seconds. A split extending to exceed one-fifth the length of the piece will reduce it to cull.

Lumber should be sawed into plump and even thicknesses. Scant sawed lumber must be reduced to the next standard thickness, or, in the case of inch lumber, to one grade lower. Uneven sawed lumber should be reduced at least one grade.

A cull which will not work one-half of its size free from all defects, or which is thinner than one inch, is a mill cull of no marketable value.

Inspectors shall inspect and measure all lumber stand-

ard grades, length and thicknesses, which shall be known as standard inspection, unless the lumber be cut for specific purposes, or unless there be a special agreement between the buyer and seller to the contrary, in either of which cases he shall be governed by the conditions of the trade as made known to him.

The Standard Grades of lumber shall be firsts and seconds, common and cull.

Standard Lengths shall be 8, 10, 12, 14 and 16 feet. In walnut and cherry an exception is made and 6 foot becomes standard. The first and second grade will admit of nothing under 10-foot, and not to exceed 10 per cent of that length in any lot. Common and cull will admit of a fair proportion of 8 and 10-foot, and in walnut and cherry, 6-foot lengths. Lumber longer than 16 feet will not be admitted into the grade of firsts and seconds unless by special agreement. All lumber shorter than standard lengths shall be classed mill cull.

Standard Thickness shall be 1, 1¼, 1½, 2, 2½, 3, 3½ and 4-inch; in poplar or whitewood ⅝-inch shall be considered a standard thickness.

In the grade of firsts and seconds the purchaser is entitled to a fair proportion of clear lumber, which must not be less than 33⅓ per cent.

Firsts and clear are interchangeable terms, meaning that lumber must be 6 inches and over wide, except poplar, yellow pine and cypress, which must be 8 inches and over wide, and free from all defects.

It is important that all lumber should be parallel in width, square edged and with square ends. Tapering lumber is measured at the small end.

Wagon stock must be cut from good, live, sound, tough, straight-grained timber.

Black stain, hearts, shakes, rots, worm-holes, etc., are considered serious defects, reducing lumber to grades lower than firsts and seconds.

Log run is the entire cut of the log, mill culls out.

INSPECTION OF LUMBER SAWED FOR SPECIFIC PURPOSES.

Lumber sawed for specific purposes, such as axles, holsters, tongues, reaches, newels, balusters, squares, etc., must be inspected with a view to the adaptability

of the piece for the intended use, as in most cases, it cannot be used for other purposes.

The inspection grades of wagon stock, newels, balusters, and table legs, shall be clear and cull.

Bolsters must be 4 feet, 4 feet 6 inches, or multiplies thereof in length, and the size must be 3x4, 3½x4½, 3½x5, or 4x5 inches.

Box Boards shall be 12, 14 and 16 feet long, and from 13 to 17 inches wide.

Reaches must be 2x4, or 2¼x4½ inches, and the length shall be 8, 10, 12 and 16 feet.

Hickory Axles must be 6 or 12 feet long for 3½x4½, 4x5, 4x6 and 4½x6 sizes, and 7 or 14 feet for 5x6 and 5x7 sizes, cut from tough, sound butt logs.

Wagon Tongues must be straight, 2x4 at the small end and 4x4 at the butt end, or 2½x4½ at the small end and 4½x4½ at butt ends, and 12 feet long.

Newels must be 5x5, 6x6, 7x7, 8x8, 9x9, or 10x10 inches square. The length must be 4 feet full or multiplies thereof.

Balusters and Table Legs shall be 2x2, 2½x2½, 3x3 and 4x4 inches square, and 32 inches long.

Clear Flooring Strips must be 4 and 6 inches in width, one face and two edges clear, and 1 inch thick.

Common Flooring Strips shall be of the same size and general character as clear, but may have one standard knot, or a small amount of wane on one edge, which will not injure it for working to its full size.

Common Timbers and plank sawed special sizes must be free from unsound knots. Sound hearts well boxed not showing on the outside, and sound knots are allowed.

SPECIAL INSPECTION.

When lumber is sold to be inspected and measured clear, common and cull, all pieces which would be seconds under standard inspection shall be put into the common grade; otherwise there is no change from standard inspection.

When lumber is sold to be inspected and measured common and better, the purchaser is entitled to the full run of the log with all culls and mill culls out. Com-

mon and better must contain at least 50 per cent of firsts and seconds.

When lumber is sold to be inspected and measured merchantable, the inspector must measure full, except culls, which are to be measured at one-half. Merchantable inspection and measurement applies only to log run lumber.

POPLAR AND WHITEWOOD.

The inspection grades shall consist of firsts and seconds, common and cull.

Firsts and Seconds shall be 8 inches wide and over. At 11 inches may have 1 inch of sap or one standard knot, and at 13 inches two standard knots or 3 inches of bright sap. At 15 inches three standard knots or 4 inches of bright sap may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall include 6 inches and over wide. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Slightly discolored sap is no defect.

Cull shall comprise all widths and sizes below the description of common.

Box Boards shall be 12, 14 and 16 feet long, from 13 to 17 inches wide and free from all defects, except bright sap one-third of their width.

ASH.

The inspection grades shall consist of firsts and seconds, common and cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one and at 10 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Bright sap is no defect.

Common shall include 5 inches and over wide. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Culls shall comprise all widths and sizes below the description of common.

OAK.

The inspection grades shall consist of firsts and seconds, common and cull.

Firsts and Seconds must be 6 inches and over wide. At 8 inches one and at 10 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall include 5 inches and over wide. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Cull shall comprise all widths and sizes below the description of common.

HICKORY AND PECAN.

The inspection grades shall consist of firsts and seconds, common and cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one and at 10 inches two standard knots or bright sap may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall include 5 inches and over wide. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Cull shall comprise all widths and sizes below the description of common

BLACK WALNUT.

The inspection grades shall consist of firsts and seconds, common and cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches 1 inch of sap or one standard knot and at 10 inches 2 inches of sap or two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be 5 inches and over wide, and shall include all lumber not up to the grade of firsts and seconds, but available full three-fourths of its size without waste, free from hearts and unsound lumber.

Cull shall comprise all widths and sizes below the description of common.

CHERRY.

The inspection grades shall consist of firsts and seconds, common and cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches may have 1 inch of sap or one standard knot, and at 10 inches 2 inches of sap or two standard knots. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be 5 inches and over wide, and shall include all lumber not up to the grade of firsts and seconds, but available full three-fourths of its size for use without waste, free from hearts and unsound lumber.

Cull shall comprise all widths and sizes below the description of common.

NOTE —Gum spots are considered a serious defect, and when their damage exceeds one-sixth of the size of the piece, shall reduce it to the grade of common. When their damage exceeds one-third of the size of the piece, it shall be reduced to cull.

BUTTERNUT AND CHESTNUT.

The inspection grades shall consist of firsts and seconds, common and cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches may have one inch of sap or one standard knot, and at 10 inches 2 inches of sap or two standard knots. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be 5 inches and over wide. At 6 inches 1 inch of sapor one standard knot, and at 8 inches two inches of sap or two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Cull shall comprise all widths and sizes below the description of common.

GUM.

The inspection grades shall consist of firsts and seconds, common and cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one standard knot and at 10 inches two standard knots or one inch of bright sap may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall include all lumber 5 inches wide and up available for use full three-fourths of its size without waste, free from hearts and unsound lumber. Bright sap may be included in this grade.

Cull shall comprise all widths and sizes below the description of common.

HARD AND SOFT MAPLE.

The inspection grades shall consist of firsts and seconds, common and cull.

Firsts and Seconds must be 6 inches wide and over (except flooring). At 8 inches one and at 10 inches two standard knots may be allowed. All allowance for more defects of this character may be made in proportion to increased width.

Common shall be sound, 5 inches and over in width, and may have defects not injuring it for ordinary use without waste. At 6 inches one and 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Cull shall comprise all widths and sizes below the description of common.

BASSWOOD AND COTTONWOOD.

The inspection grades shall consist of firsts and seconds, common and cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one and at 10 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Bright sap is no defect.

Common shall include 5 inches and over wide. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Slightly discolored sap is allowed.

Cull shall comprise all widths and sizes below the description of common.

BIRCH.

The inspection grades shall consist of firsts and seconds, common and cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one and at 10 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Bright sap is no defect.

Common shall be sound, 5 inches and over in width, and may have defects not injuring it for ordinary use without waste. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Cull shall comprise all widths and sizes below the description of common.

RED BIRCH.

Firsts and Seconds must be 6 inches and over wide, inspection to be the same as in ordinary birch, except as to sap. Six to 8 inches to admit of no sap on face side; 9 inches and up must be at least 75 per cent red on face side.

Common must be 4 inches and over wide, inspection to be the same as in ordinary birch, except as to sap. Four to 8 inches must be red on face side; 9 inches and over must be at least 75 per cent red on face side.

BEECH AND SYCAMORE.

The inspection grades shall consist of firsts and seconds, common and cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one and at 10 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be sound, 5 inches and over wide, and may have defects not injuring it for ordinary use without waste. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Cull shall comprise all widths and sizes below the description of common.

ELM.

The inspection grades shall consist of firsts and seconds, common and cull.

First and Seconds must be 6 inches wide and over. At 8 inches one and at 10 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Bright sap is no defect.

Common shall include 5 inches and over wide. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Cull shall comprise all widths and sizes below the description of common.

QUARTER-SAWED HARDWOOD LUMBER OF ALL KINDS.

The inspection grades shall consist of firsts and seconds, common and cull.

Firsts and Seconds must be 6 inches wide and over. At 7 inches one and at 9 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be 4 inches and over wide. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Cull shall comprise all widths and sizes below the description of common.

CYPRESS.

The inspection grades shall consist of firsts and seconds, common and cull.

Firsts and Seconds must be 8 inches wide and over. At 10 inches two standard knots and 3 inches of bright sap may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be 6 inches and over in width. At 6 inches one, and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased widths. Bright sap is no defect.

Cull shall comprise all widths and sizes below the description of common. Shakes and pecks are of great damage and should be closely scrutinized.

RED CEDAR.

Red cedar should be sold log-run to be measured for what it can be worked for. Lengths and widths are no defects. Caution should be used in determining defects.

NOTE.—Inspectors are instructed to measure and inspect all kinds of hardwood lumber that are not included in these rules, according to the rules governing the inspection of hard and soft maple.

SOUTHERN OR YELLOW PINE.

FLOORING.

Firsts and Seconds rift-sawed shall be clear of all defects on the face side, bright sap admissible, angle of the grain not to exceed 45 degrees.

Common rift-sawed shall admit of three sound knots $\frac{1}{2}$ inch in diameter or one sound knot 1 inch in diameter and slight sap stains, but not more than three defects to be admitted in a piece, the angle of the grain not to exceed 45 degrees.

Firsts and Seconds flat-sawed shall be clear of all defects on the face side, bright sap admissible.

Common flat-sawed shall admit of three sound knots $\frac{1}{2}$ -inch in diameter or one sound knot 1 inch in diameter, and slight saps stains, but not more than three defects to be admitted in a piece.

Cull shall consist of all pieces below the description of common that will lay with a waste of not over one-quarter of the piece.

Ceiling shall take flooring grades except as regards grain.

FINISH.

Firsts and Seconds clear finish shall not be less than 8 inches wide and up to 10 inches wide shall be free from all defects. Widths over 10 inches and up to 12 inches may have one sound knot $\frac{3}{4}$ inches in diameter or other defects equal to this. Over 12 inches to 14 inches may have two such knots and three such knots in widths over 14 inches. Bright sap admissible. Above specifications apply to face side of board.

Common finish shall not be less than 8 inches in width and shall admit of sap stains or three sound knots equivalent to three inches in diameter on the face side.

NORTHWESTERN WHITE PINE INSPECTION.

Rules Adopted by the Manufacturers of the Northwest at Winona, Minn., Sept 24, 1890. Re-affirmed at Minneapolis, Minn., March 4, 1893. Not of Official Force.

No arbitrary rules for the inspection of lumber can be maintained with satisfaction. The variations from any given rule are both numerous and suggested by practical common sense, so nothing more definite than the general features of different grades should be attempted by rules of inspection. In making grades that are standard and uniform, free scope must be given to the grader to exercise his judgment in ways that no rule can prescribe. Prominent among the features that should be taken into consideration, and which are not within the province of rules to describe, is the quality of the pine, whether soft and brash, or hard and tough; whether, on account of being narrow, a board cannot have as many defects as a rule allows, or, if extra wide, can have more. The particular use in building or manufacture to which a piece of lumber may be adapted, often warrants an inspection at variance with definite rules. The following, therefore, are submitted as the general characteristics of the different grades:

Uppers.—In the grading of finishing lumber in common practice, there is a recognized difference in classifying inch lumber and lumber thicker than inch. A very large percentage of the 1¼, 1½ and 2-inch lumber used for finishing purposes goes into work requiring each face to be shown, as in doors, sash, etc. With inch lumber the uses are quite different, the almost invariable practice being that one face of the board is shown, and that face the best one. These facts justify the practice of grading thick Uppers with particular reference to each face, and inch Uppers with more particular reference to one face.

In the grades of First, Second and Third Clear in thick Uppers, each side should be up to the required standard. In the grades of A, B or C Select in thick up-

pers, a piece that will grade A Select on its best face may be no better than a B Select on the reverse side, and a B Select, best face, may be a C Select on the reverse side, etc. In inch finish more latitude may be taken in considering the reverse side of the best face, except when both faces are exposed, as in partition. All uppers must be white pine.

First Clear shall be 12-inch or over in width, and free from all defects of whatever nature up to 14 inches. Wider than that a half inch of sap on one edge or a less amount on two edges on one side will be admissible, but the face side must be perfect.

Second Clear shall be 10 inches or over in width. When under 12 inches the piece must practically be free from all defects. From 12 to 16 inches in width will admit of white sap on each edge not to exceed $\frac{1}{2}$ inch in width or 1 inch in width on one edge only. When there is no sap, one or two small, sound knots not over $\frac{1}{4}$ inch in diameter will be admissible.

Third Clear shall be 8 inches or over in width. When over 16 inches in width the defects may be doubled, and up to 10 inches shall be free from all defects. A 10-inch piece may have an inch of white sap on each edge, and one or two very small, sound knots not to exceed $\frac{1}{4}$ inch in diameter. When 12 to 16 inches, white sap 2 inches in width on each side, or three small knots scattered at some distance apart, not to exceed an inch in diameter, will be admissible. A piece 16 inches and over may have 3 inches of white sap on both sides, with two or three small, sound knots, or one or two more knots of same size, well scattered, when there is less or no sap. No shake allowed in this grade.

A Select shall be 8 inch or over in width. In this grade an 8-inch piece should not have more than 1 inch of white sap on each edge, or more than 2 inches on one edge, and one small knot. In the absence of sap an 8-inch piece may have two or three small, sound knots not to exceed a half inch in diameter. Wider than 8-inch, the defects may be increased. In a piece otherwise a Third Clear, 12 inch and over in width, a single defect such as a knot as large as a dollar, or a single worm-hole, or a small local spot that is shakey, or white sap

on each edge 2 or 3 inches wide, or less sap on one edge and a corresponding increase on the other, or four or five small, sound knots not larger than a nickel, are each admissible in the grade of A Select.

B Select.—Some shake is admissible in this grade, a very little in an 8 or 10-inch piece, more when the lumber is wider, but never to such an extent that will prevent three-fourths of the piece being used for cutting up purposes. Consequently the shakes should be local, and not scattered over the piece. The presence of white sap is no objection in this grade and should not be considered a defect. Other defects admissible are three to six small knots, depending on the width, or if in a wide piece, where there are no other defects, two or three large knots of the size of a dollar. A little blue sap on one edge of a wide piece is admissible in this grade, or, when the sap is but slightly stained, 1 or 2 inches of it will be admissible on each side of a wide piece, provided there are but few other defects. In narrow pieces but little stained sap is admissible, and then only on one edge, or across the face at one end. The reverse side of any sap-stained B Select should not be discolored entirely across it. To summarize, no defect nor combination of defects are admissible in this grade when three-fourths of the piece can not be used for first-class finish.

C Select.—This grade will admit of quite serious defects, if the piece retains at the same time a fair appearance. Black sap on each edge of a wide piece, or on one edge of a narrow one, or sap slightly stained entirely across the face at one end or in the middle, or from 3 to 4 inches wide on each side of a wide piece, accompanied by some shake or a half dozen small knots, depending on the width, are admissible in this grade. Or a piece may have considerable fine shake scattered over its face, or more of it locally at either end, or in the middle, and be admissible. This being the lowest grade of finish, it admits of many defects that are serious; but such defects as very coarse knots, or large streaks of rot, or such others as give to the lumber a coarse, unsightly appearance, should not be put in this grade. This grade is generally used by, and made for, the retailer, and is not adapted for factory work.

Shop Common should be 6 inch and over in width. Its legitimate use is for factory work, or cutting up purposes. Its leading defects consist of large, coarse knots, so distributed that pieces of clear lumber 3 feet or over in length and 6 inches and over in width, can be cut out between the defects. Other defects, such as considerable rot, black sap or splits, may all be so located to admit of good cutting. The defects that characterize this grade are too coarse in appearance to be admissible in any grade of finish, and they should be so located as to admit of at least 60 per cent being cut into pieces, free from serious defects, of the length and width outlined above.

Box and Stock Boards.—All grades of stock boards should be free from shake or wane or any radical defect that would prevent their being used full length and width without cutting out defects. With especial reference to grade on one face. Boards 13 inch and wider are box, and the term Stock is applied to inch boards, 8, 10 and 12 inches wide.

A Stock.—Are practically the same grade as Second Clear, and will admit of white sap on each edge not to exceed $\frac{1}{2}$ inch in width or 1 inch in width on one edge only.

B Stock.—The same as Third Clear. The exceptions to this are that the 8 and 10-inch stock may have the same kind of defects as in 12-inch stock, only not quite so much sap nor so large or numerous knots.

C Stock.—Can have two or three inches of white sap on each side, or more if on one side; in either case with three or four sound scattered knots as large as a quarter, or six or eight sound knots as large as a nickel well scattered. In the absence of knots a board can have some more white sap, or a few more knots when there is no sap.

D Stock.—May have some sap stain, but not too blue, three or four inches in width on each edge, with 8 to 12 small sound knots varying in size from a nickel to a quarter, or 5 or 8 sound knots varying in size from a quarter to a dollar. Without sap more knots are admissible, and with fewer knots more sap. The 8 and 10-inch D Stocks are graded similarly, width considered.

Siding and 3-8 Ceiling.—Siding and $\frac{3}{8}$ Ceiling are

graded on the merits of the face side. Ceiling shall be graded by the same rules governing the grading of siding. Any flaw in the manufacture should be treated as a defect. Clear Siding must be clear from all defects.

No. 1 and 2 or A and B Siding.—Can have half an inch of white sap on the thin edge, or two or three sound knots a half inch in diameter. Either of these defects are admissible, but not both.

No. 3 or C Siding.—Can have white sap 2 or 3 inches wide on either edge. Or an inch of white sap with two or three sound knots well scattered, not exceeding an inch in diameter, or with one or two more knots if smaller. No shake admissible.

No. 4 or D Siding.—May have some shake and considerable stained sap. The shake should be fine and the stained sap not very blue. With or without either of these defects, may go as many as a dozen small knots well scattered, as large as a nickel, or some larger in less number, but no piece of Siding No. 4 should contain more than four knots as large as a quarter, and they should be well scattered.

Fence Siding.—Should consist of the regular grade of No. 1 Fencing made into Siding.

Four and 6-inch Flooring, Drop Siding, Ceiling and Partition.—All Flooring, Drop Siding and Ceiling should be graded on the merits of the face side, and according to the rules governing the grading of Flooring. Partition must present both faces equal in grade, or else be graded according to the poorest face. All Flooring, Drop Siding and Ceiling should have the tongue and groove well supported on the lower side, and this reverse side should have enough smooth surface to support the board. If, on account of wane, this is not the case, the piece should be placed in the grade next below where its face entitles it.

No. 1 or A. Flooring can have 1 or 2 sound pin knots, as large as the end of a lead pencil or half inch of white sap on one edge, but cannot have both defects.

No. 2 or B Flooring may have an inch of white sap on one edge, or a half inch on both edges. With less sap, one or two small knots as large as a dime, scattered; or without sap as many as three knots no larger than a dime.

No. 3 or C Flooring will admit of considerable white sap, which may extend across the face at either end, or be three inches in width along one edge of a 6 inch piece. Also two or three sound knots an inch in diameter, four or five less than half inch in diameter, or two knots as large as a quarter, are each admissible.

No. 4 or D Flooring will admit of an entire face of white sap and considerable stained sap if not too blue. A dozen small knots well scattered; five or six sound ones an inch in diameter, also some shake.

The different grades of fencing, dressed and matched, should be nothing more nor less than the regular grade of rough fencing made into flooring.

First Common Boards and Fencing should be sound lumber, free from shake, split, worm-holes, or large coarse knots that weaken the board. It is generally understood that a No. 1 board should turn water when used on a roof, the knots sound and firmly set. Boards and fencing should retain these qualities after being worked into Shiplap, Drop Siding, Grooved Roofing or Flooring.

Second Common Boards and Fencing will admit of some considerable shake, larger and more numerous knots not necessarily sound, sap stain, narrow rotten streaks that are firm in substance. In Fencing the knots should not be so large, nor bunched together to seriously weaken a piece, nor should there be much shake on the ends. Some small, fine worm-holes are admissible. When worked to Shiplap, Flooring, etc., no knot-holes are admissible.

Third Common Boards and Fencing consists of lumber having a great deal of shake, coarse knots that materially weaken the boards, knot-holes, splits, wane, or firm red rot covering not more than one-third of the board face.

Dimension, First Common, must be sound, well manufactured and free from rot. Some shake is admissible and some wane, but the ends should generally be square edged. The larger in size the dimension, larger and more numerous knots are admissible.

Second Common will admit of considerable wane, numerous large, coarse knots that materially weaken it,

streaks of red, firm rot, or numerous worm-holes. Dimension in quality good enough for No. 1, but poorly sawed, should be graded No. 2.

Shipping Culls, whether in boards or Dimension, should be uniform in length and width, well trimmed and strong enough to be handled without breakage. The predominating defect is red rot covering more than a half of its surface. This grade should be free from lumber that is absolutely worthless.

The above rules are all based on the supposition that lumber is well manufactured to recognized standards of width and thickness.

PHILADELPHIA INSPEC- TION.

Rules for Inspection of Lumber Adopted by the Lumbermen's Exchange, of Philadelphia. Reprinted by Special Permission

WHITE PINE.

First Clear shall be not less than 12 inches in width and 12 feet in length; must be perfect up to 14 inches in width. On that width sap may be allowed equal to 1 inch the whole length of the piece on one side, but the face must be perfect. Over that width imperfections may be allowed in proportion to the width based on the description of a 14-inch piece.

Second Clear shall be not less than 11 inches in width and 12 feet in length; must be perfect up to 12 inches in width. At that width sap may be allowed equal to 1 inch the whole length of the piece on one side. Over that width imperfections may be allowed in proportion to the width based on the description of a 12-inch piece.

Third Clear shall be not less than 10 inches in width and 12 feet in length; must be perfect up to 11 inches in width. At that width sap may be allowed equal to 1 inch the whole length of the piece on one side. Over that

width imperfections may be allowed in proportion to the width based on the description of a 11-inch piece.

Selects shall be not less than 9 inches in width and 12 feet in length; must be perfect up to 10 inches in width. At that width sap may be allowed equal to 1 inch in width on both edges on one side. Over that width imperfections may be allowed in proportion to the width based on the description of a 10-inch piece.

Fine Common shall be not less than 8 inches in width and 12 feet in length. At that width shall have one clear face; 9 inches and over in width may admit of some knots, and less sap in proportion to the width. This grade makes good one side lumber, and in general knots shall be allowed, so that this grade is not injured for finishing purposes.

No. 1 Shelving shall be 12 inches and over in width, and not less than 12 feet in length, with clear edges and a few small, tight knots.

No. 2 Shelving or Dressing shall be 10 inches and over in width and not less than 12 feet in length, with clear edges and medium sized, sound knots.

No. 1 Cuts shall be 9 inches and over in width, with 75 per cent of good lumber in the piece.

No. 2 Cuts shall be 8 inches and over in width, with about 60 per cent of good lumber in the piece—this grade will admit of some shake.

No. 1 Moulding shall be 6 inches and over in width, and not less than 12 feet in length, straight grained with one clear heart face—will admit of slight discoloration of sap on the back.

No. 2 Moulding, when under 6 inches in width, shall have one clear heart face—when 6 inches and over in width, will admit of a few small sound knots or sap on face not over one-third the width of the piece.

Case Boards shall be 16 inches and over in width and not less than 12 feet in length—free from split, rot, shake and loose knots.

Barn Quality shall be 8 inches and over in width and not less than 12 feet in length—free from split, rot, shake and unsound knots.

It is understood that all the above grades shall be full thickness and well manufactured.

Culls shall be 6 inches and over in width, of a generally unsound character, and when the imperfections are too great for the ordinary purposes of barn quality.

Mill Culls.—All lumber below culls, not actually worthless.

DRESSED LUMBER.

Six-inch Clear Fencing shall be not less than 12 feet in length, $\frac{7}{8}$ of an inch in thickness, and $5\frac{3}{8}$ inch face, and shall be perfect.

Six-inch No. 1 Fencing shall be of the same dimensions as Clear Fencing, and will admit of one small knot, or sap $\frac{3}{8}$ inch in width the full length of the piece, with perfect face.

Six-inch No. 2 Fencing shall be of the same dimensions as Clear Fencing, and admit of a few small sound knots with sap 1 inch, the full length of the piece on one side—if fewer knots more sap is allowed.

Six-inch No. 3 Fencing shall be of the same dimensions as the Clear Fencing—free from rot or large unsound knots—slight shakes will be admitted if without other imperfections,

Six-inch No. 4 Fencing shall be of the same dimensions as Clear Fencing—rougher than No. 3 grade, but not so unsound that it cannot be used for its intended purpose.

Promiscuous Width Fencing.—In Promiscuous Fencing the quality shall be the same as above grades, and the face shall be the full width represented.

GERMAN SIDING, BASE BOARDS, CEILING (OR ONE-SIDE FENCING) AND FLOORING.

Six-inch Clear shall be not less than 12 feet in length, $\frac{7}{8}$ inch in thickness, and $5\frac{3}{4}$ inches in width, and shall be perfect on the face.

Six-inch No. 1 shall be the same dimensions as Clear, and will admit of one small knot, or sap $\frac{3}{4}$ inch in width the full length of the piece on the face.

Six-inch No. 2 shall be of the same dimensions as Clear, and will admit of a few small, tight knots and 1 inch of sap the full length of the piece. If less knots, more sap is allowed in proportion.

Six-inch No. 3 shall be of the same dimensions as Clear, and shall be free from shake, rot or large, unsound knots.

BEVEL SIDING.

Clear shall be not less than 12 feet in length and 5½ inches in width, and must be perfect on face side.

No. 1 shall be the same dimensions as Clear, and will admit of one small knot or ½ inch of bright sap the full length of the piece on face side.

No. 2 shall be the same dimensions as Clear, and will admit of two or three small knots, or 1 inch of bright sap the full length of piece on face side.

No. 3 shall be the same dimensions as Clear, and will admit of four or five small knots, or 2 inches of bright sap the full length of the piece on face side.

No. 4 shall be the same dimensions as Clear, and will admit of larger knots than the No. 3 grade; will also allow fine shake.

PLASTERING LATH.

No. 1 shall be 4 feet in length, not less than ¾ of an inch in thickness, 1¾ inches in width, free from rot, wane or worm holes.

WHITE PINE SCANTLING

Shall be from 2x3 to 8x8 in dimensions, well manufactured, and shall be principally 16 feet long; quality shall be small, sound knots.

WHITE PINE TIMBER

Shall be square edges, straight grained, free from large or loose knots, or other imperfections that will materially injure the strength of the piece.

WHITE PINE PALES.

No. 1 shall be clear of knots, wane and black sap, not less than ¾ of an inch in thickness and 2½ inches in width.

No. 2 shall be the same dimensions as No. 1, and will admit of sap and sound knots.

YELLOW PINE.

All lumber of merchantable quality must be sound, square edged and square butted, 12 feet and over in

length. Scantling to average 25 feet in length, unless otherwise ordered. All to be well manufactured and full to size.

Merchantable Edge Boards must be either 1 inch or $1\frac{1}{4}$ inch thick, 3 inches and over in width, free from loose or unsound knots or knots over $1\frac{1}{4}$ inch in diameter; also free from rot, shake, turpentine deposit, or worm holes, and one face free from discolored sap that will not plane off bright when worked in flooring. If sawed tapering, to be measured at narrowest part.

Common Edge Boards.—All rough, thin and stained boards, not up to the grade of Merchantable, shall be called Common, and must be 10 feet and over in length, and either full $\frac{3}{4}$ inch, 1 inch or $1\frac{1}{4}$ inch thick, and better than a worthless or mill cull board.

No. 1 Heart Face Boards must be 1 inch or $1\frac{1}{4}$ inch thick, 3 inches and over wide, and free from knots and all other imperfections on the face side, and sound on the opposite side.

No. 2 Heart Face Boards must be 1 inch or $1\frac{1}{4}$ inch thick, 3 inches and over in width, and free from rot, shake and unsound or loose knots. On boards under 6 inches wide, bright sap shall be allowed on the face or best side of $\frac{1}{2}$ inch on one edge. Boards 6 inches and over wide may have bright sap on both edges of the face side not to exceed $\frac{1}{2}$ inch in width. Knots shall be allowed on the heart face side, viz.: On boards 6 inches and under wide and 16 feet long and under, one knot of not over $\frac{1}{2}$ inch in diameter; over 16 feet long, and same width, two knots of same description. Boards over 6 inches wide and 16 feet long and under, three knots not over $\frac{1}{2}$ inch in diameter, and same, over 16 feet long, number of knots may increase in proportion as the length of the board increases.

All boards not up to grade of No. 1 or No. 2 Heart Face, shall be inspected as "Merchantable" and "Common" Edge Boards.

All boards shall be manufactured parallel widths and so counted.

No 1 Heart Step Boards and Plank must be either 1 inch, $1\frac{1}{4}$ inch, $1\frac{1}{2}$ inch or 2 inches thick, and $10\frac{1}{2}$ inches to 14 inches wide (80 per cent, 12 inches and

over). One face and one edge entirely free from all imperfections, and sound on opposite face.

No. 2 Heart Step Boards and Plank must be 1 inch, $1\frac{1}{4}$ inch, $1\frac{1}{2}$ inch or 2 inches thick, allowing $\frac{1}{2}$ inch of sap on one corner of the face side, and one knot not exceeding 1 inch in diameter to every 4 feet in length; to be free from rot, shake and split; same widths as No. 1.

In the measurement of Side and Edge Boards, Heart Face Boards, and Step Boards and Plank, the fraction of a foot in contents shall not be counted, and in Heart Face Boards they shall be counted whole and half inches only in width, viz.: 3, $3\frac{1}{2}$, 4, $4\frac{1}{2}$, 5, $5\frac{1}{2}$, etc.

Merchantable Plank. — $1\frac{1}{4}$ inch, $1\frac{1}{2}$ inch and 2 inches thick, 6 inches and over in width. Plank 10 inches and under in width shall show one heart face and two-thirds heart the entire length on the opposite face. Over 10 inches wide, 1 inch of sap shall be allowed on each corner of heart face for not exceeding 4 feet in length. The other side shall show not less than one-half heart the entire length; lumber to be sound, and free from knots more than 2 inches in diameter, also free from rot and through shake, or splits which are over 4 feet in length.

Merchantable Scantling.—Sizes 2x3 and over. All sixes from 2x3 to 6x8, viz.: 2x3 and 4, 3x4 to 8, 4x4 to 8, 5x5 to 8, and 6x6 to 8, shall show three corners heart, and sizes 5x5 and under to have no knots over $1\frac{1}{2}$ inch in diameter. Over 5x5 up to 6x8, knots not exceeding 2 inches in diameter. All sizes from 3x8, 4x8, 5x8, 6x8 and over up to 14 inches to be inspected the same as lumber designated as Plank.

Square sizes, viz.: 7x7, 8x8, 9x9. Sap shall be allowed on all corners, but not to exceed $1\frac{1}{2}$ inch on any one corner. Other square sizes 10x10 and over shall show two-thirds heart on all sides. Other sizes over 8x8, where the width exceeds the thickness, viz.: 8x10, 8x12, 10x12, etc., shall show at least two-thirds heart on widest face and show heart the entire length on the narrow face.

All Merchantable Scantling shall be free from through or round shake, rot or knots that impair the strength of the piece.

Any piece of Scantling or Plank not up to size intended

shall be counted as next lower size or thickness, and all such lumber not up to the grade of Merchantable shall be counted and kept separate, and held subject to order of seller on payment of all expenses incurred on said lumber, unless price is mutually agreed upon at time of purchase.

In Scantling, fractions of a foot in length shall not be counted except when ordered to be specified lengths in feet and inches.

VIRGINIA AND NORTH CAROLINA PINE.

All lumber of Merchantable quality must be sound, square edged and parallel widths, 12 feet and over in length, and all to be well manufactured and full to size.

No. 1, Sap Flooring Quality, shall be 4-4, 5-4, or 6-4 inches in thickness, 6 inches and over in width, clear of sap stain and other imperfections on face side, and sound on the opposite side.

No. 2, Sap Flooring Quality, shall be 4-4, 5-4, or 6-4 inches in thickness, 3 inches and over in width; shall be perfect on the face side up to 6 inches in width; 6 inches and over shall admit of a few sound knots and slight discoloration from stain, and sound on the opposite side.

Sap Pine, Rough Quality, shall be 4-4, 5-4, or 6-4 inches in thickness, 3 inches and over in width, and shall include all boards which are sound in quality and not specified in above grades.

All Boards less than 1 inch and not less than $\frac{3}{4}$ inch in thickness, in No. 1 and No. 2 Flooring Quality, shall be counted as Rough. The same thickness in Rough shall be counted as Thin.

No. 1 Heart Step Boards and Plank shall be 4-4 and 5-4 inches in thickness, $10\frac{1}{2}$ inches and over in width, and 6-4 and 8-4 inches in thickness, 12 inches and over in width. One face and one edge must be perfect, and sound on the opposite side.

No. 2 Heart Step Boards and Plank shall be the same dimensions as No. 1, and will admit of 1 inch of sap on one edge of face side, and one sound, tight knot not exceeding 1 inch in diameter to every 4 feet in length. Free from rot, shake, split and turpentine deposit.

Heart Flooring Grade shall be 4-4, 5-4, 6-4 and 8-4 inches in thickness, and shall consist of all boards and plank equal in quality to No. 1 Stepping, and less than 10½ inches in width. That width and over will admit of a few small knots or 1 inch of sap on each edge.

Rough Heart shall be 4-4, 5-4, 6-4 and 8-4 inches in thickness, and of same grade as specified in Rough Quality Sap Pine.

All Boards and Plank below the grades above specified shall be inspected as Culls.

Heart Scantling and Plank from 3x4 to 3x12, and 4x4 to 4x12, shall be heart on face side and ¾ heart on opposite side, and will admit of sound knots that will not impair the strength of the piece; 5x5 and upwards will admit of 1 inch of sap on each corner and of sound quality. All the above sizes shall be free from through or round shake, rot or unsound knots.

All Scantling and Plank inferior to above quality shall be counted as Culls.

Any Piece of Scantling or Plank, not up to size intended, shall be counted as the next lower size or thickness.

HARDWOODS.

The question of grading and inspecting lumber is so much a matter of judgment to the Inspector as each piece comes before him, that no definite and positive rules can be laid down on paper by which any piece or any thousand feet can be inspected.

The variety of defects, and their location upon a piece, and their size, have such relations to each other that the inspector necessarily must depend upon his own judgment in grading, guided by the following rules, so far as they will apply practically:

A Standard Knot is not to exceed 1¼ inches in diameter, and must be sound.

Larger and loose knots grade the piece of lumber lower, as the judgment of the Inspector thinks proper.

Splits are not to exceed in length the width of the piece in Firsts, and twice the length of the width of the piece in Seconds, and not more than 25 per cent can be split.

Shakes are not admitted in Firsts and Seconds.

Worm Holes to be excluded in Firsts, and only admitted in Seconds in quantities equal to defects hereafter described in this quality.

Tapering Lumber shall be measured one-third of its length from the narrow end.

Thickness.—All lumber must be sawed square edged, and be full thickness when seasoned.

Lumber sawed for specific purposes, and dimension stock, must conform to the requirements of size and quality for the purposes intended, and be so inspected and measured.

Culls are not marketable unless one-half the surface of the board is free from defects.

Mill Culls are not marketable except by special arrangement.

Log Run is understood to be the run of the *unpicked* logs, *mill culls out*.

Combined Firsts and Seconds, as a grade, shall have 50 per cent of First Quality, unless otherwise stated differently hereinafter.

Standard Lengths are to be 12, 14 and 16 feet, admitting 10 per cent of 8 and 10 feet lengths.

Newels from all kinds of timber are to be cut outside the heart, and to be clear, to square 5, 6, 7, 8, 9 and 10 inches when seasoned, and to be in lengths of 4 feet or any multiple thereof.

Balusters to be cut exactly square, of full size, and clear, and to be 75 per cent 36 inches long; 25 per cent 32 inches long.

WALNUT.

Grades.—Firsts and Seconds, Rejects and Culls.

Firsts are to be 8 inches and over in width; 8 to 12 inches wide shall be clear; 13 to 15 inches wide will admit of bright sap on one side not exceeding 1 inch in width, or one standard knot, showing only on one side; 16 inches wide and over will admit of bright sap on one side not exceeding 2 inches in width, or two standard knots, showing only on one side.

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear; 8 to 10 inches will admit of

one standard knot; 11 to 15 inches wide will admit of two standard knots; 16 inches wide and over will admit of three standard knots. In any widths not more than one-fifth of the surface of one side may be sappy, but the piece shall be without other defect.

Rejects are to be 4 inches and over in width; 4 and 5 inches wide shall be clear; 6 inches and over in width shall include all lumber not equal to the grade of good Seconds, two-thirds of each piece being clear.

Culls are to include all lumber not equal to the grade of Good Rejects, half of each piece being clear. Other than as above stated shall be classed as Mill Culls.

CHERRY AND BUTTERNUT.

Grades.—Firsts, Seconds, Rejects and Culls.

Firsts are to be 8 inches and over in width; 8 to 10 inches wide shall be clear; 11 to 14 inches wide will admit of bright sap on one side not exceeding 1 inch in width, or one standard knot showing only on one side; 15 inches wide and over will admit of bright sap on one side not exceeding 2 inches in width, or two standard knots showing only on one side.

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear; 8 to 10 inches wide will admit of one standard knot; 11 to 14 inches wide will admit of two standard knots; 15 inches wide and over will admit of three standard knots. Gum spots in above grades not admitted, except where very slight. In any widths not more than one-fifth of the surface of one side may be sappy, but the piece shall be without other defect.

Rejects are to be 4 inches and over in width; 4 and 5 inches wide shall be clear or clear on one side; 6 inches and over in width shall include all lumber not equal to the grade of Good Seconds, two-thirds of each piece being clear.

Culls to include all lumber not equal to the grade of Good Rejects, one-half of each piece being clear.

Mill Culls.—Other than as above stated shall be classed as Mill Culls.

Strips 3 to 7 inches wide shall be clear or clear faced. The reverse side will admit of one-half sap, or one defect.

OAK—(PLAIN, WHITE OR RED.)

Grades.—Firsts, Seconds and Culls.

Firsts are to be 8 inches and over in width; 8 to 12 inches wide shall be clear; 13 to 15 inches wide will admit of one standard knot showing only on one side; 16 inches wide and over will admit of two standard knots showing only on one side. Live sap admitted on one side not to exceed 10 per cent of the surface, if without other defects. Must be entirely free from worm-holes.

Seconds are to be 6 inches and over in width; 6 and 7 inches are to be clear; 8 to 12 inches wide will admit of one standard knot; 13 to 15 inches wide will admit of two standard knots; 16 inches wide and over will admit of three standard knots. Live sap admitted on one side, not to exceed 20 per cent of the surface, if without other defects. Worm holes are serious defects.

Culls shall include all lumber not equal to the grade of good seconds, one-half of each piece being clear.

Mill Culls, other than as above stated, shall be classed as Mill Culls.

ASH.

Grades.—Firsts, Seconds and Culls.

Firsts are to be 8 inches and over in width; 8 to 12 inches wide shall be clear; 13 to 15 inches wide will admit of one standard knot; 16 inches wide and over will admit of two standard knots. Live white sap allowed.

Seconds are to be 6 inches and over in width; 6 to 7 inches wide shall be clear; 8 to 12 inches wide will admit of one standard knot; 13 to 15 inches wide will admit of two standard knots; 16 inches wide and over will admit of three standard knots. Heart or doted boards and plank will not be admitted.

Culls to include all lumber not equal to the grade of good Seconds, one half of each piece being clear.

Mill Culls, other than as above stated, shall be classed as Mill Culls.

ELM.

Grades.—Firsts, Seconds and Culls.

Firsts are to be 8 inches and over in width; 8 to 12 inches wide shall be clear; 13 to 15 inches wide will admit of one standard knot; 16 inches wide and over will

admit of two standard knots. Live white sap allowed. Must be entirely free from worm holes.

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear; 8 to 12 inches wide will admit of one standard knot; 13 to 15 inches wide will admit of two standard knots; 16 inches wide and over will admit of three standard knots. Live white sap allowed. Worm holes are serious defects.

Culls are to include all lumber not equal to the grade of good Seconds, one-half of each piece being clear.

Mill Culls, other than as above stated, shall be classed as Mill Culls.

MAPLE—(HARD AND SOFT.)

Grades.—Firsts, Seconds and Culls.

Firsts are to be 8 inches and over in width; 8 to 12 inches wide shall be clear; 13 to 15 inches wide will admit of one standard knot; 16 inches wide and over will admit of two standard knots. Live white sap allowed.

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear; 8 to 12 inches wide will admit of one standard knot; 13 to 15 inches will admit of two standard knots; 16 inches wide and over will admit of three standard knots. Live white sap allowed. Heart or doted boards and planks will not be admitted.

Culls are to include lumber not equal to the grade of good Seconds, one-half of each piece being clear.

Mill Culls, other than as above stated, shall be classed as Mill Culls.

MAPLE SQUARES.

Four inches by 4 inches to 10 inches by 10 inches square.

Firsts are to be 10 feet and upward in length, clear, sound and free from all defects, and of full size when seasoned.

Seconds are to be sound and free from hearts, shakes and checks; 10 and 12 feet lengths admit of two standard knots; 14 and 16 feet lengths admit of three standard knots. Bright sap admitted when not exceeding 50 per cent of the surface. These defects are based on 6x6 squares, and are to bear the same on other sizes.

Culls are to include all squares not equal to the grade of good Seconds, one-half of each piece being clear.

Mill Culls, other than as above stated, shall be classed as Mill Culls.

QUARTERED OAK—(SHALL BE FIGURED.)

Grades.—Firsts and Seconds.

Firsts are to be 6 inches and over in width; 6 to 9 inches wide shall be clear; 10 inches and over in width will admit of one standard knot showing only on one side, or equal defect.

Seconds are to be 6 inches and over in width; 6 to 9 inches wide will admit of one standard knot showing only on one side, or equal defect; 10 inches and over in width will admit of two standard knots showing only on one side, or equal defect.

Strips 4 and 5 inches wide only accepted by special agreement. Combined grade of Firsts and Seconds shall contain not less than 75 per cent of Firsts.

POPLAR—(WHITEWOOD).

Grades.—Firsts, Seconds and Common.

Firsts are to be 10 inches and over in width; 10 to 12 inches wide must be clear; 13 to 15 inches wide will admit of 1 inch of bright sap showing only on one side; 16 inches wide and over will admit of 2 inches of bright sap.

Seconds are to be 8 inches and over in width; 8 inches wide shall be clear; 9 to 12 inches wide will admit of 2 inches of bright sap, or one standard knot; 13 to 15 inches wide will admit of 3 inches of bright sap, or two standard knots; 16 inches and over wide will admit of 4 inches of bright sap, or three standard knots.

Common shall include any width not less than 5 inches, and will allow bright sap on one side, or one-third discolored sap on one side. Two unsound knots will be allowed in this grade if over 12 inches wide, or one sound knot in excess of those allowed in Seconds, *if* without discolored sap,—straight splits not over one-third the length shall be admitted; otherwise lumber must be sound. In this grade two-thirds must be good lumber.

Culls include all lumber not equal to the grade of common, one-half of each piece being good lumber.

Mill Culls shall include all lumber not one-half good.

POPLAR SQUARES.

Four inches by 4 inches to 10 inches by 10 inches square.

Firsts are to be 10 feet and upward in length, sound and free from all defects, sawed square and of full size when seasoned.

Seconds are to be sound and free from hearts, shakes and checks; 10 and 12 feet lengths admit of two standard knots and 2 inches of bright sap on two corners; 14 and 16 feet lengths admit of three standard knots and 2 inches of bright sap on two corners. These defects are based on 6x6 squares, and bear the same ratio in other sizes.

Culls include all squares not equal to the grade of good Seconds, one-half being clear.

Mill Culls, other than above stated, shall be classed as Mill Culls.

BIRCH AND BEECH.

Grades.—Firsts, Seconds and Culls.

Firsts are to be 8 inches and over in width; 8 to 10 inches wide shall be clear; 11 to 14 inches wide will admit of one standard knot showing only on one side; 15 inches wide and over will admit of two standard knots showing only on one side.

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear; 8 to 10 inches wide will admit of one standard knot; 11 to 14 inches wide will admit of two standard knots; 15 inches wide and over will admit of three standard knots.

Culls to include all lumber not equal to grade of good Rejects, half of each piece being clear.

Mill Culls, other than as above stated, shall be classed as Mill Culls.

CHESTNUT.

Grades.—Firsts, Seconds and Culls.

Firsts are to be 8 inches and over in width; 8 to 15 inches wide shall be clear; 16 inches wide and over will admit of one standard knot.

Seconds are to be 6 inches and over in width; 8 to 12 inches wide will admit of one standard knot; 13 to 15 inches wide will admit of two standard knots; 16 inches wide and over will admit of three standard knots. Worm holes in above grades not admitted, except when in a bunch not larger than the standard knot or knots, as provided for the width of board in which they appear.

Culls to include all lumber not equal to the grade of good Seconds, one-half of each piece being clear.

Mill Culls, other than as above described, shall be classed as Mill Culls.

GUM AND SYCAMORE.

Grades.—Firsts, Seconds, Rejects and Culls.

Firsts are to be 8 inches and over in width; 8 to 12 inches wide shall be clear; 13 to 15 inches wide will admit of bright sap on one side not exceeding 1 inch in width, or one standard knot showing only on one side; 16 inches wide and over will admit of bright sap on one side not exceeding 2 inches in width, or two standard knots showing only on one side.

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear; 8 to 12 inches wide will admit of one standard knot; 13 to 15 inches wide will admit of two standard knots; 16 inches wide and over will admit of three standard knots. In any widths, not more than one-fifth of the surface of one side may be sappy, but the piece shall be without other defect.

Rejects are to be 4 inches and over in width; 4 and 5 inches wide shall be clear; 6 inches and over in width shall include all lumber not equal to the grade of good Seconds, two-thirds of each piece being clear.

Culls are to include all lumber not equal to the grade of good Rejects, one-half of each piece being clear.

Mill Culls, other than as above stated, shall be classed as Mill Culls.

COTTONWOOD.

Grades.—Firsts, Seconds and Culls.

Firsts to be 8 inches and over in width; 8 to 12 inches wide must be clear; 13 to 15 inches wide will admit of 2 inches of bright sap on one side, or one standard knot showing only on one side; 16 inches wide and over

admit of 3 inches of bright sap on one side, or two standard knots showing only on one side.

Seconds to be 6 inches and over in width; 6 and 7 inches wide must be clear; 8 to 12 inches wide will admit of 2 inches of bright sap on one side, or one standard knot showing only on one side; 13 to 15 inches will admit of 3 inches of bright sap on one side, or two standard knots showing only on one side; 16 inches wide and over will admit of 4 inches of bright sap on one side, or three standard knots showing only on one side.

Culls to be all the lumber not equal to the grade of good Seconds, one-half of each piece being clear.

Mill Culls, other than as above stated, shall be classed as Mill Culls.

BASSWOOD.

Grades.—Firsts, Seconds and Culls.

Firsts are to be 8 inches and over in width; 8 to 12 inches wide shall be clear of knots; 13 to 15 inches wide will admit one standard knot showing only on one side; 16 inches wide and over will admit two standard knots showing only on one side.

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear of knots; 8 to 12 inches will admit of one standard knot showing only on one side; 13 to 15 inches wide will admit of two standard knots showing only on one side; 16 inches wide and over will admit of three standard knots showing only on one side.

Culls to include all the lumber not equal to the grade of good Seconds, one-half the piece being clear.

Mill Culls, other than above stated, shall be classed as Mill Culls.

QUARTERED SYCAMORE—(SHALL BE FIGURED).

Same as Quartered Oak, except as to sap; all sap, Culls.

Grades.—Firsts and Seconds.

Firsts are to be 6 inches and over in width; 6 to 9 inches wide shall be clear; 10 inches and over wide will admit of one standard knot showing only on one side, or equal defect.

Seconds are to be 6 inches and over in width; 6 to 9 inches wide will admit of one standard knot showing

only on one side, or equal defect; 10 inches and over in width will admit of two standard knots showing only on one side, or equal defect.

Strips 4 and 5 inches wide only accepted by special agreement.

HICKORY.

Grades.—Firsts, Seconds and Culls.

Firsts are to be 8 inches and over in width; 8 to 12 inches wide shall be clear; 13 to 15 inches wide will admit of one standard knot showing only on one side; 16 inches wide and over will admit of two standard knots showing only on one side.

Seconds are to be 6 inches and over in width; 6 to 7 inches shall be clear; 8 to 12 inches wide will admit of one standard knot; 13 to 15 inches wide will admit of two standard knots; 16 inches wide and over will admit of three standard knots.

Culls to include all lumber not equal to the grade of good Seconds, one-half of each piece being clear.

Mill Culls, other than above stated, shall be classed as Mill Culls.

SECOND GROWTH HICKORY.

Sawed through and through and rough edged; shall be measured inside the wane, and the average width of the face.

HEMLOCK.

The inspection of Hemlock shall be as follows:

Boards and fencing shall consist of three grades—Mill Culls, Culls and Good.

A Mill Cull shall consist of a board that is rotten, very badly shaken, that contains the shape, but not the substance, which is not altogether worthless, but is used for some certain purposes, at a low price.

A Cull Board shall consist of a board having a few loose knots or knot-holes, not over size of a 50-cent piece, or shake equal to one-half the board, or streaky rots, or split half the length of the board.

Good shall consist of all boards better than Culls.

All boards above Mill Culls shall be known as Log Run, Mill Culls out, and all boards above Culls shall be known as Log Run, Culls out.

Scantling shall consist of 2x3, 2x4 and 3x4, and shall be of two grades—Good and Culls.

A Good Piece shall be well manufactured, may admit of wane one-quarter the length of the piece one-half the thickness on one edge, except 2x3, which must be square to the end, with balance otherwise good, and no other defects that would materially injure the strength of the piece.

A Cull shall be a piece which is not included in the Good.

Joists shall consist of two grades—Culls and Good.

Cull Joists shall consist of all pieces that are doted, badly shaken, very cross grained, and such as are warped out of shape, provided that large knots or that one or two straight splits in either end of the joist shall not be construed to make it a Cull, unless it reduces the strength of the piece. Wanes shall not condemn a piece unless over two-thirds the length and one-half the thickness of piece.

Good Joists shall be well manufactured, and shall consist of all pieces above Culls.

SHINGLING, LATH, PICKETS AND PALES

Shall be well made, parallel widths, and sawed from sound timber.

PLASTERING LATH

Shall be well manufactured, from sound timber, and standard size shall be 1½ inch by 5-16, and 3 or 4 feet long.

BILL LUMBER

Shall consist of sizes thicker than 3 inches, and shall be well manufactured, of full size, as designated in the bill, and the inspection shall be the same as for good Joists, except that no wane be allowed that will destroy the strength of the piece.

SPRUCE.

The inspection of Spruce shall be as follows:

Grades.—Merchantable and Culls.

Merchantable Boards shall be free from shakes and loose or unsound knots. All shaky boards with loose and unsound knots shall be inspected as Culls.

Merchantable Scantling, Plank and Joists shall

also be sound in character and free from cross-grain that will affect the strength of the piece, and will admit of wane not to exceed one-quarter the length of the piece and one-third the thickness on one edge. A Cull shall be a piece not included in the Merchantable.

Pickets shall be either 4, 4½ or 5 feet in length, and ¾, ⅞ or 4-4 inches thick, and 3 inches in width, and shall be sound and of parallel widths.

Plastering Lath shall be sound and well manufactured and standard size; shall be 4 feet in length and 1⅜x5-16 inches, and 100 in a bundle.

TORONTO INSPECTION.

Rules and Regulations for the Inspection of Pine and Hardwood Lumber Adopted by the Lumber Section of the Board of Trade of the City of Toronto, Ont., and Sanctioned by the Council of the Board June 16, 1890.

PINE LUMBER.

INSTRUCTIONS FOR INSPECTION.

Inspectors of lumber must measure and inspect each piece as they find it, of full length and width. Imperfections are not to be measured out.

All lumber must be put into the grade its defects call for, regardless of measurement.

All lumber over 1 inch in thickness must be measured full, with the ¼ or ½ added on each piece. (No fraction in width allowed.)

In inspection the Inspector is instructed to use his best judgment, based upon the rules laid down for his guidance.

The standard knot is to be considered as not exceeding 1¼ inches in diameter.

Splits are a greater or lesser defect in lumber, and must be considered accordingly.

All lumber must be cut plump in thickness and be well

manufactured, and all lumber imperfectly manufactured shall be classed as Culls.

GRADES.

The following shall be the grades of lumber sanctioned by the Council of the Board of Trade for the Lumber Section of the Board of Trade of the city of Toronto:

Clear Lumber shall be perfect in all respects and free from wane, rot, shake or check, not less than 12 feet long, 8 inches wide and 1 inch thick. A piece 12 inches wide will admit of imperfections to the extent of one standard knot or its equivalent in sap. In lumber over 12 inches wide the Inspector must use his best judgment in accordance with the instructions above given.

Picks.—Pickings must not be less than 12 feet long, 8 inches wide and 1 inch in thickness, well manufactured and free from wane, rot, shake or check. A piece 8 inches wide will admit of one standard knot, or imperfections in sap to the same extent. A piece 12 inches wide will admit of two standard knots, or imperfections in sap to the same extent. For lumber wider than 12 inches, of this grade, Inspectors will carry out the instructions as given regarding wide, clear lumber.

No. 1 Cutting Up shall not be less than 12 feet long, 7 inches wide and 1 inch in thickness. Clear pieces 10 feet long and the required width are included in this grade; this must be free from wane, rot, shake or check. Pieces from 7 to 9 inches wide will admit of imperfections to the extent of two standard knots or their equivalent in sap. Pieces from 10 to 12 inches wide will admit of three standard knots or imperfections equivalent to them in sap, and wider for lumber of this grade Inspectors will follow instructions as given in two previous grades. Inspectors are informed that this grade of lumber is expected to cut out two-thirds clear in profitable lengths to the consumer.

No. 2 Cutting Up shall not be less than 10 feet long, 6 inches wide and 1 inch in thickness, and shall cut at least one-half clear in accordance with the instructions as given above regarding No. 1 Cutting Up Lumber.

Fine Dressing.—This grade of lumber shall be generally of a sound character, and shall be free from wane,

rot, shake or check, not less than 10 feet long, 7 inches wide and 1 inch in thickness. A piece 7 inches wide will admit of one or more knots which can be covered with a 10-cent piece if they are sound. A piece wider than 7 inches will admit of one or more knots of the same size according to the judgment of the Inspector in regard to the width.

Common Dressing shall not be less than 10 feet long, 7 inches wide and 1 inch in thickness, and shall be free from wane, rot or check, and shall be generally of a sound character, and will admit of standard knots that will not unfit it for dressing purposes.

Common shall be free from rot and unsound knots, and well manufactured, not less than 10 feet long, 7 inches wide and 1 inch in thickness.

Strips.—Clear Strips shall be from 4 to 6 inches wide, not less than 12 feet long, and 1 inch in thickness, and shall have one perfectly clear face, free from all imperfections; bright sap will be permitted on the reverse side.

Sap Strips for fine dressing shall be from 4 to 6 inches wide, not less than 12 feet long, and 1 inch in thickness, and will admit of one knot which can be covered by a 10-cent piece in a piece 4 inches wide, and two knots of like size in a piece 6 inches wide. All strips free from other imperfections and having bright sap on two sides would be admitted into this grade.

Common Dressing Strips shall be from 4 to 6 inches wide, not less than 10 feet long, and 1 inch in thickness, and shall be well manufactured and generally of a sound character; will admit of knots which are sound and not coarse, and which will not unfit it for ordinary dressing purposes.

Common Strips shall be from 4 to 6 inches in width, not less than 10 feet long, and 1 inch in thickness, free from rot and wane, and to be of a coarse, sound character.

No. 1 Culls.—This grade shall consist of lumber above the grade of No. 2 Culls, and shall admit of coarse knots and stain and be free from rot. It shall also admit of pieces imperfectly manufactured, below 1 inch in thickness and perfectly sound, and not rendered worthless through improper manufacture.

No. 2 Culls shall be lumber that will work one-half sound.

No. 1 Lath shall be 4 feet long, and shall be when cut $1\frac{1}{8}$, $1\frac{3}{8}$ and $1\frac{5}{8}$ inches in width, cut out of good, sound, live timber, free from wane, rot or knots, well manufactured and trimmed square at the ends.

No. 2 Lath shall be of the same width and length as No. 1 Lath, and shall admit of a small portion of wane, and also will admit of lath sap stained, and will admit of small, sound knots; must otherwise be well manufactured.

No. XXX Shingles, packed in 4 bunches to the 1,000, of 250 each, free from all rot, shake, sap, knots, pin holes, bastards, or defects of any nature. A shingle 4 inches being the standard, 16-inch shingles should be 5 shingles to 2 inches thickness at butt, with 1-18 inch points, and 18-inch shingles, 5 to $2\frac{1}{4}$ inches thickness at butt, and 1-18 at points, to be well manufactured and well pointed.

No. XX 6-inch Clear Butts must be perfect for at least 6 inches from butts, and the defects from this hereon to be of water-tight character, and same regulation regarding thickness as XXX shingles.

No. 1 to be of a grade not specially up to, so as to be considered in, either of above grades, and to be sold by special agreement.

All Other Shingles are Culls, and their value is to be a matter of arrangement, if they have any market value.

HARDWOOD LUMBER.

INSTRUCTIONS FOR INSPECTION.

It is impossible to make rules that will govern every piece of lumber, there being no two pieces of lumber exactly alike. It is therefore expected that the Inspector shall be a person of experience, and use his best judgment, based upon the general rules given, making no allowance for the purpose of raising or lowering the grades of a piece.

The Inspector must not favor either the buyer or seller, but take lumber as he finds it, and pass each piece into the grade to which it belongs. Inspectors should examine all lumber on the poorest side, except flooring.

All lumber must be measured in even lengths, excepting stock that is cut to order for special purposes, when it shall be measured for the full contents. Bark or waney pieces shall be measured inside the bark or wane. All tapering pieces will be measured one-third the length of the piece from the small end.

All badly cut lumber shall be classed as Cull, or placed one grade below what it would be if properly manufactured. All lumber shall be sawed thick enough to meet the required thickness when seasoned. Lumber sawed for Newels, Columns, Balusters, Axles, or other specific purposes, must be inspected with a view of the intended use of the piece, and the adaptability for that purpose, as in most cases it cannot be utilized for other purposes. Heart pieces are excluded from all grades above Cull. Worm holes are considered one of the most serious defects. Gum spots in Cherry is a defect, and, if excessive, will lower the piece one or two grades. Warped, twisted, stained and stick-rotten lumber shall either be classed as Cull, or Mill Cull and refuse.

The standard lengths of Whitewood to be 12, 14 and 16 feet, admitting 10 per cent of 10 feet lengths; Walnut and Cherry, 10, 12, 14 and 16 feet lengths, admitting 10 per cent of 8 feet; 8 feet to be admitted as No. 1, must be 12 inches wide and upwards; to grade as No. 2, 8 inches wide and upwards.

A standard knot must not exceed $1\frac{1}{4}$ inches in diameter, and must be sound. Log Run shall be the unpicked run of the log, Mill Cull out. Lumber sold on grade, and without special contract, will be measured according to these rules. The Inspector will be required to keep a correct copy of all measurements, and give duplicate of same, to both buyer and seller, if required.

In all grades mentioned as combined in No. 1 and No. 2, all pieces less than 8 inches shall be considered as Seconds.

BLACK WALNUT.

Combined grade of Firsts and Seconds, Rejects and Shipping Culls.

No. 1, from 8 to 10 inches, shall be clear of all defects; 10 to 16 inches wide may have $1\frac{1}{2}$ inches bright sap, or one standard knot; 16 inches wide and upwards

may have 2 inches bright sap, or two standard knots showing on one side only.

Seconds, 6 inches wide and upwards, must be clear of all defects at 7 inches; at 10 inches will admit of $1\frac{1}{2}$ inches sap, or two standard knots; 10 to 16 inches wide will admit of 2 inches sap, or two standard knots; 16 inches wide and upwards may have 3 inches sap, or three standard knots; 12 inches wide and upwards will admit of a split, if straight, 1-6 the length of the piece, provided the piece be equal to No. 1 in other respects. Not over 10 per cent of Seconds will be taken with splits of the above character.

Rejects, 5 inches wide and upwards; at 7 inches may have 1 inch sap, or one standard knot; 7 to 12 inches wide may have 2 inches sap, or two sound knots; 12 to 18 inches wide may have 4 inches sap, or four sound knots; above 18 inches may have 5 inches bright, sound sap.

Shipping Cull will include all lumber not equal to the above that will average and work two-thirds its width and length.

CHERRY AND BUTTERNUT

Will be graded and inspected according to the rules given for Black Walnut, with the exception of gum specks in Cherry. (See instructions.)

WHITEWOOD, COTTONWOOD OR BALM OF GILEAD

Will include the combined grade of First and Seconds—No. 1 Common, No. 2 Common, or Shipping Cull. The combined grade of First and Seconds shall not be less than 65 per cent of No. 1.

No. 1 shall be 10 inches wide and upwards, and clear of all defects at 12 inches; 12 to 15 inches may have $1\frac{1}{2}$ inches bright sap, or one standard knot showing on one side only; 15 to 18 inches may have 2 inches sap; 18 inches and upwards may have 3 inches sap, or two standard knots showing on one side only.

Seconds, 8 inches wide and upwards, clear of all defects at 9 inches; at 10 inches wide, may have one standard knot or a split not over 12 inches long; 15 to 18 inches wide may have two standard knots, or 3 inches

bright sap; 18 to 22 inches may have three standard knots or 4 inches bright, sound sap.

No. 1 Common shall be 6 inches wide and upwards, bright, sound and clear sap, not a defect in this grade; 8 to 12 inches wide, may have three standard knots; 12 to 16 inches wide, four standard knots; 16 to 24 inches, five standard knots, or may have straight heart cracks not showing over one-quarter the length of the piece, if it has no other defect excepting bright sap.

No. 2 Common or Shipping Cull will include lumber with more defects than the No. 1 Common. Pieces will be received where two-thirds of the piece will be available for use for rough manufacturing purposes; stained sap or other defects will be received in this grade; dozed and rotten sap, and other lumber, than as above named, will be classed as Mill Cull or refuse, and have no standard value.

BASSWOOD

Shall be inspected the same way as Whitewood, Cottonwood or Balm of Gilead, with the exception that Seconds will take lumber 6 inches wide and up.

ASH AND OAK

Shall be graded as Firsts and Seconds, and shall be 6 inches and over in width.

Boards or Plank 8 inches wide will admit of one standard knot or one defect; 10 inches and over wide will admit of two or more defects, according to the width of the piece; bright sap is not considered a defect.

Culls include all width, lengths and sizes, except such stock as will not work one-half without waste. Other than the above are classed as Mill Culls, and have no value in this market.

CHESTNUT

Shall be 6 inches and over in width, and clear up to 8 inches. Pieces 9 inches wide may have three standard knots; over 12 inches wide, 4 standard knots. This grade must be absolutely free from worm or pin holes. Culls shall constitute all lumber below the above grade that will cut one-half without waste.

SYCAMORE

Shall be inspected the same way as Oak and Ash.

HICKORY

Shall be inspected the same as Oak and Ash.

ROCK AND SOFT ELM

Shall be 6 inches and up wide, and up to 10 inches shall be perfect. Beyond that width shall take the inspection given to Oak and Ash.

HARD AND SOFT MAPLE

Shall be inspected for Firsts and Seconds in the same manner as Oak and Ash.

Clear Maple Flooring shall have at least one clear face, and two edges also clear.

Common Maple Flooring shall be of the same general character as Clear; may have one or two small sound knots of not more than $\frac{3}{4}$ of an inch in diameter, or a small wane on one edge, which will not injure it for working its full size without waste.

BIRCH

Shall have the same inspection as Hard and Soft Maple, with the exception that sap is considered a defect more than in Maple.

NEW YORK HARDWOOD INSPECTION.

**Rules for the inspection of Hardwoods adopted by the
New York Lumber Trade Association, April 12, 1893.**

GENERAL INSTRUCTIONS.

The question of determining the quality of lumber by grading and inspection is so much a matter of judgment, that the Inspector must necessarily be guided in a measure by his own discretion, governed by the following rules:

In inspecting all lumber, both sides of the piece shall be taken into consideration in making the grade.

In Firsts and Seconds, where the percentage of Firsts and Seconds is not agreed upon between buyer and seller, they shall contain not less than 60 per cent Firsts.

A Standard Knot is not to exceed $1\frac{1}{4}$ inches in diameter, and must be sound.

Larger and loose knots grade the piece of lumber lower, in accordance with the judgment of the Inspector.

Splits are not to exceed 12 inches in length in Firsts, or one-sixth the length of the piece in Seconds, in the aggregate, and not more than 25 per cent of the whole in either quality may be so split

Worm Holes not admitted in Firsts and Seconds, except as otherwise provided.

Shakes and Heart Boards and Plank are not admitted in Firsts, Seconds, or Rejects.

Warped, twisted, flooded, stained, and stick-rotted lumber is marketable only by special agreement.

Tapering lumber shall be measured one-third of its length from the narrow end, except as otherwise provided.

Thickness.—All lumber must be sawed square-edged and be full thickness when seasoned.

All badly sawn, missawn and uneven lumber, shall be classed as culls, except when such will dress down the full length and width to the thickness below, in which case the piece shall be reduced one grade.

Lumber sawn for specific purposes and dimension stock, must conform to the requirements of size and quality, for the purposes intended, and be so inspected and measured.

Mill Culls are not marketable, except by special arrangement.

Log Run is understood to be the run of the unpicked logs, Mill Culls out.

Standard Lengths are to be 12, 14, and 16 feet, admitting 10 per cent of 10 feet lengths.

Standard Lengths in Walnut and Cherry will admit 5 per cent of 8 and 10 per cent of 10 feet lengths, 8 feet lengths 10 inches and wider to be clear and graded as Firsts, and 8 to 9 inches clear and graded as seconds.

Newels, from all kinds of timber, are to be cut outside the heart to square 4, 5, 6, 7, 8, 9, 10, 11, and 12 inches when seasoned.

Balusters.—To be cut exactly square, full size and clear, and to be 75 per cent 32 inches long; 25 per cent may be 28 inches long.

In the following rules, all widths and lengths mentioned shall be inclusive.

ASH.

Grades.—Firsts, Seconds, Rejects and Culls.

Firsts are to be 8 inches and over in width; 8 to 10 inches wide shall be clear; 11 to 14 inches wide will admit one standard knot; 15 inches and over wide will admit two standard knots; bright sap allowed

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear; 8 to 10 inches wide will admit one standard knot; 11 to 14 inches wide will admit two standard knots; 15 inches and over wide will admit three standard knots. Heart or doted boards and plank will not be admitted in Firsts and Seconds.

Rejects, 6 inches and over wide, shall include all lumber not equal to the grade of Seconds, three-quarters of each piece being merchantable; 8 feet lengths, inspecting equal to Firsts and Seconds, shall grade as Rejects.

Culls include all lumber not equal to the grade of Rejects, one-half of each piece being merchantable. Other than above stated shall be classed as Mill Culls.

Strips 3 to 5 inches wide shall be clear, or clear one side.

ASH SQUARES.

4 in. x 4 in. to 12 in x 12 in. square.

Firsts are to be 10 feet and upward in length, sound and free from knots and checks, and of full size when seasoned. Splits to be measured off.

Seconds are to be sound and free from hearts, shakes and checks; 8 feet lengths shall be admitted if clear; 10 and 12 feet lengths admit one standard knot; 14 and 16

feet lengths admit two standard knots. Bright sap admitted.

Culls include all joists not equal to the grade of Seconds, one-half of each piece being merchantable. Other than as above stated shall be classed as Mill Culls.

ARH, SECOND GROWTH.

Sawed through and through, and rough edged, shall be measured inside the wane, and in the center of the piece.

BASSWOOD.

Grades.—Firsts, Seconds and Culls.

Firsts are to be 8 inches and over in width; 8 to 10 inches wide shall be clear; 11 to 14 inches wide will admit one standard knot; 15 inches and over wide will admit two standard knots.

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear; 8 to 10 inches wide will admit one standard knot; 11 to 14 inches wide will admit two standard knots; 15 inches and over wide will admit three standard knots. Bright sap allowed.

Culls include all lumber not equal to the grade of Seconds, one-half of each piece being merchantable. Other than as above stated shall be classed as Mill Culls.

BEECH.

Grades.—Firsts, Seconds and Culls.

Firsts are to be 8 inches and over in width; 8 to 10 inches wide shall be clear; 11 to 14 inches wide will admit one standard knot; 15 inches and over wide will admit two standard knots. Bright sap admitted.

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear; 8 to 10 inches wide will admit one standard knot; 11 to 14 inches wide will admit two standard knots; 15 inches and over wide will admit three standard knots.

Culls include all lumber not equal to the grade of Seconds, one-half of each piece being merchantable. Other than as above stated shall be classed as Mill Culls.

BIRCH.

Grades.—Firsts, Seconds, Rejects and Culls.

Firsts are to be 8 inches and over in width; 8 to 10 inches wide shall be clear; 11 to 14 inches will admit one standard knot; 15 inches and over wide will admit two standard knots. One-third bright sap on one side admitted in this grade.

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear; 8 to 10 inches wide will admit one standard knot; 11 to 14 inches wide will admit two standard knots; 15 inches and over wide will admit three standard knots. In Seconds, bright sap shall not be considered a defect.

Rejects 5 inches wide shall be clear; 6 inches and over wide shall include all lumber not equal to the grade of Seconds, three-quarters of each piece being merchantable.

Culls include all lumber not equal to the grade of Rejects, one-half of each piece being merchantable. Other than as above stated shall be classed as Mill Culls.

BIRCH SQUARES.

4x4 to 10x10 in.

Firsts are to be 10 feet and upward in length, sound, free from all defects, and of full size when seasoned.

Seconds are to be sound and free from hearts, shakes and checks; 8 feet lengths shall be admitted if clear; 10 and 12 feet lengths admit one standard knot; 14 and 16 feet lengths admit two standard knots.

Balusters or Joists under 4x4 shall be clear, except bright sap no defect.

BUTTERNUT.

Grades.—Firsts, Seconds and Culls.

Firsts are to be 8 inches and over in width; 8 to 10 inches wide shall be clear; 11 to 14 inches wide will admit bright sap on one side not exceeding one inch in width, or one standard knot; 15 inches and over-wide will admit bright sap on one side not exceeding two inches in width, or two standard knots.

Seconds are to be 6 inches and over in width; 6 and

7 inches wide shall be clear; 8 to 10 inches wide will admit one standard knot; 11 to 14 inches wide will admit two standard knots; 15 inches and over wide will admit three standard knots. In any widths not more than one-fifth of the surface shall be sappy.

Culls include all lumber not equal to the grade of seconds, one-half of each piece being merchantable. Other than as above stated shall be classed as mill culls.

CHERRY.

Grades.—Firsts, Seconds, Rejects and Culls.

Firsts are to be 6 inches and over in width; 6 to 10 inches wide shall be clear; 11 to 14 inches wide will admit bright sap on one side, not exceeding one inch in width, or one standard knot; 15 inches and over wide will admit bright sap on one side, not exceeding two inches in width, or two standard knots.

Seconds are to be 6 inches and over in width; 6 to 10 inches wide will admit one standard knot; 11 to 14 inches wide will admit two standard knots; 15 inches and over wide will admit three standard knots. In any width not more than one-fifth the surface of one side shall be sappy.

Gum spots shall be deemed a serious defect, and if excessive, shall lower the piece one or two grades.

Rejects are to be 4 inches and over in width; 4 and 5 inches wide shall be clear, or clear one side; 6 inches and over in width shall include all lumber not equal to the grade of seconds, three-quarters of each piece being merchantable. Heart boards or plank not admitted.

Culls include all lumber not equal to the grade of rejects, one-half of each piece being merchantable. Other than as above stated shall be classed as mill culls.

Strips 3 to 5 inches wide, 8 feet and over long shall be clear or clear faced.

CHERRY SQUARES.

4 in. x 4 in. to 10 in. x 10 in.

Firsts are to be 10 feet and upward in length, sound and free from knots and checks, and full size when seasoned. Splits to be measured off.

Seconds are to be sound and free from hearts and shakes; 8 feet lengths shall be admitted if clear; 10 and 12 feet lengths admit one standard knot and two inches of sap on two corners; 14 and 16 feet lengths will admit two standard knots and two inches of sap on two corners.

Gum spots not admitted, except when very slight.

Culls include all joists not equal to the grade of seconds, one-half of each piece being merchantable. Other than as above stated shall be classed as mill culls.

CHESTNUT.

Grades —Firsts, Seconds, Rejects and Culls.

Firsts are to be 8 inches and over in width; 8 to 11 inches wide shall be clear; 12 to 15 inches wide will admit one standard knot; 16 inches and over wide will admit two standard knots.

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear; 8 to 11 inches wide will admit one standard knot; 12 to 15 inches wide will admit two standard knots; 16 inches and over wide will admit three standard knots.

Worm Holes in excess of the defects allowed for knots, and stained or discolored boards, not admitted.

Rejects are to be 6 inches and over, and shall include all lumber not equal to grade of seconds, three-quarters of each piece being merchantable.

Culls include all lumber not equal to the grade of rejects, one-half of each piece being merchantable. Other than as above stated shall be classed as mill culls.

SQUARE CHESTNUT.

4 in. x 4 in. and over square, 8, 10, 12, 14 and 16 feet long.

Merchantable must be straight, sound, free from hearts and shakes; 8 and 10 feet lengths admit two standard knots; 12, 14 and 16 feet lengths admit three standard knots. Must be free from wane, except that will admit one inch wane on one corner, one-fourth the length.

Worm holes in excess of defects allowed for knots not admitted.

Culls include all joists not equal to the grade of merchantable, one-half of each piece being merchantable. Other than as above stated are not marketable.

COTTONWOOD.

Grades.—Firsts, Seconds, Rejects and Culls.

Firsts are to be 8 inches and over in width; 8 to 11 inches wide shall be clear; 12 to 15 inches wide will admit one standard knot; 16 inches and over wide will admit two standard knots. Live white sap allowed.

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear; 8 to 11 inches wide will admit one standard knot; 12 to 15 inches wide will admit two standard knots; 16 inches and over wide will admit three standard knots. Bright sap allowed.

Rejects 5 inches wide shall be clear; 6 inches and over wide shall include all lumber not equal to the grade of seconds, three-quarters of each piece being merchantable.

Culls include all lumber not equal to the grade of rejects, one-half of each piece being merchantable. Other than as above stated shall be classed as mill culls.

ELM.

Grades.—Firsts, Seconds, Rejects and Culls.

Firsts are to be 8 inches and over in width; 8 to 11 inches wide shall be clear; 12 to 15 inches wide will admit one standard knot; 16 inches and over wide will admit two standard knots. Live white sap allowed.

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear; 8 to 11 inches wide will admit one standard knot; 12 to 15 inches wide will admit two standard knots; 16 inches and over wide will admit three standard knots. Bright sap allowed.

Rejects 5 inches wide shall be clear; 6 inches and over wide shall include all lumber not equal to the grade of seconds, three-quarters of each piece being merchantable.

Culls include all lumber not equal to the grade of rejects, one-half of each piece being merchantable. Other than as above stated shall be classed as mill culls.

GUM.

Grades.—Firsts, Seconds and Culls.

Firsts are to be 8 inches and over in width. 8 to 11 inches wide shall be clear; 12 to 15 inches wide will admit bright sap on one side not exceeding one inch in width, or one standard knot; 16 inches and over wide will admit bright sap on one side not exceeding two inches in width, or two standard knots.

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear; 8 to 11 inches wide will admit one standard knot; 12 to 15 inches wide will admit two standard knots; 16 inches and over wide will admit three standard knots. In any widths not more than one-fifth the surface of one side shall be sappy.

Culls include all lumber not equal to the grade of seconds, one-half of each piece being merchantable. Other than as above stated shall be classed as mill culls.

GUM, QUARTERED.

Grades.—Firsts, Seconds and Rejects.

Firsts are to be 6 inches and over in width; 6 to 9 inches wide shall be clear; 10 inches and over wide will admit one standard knot.

Seconds are to be 6 inches and over in width; 6 to 9 inches wide will admit one standard knot; 10 inches and over wide will admit two standard knots.

Sap and doted, or discolored wood, not admitted in firsts and seconds.

Rejects shall be 6 inches and over wide, and shall be at least three-quarters merchantable.

Culls not marketable.

Strips shall be 3 to 5 inches wide, and shall be clear or clear one side.

HICKORY.

Grades.—Firsts, Seconds and Culls.

Firsts are to be 8 inches and over in width; 8 to 12 inches wide shall be clear; 13 to 15 inches wide will admit one standard knot; 16 inches and over wide will admit two standard knots.

Seconds are to be 8 inches and over in width; 8 to 12 inches wide will admit one standard knot; 13 to 15

inches wide will admit two standard knots; 16 inches and over wide will admit three standard knots. Bright sap admitted.

Culls include all lumber not equal to the grade of seconds, one-half of each piece being merchantable. Other than above stated shall be classed as mill culls.

HICKORY, SECOND GROWTH.

Sawed through and through and rough edged. Shall be measured inside the wane and in the center of the piece.

MAPLE.

Grades.—Firsts, Seconds and Culls.

Firsts are to be 8 inches and over in width; 8 to 11 inches wide shall be clear; 12 to 15 inches wide will admit one standard knot; 16 inches and over wide will admit two standard knots. Bright sap allowed.

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear; 8 to 11 inches wide will admit one standard knot; 12 to 15 inches wide will admit two standard knots; 16 inches and over wide will admit three standard knots. Bright sap allowed.

Heart, or doted, boards and plank, will not be admitted in firsts and seconds.

Culls include all lumber not equal to the grade of seconds, one-half of each piece being merchantable. Other than as above stated shall be classed as mill culls.

MAPLE SQUARES.

4 in. x 4 in. to 10 in. x 10 in.

Firsts are to be 10 feet and upward in length, sound and free from all defects, and of full size when seasoned.

Seconds are to be sound and free from hearts, shakes and checks; 8 feet lengths shall be admitted if clear; 10 and 12 feet lengths admit one standard knot; 14 and 16 feet lengths admit two standard knots. Bright sap admitted.

Culls include all joists not equal to the grade of seconds, one-half of each piece being merchantable. Other than as above stated shall be classed as mill culls.

OAK.—(PLAIN.)

Grades —Firsts, Seconds, Rejects and Culls.

Firsts are to be 8 inches and over in width; 8 to 10 inches wide shall be clear; 11 to 14 inches wide will admit one standard knot or equal defect; 15 inches and over wide will admit two standard knots or equal defect.

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear; 8 to 10 inches wide will admit one standard knot or equal defect; 11 to 14 inches wide will admit two standard knots or equal defect; 15 inches and over wide will admit three standard knots or equal defect. Live sap admitted on one side, not to exceed one-fifth of the surface, if without other defects. A worm hole in plain oak shall be considered a defect equal to a standard knot.

Rejects are to be 5 inches and over in width; 5 inches wide shall be clear; 6 inches and over in width shall include all lumber not equal to the grade of seconds, three-quarters of each piece being merchantable. Heart boards and plank not admitted.

Culls include all lumber not equal to the grade of rejects, one-half of each piece being merchantable. Other than as above stated shall be classed as mill culls.

Oak sawed through and through, not edged, shall be measured inside the wane, and tapering pieces are to be measured at the narrow end.

OAK SQUARES.

4 in. x 4 in. to 10 in. x 10 in square.

Firsts are to be 10 feet and upward in length, sound and free from knots and checks, and of full size when seasoned. Splits to be measured off.

Seconds are to be sound and free from hearts, shakes, and checks; 8 feet lengths shall be admitted if clear; 10 and 12 feet lengths admit one standard knot; 14 and 16 feet lengths admit two standard knots. Bright sap admitted.

Culls include all joists not equal to the grade of seconds, one-half of each piece being merchantable. Other than as above stated shall be classed as mill culls.

OAK, SHIPPING.

Shipping grade of oak to be a grade of first and seconds. To run 10 inches and over wide; 12, 14 and 16 feet long. To be free from hearts, shakes, rotten or loose knots, bunch or slug worm holes. Square edge free from wane. Scattering pin worm holes shall be admitted. Splits, not to exceed 12 inches in any piece, will be accepted in this grade.

OAK, QUARTERED.

Grades.—Firsts, Seconds and Rejects.

Quartered Oak shall show some figure on one face.

Firsts are to be 6 inches and over in width; 6 to 8 inches wide shall be clear; 9 inches and over in width will admit one standard knot, or equal defect.

Seconds are to be 6 inches and over in width; 6 to 8 inches wide will admit one standard knot, or equal defect; 9 inches and over in width will admit two standard knots, or equal defects. A worm hole shall be considered a defect equal to a standard knot.

Rejects shall be 6 inches and over wide, three-quarters of each piece being merchantable.

Strips, 3 to 5 inches wide, shall be clear, or clear one face. If tapering, to be measured at narrow end. Parallel edge strips shall be measured in half-inch widths.

POPLAR.—(WHITEWOOD).

Grades.—Firsts, Seconds, Sap Clear, Common and Cull.

Firsts, 1 inch to 2 inches in thickness, shall be 8 inches and upward wide and clear up to 10 inches in width; 11 inches, 1 inch of bright sap will be allowed; 12, 13, 14 and 15 inches wide, 2 inches of bright sap will be allowed, or 1 standard knot; 16 inches and over in width, 3 inches of bright sap on one edge will be allowed, or two standard knots.

Seconds, 1 inch to 2 inches in thickness, shall be 8 inches and upward in width, and at 8 and 9 inches wide

will admit of 1 inch of bright sap, but no other defects; 10 and 11 inches wide will admit of 2 inches of bright sap or one standard knot; 12, 13, 14 and 15 inches wide will admit of 3 inches of bright sap and one standard knot, or two standard knots if there is no sap; 16 inches and over will admit of 5 inches of bright sap and 1 standard knot; if there is no sap, then three standard knots will be admitted; 2½ inch and up, 1st and 2d poplar, shall be 10 inches and over wide; ⅜, ½, ⅝, ¾ 1st and 2d clear shall be 10 inches and over wide and contain not less than 75 per cent 1sts.

Sap Clear shall be sound, 5 inches and over in width, and free from all defects except white sap.

Common shall include any width not less than 5 inches, and will allow bright sap or one-third discolored sap on one side. Two unsound knots will be allowed in this grade if over 12 inches wide, or one sound knot in excess of those allowed in seconds if without discolored sap, and straight splits not over one-third the length shall be admitted; otherwise lumber must be sound.

Culls include all lumber not equal to the grade of common, one-half of each piece being merchantable. Other than as above stated shall be classed as mill culls.

POPLAR, QUARTERED.

Grades.—Firsts, Seconds.

Firsts, 6 to 8 inches wide, shall be clear; 9 inches and over will admit one standard knot or one inch of sap.

Seconds, 5 inches shall be clear; 6 to 8 inches will admit one standard knot or one inch of sap; 9 inches and over will admit two standard knots or two inches of sap.

POPLAR (WHITEWOOD) SQUARES.

4 in. x 4 in. to 12 in. x 12 in. square.

Firsts are to be 10 feet and upward in length, sound and free from knots and checks, sawed square, and full size when seasoned; 8 feet shall be admitted if clear. Splits to be measured off.

Seconds are to be sound and free from hearts, shakes and bad checks; 10 and 12 feet lengths admit one standard knot or two inches of, sap on two corners; 14 and 16 feet lengths admit two standard knots or two inches of sap on two corners. These defects are based on 6 x 6 joists, and bear the same ratio in other sizes.

Culls include all joists not equal to the grade of seconds, one-half of each piece being merchantable. Other than as above stated shall be classed as mill culls.

SYCAMORE.

Grades.—Firsts, Seconds and Culls.

Firsts are to be 8 inches and over in width; 8 to 12 inches wide shall be clear; 13 to 15 inches wide will admit bright sap on one side not exceeding one inch in width, or one standard knot; 16 inches and over wide will admit bright sap on one side not exceeding two inches in width, or two standard knots.

Seconds are to be 6 inches and over in width; 6 and 7 inches wide shall be clear; 8 to 12 inches wide will admit one standard knot; 13 to 15 inches wide will admit two standard knots; 16 inches and over wide will admit three standard knots. In any widths not more than one-fifth of the surface of one side may be sappy.

Culls include all lumber not equal to the grade of seconds, one-half of each piece being merchantable. Other than as above stated shall be classed as mill culls.

SYCAMORE, QUARTERED.

Grades.—Firsts, Seconds and Rejects.

Firsts are to be 6 inches and over in width; 6 to 8 inches wide shall be clear; 9 to 11 inches and over wide will admit one standard knot, or one inch bright sap; 12 inches and over will admit two standard knots, or two inches of bright sap.

Seconds are to be 6 inches and over in width; 6 to 8 inches wide will admit one standard knot; 9 to 11 inches and over in width will admit two standard knots; 12

inches and over will admit three standard knots. In seconds, any width not over one-fifth of the surface may be sappy.

Sap and doted, or discolored wood, not admitted in firsts and seconds.

Rejects shall be 6 inches and over wide and shall be at least three-quarters merchantable.

Culls are not marketable.

Strips shall be 3 to 5 inches wide, and shall be clear or clear one face.

WALNUT.

Grades.—Firsts, Seconds, Rejects, and Culls.

Firsts are to be 6 inches and over in width; 6 to 10 inches wide shall be clear; 11 to 14 inches wide will admit bright sap on one side, not exceeding one inch in width, or one standard knot; 15 inches and over wide will admit bright sap on one side, not exceeding two inches in width, or two standard knots.

Seconds are to be 6 inches and over in width; 6 to 10 inches wide will admit one standard knot or equal defect; 11 to 14 inches wide will admit two standard knots or equal defect; 15 inches and over wide will admit three standard knots or equal defect. In any widths not more than one-fifth of the surface of one side shall be sappy.

Rejects are to be 4 inches and over in width; 4 and 5 inches wide shall be clear, or clear one side; 6 inches and over in width shall include all lumber not equal to the grade of seconds, three-quarters of each piece being merchantable. Heart boards or plank not admitted.

Culls include all lumber not equal to the grade of Rejects, one-half of each piece being merchantable. All other than as above stated shall be classed as Mill Culls.

WALNUT SQUARES.

4 in. x 4 in. to 10 in. x 10 in. square.

Firsts are to be 10 feet and upward in length, sound and free from knots and checks, and full size when seasoned. Splits to be measured off.

Seconds are to be sound and free from hearts and shakes; 8 feet lengths shall be admitted if clear; 10 to 12 feet lengths admit one standard knot and two inches of sap on one corner; 14 to 16 feet lengths will admit two standard knots and three inches of sap on one corner.

Culls include all joists not equal to the grade of Seconds, one-half the piece being merchantable. Other than above stated shall be classed as Mill Culls.

NEW YORK LOG INSPECTION.

Adopted as the Rules of the New York Lumber Trade Association, June 26, 1889.

GENERAL CONDITIONS.

To be fresh cut, and to grade Firsts, Seconds and Culls; are to be measured full at the smallest end, solid contents, if no other agreement is made between parties. Walnut and Cherry, solid contents to be measured inside sap; all others to be measured from bark to bark. Standard lengths to be 10, 12, 14 and 16 feet, with not more than 20 per cent of 10 foot lengths. In Walnut, 8 foot lengths may be standard under the rules of Walnut inspection. A standard knot is not to exceed 3 inches in diameter. Rotten and wormy logs are classed as Culls.

OAK AND ASH.

To be 18 inches and over in diameter.

Firsts are to be 24 inches and over in diameter, sound, clear and straight. One straight split admitted in one end.

Seconds, from 18 to and including 23 inches in diameter, to be sound, clear and straight; 24 inches and over in diameter may have straight splits on one or both ends not to exceed more than one-sixth the length of the log, or one straight split and one standard, sound knot, or two standard, sound knots without splits.

Culls are to include all logs not equal to Firsts and Seconds, one-third being suitable for milling without waste.

POPLAR.

To be 24 inches and over in diameter.

Firsts are to be 30 inches and over in diameter, sound, clear and straight. One straight split admitted.

Seconds, from 24 to and including 29 inches in diameter, to be sound, clear and straight; 30 inches and over in diameter may have one standard, sound knot, or straight splits not to exceed more than one-sixth the length of the log.

Culls are to include all logs not equal to Firsts and Seconds, one-third being suitable for milling without waste.

CHERRY.

To be 16 inches and over in diameter.

Firsts are to be 18 inches and over in diameter, sound, clear and straight.

Seconds, 16 and 17 inches in diameter, to be sound, clear and straight; 18 inches and over in diameter may have straight splits on one or both ends not to exceed more than one-sixth the length of the log, or two standard, sound knots, or hollow not more than 6 inches in diameter nor more than 2 feet deep. Not more than two of these defects received in this grade.

Culls are to include all logs not equal to Firsts and Seconds, one-third being suitable for milling without waste.

Logs 30 to 36 inches in diameter that have a rotten heart not exceeding 9 inches in diameter, and those over 36 inches in diameter that have a rotten heart not exceeding 12 inches in diameter, if otherwise equal to Firsts, will be classed in that grade.

The question of gum is left to the judgment of the Inspector as to classification.

MAPLE, BIRCH, BEECH.

15 inches and over in diameter.

Firsts are to be 20 inches and over in diameter, sound, clear and straight.

Seconds, 15 to and including 19 inches in diameter, to be sound, clear and straight; 20 inches and over may have straight splits on one or both ends not equal to more than one-sixth the length of the log, or two standard, sound knots.

Culls are to include all logs not equal to Firsts and Seconds, one-third being suitable for milling without waste.

WALNUT.

Round and Shipping, 16 inches and over in diameter. Shipping logs are to be dressed to lines on four sides straight, with rounded corners

Firsts are to be 22 inches and over in diameter, sound, clear and straight, and will include 10 per cent of 8 foot lengths.

Seconds, 16 to and including 19 inches in diameter, will be sound and straight, one standard, sound knot admitted; 20 inches and over in diameter will admit straight splits not more than one-sixth the length of the log, two sound, standard knots, or one sound and one unsound standard knot, and sound sided hollow not more than 6 inches in diameter nor more than 2 feet deep. Not more than two of these defects received in this grade.

Culls are to include all logs not equal to Firsts and Seconds, one-third being suitable for milling without waste.

Logs 30 to 36 inches in diameter that have a rotten heart not exceeding 9 inches in diameter, and those over 36 inches in diameter that have a rotten heart not exceeding 12 inches in diameter, if otherwise equal to Firsts, will be classed in that grade. Logs of this character not admitted in shipping grade.

SUPPLEMENTARY RULES.

The following resolution was adopted at a meeting of the association held June 26, 1889:

Resolved, That shipping logs of Poplar, Oak, Ash, Maple and Birch, consisting of 90 per cent Firsts and 10 per cent Seconds, and Walnut and Cherry, consisting of 80 per cent Firsts and 20 per cent Seconds, shall be classed as "Prime."

And Poplar, Oak, Ash, Maple and Birch, consisting of

65 per cent Firsts and 35 per cent Seconds, and Walnut and Cherry, consisting of 50 per cent Firsts and 50 per cent Seconds, shall be classed as "Good."

Certificates of inspection under this resolution will be signed by the Inspector, and when desired the secretary of the association shall certify that the Inspector is a licensed Inspector, and shall sign and attach to such certificate the seal of the association.

YELLOW PINE LUMBER INSPECTION.

Classification of the Southern Lumber & Timber Association, Adopted at Savannah, Ga., Feb. 14, 1883. Customary in New York.

Scantling shall embrace all sizes from 2 to 5 inches in thickness and 2 to 6 inches in width. For example, 2x2, 2x3, 2x4, 2x5, 2x6, 3x3, 3x4, 3x5, 3x6, 4x4, 4x5, 4x6, 5x5 and 5x6.

Plank shall embrace all sizes from 1½ to 5 inches in thickness by 7 inches and up in width; 1½, 2, 2½, 3, 3½, 4, 4½, 5x7 and up wide.

Dimension Sizes shall embrace all sizes 6 inches and up in thickness by 7 inches and up in width, including 6x6. For example, 6x6, 6x7, 7x7, 7x8, 8x8, 8x9 and up.

Stepping shall embrace 1 to 2½ inches in thickness by 7 inches and up in width. For example, 1, 1¼, 1½, 2, 2½ x 7 and up wide.

Rough Edge or Flitch shall embrace all sizes 1 inch and up in thickness by 8 inches and up in width, sawed on two sides only. For example, 1, 1½, 2, 3, 4 and up thick by 8 and up wide, sawed on two sides only.

SQUARE-EDGED INSPECTION.

Scantling shall be free from injurious shakes, unsound knots or knots to impair strength; sap no objection.

Plank shall be free from unsound knots, wane, through or round shakes; sap no objection.

Dimension Sizes; sap no objection; no wane edges; no shakes to show on outside of stick.

All stock to be well and truly manufactured, full to sizes and saw butted.

MERCHANTABLE INSPECTION.

Scantling shall show three corners heart free from injurious shakes or unsound knots.

Plank, 9 inches and under wide, shall show one heart face and two-thirds heart on opposite side; over 9 inches wide shall show two-thirds heart on both sides, all free from round or through shakes, large or unsound knots.

Dimension Sizes.—All square lumber shall show two-thirds heart on two sides, and not less than one-half heart on two other sides. Other sizes shall show two-thirds heart on faces and show heart two-thirds of the length on edges, excepting where the width exceeds the thickness by 3 inches or over, then it shall show heart on the edges for one-half its length.

Stepping shall show three corners heart, free from shakes and all knots exceeding half an inch in diameter and not more than six in a board.

Rough Edge or Fitch shall be sawed from good heart timber, and shall be measured in the middle on the narrow face, free from injurious shakes or unsound knots.

All stock to be well and truly manufactured, full to size and saw butted.

PRIME INSPECTION.

Scantling shall show three corners heart, and not to exceed one inch of sap on fourth corner, measured diagonally, free from heart, shakes, large or unsound knots.

Plank shall show one entire heart face on opposite face, not exceeding one-sixth its width of sap on each corner, free from unsound knots, through or round shakes; sap to be measured on face.

Dimension Sizes.—On all square sizes the sap on each corner shall not exceed one-sixth the width of the face. When the width does not exceed the thickness by 3 inches, to show half heart on narrow faces, the entire

length exceeding 3 inches, to show heart on narrow faces the entire length; sap on wide faces to be measured as on square sizes.

Rough Edge or Fitch shall be measured in the middle or narrow face inside of sap, free from shakes or unsound knots.

CLEAR INSPECTION.

Scantling and Plank shall be free of sap, large knots or other defects

Dimension Sizes shall be free from sap, large or unsound knots, shakes, through or round.

DESIGNATIONS OF THE TRADE.

Resawed Lumber—Lumber sawn on four sides.

Rough Edge or Fitch—Lumber sawn on two sides.

Timber—Hewn only.

NEW YORK FLOORING INSPECTION.

The Following Rules, Governing the Inspection of Flooring, are Taken from the Maritime Exchange Rules, Adopted May 14, 1884.

MERCHANTABLE FLOORING.

One inch and $1\frac{1}{4}$ inches in thickness, and from 3 to 6 inches in width, and shall show one face free from sap and two-thirds heart the entire length on the opposite face.

Shall be free from rot, split, shakes and unsound knots; sound knots to be allowed as follows, viz.: Two knots in boards under 16 feet long; three knots in boards 16 feet long and over, of not over 1 inch in diameter, or six knots if not over half an inch in diameter.

MERCHANTABLE FLOORING PLANK.

$1\frac{1}{2}$ to 3 inches in thickness, and 5 to 10 inches in

width, shall show one face free from sap, except on each edge of the face; one half inch of sap shall be allowed and two-thirds heart on opposite face. Free from rot, split, shakes, unsound knots, and knots exceeding $1\frac{1}{4}$ inches in diameter.

MERCHANTABLE WIDE BOARDS AND PLANK.

1 inch to 2 inches in thickness, and 10 to 14 inches in width, shall show one face free from sap and two-thirds heart entire length on opposite face. Free from rot, through shakes, splits and unsound knots. Six sound knots of 1 inch and under in diameter, or three of $1\frac{1}{2}$ inches in diameter, to be allowed in any piece.

PRIME WIDE BOARDS AND PLANK.

1 to 2 inches in thickness, and 10 to 14 inches in width, shall show one face and one edge free from sap, and two-thirds heart on the other face the entire length. Free from rot, shakes, splits and knots.

MERCHANTABLE SIDINGS.

1 inch, $1\frac{1}{4}$ inches and $1\frac{1}{2}$ inches in thickness and 4 inches and over in width. Sap shall be allowed on the face, or best side (regardless of sap on the opposite face), as follows: One-half inch on one edge on boards 7 inches and under in width, and one-half inch on each edge of boards over 7 inches wide. Must be free from through shakes, rot, splits and unsound knots, and on the face side the following allowance for knots shall be made, viz.: Three sound knots not exceeding 1 inch in diameter in boards under 14 feet long; four sound knots not exceeding 1 inch in diameter in boards 14 feet long and over, or six sound knots not exceeding *one-half inch* in diameter in boards of any length.

CYPRESS INSPECTION RULES.

LUMBER.

All lumber shall be 10, 12, 14, 16, 18, and 20 feet in length (except Tank Stock), 1, 1¼, 1½, 2, 2½, 3, 3½ and 4 inches thick, and be classed as Tank Stock, First and Second Clear, Select, Shop, and Merchantable.

Tank Stock shall be 5 inches and over in width, 1¼ to 3 inches thick, and 8 feet and over long. It may have sap 1 inch wide on one side, to extend not over one half the length and half the thickness of the piece, and sound knots that do not impair its usefulness for tank purposes.

Firsts and Seconds Clear shall be 8 inches and over in width, and clear up to 9 inches. Pieces 10 to 12 inches wide may have two sound standard knots of 1¼ inches in diameter and 3 inches of sound bright sap, and for every 3 inches in width over 12 inches an additional standard knot and an additional inch of sound bright sap. Pieces wider than 10 inches may be half sound bright sap if free from other defects.

Selects shall be 7 inches and over in width, will admit two standard knots of 1¼ inches in diameter in pieces 10 inches or under in width, and an additional standard knot for every 2 inches in width above 10 inches. Sound sap not to be considered a defect.

Above grades must be free of shake and peck.

Shop to be 7 inches or over in width, and includes all lumber that will not go into above grades, but that will cut for shop use so as to work three-fourths without waste.

Merchantable or Common may be any width, admitting sap, knots and shakes, or peck when the strength is not impaired.

DRESSED LUMBER.

All stock, after being worked, shall be divided into five classes: "Clear Heart," "A," "B," "C," and "D," and the several grades shall be defined as follows:

Which shall be in lengths 10 to 20 feet.

Clear Heart must be clear of all sap or knots, and without blemish.

A must have heart face, but may have 1 inch of sap on thin edge, and may contain one small knot, and may have bright sap one-fourth its width for 6 inches from one end, or a check in one end, and not exceeding 6 inches in length.

B may have one-third of face bright sap, if otherwise clear, or, in lieu of one-third sap, can contain two small sound knots, and may have checks at one end over 9 inches long.

C may be all bright sap, or may have one to five knots, the whole not aggregating over 3 inches, or knots or other defects that can be removed in two cuts, with waste not exceeding 12 inches in length, or three pin-worm holes, and may have check or split at one end not exceeding 12 inches in length.

D may have stain sap; also pin-worm holes, unsound knots, shake, split, or other defects that will not impair its usefulness to exceed one-third.

SHINGLES.

Bests.—A dimension shingle; each width separately bunched; 16 inches long; five butts to measure 2 inches; all heart; free of shakes, knots, and other defects.

Primes.—A dimension shingle; each width separately bunched; 16 inches long; five butts to measure 2 inches; admitting tight knots and sap; free of shakes and other defects.

Extra xAx.—A random width shingle, 3 inches and over in width, and may admit shingles 14 inches long. Free from unsound knots and shakes 10 inches from butt.

Clippers.—A random width shingle, not good enough to be included in above grades.

All sales are made in accordance with above rules.

MASSACHUSETTS STATE LAW.

CHAPTER 63.

Relating to the Survey and Sale of Lumber, Ornamental Wood and Ship Timber.

SECTION 1. There shall be a surveyor-general of lumber appointed by the governor, with the advice and consent of the council, for a district to consist of the county of Suffolk, the cities of Cambridge, Somerville and Quincy and the towns of Medford, Brookline and Watertown. The said surveyor-general shall reside in said district, shall keep an office in Boston conveniently located and accessible to the public, shall be sworn, and shall give bond with sufficient sureties to the treasurer of the commonwealth in the sum of two thousand dollars for the faithful discharge of his duty, and, unless sooner removed, shall hold his office for three years and until a successor is appointed and qualified.

SEC. 2. He shall appoint a sufficient number of competent and discreet deputy-surveyors, removable at his pleasure, and for whom he shall be responsible; they shall be citizens of the counties within which the cities and towns comprising said district are situated, and shall be sworn and give bond to him for the faithful discharge of their duties; he shall appoint one or more of them to survey oak and other wood commonly used in ship building, and one or more to survey mahogany, cedar and other ornamental wood and lumber; no surveyor-general or deputy shall survey any lumber in which he has a pecuniary interest, directly or indirectly, nor for any person or persons by whom he is employed on a salary or for a per diem allowance; the deputy-surveyors shall be governed by the provisions of this chapter, under the instructions of the surveyor-general, in determining the quality and quantity of all lumber surveyed by them; ascertain the true contents of each piece of lumber, log or stick, and mark the same or its equivalent in a legible

character thereon; keep a true piece tally of the same in a plain and legible account, and make return thereof to the surveyor-general upon a form prescribed by him. Each deputy-surveyor shall keep on file for reference and examination all tallies made by him, for the period of one year from the date of making the same.

SEC. 3. All applications for surveys shall be made to the surveyor-general, and all surveys made by his deputies and the order of their services, in rotation and otherwise, shall be under his direction; all lumber brought into said district for sale, a survey or measurement of which is required by either seller or purchaser, shall be surveyed or measured by him or his deputies; and he shall enforce all the provisions of this chapter.

SEC. 4. He shall keep a record of all lumber surveyed by himself or his deputies, and of the amount of fees received by each deputy, and as often as once in each month he shall be entitled to ten per cent of such fees. Such record shall be at all times open to inspection by the members of the city councils, and by the selectmen of the several cities and towns in said district. Grades of lumber recognized in trade and not defined in this chapter may, when application therefor is presented in writing to the surveyor-general, be established and defined by him, and the fees for the survey thereof shall be same as those for surveying lumber of grades similar thereto.

SEC. 5. He shall annually on or before the fifteenth day of January, make to the secretary of the Commonwealth a return, specifying the various kinds and quantities of lumber surveyed in said district during the year ending on the thirty-first day of the preceding month, the person by whom it was surveyed, and the amount of fees received by him and his deputies.

SEC. 6. Except in the aforesaid district, towns and the city councils of cities shall annually elect one or more surveyors of lumber, who shall be sworn to the faithful discharge of their duties, and cities may from time to time establish ordinances with suitable penalties respecting the appointment of such surveyors.

SEC. 7. Surveyors of lumber in cities and towns, when requested so to do by either the purchaser or sel-

ler, shall survey oak and other hard wood commonly used in ship-building, mahogany, ash, and other ornamental wood, and all other lumber brought for sale into or manufactured in this commonwealth. But no such surveyor shall survey lumber in which he has a pecuniary interest.

[Sections 8 to 15 inclusive—containing Official Definition and Classification of Inspection with Rules of Measurements.]

CLASSIFICATION AND GRADES.

Rules as for the inspection of lumber as prepared by Surveyor-General Wiggin in accordance with Sec. 4 of the Massachusetts state law.

WESTERN PINE.

Western pine boards and plank will be inspected as First, Second and Third clear, or Uppers, Selects, Fine Common, No. 1 and No. 2 Cutups, Common, Wide Common and Culls.

All boards and plank above the grade of Culls shall be well manufactured, parallel in width (if tapering to be measured at the narrow end). All boards 1 inch and under thick, shall be measured face measure. All lumber in grade above Common shall be thick enough to plane, as follows: 1 inch to plane two sides to $\frac{7}{8}$ inch; $1\frac{1}{4}$ inch to plane two sides to $1\frac{1}{8}$ inch; $1\frac{1}{2}$ inch to plane two sides to $1\frac{3}{8}$ inch; 2 inch to plane two sides to $1\frac{7}{8}$ inch. All lumber in grade of Common should be the same thickness, but if thick enough to plane one side the thickness above specified, will not be reduced in grade. All lumber sawed scant in thickness shall be reduced to the next standard thickness, except inch, which shall be graded as Culls unless otherwise specified. Culls, if tapering, shall be measured in the middle of the piece, giving full contents. Western Pine lumber shall be so specified on inspection statement.

A sap defect shall be equal to 1 inch in width the entire length of piece on one side. In selects and upper grades, white sap is the defect admitted, and in Fine Common and under grades, discolored sap is admitted.

A knot defect shall be equal to a sound knot $\frac{3}{4}$ -inch in diameter.

A split defect shall be equal to a straight split two feet in length and parallel with the edge of the board.

A shake defect shall be equal to one square foot of surface, and not over four feet in length.

First Clear shall be not less than 12 feet long, 12 inches wide, of soft white pine, and free of defects, at 18 inches wide and up, two white sap defects may be admitted on one side.

Second Clear shall be not less than 12 feet long, 10 inches wide and free of defects, at 12 inches wide one white sap or one knot defect, and at 18 inches and up wide, three white sap or three knot defects may be admitted on one side.

Third Clear shall be not less than 12 feet long, 8 inches wide and free of defects, at 12 inches wide two white sap or two knot defects, and at 18 inches and up wide, four white sap or four knot defects may be admitted on one side.

Lumber that will grade as Uppers at 12 inches wide with one split defect, or at 18 inches wide with two split defects, shall be reduced to selects; with more split defects, to Fine Common.

Selects shall be 12 feet long (except that 10 per cent of 10 feet lengths may be allowed) 7 inches and up wide. White sap on outside shall not exceed two-thirds the width of piece. At 12 inches wide two white sap, one knot or one split defect may be admitted on face side but white sap shall not cover over two thirds of sap side. At 18 inches and up wide, four white sap, three knot, or one knot, with two split defects may be admitted on face side, and white sap not to exceed one-third of sap side. No shakes admitted in this or upper grades.

Fine Common shall be 12 feet long (10 per cent of 10 feet lengths allowed), 7 inches and up wide, white sap defects may be allowed equal to two-thirds of face on sap side, and one-third on face side, at 12 inches wide, white sap one-third of face side, and three knot or two split defects, at 18 inches wide and over, sap one-third of face and five knot or three split defects. A slight shake admitted in this grade.

No. 1 Cut-Up shall be 8 feet and up long, 7 inches and up wide. This grade shall include all lumber where

two-thirds of the same equal to the upper grades can be obtained by cutting, the shortest piece to be not less than 3 feet long.

No. 2 Cut Up shall be 8 feet long and 6 inches wide and the same as No. 1 Cut Up with the exception that the lumber obtained shall be equal to one-half of the piece, the shortest cut to be 2 feet long.

The standard length that admits knot defects in Second and Third Clear, Selects, Fine Common and Cut Ups is 16 feet.

Common shall be 12 feet long (10 per cent of 10 feet lengths allowed), 7 inches and up wide, and include all boards and plank that are well manufactured, of full thickness, sound character, and that contain small tight knots that will not prevent the whole piece being used for ordinary shelving or good matching work without waste.

Wide Common or Coffin Boards shall include all boards of the above quality 14 feet and up long, and 14 inches and up wide.

Culls shall include all boards and plank 8 feet and up long, 4 inches and up wide not up to the standard of Common, when not less than two-thirds of the piece (as a whole) can be used for coarse matching purposes; or the whole piece having good edges with narrow rot streaks and other defects that will not prevent it being used for coarse boxing purposes.

All boards not up to this standard shall be graded as Mill Culls.

EASTERN PINE INSPECTION.

Eastern pine boards and plank shall be inspected as No. 1, No. 2, No. 3, No. 4, Clear 5, No. 5, Refuse and Outs.

No. 1, the same as First Clear, Western Pine inspection.

No. 2, the same as Second Clear, Western Pine inspection.

No. 3, the same as Third Clear, Western Pine inspection.

No. 4 shall include all lumber practically free from rot, shakes, discolored sap and bad knots that is suitable for outside finish; small sound red knots admitted in this grade.

Clear 5, shall include bright sap lumber not up to the standard of No. 3, nearly free from knots on face side. A small amount of discolored sap will be admitted on sap side, and only a slight shake.

No. 5 or Coarse 5, shall include all lumber of full thickness, sound character, and may contain sound red knots. The whole piece must be suitable for ordinary shelving or matching purposes, with less than one-third waste, a slight shake admitted in this grade.

Boards 8 inch and up wide, 12 feet and up long, of this quality are denominated Boston Shippers.

A grade coarser than the above, admitting larger and branch knots, but of sound character and generally watertight, are denominated West India Shippers.

Only a slight stain, shake or split admitted in the grade of shippers.

Refuse shall include all boards not less than 10 feet and up long, 6 inches and up wide, not up to the standard of No. 5, of generally sound character. Defects admitted that will not prevent its use for matching, boxing or similar coarse purposes.

Outs shall include all Eastern and Norway pine lumber, containing rot, bad sap, shakes, worm holes, wane, splits, and other defects, which can be used without more than one-half waste for coarse ordinary purposes; also short and narrow pieces of equal quality to Refuse.

Poor Outs, all lumber not up to the standard of Outs, and practically worthless.

NORWAY PINE.

Norway Pine shall be graded the same as white pine, but shall be specified as Norway on inspection statement.

BOX BOARDS.

Waney-Edged box boards, Pine, Bass, Poplar and Spruce, shall be inspected as good and Culls.

Good shall include all sound lumber so free from black, mouldy, or rotten sap, rot, wormholes and bad shakes, that not less than two-thirds of entire piece (as a whole) can be used without waste.

Culls shall include all lumber not good enough for the above grade.

SPRUCE FLOORING.

Spruce Floor Boards shall be inspected as First Clear, Second Clear, Merchantable and Culls. All boards shall be well manufactured, square-edged and square-butted, and thick enough to plane one side seven-eighths of an inch. All boards not up to the required thickness shall be graded as Culls

The knot defects hereinafter described shall be those allowed in a clear board 16 feet long, 6 inches wide. Knot defects in all other widths and lengths shall be in the same proportion.

All boards First and Second Clear that taper shall be measured at the narrow end.

All coarse boards that taper 1 inch and over shall be measured one-third the distance from the narrow end.

All coarse boards that taper less than 1 inch shall be measured in the middle.

White sap is no defect.

First Clear shall be not less than 10 feet long and 4 inches wide; in a standard board defects on the face side may be admitted equal to four sound pencil knots, and on sap side equal to one-half of light blue sap. No wane will be allowed that will not dress off.

Second Clear shall be not less than 10 feet long or 3 inches wide (except that 10 per cent of 8 feet lengths may be allowed). In a standard board, defects on the face side may be admitted equal to six sound knots one-half inch in diameter, or if clear of knots, 1 inch in width of sap the entire length of board. Light blue sap may cover the whole of the sap side. Wane shall not be admitted on either edge of sap side over one-half inch in width.

Merchantable shall not be less than 10 feet long or 5 inches wide, of sound character and free of defects that will not prevent two-thirds of the piece being used for ordinary work without waste.

Shippers shall include all boards of the above quality 12 feet and up long, 8 inches and up wide.

Culls shall be not less than 6 feet long and 3 inches wide, and include all boards not up to the standard of common. All Culls should work one-half their size without waste for coarse work to be marketable.

SPRUCE BOARDS AND HEMLOCK BOARDS AND PLANK.

Spruce boards and Hemlock boards and plank shall be inspected as No. 1, 2 and Culls. All lumber shall be well manufactured, square edge and square butted. The boards must be thick enough to plane one side $\frac{7}{8}$ inch, and plank to plane one side $1\frac{7}{8}$ inch. All scant sawed plank shall be measured as $1\frac{1}{2}$ inch, and all scant sawed boards shall be graded as Culls.

All boards or plank that taper less than 1 inch shall be measured in the middle.

All boards and plank that taper 1 inch and over shall be measured one-third the distance from the narrow end.

No. 1 shall include all lumber 10 feet and up long, 7 inches and up wide, that can be used without waste for first-class building purposes.

No. 2 shall include all other lumber 10 feet and up long, 6 inches and up wide (except that 10 per cent. of 8 feet lengths may be allowed), of which not less than two-thirds of entire length of piece can be used without waste.

Culls shall include all lumber not up to standard of No. 2.

PINE, SPRUCE AND HEMLOCK DIMENSION.

Pine, Spruce and Hemlock dimension, joist, plank and timber shall be inspected as No. 1, No. 2 and Culls.

All lumber shall be well manufactured, square-edged, square-butted, parallel width, and full to sizes.

No. 1 and No. 2 joists shall be 9 feet and up long, standard sizes, 2x3, 2x4 and 3x4; special sizes, 2x2, 3x3, and so forth.

No. 1 and No. 2 plank shall be 10 feet and up long, 5 inches and up wide, 1, $1\frac{1}{2}$ and 2 inches thick. All other sizes 3 inches and up thick shall be 12 feet and up long.

All plank that taper less than 1 inch shall be measured at the narrow end. All plank that taper 1 inch and over shall be measured in the middle and graded as Culls. All badly missawed lumber shall be graded as Culls. All plank and lumber over $\frac{1}{4}$ inch less than intended size shall be measured the next standard size it will work.

No. 1 shall include all dimension lumber of sound character, and free of all defects that render it unfit for first-class building purposes without waste.

No. 2 shall include all other dimension lumber in which not less than two-thirds of the entire length can be used for first-class building purposes without waste, or the entire piece be used for ordinary purposes without waste.

Culls shall include all lumber not up to the standard of No. 2.

SOUTHERN PINE.

Shall be classified as flooring, stepping, wide boards, plank, scantling and dimension.

All lumber shall be well manufactured, sawed full to thickness and width, square butted and graded as No 1, No. 2 and Culls.

All 1 inch flooring and stepping shall be thick enough to plane one side $\frac{7}{8}$ inch, $1\frac{1}{4}$ inch to plane one side $1\frac{1}{8}$ inches, $1\frac{1}{2}$ inch to plane one side $1\frac{3}{8}$ inches, and 2 inch to plane one side $1\frac{7}{8}$ inches.

All 3, 4, 5 and 6 inch flooring shall be reduced to the next width in inches when less than $\frac{1}{8}$ inch narrower than intended width.

All boards or plank not up to the required thickness intended shall be reduced to the next standard thickness, except 1 inch, which if scant, shall be graded as Culls.

FLOORING.

Shall be classed as rift, heart, and heart face, and be 12 feet and up long, 3, 4, 5 and 6 inches wide, 1 and $1\frac{1}{4}$ inches thick.

A sap defect shall be equal to one-sixth of the width the entire length of the piece on one side.

RIFT FLOORING.

No. 1 shall have one heart face free of all defects, and show rift grain the entire length of piece, but may have one sap defect on sap side.

No. 2 shall include all boards that contain defects, either small pitch streaks, sap or knots on the face side, that will not prevent three-fourths of the entire piece being used as a whole for No. 1 purposes.

HEART FLOORING.

No. 1 shall have one heart face the entire length of piece, free of defects, but may have one sap defect on sap side.

No. 2 shall include all boards that contain defects, either small pitch streaks, sap, or knots on the face side, that will not prevent two-thirds of the entire piece (as a whole) being used for No. 1 purposes.

HEART FACE FLOORING.

No. 1 shall have one face free of defects, except sap that will work out in dressing. Sound sap on the sap side is no defect.

No. 2 shall include all boards that contain defects, either pitch streak, sap or knots, on the face side, that will not prevent two-thirds of the entire piece (as a whole) being used for No. 1 purpose.

Culls shall include all boards not up to the standard of No. 2 heart face.

STEPPING.

Shall be 12 feet and up long, 8 inches and up wide, and 1, 1¼, 1½ and 2 inches thick.

No. 1 shall show three corners heart, and one face free of defects.

No. 2 shall include all boards that contain defects, either pitch streak, sap or knots, on the face side, that will not prevent two-thirds of the entire piece (as a whole) being used for No. 1 purpose.

Culls shall include all boards, not up to the standard of No. 2, that cannot be graded as No. 1 and No. 2 wide boards, and all plank that cannot be graded as No. 1 and No. 2 plank.

WIDE BOARDS.

Shall be 12 feet and up long, 7 inches and up wide, and 1 and 1¼ inches thick.

No. 1 shall show one heart face and two-thirds heart on opposite side free from shakes and large or unsound knots.

No. 2 shall include all boards that contain defects that will not prevent two-thirds of the entire piece (as a whole) being used for No. 1 purpose.

Culls shall include all boards not up to the standard of No. 2.

PLANK.

Shall be 12 feet and up long, 7 inches and up wide, and 1½, 2, 2½, 3, 3½, 4, 4½ and 5 inches thick.

No. 1 shall show one entire heart face. On opposite face not exceeding one-sixth its width of sap on each corner, free from unsound knots, and through or injurious shakes, sap to be measured on face.

No. 2 shall show one heart face and two-thirds heart on opposite side, free from unsound knots, wane and through or injurious shakes.

Culls shall include all lumber not up to the standard of No. 2.

SCANTLING.

Shall be 12 feet and up long of the following dimensions: 2x3, 4, 5 and 6; 3x3, 4 and 6; 4x4, 5, 6, 7 and 8; 5x5, 6, 7 and 8.

No. 1 shall show three corners heart and not to exceed 1 inch of sap on fourth corner, measured diagonally, free from injurious shakes, large or unsound knots.

No. 2 shall show three corners heart, free from injurious shakes, or unsound knots to impair its strength.

Culls shall include all lumber not up to the standard of No. 2.

DIMENSION.

Shall be 12 feet and up long, and include all sizes 6 inches and up in thickness, 9 and up in width, and 6x6, 6x7, 6x8, 7x7, 7x8, 8x8.

No. 1 or Prime on all square sizes the sap on each corner shall not exceed one-sixth the width of the face. When the width does not exceed the thickness by 3 inches, to show half heart on narrow faces the entire length; exceeding three inches, to show heart on narrow faces the entire length; sap on wide faces to be measured as on square sizes.

No. 2 or Merchantable all square lumber shall show two-thirds heart on all sides; other sides shall be two-thirds heart on faces, and show heart entire length on edges, excepting where the width exceeds the thickness by 3 inches or over, then it shall show heart on edges for two-thirds the length.

Culls shall include all lumber not up to the standard of No. 2.

Special thicknesses and widths in flooring and stepping, and special sizes in scantling, plank and dimension, and schedule orders shall be graded under the same inspection and measured full contents.

Southern Pine, Oak and Maple and other dimension plank and timber ordered for special purposes, such as ship, bridge, car stock, etc., shall be inspected with regard to its intended use, as No. 1, No. 2 and culls.

No. 1 shall be free of all defects that will impair its strength or render it unsuitable for first-class work.

No. 2 shall include all other lumber of which not less than two-thirds of entire piece (as a whole) can be used without waste.

Culls shall include all lumber not up to the standard of No. 2.

NORTH CAROLINA PINE AND SOUTHERN PINE KILN DRIED SAP FLOORING.

No. 1 to be free from knots and stained sap. Bright sap no objection.

No. 2 two-thirds as a whole No. 1 stock.

Culls not up to standard of No. 2.

HEWN TIMBER.

Shall be measured to square butts for length. In timber with raft pins or pin holes in both ends one end only shall be allowed in measurement. If in only one end, and not injurious to the strength of the piece, the total length shall be taken.

The full average size in inches shall be taken for contents midway of stick inside of axe marks not allowing over $1\frac{1}{2}$ inches of taper to every 20 feet in length, and not exceeding 2 inches of wane on any edge.

No. 1 shall be free from all defects that will impair its strength or render it unsuitable for first-class work.

No. 2 shall include all other lumber of which not less than two-thirds of entire piece (as a whole) can be used without waste, and must show some heart for two-thirds of its length on all sides and be free from unsound knots, injurious shakes, and rot.

Culls shall include all timber not up to the standard of No. 2.

ROUND TIMBER.

Hewn Timber and Round Oak and other timber used for masts and ship-building, shall be surveyed and sold as ton timber, at the rate of 40 cubic feet to the ton, and inspected as No. 1, No. 2 and culls.

For measurement three quarters of the diameter shall be taken for the side of the square, to be measured midway of the stick or if of uneven taper, the average diameter shall be taken and the contents marked thereon.

No. 1 shall be nearly free of defects and suitable for first-class work.

No. 2 shall not contain defects that will prevent two-thirds of entire length being used for first-class work.

Culls shall include all timber not up to the standard of No. 2.

OAK, HACKMATACK AND SPRUCE KNEES.

Oak, hackmatack and spruce knees shall be inspected as No. 1 and Culls.

No. 1 shall include all sound knees of the following dimensions:

Arm or Root.	Body	Working Thickness.
2 feet long.	4 feet long.	4 inches.
2½ " "	5 " "	5 " "
2¾ " "	5½ " "	6 " "
3¼ " "	5½ " "	7 " "
3½ " "	5½ " "	8 " "
3¾ " "	6 " "	9 " "
4 " "	6 " "	10 " and up.

Culls shall include all knees that are unsound and not up to the specified dimensions of No. 1.

CYPRESS GRADES AND CLASSIFICATION.

Cypress lumber should be well manufactured, square edged and butted, and sawed plump enough in width and thickness to allow for shrinkage and dressing. It shall be graded as No. 1, or Choice and Prime, No. 2, or Merchantable, Sidings and Culls.

The length of all grades higher than Culls, shall be 10 feet and up; and the width 7 inches and up.

A knot defect shall be equal to a sound knot $1\frac{1}{4}$ inches in diameter. A sap defect shall be equal to 1 inch of sap the entire length of piece on one side.

No. 1, or Choice and Prime, shall include Choice lumber which shall be clear of all defects; and all lumber over 8 inches wide, clear of all defects one side, which does not show over one-eighth sap on each or either edge on the other side.

No. 2, or Merchantable, at 7 inches wide will admit 1 defect; 10 inches wide will admit 2 defects; 12 inches wide will admit 3 defects; 16 inches wide and up, wide, will admit 4 defects on face side. But in all widths must show one-half heart on sap side.

Sidings should be clear of all defects except bright or unstained sap. In not over 15 per cent of lumber, one or two small knots may be allowed on one face.

Culls.—All Cypress lumber not up to the above standards of grade.

Tank Stock, 10 feet and up in length, narrow or wide, shall be clear of all defects, except sap that will dress off, and one or two small knots which must be sound and water tight.

Strips shall be 4, 5 and 6 inches wide, 10 feet and up in all defects, except sap.

No. 1 Strips shall have one side clear of sap.

No. 2 Strips will admit sap on face side.

Gutter Scantling and Joist.—Standard sizes 3x4, 4x5 and 4x6; length, 12 to 35 feet. All gutter stock should be sawed $\frac{1}{8}$ inch over each intended size.

No. 1 shall be free of all defects except sap that will work off in moulding.

No. 2 shall be free from large or unsound knots and other defects that will prevent its whole use in ordinary work, or two-thirds of the same in one piece, as No. 1 stock.

Culls.—All lumber not up to standard of No. 2 grade.

INSPECTION OF HARDWOOD LUMBER.

Hardwood boards, planks and joists shall be inspected as No. 1, No. 2 (when requested Rejects or Common) and Culls.

Rejects.—When the Reject grade is requested in Black Walnut, Cherry, Oak, Ash or other hardwoods, and the Common grade in Whitewood, Basswood and other kindred lumber, it should be inspected on the best side of one-faced or cutting-up stock, and should be practically free from rot, shakes or bad defects on the poorest side that would injure it for that purpose. As the grade includes lumber that would be called Culls when only three grades are made (namely No. 1, No. 2 and Culls), the culls when thus inspected would include all lumber not up to the standard of Rejects and Common.

The inspection shall be from both sides of all boards and planks, excepting rejects, common and flooring and sheathing strips, which shall be inspected from face side and be 3, 4 and 5 inches wide, including 6 and 7 inch whitewood.

All badly missawed lumber shall be graded as culls.

No cull shall be considered to have a marketable value which will not work one-half its size without waste.

All boards one inch thick and under shall be measured face measure, and all lumber sawed scant of intended thickness or size shall be reduced to the next standard thickness or size.

All one inch lumber shall be thick enough to plane two sides $\frac{7}{8}$ inch; $1\frac{1}{4}$ inch to plane two sides $1\frac{1}{8}$ inches; $1\frac{1}{2}$ inch to plane two sides $1\frac{3}{8}$ inches; 2 inch to plane two sides $1\frac{7}{8}$ inches.

Lumber sawed for specific purposes, such as newels, balusters, etc., shall be inspected with regard to its fitness for the intended use.

Tapering boards and plank shall be measured at one-third the distance from narrow end.

Standard lengths shall be recognized as 12, 14 and 16 feet. Special lengths, 6 to 11 feet inclusive. Standard thicknesses, 1, $1\frac{1}{4}$, $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3, 4, 5 and 6 inches. Special thicknesses, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, etc.

All boards and plank under 6 feet long shall be graded as culls or measured for quantity only.

Counter tops shall be 12 feet and up long, 18 inches and up wide, 1, $1\frac{1}{4}$, $1\frac{1}{2}$ and 2 inches thick, and should be nearly clear of all defects.

Squares, 3x3, 4x4, 5x5, 6x6, 7x7, 8x8, 9x9, 10x10, are not exempt from this inspection on account of width.

Special length and sizes must be specified on inspection statement.

A knot defect shall be equal to the standard knot which shall be sound and not exceed $1\frac{1}{4}$ inches in diameter.

A split defect shall be equal to a straight split 2 feet in length, and parallel with the edge of the piece.

A white sap defect shall be equal to 1 inch in width the entire length of the piece on one side.

WHITEWOOD OR YELLOW POPLAR.

No. 1 shall not be less than 8 inches in width and free of defects up to 10 inches; at 12 inches wide will admit of two white sap defects, and at 16 inches and up wide, four white sap defects. Face side to be perfect and practically free of knots. When 12 inches and up wide, will admit of one split defect. Black or discolored sap is excluded from No. 1 grade.

No. 2 shall be not less than 7 inches wide and free of defects. At 10 inches wide will admit of two white sap or one knot defect. At 12 inches wide, of four white white sap or two knot defects. At 16 inches wide and up, six white sap or three knot defects on face side. In No. 2 grade a straight and parallel split shall be no defect unless it exceeds one-third the length of piece.

Sap Clear shall be 6 inches and up wide, and include lumber free from all defects excepting bright sap on the face side, and practically free from knots on the other side.

Common shall include all lumber 8 inches and up wide, in which two-thirds clear face on one side can be obtained in cutting up, the shortest piece not to be less than 2 feet long.

Culls shall include lumber not up to standard of No. 2 excepting that when Sap, Clear and Common grades are made; Culls shall include all lumber not up to the standard of Common, but no Cull shall have a marketable value unless one-half of the same can be worked without waste.

PLAIN SYCAMORE AND COTTONWOOD

Shall be inspected the same as whitewood; also Basswood, with the exception that white sap is no defect.

BLACK WALNUT.

No. 1 shall be not less than 6 inches wide and free of defects. At 10 inches wide will admit two sap defects on sap side; if wider, will admit of slightly increased defects that will not cause waste for first-class work. Face side to be perfect and free of knots.

No. 2 shall be not less than 6 inches wide. At 8 inches, will admit of one knot defect on face side, or two sap defects on opposite side. At 12 inches wide, two knots or one sap defect, and at 16 inches and up wide, three knots or two sap defects on face side. The opposite side must not show more than one-third sap.

Rejects shall be 5 inches and up wide, and include all lumber in which two thirds clear face on one side can be obtained in cutting up, the shortest piece not to be less than 2 feet long.

Culls shall include all lumber not up to the standard of No. 2, (excepting when Rejects are made;) then all lumber not up to the standard of Rejects, one-half of which can be worked without waste, otherwise it shall be classed as Mill Culls.

CHERRY.

The same as black walnut. Bad, resinous gum spots or blotches are excluded from No. 1 grade, but a few streaks will be admitted.

Gum defects alone in No. 2 grade shall not exceed the limit of knot and sap defects allowed in that grade, and combined defects shall not exceed the same limit.

BUTTERNUT AND CHESTNUT.

The same as black walnut. Wormholes are excluded from No. 1 grade.

SWEET GUM.

The same as black walnut. The sap is worthless and is excluded from No. 1 grade.

QUARTERED OAK AND SYCAMORE.

The same as black walnut. Sap is excluded from No. 1 grade, face side.

ASH, PLAIN OAK, MAPLE, BIRCH, BEECH, ELM AND
HICKORY.

Shall be inspected as No. 1, No. 2, and Culls.

No. 1 shall be 6 inches and up wide, and free from all defects up to 8 inches wide, with slight defects as width increases.

No. 2 shall be 6 inches and up wide, and may have a few small sound knots, but two-thirds of the entire piece (as a whole) must be suitable for first-class work without waste.

Culls shall include all lumber not up to the standard of No. 2 grade.

Sap if bright and in good condition, is no defect. Heart, shake, rot, dote or wormholes are excluded from No. 1 grade.

Whitewood, cypress, black walnut, cherry and other hard wood strips for flooring and sheathing, are inspected as No. 1, No. 2. and culls.

STRIPS.

No. 1 must have one perfect face and two sound edges.

No. 2 may have one bright sap defect (except black walnut and cherry), or three small pencil knots.

Culls shall include all lumber not up to the standard of No. 2.

MAHOGANY, SPANISH CEDAR, SATIN-WOOD

And other foreign hardwoods shall be inspected as merchantable and culls.

Merchantable shall include all logs or sticks that are sound and free of defects.

Culls shall include all logs or sticks that are unsound and defective.

Logs may be manufactured somewhat uneven, but should be square butted, as sale measurement will only be taken to square butt.

The rule for measuring merchantable shall be to allow a slab one inch thick on one side of thickness, and a slab two inches thick from one side of the width. The solid contents of the remainder to be taken for sale measurement.

Culls shall be measured full contents, one-half of which shall be deducted for sale measurements.

Each log or stick contained in each lot or cargo, shall be numbered and marked in regular numerical order, and on merchantable the sale measurement, and on culls the letter R, and the full measurements shall be marked thereon.

WHITEWOOD, MAPLE, BLACK WALNUT

And other hardwood logs shall, unless otherwise ordered, be inspected as No. 1, No. 2, and culls.

In measuring, the diameter shall be taken at the small end (inside the bark) in inches, in sections of 15 feet, and no fractions of an inch shall be allowed.

No. 1 shall include all logs that are sound and free of defects.

No. 2 shall contain no defects that will prevent two-thirds of the entire log being used for first-class work.

Culls shall include all logs not up to the standard of No. 2.

SEC. 16. The fees for surveying and marking shall be paid by the purchaser as follows: For White, Southern and Norway Pine, Spruce, Hemlock, Juniper and White-wood Boards, Planks, Joists, Sawed Timber and Dimensions, 30 cents for every thousand feet, board measure; for Southern Pine Flooring Boards, 34 cents for every thousand feet, board measure; for all kinds of Pine, Spruce, Hemlock and Juniper Timber, 12 cents for every ton; for Oak and other Hardwood, 24 cents for every ton; for knees commonly used in ship building, 3 cents for every knee; for Ash, Maple and other Hardwood, and for ornamental Boards, Planks and Joists, 40 cents for every thousand feet, board measure; for Cuba, Saint Domingo, and other branch of hard Mahogany, \$1 for every thousand feet, board measure; and for Mahogany from the Bay of Honduras, and for Cedar 75 cents for every thousand feet, board measure. One-half of the fees paid by the purchases as aforesaid shall be allowed and paid to him by the seller, if the surveyor-general receives in fees in any year more than \$2,500 and his necessary expenses for office rent, the heating and lighting thereof, clerical assistance, telephone service, postage, stationery and transportation in the discharge of his duties, he shall pay the excess over said sum and expenses into the treasury of the Commonwealth.

SEC. 17. If a surveyor general or surveyor of lumber is guilty of or connives at a fraud or deceit in surveying, marking, or numbering the contents or quality of any kind of wood or lumber, or if such surveyor, when requested by the owner of or by a dealer in lumber to

survey the same, refuses without good reason to perform the duty, he shall forfeit for each offense not less \$50 nor more than \$200.

SEC. 18. If a seller or purchaser of lumber attempts to induce a surveyor to make a false survey, he shall forfeit for each offense not less than \$50 nor more than \$200.

SEC. 19. Whoever performs, without authority, any of the duties of a surveyor of lumber, shall forfeit not less than \$50 nor more than \$200.

SEC. 20. This act shall take effect upon its passage.

MAINE INSPECTION LAW.

CHAPTER 41, SECTION 14. Every town, at its annual meeting, shall elect one or more surveyors of Boards, Plank, Timber and Joist, one or more surveyors of Shingles, Clapboards, Staves and Hoops; and every town containing a port of delivery whence Staves and Hoops are usually exported, shall also elect two or more viewers and cullers of Staves and Hoops; and the municipal officers of a town may, if they deem it necessary, appoint not exceeding seven surveyors of logs; and all said officers shall be sworn.

SEC. 15. All Boards, Plank, Timber and Joist offered for sale shall, before delivery, be surveyed by a sworn surveyor thereof; and if he has doubts of the dimensions, he shall measure the same and mark the contents thereon, making reasonable allowance for rots, knots and splits, drying and shrinking. Pine boards, when $\frac{3}{4}$ of an inch thick when fully seasoned, and in that proportion when partly seasoned, shall be considered merchantable, and no pine boards, except Sheathing Boards, shall be shipped for exportation beyond the United States but such as are square edged and not less than $\frac{7}{8}$ of an inch thick, nor less than 10 feet long, under penalty of forfeiture to the town whence shipped.

SEC. 16. All Shingles packed for exportation beyond the state shall be 16 inches long, free from shakes and worm holes, and at least $\frac{3}{8}$ of an inch thick at the butt end when green, and if of Pine, free from sap. They shall be 4 inches wide on an average, not less than 3 inches

wide in any part, hold their width three-fourths of the way to the thin end, well shaved or sawed, and be denominated "No. 1;" but Shingles intended for sale within the state, if of inferior quality or of less dimensions, may be surveyed and classed accordingly under the denomination "No. 2" and "No. 3."

SEC. 17. All Shingles shall be split or sawed crosswise the grain. Each bundle shall contain 250 shingles, and, if in square bundles, 25 courses, and be 22½ inches at the lay, and when packed to be surveyed as "No. 1," or for exportation, if in any bundle there are five shingles deficient in the proper dimensions, soundness or number, to make 250 merchantable shingles, or if any shingles are offered for sale before they are surveyed and measured by a sworn surveyor of some town in the county where they were made, and the quality branded on the hoop or band of the bundle, unless the parties otherwise agree, are forfeited to the town where the offence is committed.

SEC. 18. All Clapboards exposed for sale or packed for exportation shall be made of good, sound timber, free from shakes and worm holes, and if of Pine, clear of sap, and they shall be at least ⅝ of an inch thick on the back of thickest part, 5 inches wide and 4 feet 6 inches long, and straight and well shaved or sawed.

SEC. 21. No person shall deliver on sale, or ship or attempt to ship for exportation, any Boards, Plank, Timber, Joists, Shingles, Clapboards, Staves or Hoops before they have been surveyed, measured, viewed or culled, as the case may be, or branded by the proper officer, and a certificate thereof given by him specifying the number, quality and quantity thereof, under a penalty of \$2 a thousand, by quantity or tale, as such article is usually sold, half to the town where the offence is committed, and half to the prosecutor, and in addition thereto the master or owner of any vessel exporting any of the articles aforesaid beyond the limits of the United States contrary to law, shall for the first offence forfeit \$200 to the town whence said articles are exported, and if after conviction he commits a second offence in the same vessel, he forfeits the same sum, and the vessel is also forfeited to the town.

SEC. 22. The master or owner of any vessel having any of the lumber or other articles mentioned in the preceding section on board for exportation as aforesaid, shall, before the vessel is cleared at the custom house, produce to the collector a certificate from the proper officer that the same have been duly surveyed, measured, viewed or culled, as the case may require; and such master or owner shall likewise make oath before the collector or a justice of the peace, whose certificate shall be returned to the collector, that the articles so shipped for exportation are the same articles thus surveyed, measured, viewed or culled; that he has no other on board of the like description, and that he will not take any others.

SEC. 23. If any person duly elected a surveyor, measurer, viewer or culler of any said articles under this chapter, neglects or refuses to take the oath of his office and to serve therein, he forfeits \$3 to the town, and another person shall be elected to his place, who shall take the oath and serve as aforesaid under the like penalty, and the like proceedings shall be had until the office is filled; or if any such officer, duly qualified, unnecessarily refuses or neglects to attend to the duties of his office when requested, he forfeits \$3; and if he connives at or willfully allows any breach of the provisions thereof, or practices any other fraud or deceit in his official duties, he shall forfeit \$30 for the use aforesaid.

SEC. 24. All pecuniary penalties aforesaid may be recovered by action of debt, indictment or complaint, and all other forfeitures by a libel filed by the treasurer or any inhabitant of the town interested.

SEC. 25. Surveyors of logs may inspect, survey and measure all mill logs floated or brought to market or offered for sale in their towns, and divide them into several classes corresponding to the different quality of boards and other sawed lumber which may be manufactured from them, and they shall give certificates under their hands of the quantity and quality thereof to the person at whose request they are surveyed.

QUEBEC CULLING.

Extracts from an Act to Regulate the Culling and Measuring of Timber, Masts, Spars, Deals, Staves, etc.

The council of the Quebec Board of Trade, when required by the supervisor so to do, shall elect four merchants practically acquainted with the lumber trade; and the supervisor shall, by instrument under his hand and seal, appoint four licensed cullers; and the said four merchants and four cullers shall constitute a board of examiners, of which board the supervisors shall *ex-officio* be a member and chairman; and as often as vacancies occur in the said board by death, change of residence or otherwise, such vacancies shall be filled by election in the case of merchants and by new appointments in the case of cullers, forming the said board.

The board shall meet at the office of the supervisor or elsewhere on the first Monday of May and August in each year, or upon any other day, when notified by the supervisor so to do, and four of the number of the board shall constitute a quorum for the transaction of business, and the decision of any majority of the members present at such meeting shall be held to be the decision of the board.

Every certificate issued by the board of examiners, appointed under the provisions of the Act, shall state the qualifications of the person to whom such certificate is issued and what [description of culling he is best qualified to perform.

MODE OF CULLING AND MEASURING.

HOLDERS OF MEASURING TAPES, ETC., SHALL BE APPRENTICES.

21. The holders of measuring tapes and scribes of timbers, shall, in all cases, when practicable, be apprentices or candidates for becoming cullers; for whose acts, in the performance of their duties, the cullers shall be responsible. (8 Vic., cap. 49, sec. 8.)

SQUARE TIMBER TO BE MEASURED ACCORDING TO THREE
MODES.

22. Square timber shall be measured only in some one of the three following modes—that is to say:

First.—Measured off, in the raft or otherwise, giving the full cubic contents, without any allowance or deduction.

Secondly.—Measured in shipping order (which shall mean sound, fairly made timber); gum seams closed at the butt, and sound knots not to be considered unsoundness—lengths under the merchantable standard hereinafter mentioned, and not less than 12 feet long to be received, if, in the opinion of the culler, the same be fit for shipment.

Thirdly.—Culled and measured in a merchantable state in accordance with the rules, standards and limitations hereinafter described. (8 Vic., cap. 49, sec. 9.)

LENGTH OF TIMBER TO BE MEASURED BY CULLERS, AS
WELL AS GIRTH.

23. In measuring timber, the culler employed for that purpose shall measure not only the girth of each piece of timber, but shall also measure, personally, with the aid of one competent assistant, the length of each piece of timber in all cases where such measurement shall be practicable, with the aid of only one assistant; and in the event of any case arising in which, in the opinion of the supervisor of cullers or his deputy, such measurement cannot be effected with the aid of one assistant only, then such culler may employ an additional competent assistant for that purpose, who, as well as the assistant first above mentioned, shall be approved of by the supervisor of cullers or his deputy. (16 Vic., cap. 168, sec. 1.)

CULLER TO PROVIDE HIMSELF WITH MEASURING ROD,
TAPE, ETC.

24. Every culler shall provide himself with a measuring rod and tape, which shall, in all cases, be English measure, and tested and compared by a standard kept in the office of the supervisor (such rod having a hook at the end, five-eighths of an inch long); and also with a scribing knife, with which he shall mark, in legible char-

acters, the length, breadth and thickness of all square timber measured or culled by him, and the mark, initials or number of the party, if required.

HOW TIMBER SHALL BE MARKED.

And every culler shall provide himself with a proper stamp with the initials of his name in legible characters, and with the following capital letters, in addition:

M, which shall denote what is merchantable;

U, which shall denote what is sound and of merchantable quality, but under merchantable size;

S, which shall denote what is of second quality;

T, which shall denote what is of third quality;

R, which shall denote what is rejected and unmerchantable; which marks shall be indented or stamped on the end of each article of lumber culled in terms of merchantable standard hereinafter described, except West India and Barrel staves, Boards, Lathwood and Handspikes. (8 Vic., cap. 49, sec. 12.)

COPY OF AGREEMENT AS TO MODE OF MEASUREMENT SHALL BE LODGED IN THE SUPERVISOR'S OFFICE.

25. A copy of every agreement as to the adoption of any of the modes of measurement or culling mentioned in this Act, signed by the seller and buyer, shall be lodged in the office of the supervisor at the same time that a requisition is made to him for a culler to measure or cull any lumber, for the guidance of the supervisor and culler in the performance of their duty; and such requisition shall state the river and section of the province wherefrom such lumber is produced.

PROVISO.

Provided that it shall be competent for the owner of any lumber, or his agent, to cause it to be measured, culled or counted before any sale; in which case the specification of such lumber shall set forth the mode in which the measurement, culling or counting has been performed. (8 Vic. cap. 49, sec. 13.)

QUALITIES OF LUMBER.

DÉSCRIPTIONS AND CLASSES OF LUMBER.

26. In all cases the supervisor and cullers, respectively,

shall be governed by the following descriptions, rules, standards and limitations, in ascertaining and certifying the merchantable size and quality of lumber submitted to their culling;

SQUARE WHITE OAK TIMBER.

Square White Oak Timber, First Quality, shall be free from rot, rotten knots (affecting the surrounding wood), open rings and grub or large worm holes; but small worm holes and shakes shall be allowed, according to the judgment of the culler. Second Quality shall be Oak not coming within the definition of First Quality, and which, in the judgment of the culler, is not Culls.

ROCK ELM.

Square Hard Grey or Rock Elm shall be free from rots, open rings and rotten knots (affecting the surrounding wood, but shakes and slivers shall be allowed, according to the judgment of the culler.

WHITE OR YELLOW PINE TIMBER.

Square White or Yellow Pine Timber shall be free from rot, rotten knots (affecting the surrounding wood), worm holes, open shakes and open rings; but sound knots shall be allowed, according to the judgment of the culler.

SQUARE RED PINE TIMBER.

Square Red Pine Timber shall be free from rot, rotten knots (affecting the surrounding wood), worm holes, shakes and splits; but sound knots shall be allowed, according to the judgment of the culler.

SQUARE ASH, BASSWOOD AND BUTTERNUT.

Square Ash, Basswood and Butternut shall be of the same quality as White or Yellow Pine Square Timber.

SQUARE BIRCH.

Square Birch shall be free from rot, rotten knots, splits and shakes, and shall be allowed 2 inches wane.

MASTS, BOWSPRITS AND RED PINE SPARS.

Masts, Bowsprits and Red Pine Spars shall be sound, free from bad knots, rents and shakes, and the heart shall be visible in spots at or near the partners.

HICKORY HANDSPIKES.

Hickory Handspikes shall be 6 feet long and $3\frac{1}{2}$ inches square at the smaller end.

ASH OARS.

Ash Oars shall be 3 inches square on the loin and 5 inches broad on the blade. The blade shall be one-third of the length of the oar, and such oars shall be cleft straight on all sides, and free from large knots, splits and shakes.

LATHWOOD.

Lathwood shall be cut in lengths of from 3 to 6 feet and measured by the cord of 8 feet in length by 4 feet in height. The same, to be merchantable, shall be free from rot, and split freely, and each billet may contain to the extent of three or four open case knots, provided they run in line, or nearly so, and it shall not have more than one twist.

PINE OR FIR BOARDS.

Pine or Fir Boards shall not be less than 10 feet in length, not less than 1 inch in thickness, not less than 7 inches in breadth, equally broad from end to end, edged with a saw or neatly trimmed by a straight line, and shall be free from rot, bad knots, rents and shakes, and of equal thickness on both edges from end to end; but the color alone of any board shall not be sufficient cause for its rejection, if it is in other respects sound and merchantable and of the dimensions required by this act.

WHITE OR YELLOW PINE DEALS.

White or Yellow Pine Deals, to be merchantable, shall be free from rot, rotten knots, grub-worm holes, open case knots, shakes and splits (a slight sun-crack excepted); and sound knots and hard black knots to be allowed as follows: if not exceeding three in number, and not exceeding, upon the average, $1\frac{1}{4}$ inches diameter; if exceeding three and not exceeding six in number, and upon the average not exceeding three-quarters of an inch in diameter;—this proportion of knots to be allowed for a deal 11 inches in width and 12 feet in length, and deals of greater or less dimensions to be allowed for in proportion, according to the judgment of

the culler; wane equal to half an inch on one edge, if running the whole length of such deal, to be allowed; and if not exceeding half the length of such deal, three-quarters of an inch to be allowed, they shall be free from black or dead sap (with a slight exception at the discretion of such culler).

RED PINE DEALS.

Red Pine Deals, to be merchantable, shall be free from rot, rotten knots, grub-worm holes, open case knots and splits; several small sound knots to be allowed, according to the judgment of the culler; heart shake to be allowed, if it does not run far into the deal or form a split through at the ends; they shall be free (or nearly so) from black or dead sap; but sound sap on the corners, or on a portion of one face of a deal, to be allowed, according to the judgment of the culler.

SPRUCE DEALS.

Spruce Deals, to be merchantable, shall be free from rot, rotten knots, grub-worm holes, open case knots, splits and shakes (a heart shake, not exceeding one-fourth of an inch to half an inch in depth excepted); several small sound knots and hard black knots to be allowed according to the judgment of the culler; and in the exercise of such judgment, he shall keep in view the peculiar nature of the wood, and govern his judgment accordingly; wane equal to half an inch on one edge, if running the whole length of the deal, to be allowed, and if not exceeding one-quarter the length of such deal, three-quarters of an inch to be allowed.

WHITE OR YELLOW PINE SECOND QUALITY DEALS.

White or Yellow Pine Second Quality Deals shall be free from rot, rotten knots and splits, with slight exceptions, at the discretion of the culler; and sound knots and hard black knots to be allowed as follows; if not exceeding six in number, and not exceeding upon the average $1\frac{1}{2}$ inches diameter; if exceeding six and not exceeding twelve in number, and not exceeding upon the average $1\frac{1}{4}$ inches in diameter (small knots under half an inch in diameter not to be counted or considered),—this proportion of knots to be allowed for a deal 11

inches in width and 12 feet in length, and deals of greater or lesser dimensions to be allowed for in proportion, according to the judgment of the culler; heart-shakes and sun-cracks, not exceeding three-fourths of an inch to 1 inch in depth, to be allowed, as also worm-holes, at the judgment of the culler, wane of half an inch to be allowed, according to the quality of the deal; in other respects, at the judgment of the culler. Deals rejected as not coming within the standard of Merchantable or Second Quality, shall be classed as Culls, except that the culler may, if requested by buyer and seller, select and classify as Third Quality the best of the deals so rejected.

SPRUCE AND RED PINE SECOND QUALITY DEALS.

Spruce and Red Pine Second Quality Deals shall be Deals not coming within the definition of merchantable, and which, in the opinion and judgment of the culler, are not culls, and shall be classed as Second Quality; and the culler, if required by seller and buyer, may select and classify as Third Quality the best of the Deals unfit to be Seconds.

QUEBEC STANDARD HUNDRED OF DEALS.

The Quebec Standard Hundred of Deals shall be 100 pieces, 12 feet long, 11 inches broad and 2½ inches thick, and Deals of all other dimensions shall be computed according to the said standard. Deals of all qualities shall not be less than 8 feet long, 7 inches broad and 2½ inches thick. Deal ends shall not be less than 6 feet long, and shall be computed according to the Quebec Standard.

MERCHANTABLE DEALS.

All Merchantable Deals must be well sawn and squared at the end with a saw, and the color alone shall be no objection to their being merchantable. All Deals, when culled, shall in all cases be stamped with the initials of the culler, and the capital letter denoting their quality as such.

PROVISO AS TO SPRUCE DEALS.

Provided, always, that Spruce Deals, if not sawn at the ends prior to or at the time of culling, shall be marked with the capital letter denoting their respective qualities, with red chalk, in large, bold letters.

HOW OTHER DEALS SHALL BE MARKED.

To prevent mistakes in piling, all other Deals shall be marked with bold strokes, in red chalk, as follows:

Merchantable shall be marked **I**;
Second Quality shall be marked **II**;
Third Quality (if made) shall be marked **III**;
Rejected or **Culls** shall be marked **X**.

DIMENSIONS OF STAVES.

STANDARD OR MEASUREMENT STAVES.

Standard or Measurement Staves shall be at the dimensions set forth in the words and figures following:

5½ feet long, 5 inches broad and from 1 to 3 inches thick.
 4½ do. 4½ do.
 3½ do. 4 do.
 2½ do. 5 do.

HEART STAVES.

Heart Staves 5½ feet long and 4½ inches broad to be received as if of merchantable dimensions.

STANDARD MILLE.

The Standard Mille shall be 1,200 pieces of 5½ feet long, 5 inches broad and 1½ inches thick, and Standard or Measurement Staves of other dimensions shall be reduced to the said standard by the table of calculation now used.

WEST INDIA OR PUNCHEON STAVES.

West India or Puncheon Staves shall be 3½ feet long, 4 inches broad and ¾ of an inch thick. All Staves shall be straight grained timber, properly split, with straight edges, free from the grub or large worm holes, knots, veins, shakes and splinters, and small worm holes, not exceeding three in number, to be allowed, according to the judgment of the culler, provided there are no veins running from or connected therewith; and the culler shall measure the length, breadth and thickness of Standard Staves at the shortest, narrowest and thinnest parts, and the thickness of West India and Barrel Staves exceeding the standard breadth to be measured at such breadth, to-wit, 4 and 3½ inches, respectively, provided the thinnest edge is not less than ½ inch,

DIMENSIONS OF MERCHANTABLE TIMBER.

The dimensions of Merchantable Timber shall be as set forth in the following words and figures:

OAK.

Oak shall not be less than 20 feet in length, nor less than 10 inches square in the middle.

ELM.

Elm shall not be less than 20 feet in length, nor less than 10 inches square in the middle.

WHITE PINE.

White Pine shall not be less than 20 feet in length, and 12 inches square in the middle; and 15 feet and upwards in length, if 16 inches and upwards in the middle.

RED PINE.

Red Pine shall not be less than 25 feet in length, and 10 inches square in the middle; and 20 feet and upwards in length, if 12 inches square and upwards in the middle.

ASH, BASSWOOD AND BUTTERNUT.

Ash, Basswood and Butternut shall not be less than 15 feet in length and 12 inches square in the middle, nor less than 12 feet in length, if 15 inches and upwards in the middle.

BIRCH.

Birch shall not be less than 6 feet in length, nor less than 12 inches square in the middle.

TAPER OF MERCHANTABLE TIMBER.

Oak.....	3	inches	under	30	feet,	and	in	proportion	
									for any greater length.
Elm.....	2	do.	for	30	do.	do.	do.	do.	
White Pine...	1½	do.	for	20	do.	do.	do.	do.	
Red Pine.....	2	do.	for	25	do.	do.	do.	do.	
Ash.....	1½	do.	under	20	do.	do.	do.	do.	
Basswood....	1½	do.	under	20	do.	do.	do.	do.	
Butternut....	1½	do.	under	20	do.	do.	do.	do.	

Bends or Twists not to exceed one in number.

HOLLOW ALLOWED ON MERCHANTABLE
TIMBER.

Oak.....	3	inches for every 20 feet in length, and in proportion for any greater length.
Elm.....	3	do. do. 20 do. do. do.
White Pine...	2½	do. do. 20 do. do. do.
Red Pine.....	3	do. do. 20 do. do. do.
Ash.....	2½	do. do. 20 do. do. do.
Basswood....	2½	do. do. 20 do. do. do.
Butternut....	2½	do. do. 20 do. do. do.

DIMENSIONS OF WHITE PINE MASTS, BOW-
SPRITS AND RED PINE SPARS.

DIMENSIONS OF MASTS.

White Pine Masts, 23 inches and upwards at partners, shall be 3 feet in length to the inch in diameter.
Do. 22 do. do. 3 feet do. and 2 ft. extreme length.
Do. 21 do. do. 3 feet do. and 3 ft. do. do.
Do. 20 do. & under 3 feet do. and 4 ft. do. do.

Hollow or bend not to exceed 6 inches for 70 feet, and in proportion for any greater length.

DIMENSIONS OF BOWSPRITS.

Bowsprits shall be 2 feet in length for every inch in diameter at the partners, adding 2 feet for extreme length.

DIMENSIONS OF RED PINE SPARS.

Red Pine Spars shall be 3 feet to the inch in diameter at the partners, and 9 feet extreme length; hollow not to exceed 7 inches for 60 feet, and in proportion for any greater length.—(8 Vic., cap. 49, sec. 14.)

LUMBER IMPROPERLY SQUARED, ETC., TO BE RE-DRESSED.

27. In all cases where it appears that Timber, Masts, Spars, Boards, Planks, Deals, Staves, Oars, or any other description of lumber, are not properly hewn, squared, butted or edged, but are merchantable in other respects, and sold as such, the supervisor and culler, respectively, shall order or cause the same to be properly dressed and chopped at the expense of the seller or buyer, as the case may be, previously to their being respectively received

PACIFIC COAST INSPECTION.

Rules for the Inspection and Classification of Fir and Spruce Lumber, Adopted by the Lumber Manufacturers' Association of the Northwest, at Tacoma, Wash., Feb. 23, 1892.

FIR.

All lumber shall be well trimmed, square at both ends and cut to even lengths.

FLOORING.

No 1, 4 or 6 inch, shall be well manufactured and vertical grain; the angle of the grain in no case shall be less than 45 degrees; bright sap admissible not to exceed 1 inch in width on the face side of the piece; otherwise no imperfections of any kind.

No. 2, 4 or 6 inch, shall be well manufactured, and will admit of a slight roughness in dressing, if vertical grain, and bright sap one-half the width of the piece must be clear; if flat grain, small pitch pockets not over three inches in length or small tight knots $\frac{1}{2}$ inch in diameter to the number of two to each 16 lineal feet, admissible.

No. 3, 4 or 6 inch, shall be well manufactured and will admit of a slight roughness in dressing and bright sap; small round knots or small pitch pockets that do not show open seams; in 4-inch widths not to exceed five small tight knots or same number of pitch pockets in each 16-foot piece; 6-inch widths will admit of one or two more knots or pitch pockets than 4-inch.

No. 4 shall be well manufactured and will admit of sap the full width of the face; five sound knots not larger than $\frac{3}{4}$ inch in diameter, or in absence of sound knots can have two large knot holes or their equivalent, which can be cut out and balance of the board be equal to No. 3.

Cull shall consist of all flooring below the grade of No. 4, and shall be equal to common lumber.

RUSTIC OR DROP SIDING.

No. 1 shall be well manufactured, bright sap admissible one-third the width of the face; otherwise must be clear.

No. 2 shall be well manufactured, bright sap admissible; may contain small tight knots not more than $\frac{3}{4}$ inch in diameter, but not more than four knots to each 16 lineal feet; pitch seams or pockets not allowed more frequently than knots, and shall not be more than 3 inches in length.

No. 3 shall be well manufactured; sap will be admitted; five or six small knots not larger than 1 inch in diameter may be allowed in each 16 lineal feet; in the absence of knots can have two large knot holes or their equivalent in other defects that can be cut out and board be equal to No. 2; can admit pitch pockets equal to the above defects.

Cull shall consist of all rustic below the grade of No. 3, and shall be equal to common lumber.

PARTITION.

Must present both faces equal in grade or must be graded according to the poorest face and according to the rules laid down for the grading of rustic.

CEILING

Shall be graded on the merits of the face side and according to the rules laid down for the grading of rustic and drop siding.

STOCK BOARDS.

All grades of stock boards shall be free from any wane, shakes or any radical defects that shall prevent their being used full width and length without cutting out defects.

A Stock shall be practically clear, but will admit of $\frac{1}{2}$ -inch of bright sap on one edge. Must be close grain and must be free from pitch seams.

B Stock will admit of 1 inch bright sap on face side, also three or four tight knots not larger than $\frac{3}{4}$ inch in diameter or one or two small pitch pockets, provided they are well distributed, but cannot have both defects. In absence of sap a board can have more knots.

C Stock may have two or three inches of bright sap on both sides, or more if on one side only; will admit of

two or three knots, if tight, not over 1 inch in diameter; or seven or eight small knots if not over $\frac{3}{4}$ inch in diameter if well scattered, and two or three pitch seams if not over 4 inches long.

D Stock may have some sap, but will admit of 12 or 15 sound, tight knots none over 1 inch in diameter, and two or three small pitch pockets; but knots are admissible in this grade, while pitch pockets and sap are objectionable, as this grade is used largely for barn boards and exposed to the sun and weather.

For 8 and 10-inch stock boards less defects are allowed in proportion to the width.

BOX BOARDS

Shall be graded same as stock boards, but shall be 13 inches and over in width.

CASINGS AND FINISHING LUMBER

Shall correspond in grade with rustic and drop siding.

THICK, CLEAR AND SELECTS.

First Clear Stepping shall be well manufactured and the angle of the grain not less than 45 degrees; bright sap admissible on one edge on the face side if not over 1 inch in width. No other defects allowed.

First Clear shall be graded First Clear Stepping, but shall be flat grain.

Second Clear may be flat grain. bright sap admissible on one edge of the face side if not over 2 inches in with; where 12 inches and over in width may contain one small sound knot not over $\frac{1}{2}$ inch in diameter, or one pitch pocket 1 inch in length in a 12-foot piece. If worked, the round edge shall be free from defects.

A Select shall be well manufactured and vertical grain, angle of the grain not less than 45 degrees; will allow of 3 inches of bright sap on one edge of face, or half that amount on both sides.

B Select may be flat grain; will admit of 3 inches of bright sap on both edges of the face side and two small knots not over $\frac{3}{4}$ inch in diameter. If vertical grain will allow four small sound knots not over $1\frac{1}{4}$ inch diameter. This grade will also admit of two spike knots or similar defects that may be cut out, and board shown to equal in grade A select.

COMMON LUMBER

Shall be generally of sound character, free from rot, shake, wane, loose or rotten knots or other defects which will materially weaken the piece.

CULL LUMBER

Shall consist of a merchantable lumber that has such defects as shall exclude it from the grades of common lumber or better.

SIZES.

All 1x6 and 1x4 flooring shall be 13-16 inches thick, $3\frac{1}{4}$ and $5\frac{1}{8}$ inches wide respectively. Inch and one-quarter flooring shall be 1 1-16 thick and same width as one inch. Ceiling shall be the same width as flooring. Board and finish whether S 1 S or S 2 S shall be worked as follows: One inch to 13-16, $1\frac{1}{4}$ inch to 1 1-16 inch, $1\frac{1}{2}$ inch to 1 5-16 inch and 2 inch to $1\frac{3}{4}$ inch. All lumber dressed four sides shall be dressed to $\frac{1}{2}$ inch less in width than size designated.

SPRUCE.

Bevel Siding.—Half-inch tied, 4 and 6 inches. Inspection grades shall consist of Clear, "A.," "B.," Fence.

Clear shall be mostly vertical grain.

A Siding admits of small tight knots equal to one every 8 lineal feet, white sap equal to one inch the length of board or slight defects in milling.

B Siding admits of mill defects from manufacturing, knots equal to one every 5 lineal feet and white sap equal to one-half the face of the board. These defects are not admissible to the A grade.

Fence.—This grade admits of defects in milling, sap, knots, knot holes, if not more than one to each 4 lineal feet or their equivalent if in a group. This grade is intended for coarse work, or for cutting for betterment.

FINISH.

First and Second Clear.—8, 9 and 10 inches are clear on both faces; 11 and 12 inches are clear on one face; 13 inches and wider not to exceed two small defects on face side of board.

Third Clear.—8, 9 and 10 inches clear face; 11 inches and wider three face defects and in proportion as the board widens.

Select.—This grade admits of two face defects on 8 and 9-inch widths and four face defects on 10 and 11-inch widths. Wider boards admit of one face defect to every 4 lineal feet.

Thin Clear and Selects, $\frac{1}{2}$ -inch thick. This grade is from selects to clears. All lengths and widths from 6 inches and up.

Thin Clear.—Same as thin clear and selects, with the exception that it is clear lumber; takes the same classification as to widths and lengths.

GRADING OF CAR MATERIAL.

YELLOW AND RED FIR.

All yellow and red fir timber used in the construction and repairs of cars and engines, must be cut from good, sound, live, thrifty timber, straight grained, free from black, loose or unsound knots, sap, shakes, splits and pitch seams, except as hereinafter specified. No wane edged or cross grained timber can be accepted. All timber must be cut full, square, and true to the lengths, thickness and width ordered.

CAR SIDING.

Clear yellow and red fir 1x6, 8 or 16 feet, free from all defects except sap, 75 per cent of face to be vertical grain.

CAR ROOFING.

Yellow and red fir, 1x6, 5 and 10 feet. Face free from all defects except one or two small, sound, live knots one inch or less in diameter to each 5 feet in length; 75 per cent of face must be vertical grain.

FREIGHT CAR SILLS.

Yellow fir up to 32 feet in length. Must be free from all defects except pitch seams 5 inches in length and sound, live knots $1\frac{1}{2}$ inches or less in diameter, well scattered, not more than twelve in the piece. One face of outside sills must be free from all pitch seams.

COACH SILLS.

Yellow fir, free from all defects except sap on one edge, and sound, live, red knots one inch in diameter, well scattered.

NORTH CAROLINA PINE INSPECTION.

Rules Adopted by the North Carolina Pine Lumber Company, for the Inspection of North Carolina Kiln Dried Boards.

No. 1 Flooring, 1, 1¼, 1½ and 2 inches thick shall have one side free from knots, shakes or stain and the other side sound.

No. 2 Flooring shall consist of boards with small tight knots on the best side and to be free from worm holes and shakes. Sap-stained boards, clear of knots on one side, below No. 1, are included in this grade.

No. 3 shall consist of black-stained boards free from large knots; wormed boards, known as pin-holes, and tight knotty boards—provided there are no large knots in edge of board.

No. 4 or Box.—All boards not coming up to grade No. 3 in quality are classed as Box or Rough, excepting boards which are unsound or rotten.

Mill Culls consist of all lumber below No. 4 or Box.

NOTE.

All lumber intended for flooring shall be measured at the narrowest and thinnest points, and be 12 feet long and over.

CAIRO, ILL., HARDWOOD INSPECTION.

The rules for the inspection of hardwood lumber at Cairo, Ill., as adopted by the Cairo Hardwood Lumber Exchange, are practically the same as the Chicago rules on all woods except yellow pine and cypress. On these two the rules correspond with those adopted by the Southern Lumber Manufacturers' Association and the Southern Cypress Lumber & Shingle Association.

YELLOW PINE INSPECTION.

Adopted by the Southern Lumber Manufacturers' Association, Feb. 20, 1891, and Revised Feb. 22, 1894.

GRADES.

FLOORING.

Heart Face, Clear, shall be clear of all defects on face side.

First and Second Rift-Sawed shall be clear of all defects on face side, bright sap admissible, the angle of the grain not to exceed 45 degrees.

Star Rift-Sawed shall admit of three sound knots $\frac{1}{2}$ inch in diameter, or one sound knot 1 inch in diameter, and slight sap stains, but not more than three defects to be admitted in one piece. The angle of the grain not to exceed 45 degrees.

Clear Flat-Sawed shall be clear of all defects on face side, bright sap admissible.

Star Flat-Sawed shall admit of three sound knots $\frac{1}{2}$ inch in diameter, or one sound knot 1 inch in diameter and slight sap stains, but not more than three defects to be admitted in one piece.

No. 1 Common admits of sap stains and sound knots, to be well manufactured from sound stock. No piece shall be admitted in this grade which will not lay without waste.

No. 2 Common shall consist of all pieces that will not grade No. 1 Common and that will lay without waste of over one-quarter of a piece.

CEILING.

Ceiling shall take flooring grades, except as regards grain.

FINISH.

Clear Finish and Step Plank shall not be less than 8 inches wide, and up to 10 inches wide shall be free from all defects; widths over 10 inches may have

one sound knot $\frac{3}{4}$ inch in diameter, or other defects equal to this; bright sap admissible; from 12 to 14 inches wide, may have two such knots, or three such knots in widths over 14 inches, and slight sap stains admissible to all widths over 12 inches.

Above specifications to apply to face side of board.

Star Finish shall not be less than 8 inches in width, and shall admit of sap stains, or three sound knots equivalent to 3 inches in diameter on face side.

BOARDS.

First Common Boards admit of sound knots, without regard to size and number, but shall be free from large spike or loose knots or splits that would materially injure the strength of the board, and work without waste.

No. 2 Common shall admit of coarse and unsound knots, without regard to size, shape or number; will also admit of imperfections in manufacture.

FENCING.

No. 1 shall be well manufactured, and 4 and 6 inches wide; admit of sound knots that do not materially impair the strength of the piece.

No. 2 consists of lumber not as good as first common that can be used without waste.

DIMENSION.

No. 1 shall be well manufactured from sound stock, may have any number of tight, sound knots, provided their size and position in the piece will not materially injure its strength.

No. 2 may have any number of knots, which may be coarse, black or unsound. It will also admit of imperfections in manufacture.

STANDARD SIZES.

Flooring—The standard of 1x4 and 6 inch shall be $\frac{13}{16}$ x $3\frac{1}{2}$ and $5\frac{1}{8}$ inches; $1\frac{1}{4}$ inch flooring, $1\frac{1}{8}$ inch.

Ceiling— $\frac{3}{8}$ inch ceiling, $\frac{5}{16}$ inch; $\frac{1}{2}$ inch ceiling, $\frac{7}{16}$ inch; $\frac{5}{8}$ inch ceiling, $\frac{9}{16}$ inch.

Boards—1 inch, S 1 S or S 2 S, to $\frac{13}{16}$; $1\frac{1}{4}$ inch, S 1 S or S 2 S, to $1\frac{1}{16}$ inch; $1\frac{1}{2}$ inch, S 1 S, or S 2 S, to $1\frac{5}{16}$ inches; 2 inch, S 1 S or S 2 S, to $1\frac{3}{4}$ inches.

Piece Stuff—2x4, S 1 S 1 E, to $1\frac{5}{8} \times 3\frac{5}{8}$ inches; 2x6, S 1 S 1 E, to $1\frac{5}{8} \times 5\frac{5}{8}$ inches; 2x8 S 1 S 1 E, $1\frac{5}{8} \times 7\frac{1}{2}$ inches; 2x10, S 1 S 1 E, to $1\frac{5}{8} \times 9\frac{1}{2}$ inches; 2x12, S 1 S 1 E, to $1\frac{5}{8} \times 11\frac{1}{2}$ inches; 4x4, $\frac{3}{8}$ inch off side and edge; 4x4, S 4 S, $\frac{1}{4}$ inch off each side.

There are a number of mills which have been using a $\frac{7}{8} \times 3\frac{1}{4}$ inch standard, and it was thought advisable to adopt a standard of $\frac{13}{16} \times 3\frac{1}{8}$, and mills which desire to quote $\frac{7}{8} \times 3\frac{1}{4}$ inch do so at an advance over prices established for standard of \$1 a thousand F.O.B. mill.

GAGES.

Ceiling— $\frac{3}{8}$ inch Ceiling shall be $\frac{5}{16}$ inch. The tongue shall be $\frac{5}{64}$ inch from the bottom of the board, and $\frac{8}{64}$ inch thick and $\frac{7}{64}$ inch from the top of tongue to top of board, and shall be $\frac{3}{16}$ inch long. The groove shall be $\frac{5}{64}$ inch from the bottom of the board, $\frac{10}{64}$ inch wide, and from the top of the groove to the top of the board shall be $\frac{5}{64}$ inch, and shall be $\frac{7}{32}$ inch deep:— $\frac{1}{2}$ inch Ceiling shall be $\frac{7}{16}$ inch thick; the tongue shall be $\frac{5}{32}$ inch from the bottom of the board, and $\frac{4}{32}$ inch thick, and $\frac{5}{32}$ inch from the top of the tongue to the top of the board, and shall be $\frac{3}{16}$ inch long. The groove shall be $\frac{5}{32}$ inch from the bottom of the board, $\frac{6}{32}$ inch wide, and from the top of the groove to the top of the board, $\frac{4}{32}$ inch and $\frac{7}{32}$ inch deep:— $\frac{5}{8}$ inch Ceiling shall be $\frac{9}{16}$ inch thick, the tongue shall be $\frac{5}{32}$ inch from the bottom of the board, $\frac{4}{32}$ inch thick and $\frac{9}{32}$ inch from top of tongue to top of board, and $\frac{3}{16}$ inch long. The groove shall be $\frac{5}{32}$ inch from the bottom of the board, $\frac{5}{32}$ inch wide, and $\frac{8}{32}$ inch from the top of groove to top of board and $\frac{7}{32}$ inch deep.

Flooring— $\frac{3}{4}$ inch Flooring shall be $1\frac{1}{16}$ inch thick, the tongue shall be $\frac{8}{32}$ inch from the bottom of board, $\frac{8}{32}$ inch thick and $\frac{6}{32}$ inch from top of tongue to top of board, and $\frac{1}{4}$ inch long. The grooves shall be $\frac{8}{32}$ inch from bottom of board, $\frac{9}{32}$ inch wide, $\frac{5}{32}$ inch from top of groove to top of board and $\frac{5}{16}$ inch deep:—1 inch Flooring shall be $1\frac{3}{16}$ inch thick, the tongue shall be $\frac{8}{32}$ inch from the bottom of board, $\frac{8}{32}$ inch thick, and $1\frac{0}{32}$ inch from top of tongue to top of board, and $\frac{1}{4}$ inch long. The groove shall be $\frac{8}{32}$ inch from bottom of board, $\frac{9}{32}$ inch wide, $\frac{9}{32}$ inch from top of groove to top of board, and $\frac{5}{16}$ inch deep:— $1\frac{1}{4}$ inch Flooring shall be $1\frac{1}{16}$ inch

thick. The tongue shall be $\frac{8}{32}$ inch from bottom of board, $\frac{8}{32}$ inch thick, and $\frac{13}{32}$ inch from top of tongue to top of board, and $\frac{1}{4}$ inch long. The groove shall be $\frac{8}{32}$ inch from bottom of board, $\frac{9}{32}$ inch wide, and $\frac{17}{32}$ inch from top of groove to top of board, and $\frac{5}{16}$ inch deep.

Partition—1 inch partition shall be $\frac{3}{4}$ inch thick. The tongue shall be $\frac{8}{32}$ inch thick, and shall be $\frac{8}{32}$ inch from either side of the board, and $\frac{1}{4}$ inch long. The grooves shall be $\frac{9}{32}$ inch wide, and shall be $\frac{15}{64}$ inch from either side of the board, and $\frac{5}{16}$ inch deep. The tongue side of all matched lumber shall be made square, the bevel or clearance shall be on the groove side. Each side of the groove on partition lumber shall be beveled in toward the groove for clearance.

WEIGHTS.

The schedule marked "A" applies from Short Leaf Pine district. The schedule marked "B" applies from Long Leaf district.

SCHEDULE "A."

	Pounds.
Flooring, $\frac{13}{16}$, Drop Siding and Moulded Casing....	2,000
" " Hollow Backed.....	1,800
Ceiling, $\frac{3}{8}$,.....	1,000
" $\frac{1}{2}$	1,300
" $\frac{5}{8}$	1,500
" $\frac{3}{4}$	1,900
Siding from 1-inch stock.....	1,000
" " $1\frac{1}{4}$ -inch stock.....	1,250
Moulded Base.....	2,250
Finish, inch, S 2 S.....	2,600
" $1\frac{1}{4}$, $1\frac{1}{2}$ and 2-inch, S 2 S.....	2,800
" 1, $1\frac{1}{4}$, $1\frac{1}{2}$ and 2-inch, rough....	3,200
Shiplap and D. & M.....	2,300
Grooved Roofing.....	2,400
Boards, S 1 S.....	2,600
" rough.....	3,200
Fencing, S 1 S.....	2,600
" rough.....	3,200
2x4, 2x6 and 2x8, S & E, to $1\frac{5}{8}$	2,500
2x4, 2x6, and 2x8, rough.....	3,200
2x10 and 2x12, S & E, to $1\frac{5}{8}$	2,600

2x10 and 2x12, rough.....	3,200
2x14 and 3x12, S & E.....	2,800
2x14 and 3x12, rough.....	3,500
4x4 and 6x6, S & E.....	2,700
4x4 and 6x8, rough.....	3,500
8x8 and over, rough.....	4,000

For all $\frac{7}{8}$ inch stock add 150 pounds to the weight shown for $\frac{13}{16}$ inch.

SCHEDULE "B."

	Pounds.
Flooring, $\frac{13}{16}$	2,300
“ “ $\frac{13}{16}$, Hollow Backed.....	2,100
Ceiling, $\frac{3}{8}$ inch.....	1,000
“ $\frac{1}{2}$ “	1,300
“ $\frac{5}{8}$ “	1,600
“ $\frac{3}{4}$ “	2,000
Bev. siding from inch stock.....	1,000
“ “ $1\frac{1}{4}$ -inch stock.....	1,500
Drop “ $\frac{13}{16}$, 6-inch stock.....	2,300
Moulded casings and base.....	2,300
Finishing, S 2 S.....	2,800
Shiplap and D. & M.....	2,500
Grooved Roofing.....	2,600
Common boards and fencing, S 1 S or 2 S.....	2,800
“ “ “ “ rough.....	3,200
2x4, 2x6 and 2x8, S 1 S & 1 E, to $1\frac{5}{8}$	2,600
2x4, 2x6 and 2x8, rough.....	3,200
2x10 and 2x12, S 1 S & 1 E, to $1\frac{5}{8}$	2,800
2x10 and 2x12, rough.....	3,400
4x4 and 4x6, S 1 S & 1 E.....	3,000
4x4 and 4x6, rough.....	3,800
6x6, 6x8 and 8x8, S 1 S 1 E.....	3,600
6x6, 6x8 and 8x8, rough.....	4,000
8x10 and over, rough.....	4,000

For $\frac{7}{8}$ inch stock add 150 pounds to the weight shown for $\frac{13}{16}$ inch.

YELLOW PINE INSPEC- TION.

Adopted by the Georgia Saw Mill Association, June 24,
1890.

CLASSIFICATION.

Flooring shall embrace four and five-quarter inches in thickness by 3 to 6 inches in width. *For Example:* 1x3, 4, 5 and 6; 1¼x3, 4, 5 and 6.

Boards shall embrace all thicknesses under 1½ inches by 7 inches and up wide, including 1½ inches in thickness, by 7 in width. *For Example:* ¾, 1, 1¼ and 1½ inches thick, by 7 inches and up wide.

Scantling shall embrace all sizes from 2 to 5 inches in thickness, and 2 to 6 inches in width. *For Example:* 2x2, 2x3, 2x4, 2x5, 2x6; 3x3, 3x4, 3x5, 3x6; 4x4, 4x5, 4x6; 5x5, 5x6.

Plank shall embrace all sizes from 1½ to 6 inches in thickness, by 7 inches and up in width. *For Example:* 1½, 2, 2½, 3, 3½, 4, 4½, 5 and 5½x7 and up wide.

Dimension Sizes shall embrace all sizes 6 inches and up in thickness, by 7 inches and up in width, including 6x6. *For Example:* 6x6, 6x7; 7x7, 7x8; 8x8, 8x9 and up.

Stepping shall embrace 1 to 2½ inches in thickness, by 7 inches and up in width. *For Example:* 1, 1¼, 1½, 2 and 2½x7 and up wide.

Rough Edge or Flitch shall embrace all sizes 1 inch and up in thickness, by 8 inches and up in width, sawed on two sides only. *For Example:* 1, 1½, 2, 3, 4 and up thick, by 8 and up wide, sawed on two sides only.

SQUARE-EDGED OR STANDARD INSPECTION.

Flooring shall show no wane, shall be free from through or round shakes, or knots exceeding 1½ inches in diameter, or more than 6 in a board; sap no objection.

Boards shall show no wane, shall be free from round or through shakes, large or unsound knots; sap no objection.

Scantling shall be free from injurious shakes, unsound knots or knots to impair strength; sap no objection.

Plank shall be free from unsound knots, wane, through or round shakes; sap no objection.

Dimension Sizes.—Sap no objection; no wane edges, no shakes to show on outside of stick.

All Stock to be well and truly manufactured, full to sizes and saw butted.

MERCHANTABLE INSPECTION.

Flooring shall show one heart face, regardless of sap on opposite side, free from through or round shakes or knots exceeding 1 inch in diameter, or more than four in a board on the face side.

Boards 9 inches and under wide shall show one heart face and two-thirds heart on opposite side; over 9 inches wide shall show two-thirds heart on both sides, all free from round or through shakes, large or unsound knots.

Scantling shall show three corners heart, free from injurious shakes or unsound knots.

Plank 9 inches and under wide shall show one heart face and two-thirds heart face on opposite side; over 9 inches wide shall show two-thirds heart on both sides, all free from round or through shakes, large or unsound knots.

Dimension Sizes.—All square lumber shall show two-thirds heart on two sides, and not less than one-half heart on two other sides. Other sizes shall show two-thirds heart on faces, and show heart two-thirds of the length on edges, excepting where the width exceeds the thickness by 3 inches or over, then it shall show heart on the edges for one-half the length.

Stepping shall show three corners heart, free from shakes and all knots exceeding half an inch in diameter, and not more than six in a board.

Rough Edge or Flich shall be sawed from good heart timber, and shall be measured in the middle, on the narrow face, free from injurious shakes or unsound knots.

All Stock to be well and truly manufactured, full to sizes and saw butted.

PRIME INSPECTION.

Flooring shall show one entire heart face and two-thirds heart on the opposite side, clear of splits, shakes or knots exceeding 1 inch in diameter, or more than four in a board.

Boards shall show one heart face, and two-thirds heart on opposite side, free from shakes or large and unsound knots.

Scantling shall show three corners heart, and not to exceed 1 inch of sap on fourth corner, measured diagonally, free from heart shakes, large or unsound knots.

Plank shall show one entire heart face; on opposite face not exceeding one-sixth its width of sap on each corner, free from unsound knots, through or round shakes; sap to be measured on face.

Dimension Size.—On all square sizes the sap on each corner shall not exceed one-sixth the width of the face. When the width does not exceed the thickness by 3 inches, to show half heart on narrow faces the entire length; exceeding 3 inches, to show heart on narrow faces the entire length; sap on wide faces to be measured as on square sizes.

Rough Edge or Fitch shall be measured in the middle on narrow face, inside of sap, free from shakes or unsound knots.

CLEAR INSPECTION.

Flooring, Stepping and Boards shall be free from knots, sap, pitch and all other defects.

Scantling shall be free of sap, large knots and other defects,

Plank shall be free of sap, large knots and other defects.

Dimension Sizes shall be free from sap, large or unsound knots, shakes through or round.

DESIGNATIONS OF THE TRADE.

Re-sawed Lumber—Lumber sawn on four sides.

Rough Edge or Fitch—Lumber sawn on two sides.

Timber—Hewn only.

WESTERN INSPECTION.

DRESSED AND MATCHED FLOORING.

No. 1.—Well and truly manufactured; free of knots, shakes and blue sap; may contain all bright sap; no per cent of heart or rift guaranteed.

Standard.—Well manufactured; can contain not over three knots 1 inch and under in diameter, and three small abraded surface spots not over 1 inch in diameter to a piece; can contain all bright sap; free of shakes and bark edges on face.

Common.—Well manufactured; knots no objection; not over four abraded places to a piece. No objection to blue sap; free of shakes and bark edges that will show when laid.

Culls shall embrace all not included in other grades; must be fairly worked so as to lay without showing cracks or knot holes.

Flooring shall be 1 inch and $1\frac{1}{4}$ inches thick by $3\frac{1}{2}$, 4, $4\frac{1}{2}$ and 5 inches rough, and 12, 14 and 16 feet long. It shall finish when dressed $\frac{1}{8}$ inch under thickness and $\frac{1}{2}$ inch less than width.

CEILING.

Ceiling shall be classed as Flooring, and shall consist of $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$ and $\frac{7}{8}$ inches thick, and same widths as Flooring when worked, and shall measure 1 inch thick by $\frac{1}{2}$ inch over face. Rough Flooring and Ceiling Strips shall be classed as D. & M. Flooring, and embrace same thickness, width and length.

FINISHING LUMBER

Shall embrace all sizes from 1 to 2 inches thick by 6 inches and up wide, and 12, 14 and 16 feet long, classed as follows:

No. 1.—One face free of knots, shakes and blue sap; bright sap no objection; kiln checks no objection.

Standard.—Sound, square edge; each piece may contain three sound knots 1 inch and under in diameter; must be free of shakes; kiln checks no objection; must be bright sap.

Common.—Sound, square edge on face side, free from unsound knots and through shakes; each piece may con-

tain three black knots 1 inch and under in diameter; kiln checks no objection; blue sap no objection.

Any grades not included in Georgia Saw Mill Association rules shall be subject to special contract in writing between purchaser and seller, and when accepted by seller shall be inspected by sworn inspector, according to the terms of the contract.

Estimated weights of lumber endorsed by the Georgia Saw Mill Association, June 24, 1890:

	lbs. per 1,000 ft.
1/2 inch Ceiling and Weather Boards.....	1,300
5/8 " "	1,600
3/4 " "	2,000
7/8 " Flooring and Ceiling.....	2,500
1 " Dry Boards, dressed one side.....	2,800
1 " " " two sides.....	2,600
1 " " " rough.....	3,000
1 1/4, 1 1/2, 1 3/4 and 2 in. Dry D, dressed one side.....	3,200
" " " " " two sides.....	3,000
" " " " " rough.....	3,500
All other Dry Lumber, rough.....	3,500
All Green Lumber, rough.....	4,500
Laths, Green.....	530 pounds to 1,000
Shingles, Green.....	350 " "
Laths, Dry.....	450 " "
Shingles, Dry.....	300 " "

Classification of Cypress Lumber endorsed by the Georgia Saw Mill Association:

All Cypress Lumber will be classified according to the specifications indicated below, as Choice, Prime, Merchantable, Narrow, Box Stuff and Cullings.

It will be sawed 1-16 of an inch more than the thickness indicated, to allow for shrinkage and loss in becoming seasoned and in dressing.

The length of Choice, Prime and Merchantable will run from 10 feet and upward, and the width from 7 inches and upwards, unless otherwise specified.

Choice will be free of sap and perfectly clear of all defects.

Prime.—Square edged, sound, one heart face, the other face two-thirds heart. Choice and Prime are sold together, there being no defects in either grade, except the little sap allowed on the Prime.

Merchantable.—Square edged, one face three-fourths heart, and show heart on other face.

Narrow or Clear Sidings or Tank Stuff will run

from 4 to 6 inches inclusive, and will be sound, square edged and free from sap or other defects.

Sidings will be 1 full inch thickness and any width that may be made, regardless of sap.

Cullings.—Any Cypress not admissible to the above classes will be sold according to its merits.

PENSACOLA INSPECTION.

Classification of Pitch Pine Re-sawn Lumber, Sawed and Hewn Timber, Adopted by the Pensacola Lumber and Timber Exchange.

DEALS.

Classes.—Prime, Standard Rio, Merchantable and Stowage.

Sizes.—3 inches to 6x9 inches and up.

Prime must be square edge, one heart face, two-thirds heart surface on other face; to show heart the entire length, free from injurious shakes and through splits, and knots exceeding 2 inches in diameter.

Standard Rio must be square edge, one heart face, two-thirds heart surface on other face; to show heart the entire length, free from injurious shakes and through splits. Lengths, 14 feet and up.

Merchantable must be square edge, one heart face, and show heart on other face, free from through shakes and through splits.

Stowage must be square edge, free from through shakes and through splits.

SCANTLING.

Classes.—Prime and Merchantable.

Sizes.—2 inches to 9 $\frac{3}{4}$ inches by 2 inches and up, except sizes included under Deals and Plank; provided, that Deals 4 $\frac{1}{2}$ inches and up thick, when included in bills of Scantling or Dimension Stuff, may be inspected as Scantling.

Prime must be one face all heart, one face all heart two-thirds of the length, the other third of that face

two-thirds heart at every point, and one other face to show heart, free from through splits and through shakes and injurious knots; provided, that sizes 7 inches and up by 7 inches and up, instead of heart as above stated, may have two-thirds heart surface on each face, showing heart the entire length.

Merchantable must be square edge, show heart on two faces the entire length, free from through shakes and through splits.

DIMENSION STUFF.

Classes.—Prime and Merchantable.

Sizes.—10 inches and up by 10 inches and up.

Prime must be square edge, two-thirds heart surface on each face, showing heart the entire length, free from injurious shakes and through splits.

Merchantable must show heart on each face; may show wane on two corners not exceeding 15 inches long to each 12 feet in length, 1 inch wide on 10x10, and wider in proportion on larger sizes, free from injurious shakes and through splits.

PLANK AND BOARDS.

Classes.—Stepping, Prime and Merchantable.

Sizes.—1 inch to $2\frac{3}{4}$ inches by 7 inches and up.

Stepping must be square edge, one heart face, the other face two-thirds heart surface; to show heart the entire length; provided, that where one edge is sap the edge at the opposite point must be heart; to be entirely free from shakes and splits, not to have more than two knots $\frac{1}{2}$ inch in diameter, or one knot $\frac{3}{4}$ of an inch in diameter, to each 12 feet in length; provided, that 50 per cent shall be clear of knots.

Prime must be square edge, one heart face, two-thirds heart surface on other face; to show heart the entire length, free from through shakes and through splits, not to have more than two knots $1\frac{1}{4}$ inches in diameter in sizes under $1\frac{1}{2}$ inches thick, or two knots $1\frac{1}{2}$ inches in diameter in sizes $1\frac{1}{2}$ inches and up thick, to each 12 feet in length.

Merchantable must be square edge, one heart face, and show heart on other face, free from through shakes and through splits; provided, that sizes 11 inches and

up wide may show sap on one edge of best face not exceeding $1\frac{1}{2}$ inches wide at any one place.

FLOORING.

Classes.—Boston, Prime and Merchantable.

Sizes.—1 inch, $1\frac{1}{4}$ inches and $1\frac{1}{2}$ inches by 3 inches to 6 inches.

Boston must be square edge, all heart, with exception of small streaks of sap on one side not exceeding 2 inches wide at any one point, free from shakes and splits, not to have more than two knots $\frac{1}{2}$ inch in diameter, or one knot $\frac{3}{4}$ of an inch in diameter, to each 12 feet in length; provided, that 70 per cent shall be clear of knots.

Prime must be square edge, one heart face, and show heart the entire length on other face, free from splits and shakes, not to have more than two knots $\frac{3}{4}$ of an inch in diameter, or one knot 1 inch in diameter, to each 12 feet in length.

Merchantable must be square edge, one heart face, with exception of $\frac{1}{2}$ inch sap on one edge of best face, free from splits and through shakes and knots exceeding $1\frac{1}{4}$ inches in diameter.

SIDINGS.

Classes.—Prime, Merchantable and Sap.

Sizes.—1 inch and $1\frac{1}{4}$ inches by 3 inches and up, 3 inches to 6 inches wide being designated as Narrow, and 7 inches and up as Wide.

Prime must be square edge, one heart face, and same allowance for knots as Merchantable, free from splits and through shakes.

Merchantable must be square edge; sap shall be allowed on best face regardless of sap on other face, as follows: In Narrow Sidings, $\frac{1}{2}$ inch sap shall be allowed on one edge of best face, and in Wide Sidings $\frac{1}{2}$ inch sap on each edge of best face, free from through shakes and through splits, with following allowance for knots: In Narrow Sidings two knots 1 inch in diameter, or three knots $\frac{1}{2}$ inch in diameter, to each 12 feet in length, and in Wide Sidings two knots $1\frac{1}{8}$ inches in diameter, or three knots $\frac{3}{4}$ of an inch in diameter, to each 12 feet in length; provided, that 60 per cent shall be clear of knots.

Sap must be square edge, free from through shakes

and through splits, and same allowance for knots as Merchantable.

All lumber must be sound, evenly sawn, square butted with saw, free from unsound, loose and hollow knots. The limitation as to size and number of knots refers to the best face. The distribution of knots need not be proportionate, i.e., two knots to each 12 feet means that a piece 24 feet long may have four knots anywhere in the piece, and not two knots to each separate 12 feet.

The allowance for knots in Flooring, Plank and Boards is for the narrowest width of each division. The number may be increased in proportion to the width. In Stepping, Flooring and Sidings, sound knots one-fourth the diameter of the maximum knot, and in Prime Plank and Boards, one-half the diameter of the maximum knot, shall not be considered. In measurement of knots the average diameter must be taken. Unless otherwise specified, lumber shall be 12 feet and up long. The term Re-sawn Lumber shall include all of the sizes above mentioned. The general distinction between Sawn Timber and Dimension Stuff is that Dimension Stuff is generally bought and sold by the thousand superficial feet, and is usually a part of a schedule including several other kinds of Re-sawn Lumber. Sawn Timber generally is bought and sold by the cubic foot, the price being based on the cubic average, and is generally shipped in cargo lots or as a part of a cargo of Hewn Timber or Deals.

SAWN TIMBER.

Classes.—"A." and "B."

Class "A." must be sound, square butted with saw, square edge and well made, free from injurious shakes and unsound knots, showing heart the entire length on two faces, and showing heart on the other two faces.

Class "B." must be sound, square butted with saw, and well made, free from injurious shakes and unsound knots, showing heart on each face; may have slight places of wane not exceeding 1 inch across in the widest place by not exceeding one-third the length of the piece in the aggregate, and not exceeding 2 inches across in the widest place by not exceeding 3 feet in length, and the total number of such places of wane not to exceed one, as above mentioned, on any one corner.

HEWN TIMBER.

Classes.—"A. 2.," "B. 1. Good" and "B. 1."

"A 2." must be sound, straight, well manufactured, free from unsound knots and injurious shakes; to show heart the entire length on all sides; may taper 1 inch to 20 feet in length, and may show places of wane $1\frac{1}{2}$ inches in width and not to exceed 6 feet in length at top end.

"B 1. Good" may have 1 inch sweep to each 20 feet in length, one way only, on not exceeding 15 per cent of the number of pieces in any one raft; must be sound, well manufactured, free from unsound knots and injurious shakes; to show heart on two sides the entire length, and on other two sides $\frac{2}{3}$ of the length; may taper 1 inch to 20 feet in length, and may show places of wane 2 inches in width, and not to exceed 10 feet in length at top end.

"B 1." may have 1 inch sweep or crook to each 10 feet in length, one way only, on not exceeding 15 per cent as above; must be sound, well manufactured, free from unsound knots and injurious shakes; to show one-half heart on all sides; may taper $1\frac{1}{2}$ inches to 20 feet in length, and may show places of wane 2 inches in width and 2 feet long at one place, provided wane at the top end shall be allowed 8 feet in length.

All timber to be square butted and free from splinter draws.

MOBILE SAWED CYPRESS SHINGLE INSPECTION.

Authorized by the Mobile, Ala., Shingle Exchange.

Best, or No. 1.—A Dimension Shingle, each width separately bunched, 16 inches long, $\frac{3}{8}$ -inch thick at butt, all heart, free of shakes, knots or other defects.

Prime, or No. 2.—A Dimension Shingle, each width separately bunched, 16 inches long, $\frac{3}{8}$ -inch thick at butt,

admitting tight knots and sap, free of shakes and other defects.

Clipper shall admit of anything worth packing not in above brands.

Measurement taken on green shingles, some slight shrinkage in seasoning.

All shingles are sold by measurement, i. e., every 4 inches in width counting as one shingle, and four bundles to the 1,000.

MOBILE CYPRESS LOG MEASUREMENT.

Adopted by the Mobile, Ala., Shingle Exchange, April 9, 1890.

1. All logs 30 feet and over in length, the diameter to be taken in the middle.
2. All logs less than 30 feet in length, to be measured at the top or blossom end.
3. Where logs are cut up in the limbs, the length is to be taken from where the limbs begin; and if the log is 30 feet or more in length from this point, the diameter is to be taken half-way from this point to the butt; but if the log is under 30 feet, the diameter to be taken where the limbs begin.
4. If any defects are found in the top or blossom end of a log that has been cut up in the limbs, the deduction for same shall be taken from the length of the log as obtained by rule 3.
5. For all logs 32 feet or longer, with a peck 6 inches or more, or with a hollow 6 inches or more in diameter, deductions to be made as follows: For logs with defect at one end, 16 feet; for logs with defects at both ends, one-half of length.
6. For logs under 32 feet, deduct one-half of length for defect at one or both ends.
7. A deduction of 2 inches to be made from the dia-

meter of all logs, whether they have bark on them or not.

8. Logs wormed, rotten or sap-damaged from any other cause, a deduction of 5 inches to be made from the diameter, whether the log has bark or not.

Logs without 8 inches of sound timber at either end, to be condemned.

10. Small logs with defects, however small, must have 6 inches of sound timber around the defect; otherwise, deductions must be made as provided for in rule 5.

11. Old logs with sun cracks, deduction from diameter to be made according to the judgment of the Inspector, but in no case less than 5 inches.

CYPRESS LUMBER CLASSIFICATION.

Used by the Cypress Mills at Mobile and Stockton, Ala.

All Cypress Lumber will be classified according to the specifications indicated below, as Choice, Prime, Merchantable, Narrow, Sidings and Cullings.

It will be sawed one-sixteenth of an inch more than the thickness indicated, to allow for shrinkage and loss in becoming seasoned and in dressing.

The length of Choice, Prime and Merchantable will run from 10 feet and upward, and the width from 8 inches and upward, unless otherwise specified.

Choice will be free of sap and perfectly clear of all defects.

Prime.—Square edged, sound, one heart face, the other face two-thirds heart. Choice and Prime are sold together, there being no defects in either grade except the little sap allowed on the Prime.

Merchantable.—Square edged, one face three-fourths heart, and show heart on other face.

Narrow will run from 4 to 7 inches inclusive, and

will be sound, square-edged and free from sap or other defects.

Sidings will be 1 full inch thickness and any width that may be made, regardless of sap.

Cullings.—Any Cypress not admissible to the above classes will be sold according to its merits.

NORTHWESTERN HARDWOOD INSPECTION.

Adopted by the Northwestern Hardwood Lumberman's Association for the St. Paul, Minneapolis, Minnesota, and Wisconsin Markets.

INSTRUCTIONS TO INSPECTORS.

Inspectors must measure lumber as they find it except as to waness and bad ends, which must be measured out.

In hardwood inspection the inspector is instructed to use his best judgment, based upon the general rules for his guidance.

The Standard Knot shall not exceed $1\frac{1}{4}$ inches in diameter, and must be of a sound character.

Splits are not to exceed one-fifth the length of the piece in seconds.

Standard Lengths shall be 10, 12, 14, 16, 18 and 20 feet, but not more than ten per cent of 10-foot lumber shall be admissible in any lot.

Standard Thickness shall be 1, $1\frac{1}{4}$, $1\frac{1}{2}$, 2, $2\frac{1}{4}$, 3, $3\frac{1}{2}$ and 4 inches.

All lumber should be sawed plump thickness. Thin lumber is not considered marketable, and must be reduced to the next standard thickness, or at least one grade lower on account of thinness.

A shipping cull shall be deemed to be a cull which shall cut at least fifty per cent clear lumber, either from one or both edges, and not less than 3 inches in width; or if the blemishes are in the length, then fifty per cent of the piece must be clear lumber of full width and in pieces not less than $2\frac{1}{2}$ feet in length. The rule is not to apply to

Basswood and Elm. Basswood and Elm in this grade must cut fifty per cent sound.

A Cull which will not work one-half of its size without waste is a Mill Cull of no recognized value.

Badly sawed, mis-sawed and uneven lumber, shall be reduced in grade sufficiently to equalize the loss from the defective sawing.

Lumber sawed for specific purposes, such as Axles, Bolsters, Tongues, Reaches, Newels, Balusters, Squares, etc., must be inspected with a view to the adaptability of the piece for the intended use, as in many cases it cannot be used for other purposes.

In inspecting the grade of Firsts and Seconds an undue predominance of Seconds should always be judiciously ascertained, as the purchaser is entitled to the full average in grades, which must not comprise more than $66\frac{2}{3}$ per cent of Seconds.

Mixed Lots, containing boards, planks, flooring, bolsters, reaches, etc., shall be measured and inspected according to the rules governing the measurement and inspection of boards and planks, unless otherwise agreed between buyer and seller.

Hickory should never be cut when the sap is rising, as it is then liable to powder-post, and indications of deteriorations of this character should be carefully scrutinized.

Newels from all kinds of timber must be clean and free from heart, to square 5, 6, 7, 8, 9 and 10 inches plump. The lengths must be 4 feet full, or the multiples thereof.

Balusters and Table Legs should be clear and square 2x2, 2½x2½, 3x3 and 4x4, 24 to 32 inches long, as contracted for.

Newels, Balusters and Table Legs not coming up to the grade of clear shall be classed as Cull.

Counter Tops shall be 12 feet and over long, 1, 1¼, 1½ inches thick, and must be strictly clear, not less than 20 inches wide.

Bolsters must be 4 feet, 4 feet 6 inches, or multiples thereof in length and the size must be 3x4, 3½x4½, 3½x5, or 4x5 inches.

Reaches must be 2x4 or 2½x4½ inches, and the lengths 8, 10, 12 and 16 feet.

Harrow Timber must be $2\frac{1}{2} \times 2\frac{1}{2}$ inches, and the lengths 5, 10 and 14 feet.

Hickory Axles must be clear and in lengths of 6 or 12 feet for sizes $3\frac{1}{2} \times 4\frac{1}{2}$, 4×5 , 4×6 and $4\frac{1}{2} \times 6$, and 7 or 14 feet for 5×6 and 5×7 on special order, cut from sound, tough butt logs.

Wagon Tongues must be clear and straight, 2×4 at small end and 4×4 at the butt end, or $2\frac{1}{2} \times 4\frac{1}{4}$ at small end and $4\frac{1}{2} \times 4\frac{1}{2}$ at butt end, 12 feet long, from straight-grained timber.

Bolsters, Reaches, Harrow Timber, Hickory Axles and Wagon Tongues not up to the grade of Clear will be classed as Cull.

It is important that all lumber should be parallel in width, square edged and with square ends. Tapering lumber shall be measured at small end. Ordinary season checks are not considered defects.

Squares shall be 4×4 , 5×5 , 6×6 , 7×7 and 8×8 inches.

Stain, pecks, hearts, shakes, rot, worm-holes, etc., are considered serious defects, reducing the lumber to grades lower than first and seconds.

Log run is always understood to be the unpicked run of the logs—mill culls out.

RED AND WHITE OAK, ASH, BASSWOOD, BIRCH, MAPLE, ELM
AND BUTTERNUT.

Firsts shall be eight inches wide and over, free from defects of every kind or nature.

Seconds must be 6 inches wide and over, but clear to 8 inches; defects may be allowed equivalent to one standard knot, and at 10 inches two knots and an allowance of more defects may be made in proportion to increased widths.

Common shall include 5 inches and over wide. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Thick plank may contain sound hearts if well boxed.

Any board below the grade of common shall be a cull; and a shipping cull shall work at least 50 per cent without waste.

Mill Culls shall consist of bad heart pieces, wormy or generally unsound lumber that will not work 50 per cent without waste.

First and Second Flooring Strips shall be 3, 4 and 6 inches wide, 1 inch thick. First shall have one side and two edges clear. Seconds will admit of one standard knot or a defect equivalent to same, not to exceed a waste of ten per cent of the whole piece.

Common Flooring must work sound at least 75 per cent. of its length.

Common and better shall be construed to mean the run of the Logs, Culls and Mill Culls out, and in Red Oak shall contain at least 65 per cent of firsts and seconds and not over 35 per cent of commons; and in White Oak, Ash, Basswood, Birch, Maple and Elm not less than 50 per cent. of firsts and seconds, and not over 50 per cent. of common.

Selected Red Birch shall run as follows: No board less than two-thirds red on its face or heart side.

POPLAR AND WHITEWOOD.

The inspection grades shall consist of First and Seconds Common and Culls.

Firsts and Seconds must not be less than 8 inches in width, and clear up to 10 inches. Boards or plank 10 to 12 inches wide may have two standard knots, but no other defects; or may have bright sap not over 3 inches in width at any place or in the aggregate, and no other other defects. Boards and plank over 14 inches wide may have two standard knots and 4 inches of bright sap. Boards and plank free of other defects may be one-half bright sap, if over 12 inches wide.

Common shall include any width not less than 6 inches, and will allow of bright or discolored sap and knots beyond those described in firsts and seconds. Two unsound standard knots will be allowed in this grade, if over 12 inches wide, and splits shall not be considered a defect. Otherwise lumber must be sound.

Culls shall comprise all widths and sizes having more defects than described in common, whether in the number or character of the knots, badly checked, and generally such lumber as is unfit for ordinary purposes.

Box Boards shall be 12, 14 and 16 feet long, from 13 to 17 inches wide, free from all defects, except may be one-half bright sap.

Poplar Strips may be full 6 inches wide, 1 and 1½ inches thick, 12, 14 and 16 feet long. Sound clear may be one-half bright sap on sap side, and have one sound knot not over ¾ inch in diameter. Common shall embrace all sound strips with more defects than second clear. Culls shall contain all unsound strips that will work to one-half its contents and all tapering strips.

Chair Plank must be sound and free of heart and large knots, and sawed full width and thickness as ordered.

Common Flooring Boards and Strips must be of the same size and general character as firsts and seconds clear, but may have two or three small sound knots of not more than three-fourths of an inch in diameter, or a small wane on one edge which will not injure it for working to its full size.

Step Plank, firsts and seconds clear, must not be less than 10 inches wide and 1, 1¼, 1½ and 2 inches thick; free from all defects on one side, except 2 inches of bright sap.

Wagon Bottoms must be 1 inch full thick, 6, 8, 10 and 12 inches wide, 11 feet long. Must be good, sound lumber, Blue Sap or standard knots, without regard to number, being no objection if knots are not on edge.

Timber and Joists must be square edge and have no defects that will impair the strength of the piece for purposes intended.

HICKORY AND PECAN.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one, and at 10 inches two standard knots or bright sap may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall include 5 inches and over wide. At 6 inches one, and at 8 inches two standard knots may be

allowed. An allowance for more defects of this character may be made in proportion to increased width.

Culls shall comprise all widths and sizes below the description of Common.

BLACK WALNUT.

The inspection grades shall consist of Firsts, Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one inch of sap or one standard knot, and at 10 inches two inches of sap or two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be 5 inches and over wide, and shall include all lumber not up to the grade of firsts and seconds, but available full three-fourths of its size without waste, free from hearts and unsound lumber.

Culls shall comprise all widths and sizes below the description of common.

CHERRY.

The inspection grades shall consist of Firsts and Seconds, Common and Culls.

Firsts and Seconds must be 6 inches wide and over. At 8 inches may have one inch of sap or one standard knot, and at 10 inches two inches of sap or two standard knots. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be 5 inches and over wide and shall include all lumber not up to the grade of firsts and seconds, but available full three-fourths of its size for use, without waste, free from hearts and unsound lumber.

Culls shall comprise all widths and sizes below the description of common.

[NOTE—Gum spots are considered a serious defect, and when the damage exceeds one-sixth of the size of the piece, shall reduce it to the grade of common. When the damage exceeds one-third of the size of the piece, it shall be reduced to cull.]

BEECH AND SYCAMORE.

The inspection grades shall consist of First and Seconds, Common and Cull.

First and Seconds must be 6 inches wide and over. At 8 inches one and at 10 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be sound, 5 inches and over wide, and may have defects not injuring it for ordinary use without waste. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Cull shall comprise all widths and sizes below the description of common.

CHESTNUT.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches may have one inch of sap or one standard knot, and at 10 inches two inches of sap or two standard knots. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be 5 inches and over wide. At 6 inches one inch of sap or one standard knot, and at 8 inches two inches of sap or two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Cull shall comprise all widths and sizes below the description of common.

COTTONWOOD.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one, and at 10 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Bright Sap is no defect.

Common shall include 5 inches and over wide. At 6 inches one, and at 8 inches two standard knots may be allowed. An allowance for more defects of this char-

acter may be made in proportion to increased width. Slightly discolored sap is allowed.

Cull shall comprise all widths and sizes below the description of Common.

In Chair Plank, Cross-Splits and Heart Shakes are the only defects considered.

GUM. •

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one standard knot, and at 10 inches two standard knots and 2 inches of bright sap may be allowed on boards over 14 inches. An allowance for more defects of this character may be made in proportion to increased width.

Common shall include all lumber available for use full three-fourths of its size without waste, free from hearts and unsound lumber. Bright or slightly discolored Sap may be included in this grade.

Cull shall comprise all widths and sizes below the description of Common.

CYPRESS.

Boards and planks shall be in lengths 12, 14 or 16 feet, 1, 1¼, 1½, 2, 2½, 3, 3½ or 4 inches thick, and be classed Firsts and Seconds, Common and Cull.

Firsts and Seconds shall be 8 inches and over wide, and clear up to 10 inches; at 10 inches and over may have two standard knots and three inches of Bright Sap. Free of other defects may be one-half Bright Sap.

Common will contain all sound lumber under Second class and all shaky lumber that is available three-fourths.

Cull shall comprise all unsound lumber that is available one-half.

Shakes and pecks are always a damage in Cypress and should be closely scrutinized.

Strips must be 12, 14 or 16 feet long, 1 inch thick by 6 inches wide, unless otherwise ordered, and be classed as Firsts and Seconds, Common and Culls.

Firsts and Seconds will allow one sound knot ¾ inch in diameter or in place thereof be one-half sap on sap side.

Common will comprise sound pieces below Firsts and Seconds or pieces all sap.

Cull all unsound pieces available one-half.

ROUGH SOUTHERN OR YELLOW PINE.

Inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 8 inches wide and over (except flooring), free from defects except Bright Sap, or two small sound knots not over three-fourths of an inch in diameter.

Common shall include all lumber not up to the grade of Firsts and Seconds, but free from shakes, large knots, or unsound lumber.

Cull shall comprise all widths and sizes below the description of Common.

Firsts and Seconds Clear Flooring boards and strips must be free from all defects except Bright Sap, which is allowable. Blue Sap is excluded.

QUARTER-SAWED HARDWOOD LUMBER—OAK, SYCAMORE, ETC.

The inspection grades shall consists of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 5 inches wide and over. At 7 inches one, and at 9 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be 4 inches and over wide. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Culls shall comprise all widths and sizes below the description of Common.

RED CEDAR.

Red Cedar should be sold log run to be measured for what it can be worked for. Lengths and widths are no defects. Caution should be used in determining defects.

NOTE—Inspectors are authorized to measure and inspect all kinds of hardwood lumber that are not included in these rules, according to the rule governing the inspection of Hard and Soft Maple.

ST. LOUIS INSPECTION.

Rules for Inspection and Measurement of Lumber in the St. Louis Market, Adopted June 28, 1892.

INSTRUCTIONS TO INSPECTORS.

Inspectors of lumber are not manufacturers, and must measure and inspect lumber as they find it, of full length and width (except as to wane, which must be measured out or inspected in a lower grade), making no allowance for the purpose of raising grade unless so instructed by the buyer and seller.

In Hardwood inspection the Inspector is instructed to use his best judgment, based upon the rules for his guidance.

The Standard Knot shall not exceed $1\frac{1}{4}$ inches in diameter, and must be of a sound character.

Splits are always more or less damage to a piece of lumber. An allowance must be made either in determining the quality or quantity, according to the nature of the split. A split extending to exceed 1 foot will reduce it to one grade lower.

All lumber should be sawed plump thickness. Thin lumber is not considered marketable, and must be reduced to the next standard thickness, or at least one grade lower on account of thinness. Miscut lumber must be placed in grade lower than face showing, and badly miscut classed as Cull.

A Cull which will not work one-half its size without waste, is a Mill Cull of no recognized value.

When lumber or timber does not come up to grade or contract, it must be placed in the next lower grade named.

Lumber sawed for specific purposes, such as Axles, Bolsters, Tongues, Reaches, Newels, Balusters, Squares, etc., must be inspected with a view to the adaptability of the piece for the intended use, as in many cases, it can not be used for other purposes.

In inspecting the grade of Firsts and Seconds, an undue preponderance of Seconds should always be judi-

ciously ascertained, as the purchaser is entitled to the full average in grade, which must not comprise more than 66 $\frac{2}{3}$ per cent of Seconds.

Standard Lengths are always recognized as being 12, 14 and 16 feet. Shorter than 12 and longer than 16 feet does not come within the range of Standard. In Black Walnut and Cherry an exception is made, and 10 feet is recognized as a standard length. Shorter or longer than standard lengths in all varieties of Hardwood lumber, except in Counter Tops, are to be reduced one grade lower, unless otherwise agreed between buyer and seller.

Mixed Lots, containing Boards, Planks, Flooring, Bolsters, Reaches, etc., shall be measured and inspected according to the rules governing the measurement and inspection of Boards and Planks, unless otherwise agreed between buyer and seller.

Flooring Strips should be 4 and 6 inches in width, 1 and 1 $\frac{1}{4}$ inches in thickness. Other widths and thickness shall be designated as special sizes. It must have one face and two edges clear.

Common Flooring Strips shall be of the same size and general character as Clear, but may have two small sound knots not exceeding $\frac{3}{4}$ of an inch in diameter, or a small amount of wane on one edge which will not injure it for working to its full size.

Hickory should never be cut while the sap is rising, as it is then liable to powder post, and indications of deterioration of this character should be carefully scrutinized.

Newels from all kinds of timber must be clear and free from heart, to square 5, 6, 7, 8, 9 and 10 inches, plump. The length must be 4 feet, full, or multiples thereof.

Balusters and Table Legs shall be clear and square, 2x2, 2 $\frac{1}{2}$ x2 $\frac{1}{2}$, 3x3, and 4x4, 32 inches long.

Newels, Balusters and Table Legs, not coming up to the grade of Clear, shall be classed as Cull.

Counter Tops shall be 12 feet and over long, 1, 1 $\frac{1}{4}$ and 1 $\frac{1}{2}$ inches thick, and must be strictly clear, not less than 20 inches wide.

Clear Lumber shall be 10 inches wide and over, free from all defects of every kind or nature.

Bolsters must be 4 feet and 4 feet and 6 inches in lengths and the size must be 3x4, 3½x4½, 4x5, 4½x5½ and 5x6 inches.

Reaches must be 2x4, 8, 9 and 10 feet long, or 2¼x 4½ inches, and 12 and 16 feet long.

Harrow Timber must be 2½x2½ inches, and the lengths 5, 10 and 14 feet.

Hickory Axles must be clear, and in lengths of 6 feet and 6 inches, up to and including sizes 4x5, and for sizes 4½x5½, 5x6 and 6x7, must be 6 feet and 6 inches and 7 feet long and cut from sound, tough butt-cut logs.

Wagon Tongues must be clear and straight, 2x4 at small end, and 3½x4 or 4x4 at butt end, 12 feet long, and cut from tough, straight-grained timber.

Bolsters, Reaches, Harrow Timber, Hickory Axles, and Wagon Tongues, not up to the grade of Clear, will be classed as Cull.

Standard Thicknesses shall be 1, 1¼, 1½, 2, 2½, 3 and 4 inches, except poplar, which will allow ½-inch, ⅝-inch and ¾-inch in car lots.

Any lumber sold in this market, otherwise than above grades, shall be sold straight measure, with Mill Culls out.

It is important that all lumber shall be parallel in width, square-edged and with square ends. Tapering lumber should be measured at the small end. Ordinary season checks are not considered defects.

Squares shall be 4x4, 5x5, 6x6, 7x7, 8x8 inches.

Stains, specks, hearts, shakes, rot, worm-holes, etc., are considered serious defects, reducing the lumber to grades lower than Firsts and Seconds.

Log Run is always understood to be the unpicked run of the logs—Mill Culls out.

POPLAR AND WHITEWOOD.

The inspection grades shall consist of Firsts and Seconds, Common and Culls.

Firsts and Seconds must be not less than 8 inches in width, and clear up to 10 inches. Boards or plank over 10 and up to 12 inches wide may have two standard knots, but no other defects, or may have bright sap not over 3 inches in width at any place or in the aggregate, and no other defects. Boards and plank over 14

inches wide may have two standard knots and 4 inches of bright sap. Boards and plank free of other defects may be one-half bright sap, if over 12 inches wide, but must run the full length of the board. And 18 and 20 feet may be allowed in first and second grades.

Common shall include any width not less than 6 inches, and will allow of bright or discolored sap and knots beyond those described in Firsts and Seconds. Two unsound standard knots will be allowed in this grade, if over 12 inches wide, and splits shall not be considered a defect. Otherwise lumber must be sound.

Culls shall comprise all widths and sizes having more defects than described in Common, whether in the number or character of the knots, badly checked, and generally such lumber as is unfit for ordinary purposes.

Box Boards shall be 12, 14 and 16 feet long, from 13 to 17 inches wide, free from all defects, except may be one-half bright sap.

Poplar Strips must be full 6 inches wide, 1 and 1½ inches thick, 12, 14 and 16 feet long. **Clear** shall be free of all defects. **Second Clear** may be one-half bright sap on sap side, and have one sound knot not over ¾ inch diameter. **Common** shall embrace all sound strips with more defects than Second Clear. **Cull** shall contain all unsound strips that will work to one-half its contents, and all tapering strips.

POPLAR SQUARES.

Poplar squares shall be graded as No. 1 and No. 2.

No. 1 Squares.—4x4, 5x5, 6x6 and 7x7 will admit of bright sap or one standard knot; 8x8, 10x10 and 12x12 will admit of two standard knots and bright sap. Standard lengths to be 10, 12, 14 and 16 feet.

No. 2 Squares.—4x4, 5x5, 6x6 and 7x7 will admit of two standard knots and sound stained sap; 8x8, 10x10, and 12x12 will admit of standard knots and stained sap. Small season checks, and splits not to exceed 12 inches in length, allowed if there are no other defects. Lengths in this grade may be 8, 9, 10, 12, 14 and 16 feet.

All squares below the grade of No. 2, that will work 8 feet or over, without waste, shall be graded as Culls.

All below this grade shall be classed as Mill Culls.

Chair Plank must be sound and free of heart and large knots, and sawed full width and thickness as ordered.

OAK.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one, and at 10 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall include 5 inches and over wide. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Thick plank may contain sound hearts, if well boxed. Heart shakes, rot, dote or worm holes not admissible.

Cull shall comprise all widths and sizes below the description of common.

Wagon Stock must be cut from good, sound, tough, straight-grained timber, free from knots.

Timbers must be free from unsound knots. Sound hearts, not showing on the outside, will be allowed.

ASH.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds shall include 12, 14 and 16 feet, and must be 6 inches wide and over; 18 feet or longer shall be 5 inches wide and up. At 8 inches one and at 10 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Bright sap is no defect.

Common shall include 5 inches and over wide. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Heart shakes, rot, dote or worm holes not admissible.

Cull shall comprise all widths and sizes below the description of common.

HICKORY AND PECAN.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one and at 10 inches two standard knots. An allowance for more defects of this character may be made in proportion to increased width. Bright sap is no defect.

Common shall include 5 inches and over wide. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Heart shakes, rot, dote or worm holes not admissible.

Cull shall comprise all widths and sizes below the description of Common.

BLACK WALNUT.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches 1 inch of sap or one standard knot and at 10 inches 2 inches of sap or two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be 5 inches and over wide, and shall include all lumber not up to the grade of Firsts and Seconds, but available full three-fourths of its size without waste, free from hearts and unsound lumber. Heart shakes, rot, dote or worm holes not admissible.

Cull shall comprise all widths and sizes below the description of Common.

CHERRY

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches may have 1 inch of sap or one standard knot, and at 10 inches 2 inches of sap or two standard

knots. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be 5 inches and over wide, and shall include lumber not up to the grade of Firsts and Seconds, but available full three-fourths of its size for use without waste, free from hearts and unsound lumber.

Cull shall comprise all widths and sizes below the description of Common.

NOTE.—Gum spots are considered a serious defect, and when their damage exceeds one-sixth of the size of the piece, shall reduce the grade to common. When their damage exceeds one-third the size of the piece, it shall be reduced to Cull.

BUTTERNUT AND CHESTNUT.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches may have 1 inch of sap or one standard knot, and at 10 inches 2 inches of sap or two standard knots. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be 5 inches and over wide. At 6 inches 1 inch of sap or one standard knot, and at 8 inches 2 inches of sap or two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Heart shakes, rot, dote or worm holes not admissible.

Cull shall comprise all widths and sizes below the description of Common.

GUM.

The inspection grades shall consist of First and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one standard knot, and at 10 inches two standard knots, and 2 inches of bright sap may be allowed on boards over 14 inches. An allowance for more defects of this character may be made in proportion to increased width.

Common shall include all lumber available for use full

three-fourths of its size without waste, free from hearts and unsound lumber. Bright or slightly discolored sap may be included in this grade.

Cull shall comprise all widths and sizes below the description of Common.

HARD AND SOFT MAPLE.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must 6 inches wide and over (except flooring). At 8 inches one and at 10 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be sound, 5 inches and over in width, and may have defects not injuring it for ordinary use without waste. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Heart shakes, rot, dote and worm holes not admissible.

Cull shall comprise all widths and sizes below the description of Common.

BASSWOOD AND COTTONWOOD.

The standard rules governing poplar are applicable to Basswood and Cottonwood, excepting that bright sap shall be considered no defect and thin stuff does not apply.

In chair plank, cross splits and heart shakes are the only defects considered.

BIRCH.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one and at 10 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Bright sap is not a defect.

Common shall be sound, 5 inches and over in width

and may have defects not injuring it for ordinary use without waste. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Cull shall comprise all widths and sizes below the description of Common.

BEECH AND SYCAMORE.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one and at 10 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be sound, 5 inches and over wide, and may have defects not injuring it for ordinary use without waste. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Cull shall comprise all widths and sizes below the description of Common.

ELM.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one and at 10 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Bright sap is not a defect.

Common shall include 5 inches and over wide. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Cull shall comprise all widths and sizes below the description of Common.

QUARTER-SAWED HARDWOOD LUMBER—OAK, SYCAMORE, ETC.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one and at 12 inches two standard knots will be allowed and more in proportion to increased width. Ten per cent of 10 feet lengths may be allowed in this grade.

Common shall be 3 inches and over wide. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Cull shall comprise all widths and sizes below the description of Common.

CYPRESS.

Boards and planks shall be in lengths of 12, 14 or 16 feet, 1, 1¼, 1½, 2, 2½, 3, 3½, or 4 inches thick, and be classed as Firsts and Seconds, Common and Cull.

Firsts and Seconds shall be 8 inches and over wide, and clear up to 10 inches; over 10 inches in width may have two standard knots and 3 inches of bright sap. An allowance for more defects of this character may be made in proportion to increased width. Free of other defects, may be one-half bright sap; 18 feet and over allowed in this grade.

Common will contain all sound lumber under second-class, and all shaky lumber that is available, three-fourths.

Cull shall comprise all unsound lumber that is available one-half.

Shakes and pecks are always a damage in Cypress and should be closely scrutinized.

Strips must be 12, 14 or 16 feet long, 1 inch thick by 6 inches wide, unless otherwise ordered, and be classed as Firsts and Seconds, Common and Cull. **Firsts and Seconds** will allow one sound knot ¾ inch in diameter, or in place thereof be one-half sap on sap side. **Common** will comprise sound pieces below Firsts and Seconds, or pieces all sap. **Cull**, all unsound pieces available one-half.

ROUGH SOUTHERN OR YELLOW PINE.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 8 inches wide and over

(except flooring), free from defects, except bright sap or two small sound knots not over three-fourths of an inch in diameter.

Plank 2½, 3, 3½ and 4 inch for finish purposes may have one or two standard knots in wide plank, 12 inch and over, but otherwise clear excepting bright sap and small season checks. Two inch and over plank shall be inspected same as other lumber.

Common shall include all lumber not up to the grade of Firsts and Seconds, but free from shakes, large knots, or unsound lumber.

Cull shall comprise all widths and sizes below the description of Common.

Firsts and Seconds Clear Flooring boards and strips must be free from all defects except bright sap, which is allowable. Blue sap is excluded. **Common Flooring Boards** and strips must be of the same size and general character as Firsts and Seconds Clear, but may have two or three small knots of not more than three-fourths of an inch in diameter, or a small wane on one edge which will not injure it from working to its full size.

Step Plank, Firsts and Seconds Clear, must not be less than 10 inches wide and 1, 1¼, 1½ and 2 inches thick; free from all defects on one side, except 2 inches of bright sap.

Wagon Bottoms must be 1 inch full thick, 6, 8, 10 and 12 inches wide, 11 feet long. Must be good, sound lumber, blue sap or standard knots, without regard to number, being no objection if knots are not on edge.

Timber and Joists must be square edge and have no defects that will impair the strength of the piece for purpose intended.

RED CEDAR.

Red Cedar should be sold log-run, to be measured for what it can be worked for. Lengths and widths are no defects. Caution should be used in determining defects.

NOTE.—Inspectors are authorized to measure and inspect all kinds of hardwood lumber, that are not included in these rules, according to the rules governing the inspection of hard and soft maple.

NEW ORLEANS INSPEC- TION.

Classification and Measurements of Logs, Building Materials, Furniture Timber and Hardwoods, as Adopted by the Mechanics', Dealers' and Lumbermen's Exchange, of New Orleans, La., Aug, 11, 1888.

LOGS AND TIMBER.

RULES OF MEASUREMENT.

The following rules are to govern in all cases, when agreements have not been made otherwise, and in all such cases written instructions must be given to Inspectors.

Round Logs, in or out of the water, to be measured with hooks, which shall not be less than 2 and no more than 3 inches crook. The sticks or iron handles of hooks to be distinctly marked and painted in inches on two sides. The measurement shall be as follows: Length of logs measured to square butt of log, fractions of a foot not to be allowed. If with pins at the ends, length to be measured inside of one of the pins, allowing the other, if so placed as to be not further than 1 foot from the end. Diameters to be taken at small end and inside the bark; no fractional part of an inch to be allowed. Contents to be calculated by what is generally termed the two-thirds rule.

The above rule of measurement shall govern the following named timber: Ash, Cottonwood, Cypress, Pine, Poplar, Oak and Walnut.

Square and Waney Logs, in or out of the water, to be measured with callipers at the middle of the logs, allowing for saw kerf of 2 inches on two sides of logs, and if waney an additional reduction proportional to wane. Lengths of logs, if without pins, to be taken to the square butt; if with pins or pin holes, length to be measured inside of same when placed at 6 inches from

ends; fractions of feet not to be counted. Full allowance shall be made and deducted from measurement of timber for extra pins, bad knots, crooks or any other faults.

Certificates of inspection to call only for the net measurement, but tally books of Inspectors to show the allowances made for reference when necessary.

Domestic Sawn Timber shall be measured out of the water; fractions of feet or inches not to be allowed in taking lengths and full contents without deductions to be given in certificates of inspection. All questions in regard to pins, wane or other faults to be determined and regulated by the class of timber inspected according to adopted rule and standard.

Cabinet and Furniture Timber, whether foreign or domestic, shall be measured by special rule given hereafter when speaking of their different kinds.

Fitch of all kinds to be measured at the narrowest place and inside the sap.

Logs for Export of domestic timber losing one-half of their measurement for faults, shall be rejected from cargoes, and cannot, under any circumstances, be branded as inspected, even when admitted by private agreement.

String Measurement.—Girt the log, and one-quarter of said girt shall be considered to be one-fourth of its inscribed square, to be multiplied by itself and by the length, and divided as usual when working contents of square logs. All timber measured string measurement shall be reckoned in cubic feet. Fractions of feet in length will not be allowed. Deduction for defects in timber shall be made from lengths, and if necessary in fractions of feet. Certificates of string measurement shall only give the net measurement of logs, but Inspector's tally book shall show deductions made for faults.

Octagon Logs, or logs having more than four faces, shall be measured at small end by string measurement rules.

Freight Measurement.—Straight timber, whether square or octagon, shall be measured at extreme length and with callipers where their sides are larger; the same if crooked, lines to be drawn from crook to extreme lengths, being the chord of the arch of crooks or bents,

thus shaping it to a perfect square log. Round logs shall be measured for freight by string measurement rule, girting the log at its largest circumference.

All cargo lots shall comprise the classifications hereafter made, and all that are not within said classification are to be called Rejected, and cannot be branded as inspected, although by special contract it may be accepted by the purchaser.

CLASSIFICATION OF ROUND LOGS.

Cypress.—In round logs, when pecky at one end, 10 feet of the length of each log so conditioned shall be deducted as compensation for such faults, and if pecky at both ends another 10 feet in length shall be deducted. Lengths of less than 10 feet shall not be accepted as a log.

Poplar and Cottonwood, in round logs, must measure 26 inches diameter inside of the bark and 12 feet in length to be received at inspection. No smaller sizes shall be received when inspected, unless by special agreement, and will and must remain unclassified.

Black Walnut.—None shall be received as merchantable having less than 20 inches diameter inside of the bark, and less than 10 feet in length. Smaller dimensions may be accepted by special agreement, but will and must remain unclassified.

Cherry and Maple, to be received as merchantable, must not be less than 10 feet long and 19 inches in diameter inside of the bark, though other dimensions may be received when measuring by private agreement.

White Oak, to be accepted as merchantable, must not be less than 21 inches in diameter inside of the bark and 20 feet in length. Smaller dimensions are not entitled to be classed, but may be received by private contracts.

Ash, to be accepted as merchantable, if intended for sawing and manufacturing purposes, must not be less than 20 feet in length and 20 inches in diameter, though if for other purposes smaller timber may be accepted by private contract, but must not be classed.

INSPECTORS' RULES.

Cargo Lots of domestic timber or lumber must aver-

age the medium grade or classification of their different kinds, unless differently agreed upon by private contract. Inspectors must have complete and full discretion when allowing for faults, exercising said discretion to the best of their knowledge and experience. In case of a doubt in the Inspector's mind, he must allow to the utmost of his judgment.

Certificates must be plainly written on printed forms suitable for each kind of inspection, and must have a complete and full detail of the measurement of each log or pieces of lumber according to these rules. Cabinet and Furniture Timber certificates, whether foreign or domestic, must have a column of remarks, wherein the defects of timber shall be mentioned, that the percentage of allowance may be easily ascertained both by vendor and purchaser.

In all cases of inspection or measurement of timber and lumber, where the same has been made according to special agreement, and which deviates from the established rules, the certificate of inspection must mention the fact. All certificates must bear the signature of the Inspector and seal of his office, and a copy of each certificate issued must be faithfully kept and recorded at his or their office.

RESURVEYS AND REMEASUREMENT.

All certificates of inspection and measurements of timber shall be considered good and binding to both vendor and purchaser during three months from date thereof, but a purchaser may ask a resurvey and remeasurement, and the cost of said inspection and measurement, moving material, etc., and all expenses attending to said resurvey shall be borne by the party or parties ordering the same, as he or they are the real beneficiaries.

TIMBER AND LUMBER.

WHITE OAK.

Measurements as by preceding rules given for measurement of Timber and Lumber.

TIMBER.

Classifications of Timber shall be No. 1, No. 2 and No. 3.

No. 1 to be from the body of the tree, 30 to 50 feet long and upwards, and from 19 to 30 inches and upwards square; to be square butted with saw, straight grained, free from heart or side rot, worm-holes, large or unsound knots, splits, checks, shakes, frost or sun-cracks; good, sound sap allowed on one corner, not exceeding 1 inch to every 12 inches in width. When hewn shall be free from spalls and axe-scores, and not tapering over $1\frac{1}{2}$ inches for every 15 feet in length; must be hewed or sawed to perfect square, and no wane allowed; pins permitted if they should be the only defect, provided the same be found only at 6 inches from the end and on one side only, but none in the middle nor on two sides.

No. 2 to be of same length and manufacture as No. 1, but may be from 17 inches and upwards square, pins allowed as in No. 1; splits, whether at head or side, allowed, provided same shall not exceed 1 foot for every 25 feet in length; to be free from worm-holes, large or unsound knots, wind or other shakes, rot and sun or frost cracks; good, sound sap permitted on two corners, but not to exceed in each corner 1 inch for every 12 inches in width of stick. No wane shall be allowed.

No. 3 to be from 20 to 30 feet and upwards in length and not under 14 inches square, to be of the same taper and manufacture as classes No. 1 and No. 2; sap permitted on three corners, but not to exceed in each corner 1 inch for any 12 inches width of piece; to be free from large or unsound knots and worm-holes; wind or other shakes allowed at one end only, or decay at one head, provided shakes or decay will not exceed one-tenth of diameter of the piece and one-fifteenth of its length. Wane may be allowed, but must not exceed 2 inches to perfect square of stick.

LUMBER.

To be classed also No. 1, No. 2, No. 3.

No. 1 shall be sound, square-edged, butted with saw and evenly sawed; width to be from 20 to 30 inches and upwards; thickness from $\frac{1}{2}$ to 8 inches; lengths to be from 25 to 50 feet and upwards; entirely free from splits, checks, large or unsound knots; pins or pin-holes and with not more than $\frac{1}{8}$ of an inch of sound sap on one corner for every 20 inches in width.

No. 2 shall be square-edged, butted with saw and evenly sawed; width from 16 to 20 inches and upwards; length from 20 to 50 feet and upwards, entirely free from shakes, frost and sun-cracks, splits, large or unsound knots and worm-holes; thickness to be the same as No. 1. Only two pins or pin-holes permitted at each end, at from 6 to 9 inches from the ends, and not more than 1 inch sound sap on two corners allowed for every 16 inches in width.

No. 3 shall be square-edged, butted with saw and evenly sawed; one heart-face on one side, and must show heart on at least two-thirds of the length of the other face; sap, however, must be sound; shall be free from through shakes or splits and entirely free from large or unsound knots; pins or pin-holes as allowed in No. 1; sun and frost cracks allowed only on sappy face and must not be more than 2 inches in depth; lengths to be from 16 to 20 feet or more.

Fitch shall be classified as above, but dimensions are to be taken as stated under the head of measurement.

ASH

Shall be measured and classed the same as White Oak, and all specifications in each class of same shall apply to Ash, but with the following exceptions, viz.:

No. 1 can be 20 feet long and upwards.

No. 2 can be 18 feet long and upwards.

No. 3 can be 12 feet and upwards in length.

For Furniture and Export must be free from bluish veins, and must show close, white grain, whether it be straight or curly.

BLACK WALNUT, CHERRY,

And other woods of similar texture and used for cabinet work.

Measurements as by preceding rules for measurement of Timber and Lumber.

TIMBER

shall be in four classes: No. 1, No. 2, No. 3 and No. 4.

No. 1 to be from the body of the tree, straight grained and from 12 feet and upwards in length, and from 28 inches and upwards square, to taper only $\frac{3}{4}$ to 1 inch

for every 12 feet in length; shall be square butted with saw, free from all defects, making it suitable for best kind of work; wane allowed $1\frac{1}{2}$ inches to full square of piece for every 10 inches in width or depth; pins allowed if they are the only defect, provided they be only at ends and on one side, and not farther than 6 inches from ends.

No. 2 to be from body of the tree, and to be in length the same as No. 1; with the same taper, and from 22 inches and upwards square; shall be straight grained, square butted with saw, free from shakes, bad or large knots, heart or side-rot $1\frac{1}{2}$ inches for every 10 in width or depth allowed for wane or correspondingsap to same, also pins at both ends, but they must not be farther than 6 inches from each end. The timber shall also be free from splits not parallel to one face.

No. 3 to be in lengths of 10 feet and upwards, and 18 inches and upwards square; taper and wane will be allowed as in class No. 2; shall be free from bad shakes, large or unsound knots and bad splits; pins allowed as in No. 2, and splits at the ends though not parallel to sides.

No. 4, when loosing one-third or more of its measurements, as allowances for defects, shall be called No. 4, and will be considered unfit for shipment, unless differently stipulated in contract of sale.

LUMBER

Shall be divided into three classes: No. 1, No. 2 and No. 3.

No. 1 includes all boards, planks and joists, free from rot, shakes and nearly free from knots, sap and bad taper; all pieces to be evenly sawed, square-butted and square-edged; knots to be small and sound, and so few as not to cause waste for the best kind of work. A small split is allowable on one end of a board or plank, if not too long, and is parallel to the edge of the piece.

No. 2 must be square-edged and evenly sawed. This class includes all other description of material manufactured, except when one-third is worthless. Boards, planks, joist or scantling containing sap, knots, splits, or not evenly sawed, when all these imperfections combined

will make less than one-third of a piece, unfit for good work and only fit for ordinary purposes.

No. 3 includes all boards, planks, joist or scantling, badly manufactured by being sawed in a diamond shape, smaller in one part than in another, splits on both ends or with long splits or splits not parallel to edge, with large and bad knots, worm or pin-holes, sap, rot, shakes or any other imperfection which will cause any one piece of lumber to be one-third worthless or waste.

MAHOGANY AND CEDAR.

TIMBER.

Certificates of inspection for Mahogany or Cedar shall show the gross and net measurement of each log.

Measurement.—Timber shall be measured midway of logs with callipers for their gross measurement if squared, but if wany or octagon the inspector shall make proportional deduction for such wane when entering the net measurement of same in addition to the deduction stated hereafter. The gross measurement shall be entered as such in the inspector's tally book. The gross inspected measurement, when the log is perfect, shall be brought without deduction to the net measurement, but if it show any faults a proportional deduction for the same shall be made from the gross measurement and the remainder shall constitute the net measurement. That which is defective from worm-holes in the heart, rots, rotten knots, or are doughty or are badly split, shall be measured full contents for gross measurement, and called Refuse. All such refuse to be marked R by the inspector, and half of the gross measurement deducted for net measurement; all lengths to be taken to square butt of pieces and entered as usual, every 6 inches being called a full foot.

Crooked.—If slightly crooked a deduction shall be made from gross measurement for such faults, and if very crooked, particularly if there is more than one crook and short, the measurement shall be as governs Refuse in above article, and shall be marked as such.

Small Crotches, such as received from St. Domingo, shall be measured as follows, viz.: Lengths to be taken as far as sap or gray-wood at the upper end, allowing

the same as for Timber in gross measurement. When sound the gross measurement shall be brought over as net, but those having bark or rotten defects, tending to injure the crotch, shall be measured as Refuse in Timber and marked as such.

Canon Logs to be made straight one way and subject to same allowances as the crotches.

Classifications shall be in four classes, viz.: Numbers 1, 2, 3 and 4.

No. 1 Cedar must be straight-grained, free from knots and every other defect, shall be manufactured straight and even, but may be hewed or sawed, and ought to be square-butted with saw, before shipment, as all slant heads shall be deducted from gross to sale measurement, that is to perfect square; shall be from 12 feet and upwards in length, and 18 inches and upwards square. Wane of $\frac{3}{4}$ of one inch to perfect square will be permitted, but must be deducted in its proportional ratio from gross to net measurement.

No. 1 Mahogany will correspond to above specifications, but may be curly or cross-grained, and must be 12 feet and upwards in length and 20 inches and upwards square.

No. 2 Cedar must be straight-grained and free from large knots; small ones, if sound, admissible; shall be manufactured as in class No. 1, wormy sap not objectionable if worm-holes do not go through to body of the wood and a wane of 2 inches to perfect square permissible; also rotten or decayed heart, not exceeding one-eighth of length. Splits not to be over 6 inches for every 10 feet of the length, and sun-checks not over 2 inches deep on any one face are also permitted, but shall be deducted from the gross to the net or sale measurement. Lengths to be 10 feet or more and 16 inches or more square.

No. 2 Mahogany shall correspond to all the above specifications, but may be cross-grained, curly and have large knots, if sound; shall be 10 feet or more in length and 18 inches or more square.

No. 3 Cedar may be manufactured somewhat uneven, but ought to be square butted with saw, as explained in class 2. Can be crooked, waney, sappy, wormy, split,

sun-checked and have rotten heads and knots, large or small, provided the loss shall not be more than one-third from the gross to the net measurement for these defects. Lengths to be 9 feet or more and 14 inches or more square. Wood may be curly and cross-grained.

No. 3 Mahogany shall correspond to all the above specifications governing Cedar.

No. 4 Cedar and Mahogany will embrace all other descriptions which, by their defects, will lose more than one-third, but not over one-half from gross to net measurement, provided lengths shall not be less than 9 feet and square at least 12 inches.

LUMBER.

Mahogany Lumber shall be put in three classes: Nos. 1, 2 and 3.

No. 1 includes all boards, planks, etc., which shall be evenly sawed, free from sap, rots, shakes or splits; knots, if any, to be small and sound and free from any fault which may cause waste for the best kind of work. Boards or planks shall not be less than 8 inches in width and 8 feet long.

Counter Tops shall be 1, $1\frac{1}{8}$, $1\frac{1}{4}$ and $1\frac{1}{2}$ inches thick, 20 inches and upward in width, 12 feet and over long, and shall be perfect boards.

No. 2 to be manufactured as in class 1, splits parallel to the edge of the piece permitted if they do not exceed 6 inches long for every 10 feet in length of the piece. The width of pieces must not be less than 6 inches, 8 feet long.

No. 3 includes all other description of boards, planks and joists; provided all the imperfections combined in any one piece shall not make one-third of the measurement; when they do, the piece shall be rejected and not entitled to classification.

CLASSIFICATION OF YELLOW PINE.

SAWN TIMBER.

Sawn Timber shall be put in three classes, which will be designated as follows: Nos. 1, 2 and 3.

No. 1 must be sound, square-edged and butted square, must not have more than 1 inch of sap on corners, and

free from shakes which show on surface. Sizes, 10x10 and up.

No. 2 must be sound and butted square, show heart on each face, and may show places of wane not to exceed 4 feet in length, and not more than three places of wane on any one corner. Sizes 10x10 and up.

No. 3 must be sound and butted square, not more than 3 inches width of wane on a corner, and need not show heart on sides. Sizes, 10x10 and up.

DEALS.

Deals shall be put in three classes and designated as follows: Nos. 1, 2 and 3.

No. 1 must be sound, square-edged and square-buttcd; all heart with exception of $\frac{3}{4}$ of an inch of sap on one corner; free from knots exceeding $1\frac{1}{4}$ inches in diameter, and not more than two knots in one piece; entirely free from shakes and splits; 9 inches and upwards in width, 3 inches and upwards in thickness and 12 feet and upwards in length.

No. 2 shall be sound, square-edged and square-buttcd; one heart-face, two-thirds heart in opposite face, comparatively free of shakes and splits, entirely free of unsound knots, 9 inches wide and upwards by 3 inches thick and upwards, and 12 feet long and upwards.

No. 3 must be sound, square-edged and square-buttcd; one heart-face and show heart on other face; free from through shakes, splits and unsound knots; 3 inches thick and upwards by 9 inches wide and upwards, 12 feet long and upwards.

PLANK.

Plank shall be put in three classes, viz.: Nos. 1, 2 and 3.

No. 1 must be sound, evenly sawn, free from sap, knots, shakes and splits.

No. 2 must be sound, evenly sawn, one heart face, two-thirds heart on other face, comparatively free from shakes and splits, and entirely free of unsound knots.

No. 3 must be sound, evenly sawn, not over 2 inches sap on heart-face, free from through shakes and splits and unsound knots, $1\frac{1}{4}$ to 4 inches thick, 10 inches and upwards wide, 12 feet and upwards in length.

SCANTLING.

Scantling shall be put in three classes, viz.: Nos. 1, 2 and 3.

No. 1 must be sound, evenly sawn, free from sap, through shakes, splits and knots exceeding 1 inch in diameter, 12 feet and upwards in length. Sizes, 2x4 to 9x9 inclusive.

No. 2 must be sound, evenly sawn, free from through shakes and splits, and not to show more than 1 inch sap on corners.

No. 3 must be sound, evenly sawn, free from through shakes and splits.

FLOORING.

Flooring shall be $1\frac{1}{4}$ and $1\frac{1}{2}$ inches thick, and from $3\frac{1}{2}$ to 7 inches wide, 12 feet and upwards in length, and shall be of three classes.

No. 1 must be sound, free from knots, shakes, splits and sap, and sawed plump.

No. 2.—Clear face.

No. 3 must be sound, free from sap, shakes and knots exceeding $1\frac{1}{2}$ inches in diameter, and not more than two knots in a piece.

No. 4 must be sound, one face free from sap, free from shakes, splits and knots exceeding $1\frac{1}{2}$ inches in diameter, and more than four knots in any one piece.

CEILING.

No. 1 should be strictly clear.

No. 2 shall have the face clear of sap and knots.

No. 3 should be sound and free from shakes.

WEATHER-BOARDS.

Weather-boards shall be $\frac{1}{2}$ to $\frac{3}{4}$ inches thick, $5\frac{1}{2}$ to 8 inches wide, 8 feet and upwards long, and should be put in two classes.

No. 1 must be clear of sap, knots, shakes and splits.

No. 2 must be clear of knots exceeding $1\frac{1}{2}$ inches in diameter, and not more than four knots to one piece, and not over 1 inch sap on one edge.

BOARDS.

Boards shall be 1 inch thick by 10 inches wide and

over, and 12 feet long and upwards, and shall be of four classes.

No. 1 shall be sound, evenly sawn, free from sap, shakes, splits and knots exceeding $\frac{1}{2}$ inch in diameter.

No. 2 shall be sound, evenly sawn, free from shakes, splits and unsound knots, not more than $1\frac{1}{4}$ inches sap on one face.

No. 3 shall be sound and evenly sawn, not over 2 inches sap on heart-face and show heart on the other face, free from through shakes and splits and loose knots.

No. 4 shall be sound, evenly sawn and free from splits.

CYPRESS LUMBER.

All Cypress Lumber will be classified according to the specifications indicated below, as Nos. 1, 2, 3, 4, 5 and 6.

It will be sawed 1-16 of an inch more than the thickness indicated, to allow for shrinkage and loss in becoming seasoned and in dressing.

The length of Nos. 1, 2, 3 will run from 10 feet and upwards, and the width from 9 inches and upwards, unless otherwise specified.

No. 1 will be free of sap and perfectly clear of all defects.

No. 2 square-edged, sound, one heart-face, the other face two-thirds heart, and two sound knots not over $1\frac{1}{2}$ inches in diameter to each 10 feet.

No. 3 square-edged, one face three-fourths heart, and show heart on other face, and sound knots.

No. 4 will run from 4 to 8 inches inclusive, and will be sound, square-edged and free from sap. No. 4 not sold to fill any special schedule, but must be taken just as the sizes run, within the dimensions given.

No. 5 will be 1 inch full thickness, square-edged, and any width that may be made.

No. 6.—Any Cypress not admissible to the above classes will be sold according to its merits.

All Cypress Dimension lumber shall be classed and inspected according to rules of classification, etc., governing pine lumber.

LATHS.

Plastering laths shall be of one class, viz.:

Merchantable to be one-fourth $\frac{3}{8}$ of an inch in thickness, $1\frac{1}{4}$ to $1\frac{1}{2}$ inches wide, and 4 feet long; to be perfectly sound.

SHINGLES.

Shall be of three classes, which shall be designated as follows: Nos. 1, 2 and 3.

No. 1 shall be 18 or 20 inches long, $\frac{3}{8}$ to $\frac{1}{2}$ of an inch thick at butt end, and not less than 3 inches wide, clear of sap and knots.

No. 2 shall be 18 to 20 inches long, $\frac{3}{8}$ to $\frac{1}{2}$ of an inch thick at butt end, and not less than 3 inches wide, clear of unsound or loose knots; two sound knots will be allowed if not over $\frac{1}{2}$ of an inch in diameter.

No. 3 shall be 16 to 20 inches long, $\frac{1}{4}$ to $\frac{1}{2}$ of an inch thick at butt end, and not less than 3 inches wide.

INSTRUCTIONS.

TO INSPECTORS AND MEASURERS OF CYPRESS AND PINE LUMBER.

All inspections, measurements and classifications are to be made according to the adopted standards of this Exchange, unless otherwise agreed upon and ordered by both buyer and seller; but when some slight deviation, either in width or thickness, should occur by accidental manufacture, so long as it will not hinder the lumber from being used for the purpose for which it was intended, shall not be reduced in grade on account of such deviation, it being the purpose of the foregoing rules to grade lumber so that the grades sold on the market and out of the yards shall be the same.

Inspectors and Measurers, inspecting or measuring any cargo of lumber, shall have full control of the unloading of the lumber, so far as determining how fast the lumber shall be delivered off the vessel.

All Inspectors who inspect lumber by grades, under the foregoing rules in this market, when required, shall mark the quality upon the pile or lot, so inspected, in at least four places.

No Inspector or Measurer, commissioned by this Ex-

change, shall be directly or indirectly interested in the business of buying or selling lumber, either for himself or other parties.

The Inspector or Measurer shall keep the original tally-sheets, with date, name of the vessel and for whom inspected, at their office for at least one year, and said tally-sheets shall at all times be accessible to any of the parties interested. Duplicates of tally-sheets shall be rendered to party ordering inspection immediately on completion of said inspection.

The remuneration of Inspectors and Measurers to be by fees equally paid by seller and buyer, unless otherwise agreed upon.

BALTIMORE HARDWOOD INSPECTION.

Adopted by the Lumber Exchange of Baltimore, December 4, 1893.

INSTRUCTIONS TO INSPECTORS.

Inspectors of lumber are not manufacturers and must measure and inspect lumber as they find it, of full length and width, except as to wane; which must be measured out where it is not over one-fifth the width of the board. When it is in excess of this the board must be reduced one grade, making no allowance for the purpose of raising grade unless so instructed by the buyer or seller.

In hardwood inspection the inspector is instructed to use his best judgment, based upon the rules for his guidance.

The Standard Knot shall not exceed $1\frac{1}{4}$ inches in diameter, and must be of a sound character, regardless of color.

Splits equal to the width of the board shall be admissible except where otherwise specified.

Ordinary season checks shall not be considered a serious defect.

All lumber shall be sawed plump thickness. Thin lumber is not considered marketable, except in quarter-sawed oak, and must be reduced to the next standard thickness, or at least one grade lower on account of thinness.

Lumber sawed for specific purpose, such as Axles, Bolsters, Tongues, Reaches, Newels, Balusters, Squares, etc., must be inspected with a view to the adaptability of the piece for the intended use, as in many cases it can not be used for other purposes. In inspecting the grade of Firsts and Seconds, an undue predominance of Seconds should always be judiciously ascertained, as the purchaser is entitled to the full average in grade, which must not comprise more than $66\frac{2}{3}$ per cent. of Seconds, unless otherwise specified.

Standard Lengths are always recognized as being 12, 14 and 16 feet. Shorter than 12 and longer than 16 feet does not come within the range of Standard, unless otherwise specified. In Black Walnut, Ash and Cherry an exception is made, and 10 feet is recognized as a standard length. In quarter-sawed oak 8 and 10 feet are considered Standard Lengths.

Newels from all kinds of timber must be clear and free from heart, to square 5, 6, 7, 8, 9 and 10 inches plump. The length must be 4 feet or full multiples thereof.

Balusters and table legs shall be clear and square 2 x 2, $2\frac{1}{2}$ x $2\frac{1}{2}$, 3 x 3 and 4 x 4, 32 inches long.

Newels, Balusters and Table Legs not coming up to the grade of clear shall be classed as Common and Cull.

Counter Tops shall be 12 feet and over long, 1, $1\frac{1}{4}$ and $1\frac{1}{2}$ inches thick, and must be strictly clear, not less than 8 inches wide.

Bolsters must be 4 feet, 4 feet 6 inches, or multiples thereof in length, and the size must be 3 x 4, $3\frac{1}{2}$ x $4\frac{1}{2}$, 1 x 5, $4\frac{1}{2}$ x $5\frac{1}{2}$ or 5 x 6 inches.

Reaches must be 2 x 4, or $2\frac{1}{2}$ x $4\frac{1}{2}$ inches and the lengths 8, 10, 12 and 16 feet.

Harrow Timber must be $2\frac{1}{2}$ x $2\frac{1}{2}$ inches, and the lengths 5, 10 and 14 feet.

Bickory Axles must be clear and in lengths of 6 or 12 feet for sizes $3\frac{1}{2}$ x $4\frac{1}{2}$, 4 x 5, 4 x 6 and $4\frac{1}{2}$ x 6 and 7

or 14 feet for 5 x 6 and 5 x 7 on special order, cut from sound, tough, butt logs.

Wagon Tongues must be clear and straight 2 x 4 at small end and 4 x 4 at butt end, or 2½ x 4½ at small end and 4½ x 4½ at butt end, 12 feet long, from tough, straight-grained timber.

Bolsters, Reaches, Harrow Timber, Hickory Axles and Wagon Tongues, not up to the grade of clear will be classed as Cull.

Standard Thickness shall be ¾, ½, ⅝, ⅞, ¾, 1, 1¼, 1½, 2, 2½, 3 and 4 inches, unless otherwise specified.

It is important that all lumber should be parallel in width, square edged and with square ends, unless otherwise specified. Tapering lumber should be measured one third from narrow end of board.

Squares shall be 4 x 4, 5 x 5, 6 x 6, 7 x 7 and 8 x 8 inches.

Log Run is always understood to be the unpicked run of the logs—Mill Culls out. Mill Culls are supposed to be worthless, unless 50 per cent. merchantable, except where otherwise stated.

Any board which will not cut at least 50 per cent. sound timber by cutting up into pieces 3 inches by 4 feet or 6 inches by 2 feet long, or its equivalent shall be classed as Mill Culls.

In the measurement of all lumber, all fractions over one-half shall be counted to next even foot, and all fractions of one-half and under shall be counted off.

ASH.

Grades shall consist of Firsts and Seconds, Common and Cull. Standard lengths are 12, 14 and 16 feet, and will admit of 10 per cent. of 10 feet. Will admit of wane one-fifth the width of board, which must be measured off.

Firsts and Seconds must be 6 inches wide and over. Firsts must be 8 inches and over wide and clear of all defects. Seconds must be 6 inches wide and clear up to 8 inches; from 8 to 10 inches will admit of one standard knot; 10 to 12 inches will admit of two standard knots; 12 inches and over will admit of three standard knots, and when two or three knots are taken one knot may be

admitted of equal area to the two or three knots, or other defects of equal proportions may be allowed. Straight splits equal to the width of the board may be allowed. Sound sap is no defect.

Common shall be 4 inches and over wide; 5 to 7 inches one standard knot, not necessarily sound, may be allowed; from 10 to 13 inches inclusive two standard knots may be allowed, and from 13 to 15 inches four standard knots. Splits twice the width of the board not necessarily straight may be allowed.

Cull shall consist of all widths and sizes below the description of common, but available to work one-half sound lumber.

BASSWOOD.

Grades shall consist of First and Seconds, Common, Cull, Ceiling and Siding Strips. Standard lengths shall be 10, 12, 14 and 16 feet, with not over 10 per cent. of 10 feet.

Firsts and Seconds shall be 7 inches and over in width. At 8 inches one, and at 10 inches two knots not over $1\frac{1}{4}$ inches in diameter, or other defects not aggregating more than the above, may be allowed. An allowance for more defects may be made in proportion to increased width. Sound sap is no defect.

Common shall be 5 inches and over in width. At 6 inches one, and at 8 inches two knots, not over $1\frac{1}{4}$ inches in diameter, or other defects not aggregating more than the above, may be allowed.

Ceiling and Siding Strips shall be 3, 4 and 6 inches wide, and shall be clear one face.

Cull shall comprise all widths and lengths below the description of Common which will work 40 per cent. without waste.

BIRCH.

Grades shall consist of Firsts and Seconds, Common, Cull and Flooring Strips, and shall be, 10, 12, 14 and 16 feet lengths, with not to exceed 10 per cent. of 10 feet. All shorter than 19 feet shall be reduced one grade on account of length.

Firsts and Seconds must be 6 inches or over wide, and must be clear up to 8 inches. At 8 inches one and

at 10 inches two knots, not over $1\frac{1}{4}$ inches in diameter, or other defects not aggregating more than the above, may be allowed.

An allowance for more defects may be made in proportion to increased width. Sound sap shall not be considered a defect.

Common shall be 5 inches or wider. At 5 inches one knot, and at 8 inches two knots or other defects not aggregating more than the above will be allowed. Heart pieces shall be allowed if sound and showing only on one side. More defects shall be allowed in proportion to the increased width.

Flooring Strips shall be $2\frac{1}{2}$, 3, $3\frac{1}{2}$, 4 and 5 inches wide, and one face shall be clear.

Cull shall comprise all widths and lengths below the description of Common, and shall work 40 per cent sound.

BEECH.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one and at 10 inches two standard knots or equal defects may be allowed unless otherwise specified. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be sound, 5 inches and over wide, and may have defects not injuring it for ordinary use without waste. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Cull shall comprise all widths and sizes below the description of Common, but 50 per cent of the board shall be merchantable.

BUTTERNUT.

Grades shall consist of Firsts and Seconds, Common and Cull. Standard lengths shall be 8, 10, 12, 14 and 16 feet, and not to exceed 15 per cent of 8 feet will be admitted.

Firsts and Seconds must be 6 inches wide and over. At 8 inches 1 inch of sap or one standard knot or

equal defect, and at 10 inches 2 inches of sap or two knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common rejects or selects shall be 5 inches and over wide, and shall include all lumber not up to the grade of Firsts and Seconds, but full three-fourths of the piece shall be available as sound lumber.

Cull shall comprise all widths and sizes below the description of Common, but 50 per cent of the board shall be merchantable.

CHERRY.

Grades shall consist of Firsts and Seconds, Common and Cull. Standard lengths shall be 10, 12, 14 and 16 feet, and not to exceed 15. per cent of 8 feet will be admitted.

First and Seconds must be 6 inches wide and over. At 8 inches 1 inch of sap or one standard knot or other equal defect, and at 10 inches 2 inches of sap or two knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be 5 inches and up wide and shall include all lumber not up to the grade of Firsts and Seconds, but available full three-quarters of the piece without waste, free from heart and unsound lumber. Heart shakes, rot, dote or worm holes not admissible.

Cull shall comprise all widths and sizes below the description of Common, but 50 per cent of the board shall be merchantable.

NOTE.—Gum spots are considered a serious defect, and when their damage exceeds one-sixth of the size of the piece, shall reduce to the grade of Common. When their damage exceeds one-third of the size of the piece, it shall be reduced to Cull.

CHESTNUT.

Grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches and over. At 8 inches may have 1 inch of sap or one standard knot, and at 10 inches 2 inches of sap or two standard knots

or equal defects. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be 5 inches and over wide. Shall be free from heart and shake at least three-quarters of its length as sound lumber, excepting worm holes, which shall not be considered a defect if they are not bunched in a greater area than covered by a standard knot.

Cull shall comprise all widths and sizes below the description of Common.

COTTONWOOD.

Grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over, and free from all defects, except sound sap.

Common shall be 5 inches and over wide, free from heart shake and unsound sap.

Cull shall comprise all widths and sizes below the description of Common.

ELM.

Grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one and at 10 inches two standard knots or equal defects may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Sound sap is no defect.

Common shall include 4 inches and over wide. At 5 inches one and at 7 inches two standard knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Cull shall comprise all widths and sizes below the description of Common.

GUM.

Grades shall consist of Firsts and Seconds, Selects, Common and Cull.

Firsts and Seconds shall be 6 inches wide and over. At 8 inches one standard knot, and at 10 inches two standard knots; 2 inches of sound sap may be allowed on boards over 14 inches. An allowance for more

defects of this character may be made in proportion to increased width.

Selects shall be 5 inches and over. At 5 inches shall have one clear side; 6 to 8 inches may have one standard knot, and at 10 inches two standard knots or 2 inches of sap on one side. Up to 10 may have two standard knots or 2 inches of sap upon face side; 10 inches and up may have 3 inches of sap or three standard knots, or defects equal to the above.

Common shall include all lumber available for use full three-fourths of its size without waste, free from heart shake and unsound lumber. Sound or slightly discolored sap may be included in this grade.

Cull shall comprise all widths and sizes below the description of Common.

HICKORY AND PECAN.

Grades shall consist of Firsts, Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one and 10 inches two standard knots or equal defects. An allowance for more defects of this character may be made in proportion to increased width. Sound sap is no defect.

Common shall include 5 inches and over wide. At 6 inches one and at 8 inches two standard knots or equal defects. An allowance for more defects of this character may be made in proportion to increased width. Heart shakes, rot, dote or worm holes not admissible.

Cull shall comprise all widths and sizes below the description of Common.

MAPLE.

The inspection grades shall consist of Firsts and Seconds, Common, Flooring Strips and Cull.

Firsts and Seconds must be 6 inches wide and over (except flooring). At 8 inches one and at 10 inches two standard knots or equal defects may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be sound, 5 inches and over in width, and may have defects not injuring it for ordinary use without waste. At 6 inches one and at 8 inches two standard knots may be allowed. An allowance for more

defects of this character may be made in proportion to increased width. Heart shakes, rot, dot and worm holes not admissible.

Flooring Strips to be 3 and 4 inches, one clear face and two edges.

Cull shall comprise all widths and sizes below the the description of Common.

OAK (PLAIN SAWED).

Grades shall consist of Firsts and Seconds, Selects, Common and Cull. Standard lengths shall be 10, 12, 14 and 16 feet, with not to exceed 10 per cent of 10 feet.

Firsts and Seconds shall be 6 inches and up wide. At 8 inches will admit of one standard knot or 1 inch of sound sap on one side; at 10 inches two standard knots or 2 inches of sap on face side, or equal defects; at 12 inches, three standard knots or 3 inches of sap on face side, or equal defects. Where there is but one knot in a board 12 inches and up wide, a knot containing double the area of a standard knot will be admitted. Straight splits equal to the width of each board are allowable.

Selects shall be 5 inches up and wide. At 6 inches one, at 8 inches two and at 10 inches three standard knots or other equal defects will be allowed.

Common shall be 5 inches and up wide. At 6 inches one and at 8 inches two standard knots will be allowed. Sound sap is not considered a defect. An allowance for further defects of this character may be made in proportion to increased width. Plank, 3 inches and over thick, may contain sound heart if showing only on one side.

Cull shall contain all lumber not included in the above grades, of which not less than 50 per cent shall be merchantable and available for ordinary purposes.

CAR MATERIAL.

May have sound knots and heart cracks on one side if they do not impair the strength of the stick, and to be cut common lengths mainly, 6, 7, 8, 9, 10, 12, 14 and 16 feet long.

OAK (QUARTER-SAWED).

Grades shall consist of Firsts and Seconds, Selects, Clear Strips and Common. Standard lengths shall be

8, 10, 12, 14 and 16 feet, but not more than 15 per cent of 8 and 10 feet shall be admitted.

Standard Thicknesses shall be 1, 1 $\frac{1}{4}$, 1 $\frac{1}{2}$, 2, 2 $\frac{1}{2}$, 3, 3 $\frac{1}{2}$ and 4 inches, admitting 20 per cent of thin lumber if not more than $\frac{3}{8}$ of an inch scant on heart edge up to 2 inches, and $\frac{1}{16}$ of an inch in thicker stock. Sap is no defect.

Firsts shall be 6 inches and upward wide, free from all defects.

Seconds shall be 5 inches and over in width; 6 to 8 inches will admit of one standard knot or equal defects; 9 inches or over will admit two standard knots or equal defects, or one knot of double size.

The proportion of Firsts in the combined grades of Firsts and Seconds shall not be less than 56 per cent.

The average width of Firsts and Seconds shall not be less than 8 inches.

Clear Strips shall be 2 $\frac{1}{2}$, 3, 3 $\frac{1}{2}$, 4 and 4 $\frac{1}{2}$ inches wide, and one face shall be clear.

Selects must be 4 inches and up in width. At 5 inches will admit of one standard knot; at 7 inches two standard knots; at 9 inches will admit of three standard knots or other equal defects.

Common shall contain all lumber not included in the above grades; it shall be 3 inches and over wide, and merchantable one-half its length or width.

No lumber shall be classed as quarter-sawed if the angle is less than 45 degrees with the face of the board.

A Standard Knot shall have an area equal to the area of a circle 1 $\frac{1}{2}$ inches in diameter, and shall not be larger than 4 inches, or when two standard knots are admissible one knot can have double the surface.

POPLAR.

In poplar lumber inspection the inspector is instructed to use his best judgment based upon the general rules laid down for his guidance. He must inspect all boards and planks on the poorest side. The standard knot to be considered as not exceeding 1 $\frac{1}{4}$ inches in diameter and of sound character. Splits are always a greater or less damage to poplar lumber and will reduce a piece to one grade lower if the split is over 12 inches in length in

boards and plank, or 6 inches in strips, but splits must be straight and in one end only to be allowed. All lumber must be sawed so that it will be of the standard thickness when seasoned. All lumber must be sawed square-edged unless otherwise ordered, and boards and plank having bark and wane must be reduced one grade and measured inside wane or bark. All boards one inch or under thick shall be measured face measure. If sawed scant must be placed in the next thickness below. All badly mis-sawed lumber shall be classed as Cull. No Cull is considered as having a market value which will not work half its size without waste. The lumber sawed for specific purposes must be inspected with a view to the adaptability of the piece for the intended use, as in many cases it cannot be utilized for other purposes. In the inspection of combined grades of Firsts and Seconds, 60 per cent. shall be Firsts and may contain 40 per cent. Seconds. Standard lengths are always recognized as being 12, 14 and 16 feet, but 10 per cent. of 10 foot lengths may be allowed. Shorter than 10 feet does not come within the range of marketable, although sometimes admitted. Squares shall be 4 x 4, 5 x 5, 6 x 6, 7 x 7, 8 x 8, 9 x 9, 10 x 10. Worm holes are to be considered as one of the most serious defects in poplar lumber.

First Clear 1 inch to 2 inches in thickness, shall be 8 inches and upward wide and absolutely clear up to 10 inches in width; at 11 inches 1 inch of bright sap will be allowed; at 12, 13, 14 and 15 inches wide 2 inches of bright sap on one edge will be allowed or one standard knot; at 16 inches and over in width 3 inches of bright sap on one edge will be allowed or two standard knots.

Second Clear 1 inch to 2 inches in thickness, shall be 7 inches and upward in width, and at 8 and 9 inches wide will admit of one inch of bright sap but no other defects; at 10, 11 and 12 inches wide will admit of 2 inches of bright sap or one standard knot; at 13, 14 and 15 inches wide will admit of 3 inches of bright sap and one standard knot or two standard knots if there is no sap; at 16 inches and over will admit of 5 inches of bright sap and one standard knot; if there is no sap

then three standard knots will be admitted; 2½ inches, 3 inches and 4 inches, first and second poplar shall be 10 inches and over wide.

Poplar Squares shall be the combined grade of Firsts and Seconds clear; 4 x 4 must be clear of all defects. Sap is no defect; ⅜, ½, ⅝, ¾, First and Second clear shall be 10 inches and over wide and contain not less than 75 per cent. Firsts; 5 x 5 and 6 x 6 will admit of 2 inches of bright sap on one face; 7 x 7, 8 x 8, 9 x 9 and 10 x 10 will admit of 3 inches of bright sap on one face; squares must be free of hearts and unsound knots.

Sap Clear shall be sound but not black and 6 inches and over in width and admit of same defects as First and Second.

Common shall include any width not less than 6 inches, and will allow of bright or discolored sap and not beyond those described in Second and Clear. Two unsound standard knots will be allowed in this grade if over 12 inches wide and straight. Splits shall not be considered defects; otherwise lumber must be sound.

Cull poplar shall include all grades not up to the standard of Common and must be available one-half its size without waste.

Poplar Strips shall be 4 and 6 inches wide and known as Clear, Second Clear and Common. Clear shall be free from all defects; Second Clear may have bright sap but free of all other defects; Common shall contain from 1 to 4 standard knots and slight amount of discolored sap. Beveled siding, worked to 5¾ inches wide.

The grades of manufactured lumber are as follows:

Firsts and Seconds, 1 inch sap or one small knot admitted on thin edge but no other defect; Selects, sound sap no defect; Common may contain not to exceed three standard knots, or pin knots; sap no defect.

Ceiling and Patent Siding, Firsts and Seconds, one clear yellow face. Selects, sound sap no defect. Common not to exceed three standard knots. Casing and Base same as Ceiling.

Flooring.—Firsts and Seconds, one clear yellow face. Selects, sound sap no defect. Common, four or more standard knots, sap no defect. Moulding, sap no defect. All work material to be sold count measure.

RED BIRCH.

Grades shall consist of Firsts, Seconds, Common and Cull and may contain not to exceed 25 per cent. of white sap on face side.

Firsts and Seconds shall be 6 inches and over wide and must be clear up to 7 inches. At 7 inches one, and at 8 inches two standard knots or other equal defects are allowed. An allowance for more defects shall be made in proportion to increased width.

Common shall be 5 inches and wider. At 5 inches it may contain one, and at 7 inches two standard knots or other equal defects may be allowed. Defects may increase in proportion to the width.

Cull shall comprise all widths and lengths below the description of Common, but shall work 50 per cent. sound.

RED CEDAR.

Shall be graded as log run and shall be 2 inches and over wide and any length from 2 feet up, and any board that will not make half sound lumber shall be classed as a Mill Cull and thrown out.

SYCAMORE.

The grades shall consist of Firsts and Seconds and Common.

Firsts shall be 8 inches in width and free from all defects.

Seconds shall be 6 inches and upwards in width, and at 8 inches will admit one standard knot or one inch of sap on face side, and at 10 inches wide two inches of sap on face side or two standard knots; 12 inches wide, 3 standard knots; 14 inches wide will admit of three standard knots.

Sound sap is no defect. Splits allowed equal to the width of the board.

Common shall contain all other lumber not contained in the above grades, and shall be 3 inches and over, and merchantable one-half its length or width.

Sycamore for tobacco boxes must be sawed $\frac{7}{8}$ inches thick and 13 and 15 inches wide as far as practicable, and the balance of measurements one foot for each defect equal to the standard. Where it is necessary to cut one-third the contents of a board it shall be thrown out as worthless, or Mill Cull.

SYCAMORE. (QUARTER-SAWED.)

Grades shall consist of Firsts and Seconds, Selects, Clear Strips and Common. Standard lengths shall be 8, 10, 12, 14 and 16 feet, but not more than 15 per cent. of 8 and 10 feet shall be admitted.

Standard Thicknesses shall be 1, 1¼, 1½, 2, 2½, 3, 3½ and 4 inches, admitting 20 per cent. of thin lumber if not more than 1-32 of an inch scant on heart edge up to 2 inches and 1-16 of an inch in thicker stock. Sap is no defect.

Firsts shall be 6 inches and upward wide, free from all defects.

Seconds shall be 5 inches and over in width; 6 to 8 inches will admit of one standard knot or equal defects; 9 inches or over will admit two standard knots or equal defects, or one knot of double size.

The proportion of Firsts in the combined grades of Firsts and Seconds shall not be less than 50 per cent.

The average width of Firsts and Seconds shall not be less than 8 inches.

Clear Strips shall be 2½, 3, 3½, 4 and 4½ inches wide and one face shall be Clear.

Selects must be 4 inches and up in width. At 5 inches will admit of one standard knot; at 7 inches two standard knots; at 9 inches will admit of three standard knots or other equal defects.

Common shall contain all lumber not included in the above grades; it shall be 3 inches and over wide, and merchantable one-half its length or width.

No lumber shall be classed as quarter-sawed if the angle is less than 45 degrees with the face of the board.

A Standard Knot shall have an area equal to the area of a circle 1½ inches in diameter, and shall not be larger than 4 inches, or when two standard knots are admissible one knot can have double the surface.

WALNUT.

Grades shall consist of Firsts and Seconds, Common and Cull. Standard lengths shall be 8, 10, 12, 14 and 16 feet and not to exceed 15 per cent. of 8 feet will be admitted.

Firsts and Seconds must be 6 inches wide and over. At 8 inches 1 inch of sap or one standard knot, or other

equal defects; at 10 inches 2 inches of sap or two knots may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common or Rejects shall be 5 inches and over wide, and shall include all lumber not up to the grade of Firsts and Seconds, but full three-quarters of the piece shall be available as sound lumber.

Cull shall comprise all widths and sizes below the description of Common, and available one-third as sound lumber.

BALTIMORE CYPRESS INSPECTION.

Rules for Inspection of all Southern Cypress other than North Carolina. Adopted by this Exchange, February 6th, 1893.

No. 1 must be 7 inches and over in width, 10 feet and over in length, sound, square edged, and clear of knots; one heart face, the other face two-thirds heart.

No. 2 shall be sound, square edged, one face three-fourths heart and show heart on other face, one standard knot to the extent of every 4 feet of contents admissible.

Cullings.—Any cypress not admissible to the above grades.

NORTH CAROLINA CYPRESS.

No 1.—1x6 must be sound, square edge, clear of knots and stained sap on one face.

No. 2.—1x6 must be sound, square edge and will admit of stained sap and two standard knots, or three or four small knots equal thereto.

Fencing.—Shall be sound, 1x6—16 feet, regardless of knots. **Cullings.**—Any sound lumber below the above grades, including 1x6 under 16 feet.

No. 1 Edge, must be sound, square edged, clear of knots and stained sap on one face.

No. 2 Edge, must be sound, square edged, admit of stained sap, and one standard knot or small knots equal thereto, to every four feet of its contents.

Cullings.—Any sound lumber below the above grades will be classed as culls.

BALTIMORE YELLOW PINE FLOORING INSPECTION.

**Rules for Inspection of Yellow Pine Flooring, Adopted by
this Exchange, January 17th, 1887.**

All lumber intended for flooring shall be measured at its narrowest place.

VIRGINIA AND NORTH CAROLINA FLOORING.

No. 1. of 1 and $1\frac{1}{4}$ inches in thickness, in order to rate as No. 1 flooring in quality, shall have one side free from knots, shakes and stain, the other side to be sound.

No. 2 consists of boards with small sound knots on the best side and to be free from worm holes and shakes.

Sap stained boards are included in the No. 2 grade.

Black stained boards the entire length are classed as No. 3 or Box.

Culls.—All boards not coming up to the grade of No. 2 in quality are classed as Box or Culls, excepting condemned boards which are thoroughly unsound or rotten.

SOUTHERN FLOORING 4-4 AND 5-4.

No. 1 southern yellow pine heart-faced lumber admits of $\frac{1}{2}$ inch of sap on one edge of a board not wider than 7 inches, and on boards wider than 7 inches $\frac{1}{2}$ inch of sap is allowable on both edges. It is also to be free from shakes, rot, and large or unsound knots. Knots not exceeding $\frac{3}{4}$ of an inch in diameter, and sound, not more than one knot to every 4 feet of contents are allowed.

It is expected that this grade shall make (when worked) at least 85 per cent. of clear face flooring.

No. 2.—All flooring not coming up to No. 1 grade is classed as No. 2, excepting condemned boards which are thoroughly unsound or rotten.

BALTIMORE WHITE PINE INSPECTION.

It is reported to the publisher that in Baltimore there are no official rules for White Pine inspection, but that the rules governing Williamsport, Pa., and Chicago are, practically, the ones in general use. The qualities are as follows: Panel, Selects, Picks, Shelving, Barn and Cullings.

CINCINNATI INSPECTION.

Rules for the Classification and Inspection of Lumber Adopted by the Cincinnati, O., Chamber of Commerce, February 12, 1889, and Amended August 22, 1889. These Rules are Still in Force and are Observed Closely.

WHITE PINE LUMBER.

First and Second Clear shall be not less than 10 inches wide, and perfect up to 11 inches in width; will then allow imperfections equal to bright sap 1 inch on one side of the whole length of the piece, if well manufactured; as width increases, will allow other or larger imperfections in knots or sap in proportion to the width, but not imperfections enough to decrease the value below the above described piece.

Third Clear shall be not less than 9 inches in width, and perfect up to 10 inches; wider than 10 inches, imperfections equal to bright sap 2 inches on one side of the whole piece, or two knots aggregating the size of a half dollar, will be allowed as to the general location and effect upon the use of the board.

Selects take a piece 12 inches wide and 12 feet long as a basis; this width will admit of not to exceed three defects; if free from sap, may allow three knots aggre-

gating the size of a silver dollar, or their equivalent, on one side; if free from knots, it may allow two saps equal to 2 inches on each side; if bright, pieces under 9 inches wide must be perfect on one side; over 12 inches wide, defects may be allowed in proportion to width.

First Common, if narrow, one side may be well covered with bright sap running through 1 to 1½ inches on each edge; no knots on face; such a piece may be from 7 to 10 inches wide; at 10 to 14 inches some knots and less sap; this class makes good one-side lumber for finishing and in general knots may be allowed of a character not to injure the piece for finishing purposes or for cutting up.

Second Common will admit of any amount of bright sap, together with round knots aggregating not over 1½ inches in pieces 14 inches or over wide, and shall be free from rot and shake.

Shop may have large, loose, rotten knots, shake and sap, and shall cut up at least 66⅔ percent. clear of knots and shake.

Third Common shall be a coarser board or piece than second common, but the knots, while they may be larger, must be tight; this grade will admit of some shake at one end of the piece, also straight splits not to exceed ½ of the length of the piece.

Fourth Common may have large, coarse unsound knots and shake.

Boxing.—This grade includes all boards with loose knots, red streaks and bad shake.

STRIPS.

Clear.—1x4 and 1x6 shall be free from sap and all other defects; perfect in thickness and width.

No. 1 may have two or three small sound knots, or bright sap ½ to ¾-inch in width on one side of strip.

No. 2 will admit of any amount of bright sap, and not over three small sound knots, each to be not larger than 1-inch in diameter, and be free from rot and shake.

No. 3, as a sound strip, and will admit of small, tight knots; must be free from rot, shake, hearts, and splits.

No. 4 is a coarse-knotted strip, but the knots, while they may be large, must be tight; may contain some shake.

FLOORING, CEILING AND PARTITION.

Clear.—1x4 and 1x6 shall be free from sap and all other defects, perfect in thickness and width.

No. 1 may have two or three small, sound knots, or bright sap $\frac{1}{2}$ to $\frac{3}{4}$ -inch in width on one side.

No. 2 will admit of any amount of bright sap, and not over three small, sound knots, each to be not larger than 1 inch in diameter, and be free from rot or shake.

No. 3 will admit of small, tight knots, and must be free from rot, shake, hearts and splits.

No. 4 may be coarser than No. 3, but the knots, while they may be large, must be tight; may contain some shake.

No. 5 may have large, coarse, or unsound knots, red streaks and bad shake.

SIDING.

Clear must be free from all defects.

No. 1 may allow two inches of bright sap one-half the length of the piece, or its equivalent; or if free from sap, may allow one or two small knots, each not to exceed $\frac{1}{2}$ inch in diameter, if sound.

No. 2 may allow on the face of the board bright sap, or three knots, if sound, each not more than $\frac{1}{2}$ -inch in diameter in a 12-foot piece, and more in longer lengths; but a piece having both knots and sap must have less of each defect.

No. 3 must be sound, and will admit of sap and small, tight knots, and be free from rot, shake, hearts, and splits.

YELLOW PINE.

FLOORING, CEILING AND PARTITION.

First and Second Clear shall be free from knots, and may contain some bright sap.

First Standard will admit of bright sap, and not more than one small knot in a 12-foot piece.

Second Standard will admit of bright sap, and not over three small knots in a 12-foot piece.

Common.—All stained sap and large knotted pieces shall go into this grade.

POPLAR.

In poplar lumber inspection, the Inspector is instructed to use his best judgment, based upon the general rules laid down for his guidance. He must inspect all boards and plank on the poorest side. The standard knot is to be considered as not exceeding $1\frac{1}{4}$ inches in diameter, and of a sound character. Splits are always a greater or less damage to poplar lumber, and will reduce a piece to one grade lower if the split is over 12 inches in length in boards and plank, or six inches in strips; but splits must be straight, and in one end only, to be allowed. All lumber must be sawed so that it will be of the standard thicknesses when seasoned. All lumber must be sawed square edged, unless otherwise ordered; and boards and plank having bark and wane must be reduced one grade, and measured inside the wane or bark. All boards one inch thick and under shall be measured face measure. If sawed scant, must be placed in next thickness below. All badly mis-sawed lumber shall be classed as culls. No cull is considered as having a market value which will not work one-half its size without waste.

Lumber sawed for specific purposes must be inspected with a view to the adaptability of the piece for the intended use, as in many cases it cannot be utilized for other purposes.

In the inspection of the combined grades of Firsts and Seconds, 60 per cent. shall be Firsts, and may contain 40 per cent. of Seconds.

Standard Lengths are always recognized as being 12, 14, and 16 feet; but ten per cent. of 10-foot lengths may be allowed. Shorter than 10 feet does not come within the range of marketable, although sometimes admitted.

Squares.—The sizes shall be 4x4, 6x6, 7x7, 8x8, 9x9, and 10x10.

Worm holes are to be considered as one of the most serious defects in poplar lumber.

Firsts.—One to two inches in thickness shall be 8 inches and upward wide and absolutely clear up to 10 inches in width. At 11 inches, one inch of bright sap will be allowed. At 12 to 15 inches wide, two inches of

bright sap will be allowed, or one standard knot. At 16 inches and over in width, three inches of bright sap on one edge will be allowed, or two standard knots.

Seconds.—One inch to two inches in thickness shall be 8 inches and upward in width, and at 8 and 9 inches wide will admit one inch of bright sap, but no other defects. At 10 to 12 inches wide, will admit of two inches of bright sap, or one standard knot. At 13 to 15 inches wide, will admit of three inches of bright sap and one standard knot, or two standard knots if there is no sap. At 16 inches and over, will admit of five inches of bright sap and one standard knot; if there is no sap, then three standard knots will be admitted.

First and Second poplar $2\frac{1}{2}$, 3 and 4 inches thick, shall be 10 inches and over wide; $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ inches thick shall be ten inches and over wide, and contain not less than 75 per cent of firsts.

Poplar Squares.—Shall be of the combined grades of firsts and seconds; 4x4 must be clear of all defects, excepting $\frac{1}{2}$ inch of sap on the face side; 5x5 and 6x6 will admit of two inches of bright sap on one face; 7x7, 8x8, 9x9, and 10x10, will admit of three inches of bright sap on one face. Squares must be free of hearts and unsound knots.

Box Boards.—Is a special grade.

Sap Clear.—Shall be sound, but not black, six inches and over in width and free from all defects.

Common.—Shall include any width not less than six inches, and will allow of bright or discolored sap and knots beyond those described in seconds. Two unsound standard knots will be allowed in this grade if over 12 inches wide, and straight splits shall not be considered a defect; otherwise, lumber must be sound.

Cull Poplar.—Shall include all grades not up to the standard of common, and must be available one-half of its size without waste.

Poplar Strips shall be four and six inches wide, and known as clear, second clear, and common clear, shall be free from all defects. **Second Clear.**—May have bright sap, but be free from other defects. **Common.**—May contain from one to four standard knots, and a slight amount of discolored sap.

HARDWOOD LUMBER.

BLACK WALNUT.

The grades of Black Walnut shall consist of Firsts and Seconds, Rejects, Shipping Culls, and Mill Culls. The combined grades of First and Seconds shall consist of 50 per cent of Firsts and 50 per cent of Seconds, unless otherwise stated.

Firsts.—Shall not be less than 7 inches in width; from 7 to 10 inches, shall be clear of all defects; 10 to 16 inches wide, may have $1\frac{1}{2}$ inches bright sap, or one standard knot; 16 inches wide and upward, may have 2 inches of bright sap, or two standard knots.

Seconds.—Shall be less than 6 inches in width; from 6 to 8 inches, must be clear of all defects; 8 to 10 inches, will admit of $1\frac{1}{2}$ inches of sap, or two standard knots; 10 to 16 inches wide, will admit of 2 inches of sap, or two standard knots; 16 inches wide and upward, may have 3 inches of sap, or three standard knots; 12 inches wide and upward, will admit of a split, if straight; one-sixth the length of the piece, provided the piece be equal to Firsts in other respects. Not over 10 per cent of Seconds will be taken with splits of the above character.

Rejects.—Shall not be less than 4 inches in width; from 4 to 7 inches may have 1 inch of sap, or one standard knot; 7 to 12 inches wide, may have 2 inches of sap, or two sound knots; 12 to 18 inches wide, may have 4 inches of sap, or four sound knots; above 18 inches, may have 5 inches of bright, sound sap.

Shipping Culls.—Shall include all lumber not equal to Rejects, that will average and work one-half of its width and length without waste.

Mill Culls.—Shall embrace everything not included in shipping culls, and must work one-fourth of its size without waste.

CHERRY.

Cherry shall be graded and inspected according to the rules given for Black Walnut, with the exception of gum specks. Gum specks in Cherry are a defect, and if excessive will lower the piece one or two grades.

BUTTERNUT OR WHITE WALNUT AND CHESTNUT.

Butternut or White Walnut and Chestnut shall be inspected Firsts and Seconds, and Culls.

Firsts and Seconds.—Must not be less than 6 inches wide and clear up to 8 inches; but at 8 inches, may have 1 inch of sap or two standard knots. Defects may increase with the width, in proportion. Worm-holes are absolutely excluded from this grade.

Culls.—Shall include all lumber not up to the standard of seconds, but shall work not less than one-half of its size.

RED SWEET GUM.

Red Sweet Gum shall be inspected according to the rules governing Poplar, with the exception of sap on Firsts and Seconds, 2 inches of sap being the extreme width allowed on pieces 18 inches wide and upward, a proportionate amount being allowed on pieces running from that down to 10 inches.

ASH, BEECH, COTTONWOOD, SUGAR MAPLE, SOFT OR
WATER MAPLE, AND SYCAMORE.

Ash, Beech, Cottonwood, Sugar Maple, Soft or Water Maple, and Sycamore shall be inspected according to rules governing Poplar, with the exception of bright and sound sap, which will not be considered a defect.

PLAIN OAK.

Firsts.—Shall not be less than 8 inches in width; from 8 to 12 inches shall be clear; 12 to 18 inches wide, may have one standard knot; 16 to 20 inches wide, may have two standard knots, showing on one side only, or 2 inches of sound sap. Worm holes will not be admitted.

Seconds.—Shall not be less than 6 inches in width; from 8 to 12 inches, may have two standard knots; 12 to 16 inches, may have three standard knots; 16 to 18 inches, may have three inches of bright, sound sap.

Live sap admitted on one side in the grades of Firsts

and Seconds in plain oak not to exceed one-fifth of the surface, if without other defects.

Cull and Common Oak.—Shall be inspected according to the rules governing Poplar.

QUARTERED OAK.

Firsts.—Shall not be less than 6 inches in width; from 6 to 8 inches, must be clear; 8 to 12 inches, may have one standard knot, showing only on one side, or an equal defect.

Seconds.—Shall not be less than 5 inches in width; 5 to 9 inches, may have one standard knot, or equal defect; 9 to 12 inches, may have two standard knots, or an equal defect.

LOUISVILLE HARDWOOD INSPECTION.

Adopted by the Lumbermen's Exchange, Louisville, Ky.,
May 7, 1888.

INSTRUCTIONS FOR INSPECTION OF LUMBER

It is impossible to make rules that will govern every piece of lumber, there being no two pieces of lumber exactly alike; it is therefore expected that the Inspector shall be a person of experience, and use his best judgment—based upon the general rules given; making no allowance for the purpose of raising or lowering the grades of a piece.

The Inspector must not favor either buyer or seller, but take lumber as he finds it, and pass upon each piece the grade to which it belongs. Inspectors should examine all lumber on the poorest side, except flooring. All lumber must be measured in even lengths, excepting stock that is cut to order for special purposes, when it shall be measured for the full contents. Bark or waney pieces shall be measured inside the bark or wane. All

tapering pieces will be measured one-third the length of the piece from the small end.

All badly cut or mis-sawed lumber shall be classed as Cull, or placed one grade below what it would be if properly manufactured. All lumber shall be sawed thick enough to meet the required thickness when seasoned. Lumber sawed for Newels, Columns, Balusters, Axles or other specific purposes, must be inspected with a view of the intended use of the piece, and the adaptability for that purpose, as in most cases it cannot be utilized for other purposes. In the inspection of the combined grade of Firsts and Seconds, it will be the duty of the Inspector to see that an undue amount of Seconds do not appear. Heart pieces are excluded from all grades above Cull. Worm-holes are considered one of the most serious defects. Gum spots in Cherry is a defect, and, if excessive, will lower the piece one or two grades. Warped, twisted, flood-stained, stick-rotten lumber shall either be classed as Cull or Mill Cull and Refuse.

The standard lengths of Poplar to be 12, 14 and 16 feet, admitting 10 per cent of 10 feet length; Walnut and Cherry, 10, 12, 14 and 16 feet lengths, admitting 10 per cent of 8 feet; 8 feet to be admitted as No. 1 must be 12 inches wide and upwards; to grade as No. 2, 8 inches wide and upwards.

A standard knot must not exceed $1\frac{1}{4}$ inches diameter, and must be sound. Log Run shall be the unpicked run of the log, Mill Cull out. Lumber sold on grade, and without special contract, will be measured according to these rules. The Inspector will be required to keep a correct copy of all measurements, and give duplicate of same to both buyer and seller.

BLACK WALNUT.

Combined grade of Firsts and Seconds, Rejects and Shipping Culls.

No. 1, from 8 to 10 inches, shall be clear of all defects; 10 to 16 inches wide may have $1\frac{1}{2}$ inches bright sap or one standard knot; 16 inches wide and upwards may have 2 inches bright sap or two standard knots, showing on one side only.

Seconds.—Six inches wide and upwards, must be

clear of all defects at 7 inches; at 10 inches will admit of 1½ inches sap or two standard knots; 10 to 16 inches wide will admit of 2 inches sap or two standard knots; 16 inches wide and upwards may have 3 inches sap or three standard knots; 12 inches wide and upwards will admit of a split, if straight, one-sixth the length of the piece, provided the piece be equal to No. 1 in other respects. Not over 10 per cent of Seconds will be taken with splits of the above character.

Rejects.—Five inches wide and upwards; at 7 inches may have 1 inch sap or one standard knot; 7 to 12 inches wide may have 2 inches sap or two sound knots; 12 to 18 inches wide may have 4 inches sap or 4 sound knots; above 18 inches may have 5 inches bright, sound sap.

Shipping Culls will include all lumber not equal to the above, that will average and work two-thirds its width and length.

CHERRY AND BUTTERNUT—(OR WHITE WALNUT)

Will be graded and inspected according to the rules given for Black Walnut, with the exception of gum specks in Cherry.—See instructions.

POPLAR

Will include the combined grade of Firsts and Seconds—No. 1 Common, No. 2 Common, or Shipping Cull. The combined grade of First and Seconds shall not be less than 65 per cent of No. 1.

Firsts shall be 10 inches wide and upwards, and clear of all defects at 12 inches; 12 to 15 inches may have 1½ inches bright sap or one standard knot, showing on one side only; 15 to 18 inches may have 2 inches sap; 18 inches and upwards may have 3 inches sap or two standard knots, showing on one side only.

Seconds.—Eight inches wide and upwards, clear of all defects at 9 inches; at 10 inches wide may have one standard knot or a split not over 12 inches long; 15 to 18 inches wide may have two standard knots or 3 inches bright sap; 18 to 22 inches may have three standard knots or 4 inches bright, sound sap.

No. 1 Common shall be 6 inches wide and upwards,

bright, sound, clear sap not a defect in this grade; 8 to 12 inches wide may have three standard knots; 12 to 16 inches wide, four standard knots; 16 to 24 inches, five standard knots, or may have straight heart-crack not showing over one-fourth the length of the piece, if it have no other defect excepting bright sap.

No. 2 Common or Shipping Cull will include lumber with more defects than the No. 1 Common. Pieces will be counted where two-thirds of the piece will be available to use for rough manufacturing purposes, stained sap or other defects will be counted in this grade, dotted and rotten sap, and other lumber than as above named will be classed as Mill Cull or Refuse, and have no standard value.

Six-inch weather-board strips should be cut full width, and full $1\frac{1}{8}$ inches thick. No. 1 must be clear of all defects. No. 2 may have $1\frac{1}{4}$ inches bright, sound sap, showing on one side only, or two standard knots.

RED SWEET GUM

Will be inspected according to the rules governing Poplar, with the exception of sap on the Firsts and Seconds, 2 inches sap being the extreme width allowed on pieces 18 inches wide and upwards, a proportionate amount being allowed on pieces running from that down to 10 inches.

ASH, BEECH, COTTONWOOD, SUGAR MAPLE, SOFT, OR
WATER MAPLE, SYCAMORE AND CHESTNUT

Will be inspected according to rules governing Poplar— with the exception of bright and sound sap, which will not be considered a defect.

PLAIN OAK.

Firsts—Eight inches wide and upwards shall be clear at 12 inches; 13 to 15 inches wide will admit of one standard knot; 16 to 20 inches wide will admit of two standard knots, showing on one side only, or 2 inches sound sap.

Seconds.—Eight inches wide and upward; 8 to 12 inches wide will admit of two standard knots; 13 to 16 inches wide will admit of three standard knots; 15 to

18 inches will admit of 3 inches bright, sound sap. Cull and Common Oak will be inspected according to rules governing poplar.

HICKORY.

Inspection same as Oak, excepting that bright, sound sap is not to be considered a defect, and Firsts and Seconds to be 6 inches wide and upwards.

RED ELM.

Firsts and Seconds will be inspected according to rules given for Oak.

QUARTERED OAK.

Firsts and Seconds—**First** to be 6 inches and over in width, must be clear at 8 inches; 8 to 12 inches will admit of one standard knot, showing only one side, or an equal defect. **Seconds**, 5 inches and over in width; 5 to 9 inches will admit of one standard knot or equal defect; 9 to 12 inches wide will admit of two standard knots, or equal defect.

POPLAR INSPECTION.

**Adopted by the Poplar Manufacturers' Association,
August, 1892.**

GENERAL INSTRUCTIONS AND EXPLANATIONS.

It shall be the duty of the inspector in determining the quality of the lumber inspected by him to place the same in that class or quality to which it approaches nearest in description and value; at all times using the description of qualities contained in this Act as the standard of comparison.

He shall inspect and measure all lumber Standard grades, lengths and thickness as herein described, which will be known as standard inspection, unless the lumber be cut for specific purposes, in which case he shall be

governed by the conditions of the trade as made known to him.

He must inspect all boards or plank on the poorest side, excepting as hereinafter provided.

All tapering boards shall be measured at the narrow end, and in lengths of even feet.

The Standard Knot shall not exceed $1\frac{1}{4}$ inch in diameter and must be of sound character, though not necessarily all bright or white.

Splits exceeding the width of the board in firsts and seconds will reduce it one grade.

Bark, Waney Boards or Plank must be measured inside of the wane or bark, or, if measured full, must be reduced one grade.

All badly mis-sawed lumber will be classed as culls.

All lumber sawed for specific purposes must be inspected with a view to the adaptability for which it is intended.

In grades permitting bright or discolored sap or standard knots, one standard knot will be considered equivalent to three inches of bright sap.

In grades permitting unsound knots, one unsound knot will be equivalent to two standard knots.

Worm holes are to be considered a defect in poplar lumber.

All standard grades of merchantable lumber shall be classified for the purpose of inspection as follows:

Firsts, Seconds, Selects, No. 1 Saps, No. 2 Saps, Commons, Shipping Culls, Mill Culls and squares.

The Standard Lengths shall be 10, 12, 14, 16, 18 and 20 feet; but the percent. of 10, 18 and 20 feet lengths shall not exceed 15 per cent. of the whole.

The Standard Thickness shall be 1, $1\frac{1}{4}$, $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3 and 4 inches.

All lumber less than one inch shall be measured face measure.

In measuring lumber all fractions amounting to over one-half foot will be considered as a whole foot: one-half foot and under will not be measured. All lumber promiscuous widths, contents shall be marked on each piece. 5-4 inch and up in thickness to be measured with plank rules.

Firsts and seconds, $\frac{3}{4}$ inch and under, in thickness shall be 10 inches and up in width, and graded same as one inch Firsts and Seconds thicker than two inches shall be 10 inches and over in width and graded same as one inch, allowing defects according to thickness as well as width.

Firsts.—One to two inches in thickness shall be eight inches and wider, clear up to and including ten inches. At 11 inches wide will admit of one inch bright sap. At 12 inches wide will admit of two inches of bright sap. At 13 inches wide will admit of three inches bright sap. At 14 inches wide will admit of four inches bright sap. At 15 inches wide will admit of five inches bright sap, or one standard knot. At 16 inches wide will admit of six inches bright sap or two standard knots.

As widths increase, defects may increase in proportion. Firsts shall have no splits.

Seconds.—One to two inches in thickness shall be 7 inches and upward in width. At 8 inches wide will admit of one inch bright sap. At 9 inches wide will admit of two inches bright sap. At 10 inches wide will admit of three inches bright sap, or one standard knot. At 11 inches wide will admit of four inches bright sap, or one standard knot. At 12 inches wide will admit of five inches bright sap, or its equivalent in standard knots. At 13 inches wide will admit of six inches bright sap, or its equivalent in standard knots. At 14 inches wide will admit of seven inches bright sap, or its equivalent in standard knots. At 15 inches wide will admit of eight inches bright sap, or its equivalent in standard knots. At 16 inches wide will admit of nine inches bright sap, or its equivalent in standard knots. As widths increase bright sap may increase in proportion, or its equivalent in standard knots. Splits exceeding the width of the board will not be allowed in seconds.

In the Combined Grade of Firsts and Seconds, 50 per cent. shall be Firsts and 50 per cent. Seconds.

Selects shall be lumber that will inspect as good as Firsts and Seconds on one side regardless of the inspection of the other side, and may be any width.

No. 1 Saps shall be inspected on the face side, be four inches and up in width and free from all defects

excepting bright sap on the face side, and must be sound and practically free from knots on the other side,

No 2 Saps must be free from all defects on the face side excepting black or discolored sap.

Common shall include any width not less than five inches wide, and will allow of bright or discolored sap and knots as follows:

To and including 7 inches wide will allow one standard knot on face side. At 8, 9 and 10 inches wide two standard knots on face side or one unsound knot. At 11, 12 and 13 inches wide, three standard knots on face side or two unsound knots or their equivalent.

As widths increase defects may increase in proportion, provided the board will work two-thirds merchantable lumber. Splits may be allowed one-third of the length in this grade.

Shipping Culls shall comprise stock not up to grade of Common, and will be a board or plank which can be used for coarse siding, flooring, sheeting, crating, boxing, etc., etc., and may have any number of sound or unsound or black knots, worm holes and other defects not rendering it unfit for the purposes herein described.

Three quarter inch and under, graded same as 1 inch.

Mill Culls shall include all lumber not up to grade of Shipping Culls.

Squares shall be graded as No. 1 and No. 2. Bright sap shall be no defect.

No. 1 Squares, 4x4, 5x5 and 6x6 will be practically clear of knots. 7x7, 8x8, 9x9 and 10x10 will admit of sound yellow knots.

No. 2 Squares, 4x4 and up to 10x10 will admit of sound knots, stained sap, small season checks, splits not to exceed 12 inches in length, and pinworm holes will be allowed.

STRIPS.

Splits shall be classified for the purpose of inspection as follows: Firsts Selects, Common and Culls.

Firsts shall not be less than 4 inches and up to and including 6 inches, and will be clear both sides.

Selects shall not be less than 4 inches and up to and

including 6 inches wide, and have one clear face, except bright sap, but no other defects.

Common shall be 4 to 6 inches wide, and will permit of bright and discolored sap and standard knots on face side.

Culls shall include all strips not up to grade of Common and better than Mill Culls.

Panel Lumber, all thickness, special grade.

Wagon Box Boards. special grade.

ONE-HALF INCH BEVEL SIDING.

First Grade shall be known as No. 1, which will be absolutely clear face excepting bright or sound sap or small knots within 1 inch on the thin edge.

Second Grade shall be known as No. 2. In this grade bright sap will not be considered a defect, or in the absence of bright sap, two sound knots not to exceed three-quarters of an inch in diameter.

Third Grade shall be known as No. 3. In this grade discolored sound sap will be admitted, or three standard knots or their equivalent in smaller knots.

Four, 5 and 6 inch shall be worked $3\frac{3}{8}$ inch, $4\frac{3}{8}$ inch $5\frac{3}{8}$ inch wide.

SEVEN-INCH PATENT OR DROP SIDING.

First Grade shall be known as No. 1, and shall have one clear face and be otherwise sound.

Second Grade shall be known as No. 2, and will admit of bright sap or two standard knots or their equivalent in smaller knots or sap.

Third Grade shall be known as No. 3. Stained sound sap will not be counted a defect, or three or more standard knots can be admitted.

CEILING AND FLOORING.

Same grading applies as in patent siding.

Four, 5 and 6 inch Flooring, Ceiling and Drop Siding shall be worked $3\frac{1}{4}$, $4\frac{1}{4}$ and $5\frac{1}{4}$ inch face.

PARTITION, DRESSED AND WORKED TWO SIDES.

No. 1 must be clear of knots both sides.

No. 2 will admit of bright sap or two standard knots.

CASINGS AND BASE, DRESSED FOUR SIDES.

Graded same as Patent Siding, and shall be inspected on face side and worked $\frac{1}{2}$ inch less than sizes given.

All Dressed Lumber shall be counted Strip Measure

MOLDINGS.

Shall be based on Universal Molding Book.

WEIGHTS:

The following are the weights adopted by the Poplar Manufacturers' and Wholesale Dealers' Association on which to base delivered prices:

STOCK.	WEIGHT PER 1,000 FEET.
Beveled Siding.....	900 lbs.
Drop or Patent Siding.....	2,000 lbs.
$\frac{3}{8}$ inch Ceiling.....	900 lbs.
$\frac{1}{2}$ " "	1,200 lbs.
$\frac{5}{8}$ " "	1,500 lbs.
$\frac{7}{8}$ " "	2,000 lbs.
Boards and plank, 1 inch and thicker, S 2 S.....	2,500 lbs.
$\frac{3}{8}$ inch panel, rough.....	1,050 lbs.
$\frac{1}{2}$ " " rough.....	1,400 lbs.
$\frac{1}{2}$ " " dressed to $\frac{3}{8}$ inch.....	1,000 lbs.
$\frac{5}{8}$ " " rough.....	1,650 lbs.
$\frac{5}{8}$ " " dressed to $\frac{1}{2}$ inch.....	1,300 lbs.
$\frac{3}{4}$ " " rough.....	2,100 lbs.
$\frac{3}{4}$ " " dressed to $\frac{5}{8}$ inch.....	1,600 lbs.
1 or $\frac{7}{8}$ inch plank, dressed to $\frac{3}{4}$ inch.....	2,000 lbs.

CALIFORNIA REDWOOD INSPECTION.

Inspection of Different Grades as Used at San Francisco,
May 7th, 1892.

Tongued and grooved, tongued, grooved and beaded rustic should be dressed to $\frac{7}{8}$ inch thick.

All clear lumber, unless otherwise specified, should be

dressed one side $\frac{3}{32}$ inch scant, when dressed two sides $\frac{3}{16}$ inch scant.

Clear should be 4 inches and over wide, well manufactured, and free from all defects, and should not include pieces that are crooked or sprung to any extent.

Selects must be stock that is well manufactured and otherwise clear, but will allow sap to the extent of one-fourth of the surface on one side, sap not to go through on the other side in excess of $\frac{1}{4}$ inch in width. It will allow sound knots, the added diameter of which will not exceed one-sixth of the width of the piece. All such defects should be of such a nature that they could be covered when painted.

Cut Ups must be good, sound material free from sap, which will produce 50 per cent of clear lumber by making one cut crosswise or one cut lengthwise of the piece.

Select Saps shall include all lumber too sappy to go into the grade of selects, and in which other defects would not debar it from being placed with select except the excess of sap mentioned above.

C Saps includes all other sappy lumber of regular sizes which can be used for ordinary uses without waste.

Merchantable includes all sound knotted lumber where the knots are not large enough to weaken the strength of the piece for ordinary purposes. It must be clear of sap and well manufactured.

No. 2 Merchantable includes such as is rejected from Merchantable, but which is of regular sizes and of sufficient strength to allow for cheap building purposes. It should not have more than 2 inches of sap on one edge, but it will admit of loose or black knots if not too large or too many to answer for the use mentioned above.

Block Stock should be selected with great care to avoid lumber that has hard shell between the grain; such stock is worthless. Lumber that has a tendency to sound knots makes the poorest kind of block stock; lumber that shows black or rotten knots almost always works well. Should be 6 inches and multiples in width. If 12 inches and over wide must be full width. Thickness $1\frac{1}{4}$ inch and $1\frac{1}{2}$ inch. No sap allowed. Any number of rotten and black knots not objectionable as it cuts 6' to 12 inches long.

CHICAGO SPECIFICATIONS FOR TIES.

They must be manufactured from good sound timber, be it green or dry (not dead or burnt), to be full 8 feet long with square ends; hewn to parallel lines not less than 6 inches thick (nor more than 7); if sawed, it would be well to have them uniformly $6\frac{1}{2}$ inches thick; to have a face not less than 6 inches between the bark at narrowest part, and the entire lot to average 8 inches.

WILLIAMSPORT INSPEC- TION.

**Rules of Inspection Adopted by the West Branch
Lumberman's Exchange, December 28, 1875.**

1.—SELECTS AND BETTER.

Shall include all the better grades of lumber that is equal in value to the following described piece: not less than 8 inches in width and perfect up to 10 inches in width, except sap, which may be admitted $1\frac{1}{2}$ times the thickness on the back side.

Above 10 inches wide will admit of imperfections equal to three small knots and sap $1\frac{1}{2}$ times the thickness on face side; above 14 inches wide will admit of imperfections equal to saps as above, and larger knots and straight split, 1-6 the length of the piece; as the width increases, will admit of greater imperfections, but not enough to decrease the value below the first described piece.

2.—PICKS.

This grade shall include all boards below the grade of Selects and Better that shall be equal in value to a piece from 6 to 9 inches wide, that shall have a perfect face with back side sound and free from badly stained sap.

Above 9 inches wide, will admit of defect equal to sap 2 inches on either edge of face side, and knots equal to one knot $2\frac{1}{2}$ inches in diameter.

Above 13 inches wide may admit of defects equal to sap 3 inches in width on either edge of face side, and three knots $2\frac{1}{2}$ inches in diameter. All boards of this grade above 10 inches, may admit of straight split, 1-6 the length of the piece, but no board shall be of less value than the first described piece.

3.—FLOORING.

Shall include all boards below Picks that shall be 5 inches in width, with red sound knots not exceeding $1\frac{1}{2}$ inches in diameter. Will admit of sap $1\frac{1}{2}$ times the thickness of the piece, and when above 10 inches in width may admit of straight split, 1-6 length of the piece, and should be free from shakes, rot and loose knots.

4.—3D COMMON OR BARN BOARDS.

Shall include all lumber below grade of flooring that is of fairly sound character. May admit of straight split $\frac{1}{4}$ length of piece, and should be free of large loose knots, bad shakes and rot.

5.—CULLS AND SAMPLES.

Shall consist of all lumber of a generally unsound character, and where the imperfections are too great to allow of the board being used for the ordinary uses of 3d Common or Barn Boards. Worthless, rotten lumber should not be counted in this grade.

6.—PICKETS.

No. 1.—Shall be clear of knots, wane and black sap, not less than $\frac{7}{8}$ inches thick and $2\frac{1}{2}$ wide.

No. 2.—May include sound knots, stained sap and wane not to exceed one-half thickness of Picket. Square Pickets to be of same grades.

7.—LATH.

No. 1.—Shall be $1\frac{1}{2}$ inches wide, not less than $\frac{3}{8}$ of an inch thick, packed in bundles of 100 lath to each bundle.

8.—HEMLOCK.

Shall consist of two grades, merchantable and cull hemlock,

MICHIGAN HARDWOOD INSPECTION.

Rules for the Wholesale Inspection of Hardwood Lumber, as adopted by the Northern Michigan Hardwood Lumber Manufacturers' Association, 1894.

GENERAL INSTRUCTIONS AND EXPLANATIONS.

Lumber scant $\frac{1}{4}$ of an inch in width should be measured full to the next higher figure; if scant more than $\frac{1}{4}$ of an inch in width it should be measured at the next figure below.

All lumber shall be measured surface measure, and all fractional thickness afterwards added.

Lumber should be inspected on the best side, except when the other side shows a difference of more than one grade. Then it should be inspected one grade lower than the best side.

Inspectors of lumber must measure and inspect lumber as they find it, of full length and width (except $\frac{1}{4}$ inch scant as above stated, and as to wane, which must be measured out is more than the defect allowed) making no allowance for the purpose of raising grade.

Inspectors must use their best judgment based upon these rules for their guidance.

The Standard Knot shall not exceed $1\frac{1}{2}$ inches in diameter. Splits are always more or less damage to lumber, and the nature of the splits and the kind of lumber under consideration must be taken into account before assignment to proper grade can be made. Except in the case of lumber cut for specific purposes, a straight split not extending to exceed 12 inches in length, shall be admitted into the grade of firsts and seconds. A split extending to exceed one-fifth the length of the piece will reduce it to a cull.

Lumber should be sawed into plump and even thickness. Scant sawed lumber must be reduced to the next standard thickness, or in case of inch lumber, to one grade lower. Uneven sawed lumber should be reduced at least one grade.

A cull which will not work one-half of its size free from all defects, in one or two pieces, in length or in width which may be either ripped out or cut off, or which is thinner than one inch, is a mill cull of no marketable value.

Inspectors shall inspect and measure all standard grades, lengths and thicknesses, which shall be known as standard inspection unless the lumber be cut for specific purposes, or unless there be a special agreement between the buyer and the seller to the contrary, in either of which cases he shall be governed by the condition of the trade as made known to him.

The Standard Grades of lumber shall be Firsts and Seconds, common and cull.

Standard Lengths shall be 6, 8, 10, 12, 14 and 16 feet. The first and second grade will admit of nothing under 10 feet and not to exceed 10 per cent. of that length in any lot. Common will admit of a fair proportion of 6 and 8 feet in length; 3 and 4 inch strips must be 8 feet long, and 3, 4 and 5 inch strips must have one side and two edges clear. Lumber longer than 16 feet will not be admitted into the grades of firsts and seconds unless by special agreement. All lumber shorter than standard lengths shall be classed mill cull.

Standard Thickness shall be 1, 1¼, 1½, 2, 2½, 3, 3½ and 4 inches. In Poplar or Whitewood ⅝ inch shall be considered a standard thickness. Standard width shall be 3 inches and over.

In the grade of firsts and seconds the purchaser is entitled a fair proportion of clear lumber, which must not be less than 33⅓ per cent.

It is important that all lumber should be parallel in width, square edged and properly trimmed.

Black Stain shall reduce lumber one grade. But not more than 5 per cent. shall be taken.

Log Run is the entire cut of the log, mill culls out.

HARD AND SOFT MAPLE.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be five inches wide and over. At 8 inches wide one standard knot or other defects equal to it; at ten inches two standard knots or other

defects equal to them may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be 3 inches and over in width, and may have defects not injuring it for ordinary use without waste. At 6 inches in width one standard knot or other defects equal thereto, and at 8 inches two standard knots or other defects equal thereto may be allowed.

An allowance for all defects of this character may be made in proportion to increased width.

Culls shall comprise all widths and sizes below the description of common.

BASSWOOD.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 4 inches wide and over. At 7 inches one standard knot or other defects equal to it; and at 10 inches two standard knots or other defects equal to them may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Bright sap is no defect.

Common shall include 4 inches and over wide. At 5 inches one standard knot or other defects equal to it; and at 6 inches two standard knots or other defects equal to them may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Slightly discolored sap is allowed.

Culls may comprise all widths and sizes below the description of common.

BIRCH.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 5 inches wide and over. At 8 inches one standard knot or other defects equal to it; and at 10 inches two standard knots or other defects equal to them may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be sound, 5 inches and over in width, and may have defects not injuring it for ordinary use

without waste. At 6 inches one standard knot or other defects equal to it; and at 8 inches two standard knots or other defects equal to them may be allowed. An allowance for more defects of this character may be made in proportion to increase width. Bright sap is no defect.

Culls may comprise all widths and sizes below description of common.

BEECH.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one standard knot or other defects equal to it; and at 10 inches two standard knots or other defects equal to them may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Common shall be sound, 5 inches wide and over, and may have defects not injuring it for ordinary use without waste. At 6 inches one standard knot or other defects equal to it; and at 8 inches two standard knots or other defects equal to them may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Culls shall comprise all widths and sizes below the description of common.

ELM.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one standard knot or other defects equal to it; and at 10 inches two standard knots or other defects equal to them may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Bright sap is no defect.

Common shall include 5 inches and over. At 6 inches one standard knot or other defects equal to them may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Culls shall comprise all widths and sizes below the description of common.

ASH.

The inspection grades shall consists of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one standard knot or other defects equal to it, and at 10 inches two standard knots or other defects equal to them may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Bright sap is no defect.

Common shall include 5 inches and over. At 6 inches one standard knot or other defects equal to it, and at 8 inches two standard knots or other defects equal to them may be allowed. An allowance for more defects of this character may be made in proportion to increased width.

Culls shall comprise all widths and sizes below the description of common.

OAK.

The inspection grades shall consist of Firsts and Seconds, Common and Cull.

Firsts and Seconds must be 6 inches wide and over. At 8 inches one standard knot or other defects equal to it; and at 10 inches two standard knots or other defects equal to them may be allowed. An allowance for more defects of this characters may be made in proportion to increased width.

Common shall include 4 inches and over wide. At 6 inches one standard knot or other defects equal to it; and at 8 inches two standard knots or other defects equal to them may be allowed. An allowance for more defects of this character may be made in proportion to increased width. Thick planks may contain sound hearts if well boxed.

Culls shall comprise all widths and sizes below the description of common.

Wagon Stock must be cut from good, sound, tough, straight-grained timber free from knots.

Timbers must be free from unsound knots. Sound hearts not showing on the outside will be allowed.

NASHVILLE INSPECTION.

Rules for the Inspection and Measurement of Lumber, Adopted by the Lumberman's Exchange of Nashville, Tenn., in 1884, and Revised and Corrected, 1887.

It should be noted that the inspection of Poplar at Nashville and other manufacturing points, was intended to be superseded by the rules of the Poplar Manufacturers' and Wholesale Dealers' Association.

TO INSPECTORS AND MEASURERS.

It is understood that when the term strips is used the said strips shall be 6 inches in width unless otherwise specified. All tapering pieces of lumber to be measured one-third the distance from the narrow end, when 12 inches and over in width at the center; and when less than 12 inches wide in center, to be measured at the narrow end. All lumber to be measured in even lengths (except Culls), from 12 to 30 feet inclusive in length. Above that length, timber shall be counted for what it will measure.

Culls commence 10 feet in length, and then measure the same as other qualities. Manufacture should be taken into consideration in all qualities, and if badly manufactured should reduce the grade.

Inspectors and Measurers are instructed that the rule herein given as to width and thickness is the standard width and thickness for merchantable lumber for each grade. In no case shall Mill Culls be considered a quality for the purpose of increasing the inspection fees.

RULES FOR THE INSPECTION OF HARDWOOD LUMBER.

In hardwood inspection the Inspector is instructed to use his best judgment, based upon the general rules laid down for his guidance. He must inspect all boards and plank on the poorest side, excepting in flooring.

The Standard Knot is to be considered as not exceeding $1\frac{1}{4}$ inches in diameter, and of a sound character.

Splits are always a grater or less damage to hardwood lumber, and will reduce a piece to one grade lower

if the split is over 12 inches in length in boards and plank, or 6 inches in strips, but splits must be straight and in one end only to be allowed.

All hardwood lumber should be sawed 1-16 inch plump. All lumber must be sawed square-edged, unless otherwise ordered, and boards and plank having bark or wane must be reduced one grade and measured inside wane or bark. All boards 1 inch and under thick shall be measured face measure. If sawed 1 inch scant shall be reduced one grade; if under $\frac{3}{4}$ of an inch, reduced two grades. All badly mis-sawed lumber shall be classed as Culls. No Cull is considered as having a marketable value which will not work one-half its size without waste.

Lumber sawed for specific purposes must be inspected with a view to the adaptability of the piece for the intended use, as in many cases it cannot be utilized for other purposes. In the inspection of combined grades of Firsts and Seconds, an undue predominance of Seconds should always be judiciously ascertained as the purchaser is entitled to the full average in quality, based upon the average mill run of the kind of timber involved.

Standard Lengths are always recognized as being 12, 14 and 16 feet, but 10 per cent of 10-foot lengths may be allowed. Shorter than 10 feet does not come within the range of marketable, although sometimes admitted. In Black Walnut and Cherry an exception is made; and 10 feet is recognized as a standard length, and 10 per cent of 8-foot lengths may be admitted in the Firsts and Seconds and even 6 feet in lower grades. Mill Culls are never recognized as marketable; and all Culls which will not work to the use for which the timber or the size is applicable, without wasting more than one-half, are Mill Culls, and shall be so reported on certificate,

Hickory should never be cut while the sap is rising, as it is then liable to powder-post, and indications of deterioration of this character should be carefully scrutinized by the Inspector.

Merchantable includes only sound lumber, free from rot, shake and unsound hearts; hearts in nearly all varieties of lumber are to be excluded from all grades above Culls.

It is important that all lumber should be parallel in width, square-edged and with square ends.

In Poplar or Whitewood marketable thickness shall be recognized as $\frac{5}{8}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3 and 4 inches. One-half, 5 and 6 inches are classed as special sizes. When squared, the sizes shall be 4x4, 5x5, 6x6, 7x7, 8x8, 9x9 and 10x10, and shall be sawed $\frac{1}{8}$ inch plump.

Worm-holes are to be considered as one of the most serious defects in hardwood lumber.

DRESSED LUMBER.

All dressed lumber, such as Weatherboards or Siding, Ceiling, Flooring, Molding, etc., shall be measured full width as ripped to work.

POPLAR OR WHITEWOOD.

Inspection grades shall be known as Clear, Second Clear, Common and Culls.

Clear must be 10 inches or more in width, and free from all defects. The square pieces are exempt from this rule only as to width.

Second Clear must not be less than 8 inches in width and clear up to 10 inches. Boards or plank 10 to 12 inches wide may have one standard knot, but no other defects; or may have bright sap not over 3 inches in width in the aggregate, and no other defects.

Boards and plank 13 to 16 inches may have two standard knots and no other defects; or may have 4 inches bright sap not to exceed $2\frac{1}{2}$ inches on any one edge, and no other defects.

Boards and plank 17 inches and over will allow 5 inches sap not to exceed 3 inches on any one edge, or two standard knots, or 2 inches sap and one standard knot.

The two grades above enumerated may be combined in one grade, to be designated Firsts and Seconds.

Combined Grades of Firsts and Seconds shall consist of not less than 60 per cent of Firsts.

Boards and plank $1\frac{1}{4}$ inches thick shall be 8 inches wide and over; $\frac{5}{8}$ inch thick shall be 12 inches wide and over.

Common shall include any width not less than 7

inches, and will allow of bright or discolored sap and knots beyond those described in Second Clear. Two unsound standard knots will be allowed in this grade, if over 12 inches wide, and straight splits shall not be considered a defect; otherwise lumber must be sound.

Culls shall comprise all widths and sizes having more defects than described in common, whether in the lumber or character of the knots, badly checked, and generally such lumber as is unfit for ordinary purposes without waste.

Box Boards is a special grade.

POPLAR STRIPS

Must be full 6 inches wide, 1 inch plump thick when dry, 12, 14 and 16 feet long.

Clear shall be free of all defects.

Second Clear may have bright sap and must be free of all other defects.

Common shall embrace all sound strips with more defects than Second Clear.

Culls shall contain all unsound strips that will work to one-half their contents, and all tapering strips.

WHITE ASH.

The inspection grades shall consist of Firsts and Seconds and Culls.

Firsts and Seconds must be 6 inches and over wide, 10 feet and over long and clear up to 8 inches in width. Over 8 inches wide and up to 10 inches will allow one standard knot; 10 inches wide and over will allow two standard knots, but must be free of hearts and dry rot.

Culls include all defective lumber—heart-shaken, knots beyond standard and defective sawing.

Wagon Tongues must be cut from tough timber, straight and free from all defects.

Flooring must have one face and two edges clear, and 4 to 7 inches wide, inclusive.

WHITE AND BURR OAK

Shall be inspected as Firsts, Seconds, Common and Culls.

Firsts must be 8 inches and over wide and clear up to

10 inches; 10 to 12 inches will allow one defect, and defects may increase with the width.

Seconds at 6 inches wide will allow one standard knot, or a little bright sap. No other defects shall be allowed in this grade, but their extent may increase with the size of the piece.

A Combined Grade of Firsts and Seconds must not comprise more than $66\frac{2}{3}$ per cent of Seconds.

Common must be free from heart shake, but thick planks may contain sound hearts. All knots must be sound.

Culls consist of bad heart plank, wormy or generally unsound lumber.

OAK TIMBER

Must be sound in all respects; sound knots and hearts not showing on the outside of the stick shall not be considered defects.

HICKORY.

Hickory shall be classed as Boards, Plank and Axles.

Boards and Planks shall be inspected as Firsts and Seconds in one grade, and must not be less than 6 inches wide if less than 2 inches thick; this grade shall not admit of more than one or two standard knots, but no other imperfections.

Axles must be free from all defects.

Culls include all lumber not up to the preceding description.

Wane is permitted in boards and planks.

BLACK WALNUT

Shall be inspected in three grades—Firsts, Seconds and Culls.

Firsts shall not be less than 8 inches wide and 10 feet long, and may allow one standard knot or 1 inch bright sap on one side, or a check 10 inches long in a board that is 11 inches wide and over when dry.

Seconds shall be free from heart, wind shakes and rot. All strips 6 and 7 inches wide, 10 feet and over long, must be clear and straight. Boards 9 inches wide will allow one defect if it is small; boards 10 and 11 inches wide, two defects, provided one is small; boards

12 to 16 inches wide, three defects, if two of them are small; and those 16 inches and over will allow three defects.

All boards must have one black face. Boards 8 inches wide and over will admit of sap, but not more than one-third on sap side, and the sap shall be counted as a defect. A few worm-holes will be allowed in a Second, but as it depends on their location and the width of the board, it will be left to the discretion of the Inspector.

Ten per cent of the lumber may be 8 feet long and graded the same as lumber of other lengths.

Culls are all boards that do not come up to the above grades, and will work one-half good.

Mill Culls are such lumber as is not included in above grades.

Miscuts.—All miscut boards are to be classified one grade below, and must be measured at the thinnest place.

Common, or Reject, is to be considered a special grade, quality to be decided between seller and buyer.

CHERRY

Shall be classified and graded the same as Black Walnut.

BUTTERNUT AND CHESTNUT.

Butternut and Chestnut shall be inspected in Firsts and Seconds and Culls.

Firsts and Seconds must not be less than 6 inches wide, and clear up to 8 inches, but at 8 inches may have an inch of sap or two standard knots. Sap on the face side shall be measured out. Defects may increase with the width in proportion. Worm-holes are absolutely excluded from this grade.

Culls include all lumber not up to the standard of Seconds, but available not less than one-half to work without waste.

SWEET GUM

Sweet Gum shall be inspected in grades of Firsts and Seconds and Common.

Firsts and Seconds must not be less than 6 inches wide, and must be clear up to 10 inches. Over 10 inches may have two standard knots. Sap is wholly excluded from this grade.

Common shall include all lumber not up to the standard of Firsts and Seconds, in which not less than three-fourths of the piece is available for use without waste.

Culls, worthless.

BASSWOOD, ELM, SYCAMORE, BEECH AND COTTONWOOD.

The above named varieties of lumber shall be classified under an inspection of Good and Cull, and shall not be less than 6 inches in width.

Good shall include all sound lumber free from shake and hearts. Standard knots from one to five in number do not condemn from this grade in proportion to the width of the piece.

Culls include all lumber not good enough for the preceding grade, but in which one-half the piece will work without waste.

YELLOW PINE

Shall be classed as Clear, Second Clear, Standard and Common.

Clear must be 10 inches or more in width and free from all defects.

Second Clear must be 8 inches or more wide, and bright sap not called a defect; will allow one or two small sound knots, not over $\frac{3}{4}$ inch in diameter, showing through if free of other defects; face being clear one narrow wane may be allowed.

Standard is Firsts and Seconds classed together, 50 per cent being Firsts and Seconds and 50 per cent Common.

Common shall include all lumber poorer than that described as Seconds, but free from shake, large unsound knots, or rot.

FLOORING STRIPS

Shall be 3 to 6 inches wide, and be classed as follows:

First and Second Clear, 3 and 4 inches wide, may have one sound knot not over $\frac{1}{2}$ inch in diameter, and free of other defects. No strip in this class shall have knot on edge of piece. Bright sap shall not be classed as a defect, but blue stain excluded.

Standard shall contain 50 per cent First and Second and 50 per cent Common.

Common shall contain all sound strips below Firsts and Seconds. Knots large enough to weaken a strip will throw it into Culls.

Culls.—All unsound pieces and all blued sap pieces.

TIMBER AND JOISTS

Must be square edge, and have no defects that will impair the strength of the piece for the purpose intended.

RED CEDAR.

Inspection grades shall consist of No. 1, Common and Culls, both in regard to Boards and Dimension Stuff. Sound knots in Cedar not considered a defect.

No. 1 must be full 6 inches wide and up, 8 to 16 feet long; will admit $\frac{1}{2}$ inch of sap on each edge of one face; one face must be red; free from all splits and checks; any thickness from 1 to 2 inches; evenly sawed.

Common will admit of boards 4 inches wide and up, 6 to 16 feet long; one sap face; two unsound knots; checks and splits not exceeding 12 inches; clear of wane edges.

Culls will include all boards not good enough for preceding grades, but in which one-third of piece will work without waste.

DIMENSION STUFF.

No. 1 will include all sizes from 2x4 up, not less than 6 feet in length, and will admit of $\frac{1}{2}$ inch sap on each face in sizes 6 inches square and over; a $\frac{1}{2}$ -inch hollow in one end shall not be considered any defect; otherwise must be sound and perfect.

Common will in no wise differ from No. 1, except that sap will be considered no defect, and will admit of small hollow in each end without regard to size; otherwise sound and perfect.

Culls.—All pieces that do not come up to the above grades will be considered Culls.

BURLINGTON, VT., INSPECTION.

Although doing a large business in lumber, the extensive market of Burlington has no systematized method of inspection. The grades recognized in the Burlington market are as follows: Selects, Shelving, Second Shelving, Pickings, Shippers, Box and Mill Culls.

These gradings apply to wide lumber from 8 inches and upward.

Strips 12 feet long and upward are classed as First Quality, Second Quality, Third Quality and Box.

Under 12 feet in length the classes of Firsts and Seconds are combined as one, while all unfit for this grade go into a still lower grade of Third Quality, or into a new grade of Box.

Spruce is divided into three grades, namely: Clear, Number One and Number Two. (See Maine Survey.)

Selects comprise the finer grades of lumber, and include all fair widths approaching to the upper grades of other markets, and suited to all the finer finishing purposes for which the timber is adapted.

Shelving includes 10, 12 and 14-inch stock, and is classed as First and Second Shelving as to relative quality and adaptability to the purpose indicated. First Quality ranks about \$7 per thousand below Uppers, while the Second Quality is from \$5 to \$7 below the First. In both qualities more or less knots and sap may be allowed not affecting the board for the purpose from which it derives its name.

Pickings.—A grade of lumber of any width suited to one side finishing, embracing Sap Boards and generally such lumber as while from width not fitted for Shelving, is more defective than Selects, yet filling a position which must otherwise be occupied by Selects. As in other markets, it may be called the cream of the Common.

Shippers are of diversified widths, without shake or case knots, and free from large, coarse knots, comprising the best of the Common after the Picks are removed.

Box comprises a grade poorer than Shippers, yet tak-

ing the run of the Common in all fairly sound and merchantable lumber.

The grades of Shelving (First and Second), Pickings, Shippers and Box are, one and all, selections from Common, made with reference to adaptability to the uses indicated by their designations.

Mill Culls are the poorest grade of lumber adapted to any utility or recognized as merchantable, and bear the same description as the same grade in other markets.

GEORGIA INSPECTION.

Law Governing Inspection and Measurement of Wood, Timber, Lumber, Staves, Etc.

INSPECTORS.

1563.—Inspectors may be appointed, their duties prescribed, their fees fixed, and inspection and marking regulations adopted, by the corporate authorities of any city for the inspection of guano and other fertilizers, tobacco, salt, pitch, tar, turpentine, rosin, oil, staves, shingles, timber, wood, lumber and liquor, and such other things as are usually the subject of inspection and measurement, and for measuring and gaging the said articles, or any of them, within the limits of said city; and the same power may be exercised by the ordinary of every county outside the limits of such town and within the limits of such county; provided, such regulations be not inconsistent with the following provisions:

1. No person shall be permitted to inspect, measure or gage, except such as may be regularly appointed, under a penalty of \$500 for every offense, one-half to go to the informer and the other half to the incorporation or court having the appointment of inspectors. Every person so appointed shall be required to take an oath or affirmation faithfully to perform the duties of the office to the best of his skill and ability, and shall, moreover, give bond and security for the faithful discharge of the

duties thereof. All vacancies may be filled by the appointing power.

2. In all seaport towns, where timber or lumber is brought for exportation, or otherwise, the same shall be inspected and measured, and bills for such measurement shall be made out in superficial measurement.

3. No lumber or timber Inspector or Measurer shall, during his term of office, be or become the clerk or agent of any lumber or timber buyer, or the clerk or agent of lumber mill, on pain of forfeiture of his office, on conviction, and fine or imprisonment, at the discretion of any court having jurisdiction.

TIMBER.

4. All square timber shall be measured as follows: The length shall be counted from pin-hole and the size from the middle of the stick, taking the smallest side and the face, throwing off fractions, allowing one-half of the wanedge on the side and face; and other flatted timber, usually known as saw or mill logs, shall be measured one-third from the smallest end.

5. All sticks which are rotten, hollow, split or broken, shall be declared Refuse by the Inspector, and the seller shall only be allowed one-half the measurement; but if the defect be at or near the end, only as is defective shall be declared Refuse.

6. The hook to the dip-rod shall not be less than $1\frac{3}{4}$ inches long.

SCANTLING, BOARDS, ETC.

7. Ranging Timber, Scantlings and Boards, shall be deemed merchantable only when they shall have square edges, and be sound and without decay; nevertheless, if any Scantling or Board to be measured and inspected shall be split, decayed or fractured, more than 2 feet and less than 6 feet from the end thereof, such split, decayed or fractured part shall be left out and not counted in the measurement.

HEADING.

8. Heading shall be $2\frac{1}{2}$ feet long, 6 inches broad, 1 inch thick on one edge, and not less than $\frac{3}{4}$ of an inch on the other edge, sound and free from decay, worm or knot-holes; shingles to be 22 inches long, not less than

3½ inches wide and ½ inch thick at the thick end, not decayed, and free from worm or knot-holes.

STAVES.

9. Pipe, Hogshead and Barrel Staves shall be considered merchantable only when conditioned as follows: Pipe Staves to be at least 54 inches in length, 3 inches in breadth and 1 inch thick on the thin edge, sound and free from worm or knot-holes; Hogshead Staves to be 42 inches long, 3 inches broad, and not less than ¾ of inch thick on the edges, sound and free from worm or knot-holes; Barrel Staves to be 2½ feet long, 3 inches wide, and not less than ¾ of an inch on their edge, sound and free from worm or knot-holes.

PENALTY.

10. If any inspector or measurer of timber shall fail, neglect or refuse to measure timber as is now prescribed by law, the said inspector or measurer shall be guilty of a misdemeanor, and, on conviction, be subject to a fine of \$500 and imprisonment in the common jail of the county for the term of three months. One-half of said \$500 shall be, on conviction, paid over to the prosecutor or informer.

FIREWOOD.

11. Every cord of firewood shall measure 8 feet in length, and 4 in breadth, and 4 in height. Any person to whom such wood is offered for sale, who may suspect any deficiency, shall have the right to have the same measured and corded by any sworn Inspector or Measurer of the place; and in case of any deficiency appearing, the seller shall, besides paying the fees of the Inspector, make good the deficiency without delay, or forfeit, before any court having jurisdiction, the sum of \$2 for every cord so deficient; in case of no deficiency appearing, the fees of the Inspector or Measurer shall be paid by the buyer. The corporate authorities of any town or city may make such further regulations on this subject as to them shall appear proper to insure the objects of this section.

FEEES OF INSPECTORS.

1564. No corporate authority, incorporation or court

having the appointment of inspectors, shall have power to authorize or empower inspectors and measurers of lumber and timber to charge more than 25 cents per 1,000 feet for inspecting, measuring and turning lumber and timber; and any inspector or measurer of lumber and timber who shall charge more than 25 cents per 1,000 feet shall be guilty of a misdemeanor, and on conviction thereof shall be subject to a fine of \$500, one-half of which shall go to the informer, or imprisonment in the county jail of the county for the term of three months.

LUMBER AND TIMBER MEASUREMENTS.

In the United States, and also largely in Canada and Mexico, lumber, timber and logs are sold by the thousand feet, "board measure." In this system called "board measure," the unit is a piece 12 inches square on the surface and 1 inch thick. This rule is invariable in all thicknesses above 1 inch, but nothing is reckoned as thinner than 1 inch. Thus a piece 16 feet long, 12 inches wide and 1 inch thick measures 16 feet board measure; a piece of the same length and breadth, but 2 inches thick, measures 32 feet board measure, while a piece of the same length and breadth, but $\frac{1}{2}$ inch thick, measures 12 feet board measure, as would also any other thickness under 1 inch. A more correct statement would be that all thin (that is, under 1 inch in thickness) lumber or veneers is measured by the square feet of surface—by the superficial foot. The discrepancy between the nominal measurement and the actual contents of thin lumber is allowed for in the price.

As a general rule, lumber must not be reduced by dressing one side to below its standard thickness. That is, lumber must be sawed slightly thicker than at what it is measured. Matched lumber is given the measurement of the rough lumber from which it is manufactured, though there are some unimportant exceptions to this rule, chiefly in the retail trade.

ENGLISH AND OTHER LUMBER MEASUREMENTS.

In England, and other countries intimately associated in trade with that country, the unit of measurement is the "standard," with the higher denomination, "standard hundred;" consisting, except in the case of the Quebec standard hundred, of 120 pieces of the standard. The following table gives the principal standards in use in England:

NAME.	NO. OF PIECES AND DIMENSIONS.		EQUIVALENT IN BOARD MEASURE.
Petersburg Standard.....	1 piece, 12 ft. x 11 in. x 1½ in.		10½ feet.
" " Hundred	120 " " " " " "		1,980 "
London or Dublin Standard.	1 " 12 ft. x 9 in. x 3 in.		27 "
" " Hundred.	120 " " " " " "		3,240 "
Christiana Standard.....	1 " 11 ft. x 9 in. x 1¼ in.		10 ⁵ / ₁₆ "
" " Hundred.....	120 " " " " " "		1,237½ "
Drammen Standard	1 " 9 ft. x 6½ in. x 2½ in.		12 ³ / ₁₆ "
" " Hundred.....	120 " " " " " "		1,462½ "
Quebec Standard.....	1 " 12 ft. x 11 in. x 2½ in.		27½ "
" " Hundred	100 " " " " " "		2,750 "

Quebec.—For details in regard to Quebec inspection, or “culling,” and measurement, reference is made to the rules in full on page 105. Deals are generally sold by the Petersburg standard; sometimes by the number of pieces, Quebec standard.

St. John.—Battens, deals and plank are usually sold by the thousand feet, board measure or by Petersburg standard, and run from 8 to 26 feet long. All pieces under 8 feet are called “ends.”

Miramiche and other lower ports are as at St. John, with lengths from 8 to 16 feet.

London.—Pine deals are sold by Petersburg standard; spruce deals by London or Dublin standard; square timber by board or cubic foot, caliper measure.

Liverpool.—Deals are sold by Petersburg standard; square timber by load or cubic foot, string measurement.

Glasgow.—As at Liverpool.

Dublin.—Deals are sold by London or Dublin standard; square timber by ton, string measure.

ENGLISH SQUARE TIMBER MEASURES.

Square timber is bought by the cubic foot or by the “ton” of 40 cubic feet, or by the “load” of 50 cubic feet; determined by the string or caliper measure, the latter being a disadvantage to the buyer of from 4 to 9 per cent.

LOG MEASUREMENTS.

The rules in use for the reduction of round logs or timber to cubic feet or to feet board measure are numerous, but those given below are among the principal ones in use. The “string” or “caliper” measure is in use in England or in ports which export to the English market. The Doyle rule is the most generally in use in the United States, having largely superseded the Scribner. The Lumberman’s “Favorite” is a rule which, avoiding the inconsistencies of the others, has increased in popularity within a few years past. The Cumberland river rule is used in the section indi-

cated by its name, and the principal market is Nashville, Tenn.

CUSTOM HOUSE CALIPER MEASURE.

This rule is as follows: The mean diameter (in inches) squared, multiplied by the length of the log (in feet), divided by 183. The quotient is the cubic contents.

LIVERPOOL STRING MEASUREMENT.

RULE.—One quarter of the mean circumference of the log (in inches) squared, multiplied by the length of the log (in feet).

As practiced in New York a fine cord is passed around the center of the log, making allowance for bark; the cord is then doubled twice, giving one-fourth the girth. The length of the log is taken to the even foot, rejecting all fractions, and the girth to $\frac{1}{2}$ inch. The contents are computed to the even foot in soft woods, and to the half foot in hardwoods, Pitch Pine being included in the latter.

By English custom the mean circumference is the mean between the greatest and least girths. Example: A log 30 feet long. Allowing for bark, the girth at the top is 44 inches; at the bottom is 54 inches. The sum of the two is 98 inches, making the mean girth 49 inches. One-fourth of that is $12\frac{1}{4}$ inches, or 1 foot and $\frac{1}{4}$ inch. Multiplied by itself and then multiplied by the length, 30 feet, the product is $31\frac{1}{4}$ cubic feet, the contents of the log.

LOG SCALING.

The first thing a log scaler determines is the length of the log, then its quality or grade, which must be determined by the defects visible to the eye. These consist of crooks, knots, punks, hollows, etc. Looking at both ends of the log he ascertains whether there is any hollow, or ring rot, and if the butt is free from shake. Having settled these points, he lays his rule on the narrowest diameter of the small end of the log. If it is crooked, he takes his diameter (always inside the bark) from a point which allows the saw to pass through the log, fully removing the slab. If the butt is hollow, he adds 3 inches to the diameter of the hollow, multiplies the size by itself, and deducts from the gross measurement. If it is a shaky log he allows for that in determining the quality. If it has not been properly square butted, he makes a memorandum so that the expense of butting can be charged to the seller, or logger, unless in the bargain he is instructed to deduct enough from the measurement to cover the cost. A log cannot be considered merchantable until it is fully prepared for market. If it is very knotty, he lowers its grade accordingly, if he is grading in quality. If the knots are large, black or rotten, he is to determine the class in which the log belongs by the damage caused by the defects. If the defect is ring rot, he should take no account of the log at all, as it is not worth the expense of handling, in a majority of cases. If a log is less than 24 feet long, it should be measured at the end; over that length it is usually measured in the middle by calipers. In very long timber it is sometimes customary to measure at lengths of 12, 14 or 16 feet; this, however, is a matter of agreement between buyer and seller. Dead timber is always measured inside the decayed or black-stained sap. In many hardwood sections the sap is always excluded from the diameter of the log. Bright sap in Pine, Hemlock, Poplar, White-wood, Basswood and Spruce is always measured. Diameters are always to be taken inside of the bark the smallest way of the smallest end of the log.

CLASSIFICATION OF LOGS AND RULES OF MEASUREMENTS.

Adopted by Lumberman's Exchange of Nashville, Tenn.

Poplar Logs shall be graded as follows, and designated as No. 1, No. 2, No. 3 and Cull.

No. 1 shall be 30 inches and upwards in diameter, and fresh cut, green, straight, and free from knots, windshakes and other defects.

No. 2 shall be 27 to 29 inches, inclusive, in diameter, and fresh cut, green, and of the same description as No. 1; or logs 30 inches and up in diameter, that have one to three small solid knots.

No. 3 shall be 24 to 26 inches, inclusive, in diameter, fresh cut, green, and of the same description as No. 1, or logs 27 to 29 inches, inclusive, in diameter, that may have one to three knots.

Cull shall embrace any log not filling the above descriptions. All logs shall be cut full length.

The following rules shall govern all measurements for defects in Poplar:

For a hollow log, two-thirds of the diameter of the hollow in inches shall be deducted from the diameter of the log, and the hollow shall be measured the long way.

Old poplar logs—that is, logs that have been held over from one season, or logs with the sap damaged or discolored—shall have four inches deducted from the diameter of the log.

All logs shall be measured at both ends. Where there is a variation of 1 inch in the diameter, the least end shall be taken as the measurement of the log. If a variation of 2 inches, the number of inches shall be divided; if 3 inches the number of inches shall be divided as if only 2. If 4 inches, the diameter shall be divided, but if the difference exceeds 4 inches, it shall be divided as if only 4 inches.

When a log is "edged" it shall be measured the flat way.

All crotch or forked logs shall be cut off sufficient to clear the crotch or fork.

All crooked logs shall be classed as Cull logs unless sufficient deductions are made for straightening.

Spikes.—Sellers of logs will be held responsible for damages resulting from spikes or pieces of iron in logs.

Brands.—All logs should be branded before being brought to market. Brands defaced or changed subjects perpetrator to prosecution.

THE LUMBERMAN'S "FAVORITE" LOG RULE.

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DIAMETER IN INCHES.

Feet	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
8	4	8	12	15	19	24	33	42	50	60	72	84	99	114	124	143	162	179	196	218	240	260	8
9	4	9	13	17	21	27	37	47	56	67	80	94	111	128	139	161	182	201	220	245	269	292	9
10	5	10	15	19	24	30	41	52	62	75	90	105	124	142	155	179	203	224	245	272	299	325	10
11	5	11	16	20	26	33	45	57	68	82	98	115	136	156	170	186	223	246	269	299	328	357	11
12	6	12	17	22	28	36	49	62	74	90	107	125	148	170	186	214	243	268	294	326	358	390	12
13	6	13	18	23	30	39	53	67	80	97	115	135	160	184	202	230	263	290	318	353	382	422	13
14	7	14	19	25	32	42	57	72	86	105	124	145	172	198	218	247	283	312	343	380	417	455	14
15	7	15	20	27	34	45	60	77	92	112	133	155	184	212	233	266	303	334	367	407	446	487	15
16	8	16	22	29	37	48	64	82	98	120	142	166	197	226	248	285	324	357	392	434	476	520	16
17	9	17	23	31	39	51	68	87	104	127	151	176	209	240	263	303	344	379	416	461	506	552	17
18	10	18	25	33	42	54	73	93	111	135	160	187	222	255	279	321	364	402	441	489	537	585	18
19	11	19	26	34	44	57	77	97	116	142	168	197	234	268	293	339	384	425	465	515	561	617	19
20	12	20	28	36	46	60	81	102	122	150	177	207	246	282	308	358	405	448	490	542	596	650	20
21	13	21	30	37	47	63	85	107	128	157	185	216	257	296	324	376	425	470	514	569	620	682	21
22	14	22	32	38	48	66	89	112	134	165	192	225	268	310	340	394	446	492	539	597	656	715	22
23	15	23	33	41	52	69	93	118	141	172	203	237	282	325	356	411	466	514	563	627	686	747	23
24	16	24	34	44	56	72	98	124	148	180	214	250	296	340	372	428	486	536	588	652	716	780	24
25	17	25	35	45	58	75	102	129	154	187	222	260	308	354	388	445	506	558	612	679	744	812	25
26	18	26	36	47	60	78	106	134	160	195	231	271	320	368	404	463	526	580	637	706	775	845	26
27	19	27	37	48	62	81	110	139	166	202	239	280	332	382	420	480	546	602	661	733	804	877	27
28	20	28	38	50	64	84	114	144	172	210	248	290	344	396	436	498	563	624	686	760	834	910	28
29	21	29	39	52	66	87	117	149	178	217	257	300	356	410	454	517	582	648	710	787	863	942	29
30	22	30	41	54	68	90	120	154	184	224	266	310	368	424	462	537	609	672	735	814	893	975	30

SYNOPSIS OF DOYLE'S LOG RULES.

		DIAMETER OF								
LENGTH IN FEET.		10	11	12	13	14	15	16	17	18
	12	27	37	48	61	75	91	108	126	147
	14	32	43	56	71	88	106	126	144	171
	16	36	49	64	81	100	121	144	169	196
	18	41	55	72	91	112	136	162	190	220
	20	46	61	80	101	125	151	180	211	244
	22	50	67	88	111	137	166	198	232	269
	24	54	74	96	122	150	181	216	254	294
	26	59	80	104	132	163	196	234	274	318
	28	63	86	112	142	175	212	252	296	342
30	68	92	120	152	188	226	270	316	368	

		DIAMETER OF									
LENGTH IN FEET.		29	30	31	32	33	34	35	36	37	38
	12	469	567	547	588	631	675	721	768	817	867
	14	547	591	638	686	736	787	841	896	953	1011
	16	625	676	729	784	842	900	961	1024	1089	1156
	18	703	761	820	882	946	1012	1081	1152	1225	1300
	20	782	845	912	980	1052	1125	1202	1280	1361	1446
	22	860	930	1004	1078	1156	1238	1322	1408		
	24	938	1014	1094	1176	1262	1350	1442	1536		
	26	1016	1098	1184	1274	1368	1462	1562	1664		
	28	1094	1182	1276	1372	1472	1574	1682	1792		
30	1172	1266	1366	1470	1578	1688	1802	1920			

SYNOPSIS OF SCRIBNER'S LOG RULE.

DIAMETER OF LOG IN INCHES.

	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
12	59	73	86	107	119	139	160	180	210	228	251	283	303	344	375	411
14	69	85	100	125	139	162	187	210	245	266	292	330	353	401	439	479
16	79	97	114	142	159	185	213	240	280	304	334	377	404	459	500	548
18	88	109	129	160	178	208	240	270	315	342	376	424	454	516	562	616
20	98	122	143	178	198	232	267	300	350	380	418	470	505	573	625	684
22	108	134	157	196	218	255	293	330	385	418	460	518	555	631	688	753
24	118	146	172	214	238	278	320	360	420	456	501	566	606	688	750	821

DIAMETER OF LOG IN INCHES.

	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
12	436	457	493	532	552	588	600	657	692	772	801	840	903	954	1007	1046	1110
14	509	533	575	622	644	686	700	766	807	901	934	980	1053	1113	1175	1222	1295
16	582	609	657	710	736	784	800	876	923	1029	1068	1120	1204	1272	1343	1396	1480
18	654	685	739	799	828	882	900	985	1038	1158	1201	1260	1354	1431	1511	1571	1665
20	728	761	821	888	920	980	1000	1095	1152	1287	1335	1400	1505	1590	1679	1745	1850
22	800	838	904	976	1012	1078	1100	1204	1268								22
24	873	914	986	1065	1104	1176	1200	1314	1380								24

LENGTH FT.

SHINGLE MANUFACTURE.

The manufacture of shingles is practically the same in all sections of the country, and comprises the two classes of breasted, usually spoken of as shaved, and sawed shingles.

Breasted or shaved shingles are, in white pine, usually 18 inches in length, the standard thickness being five shingles to 2½ inches in thickness at the butt, and 1-16 inch at the point. Sometimes, though of late but seldom, they are made a full half inch thick at the butt. In some markets, notably as we go south, we find some white pine shingles 24 inches long, with butts of ⅝ and points of ⅛ inch. The cypress and cedar shingles of Virginia and further south are largely of 20, 24 and 30 inches length by ½-inch butt.

A breasted shingle should be of full length, with square ends, even thickness of butt, and uniform points, with no clips at the point. The dressing or breasting should be perfectly smooth, as though planed, and free from ridges or grooves. Nothing less than a standard shingle 4 inches wide should be packed in the bunch, although an occasional 3-inch is not criticised. The edges should be perfectly square, unless, as practiced by some first-class makers, they are uniformly beveled so that one edge will fit the next with a partial overlay.

Breasted shingles are usually packed in bunches of 500, or two bunches to the thousand, the bunches being packed 24 inches wide (six shingles) by 42 courses at each end. Cypress and other extra length shingles are packed in round bunches of 100 shingles each. Clipped and imperfectly breasted shingles are classed as No. 2, or Common. Shaved shingles of less than 7-16 butt must be uniform and nice to be admitted to the brand of No. 1, or Extra.

Sawed shingles are manufactured at different points, of different sizes. Michigan produces for the eastern and southern trade nothing but 18-inch shingles, while the Chicago and western trade demands only 16-inch shingles. Some markets use 14-inch and even 12-inch lengths.

The best sawed shingles are made from split quartered white pine, although the practice of quartering with a saw is an extended one. In the hands of an inexperienced sawyer a sawed block will often be made to turn out bastard shingles, which are objectionable and, in fact, worthless upon a roof. Shingles should always be sawed with, and not across, the grain. The inspection of shingles of all lengths is the same. Eighteen-inch are always sawed 5 to 2¼ inches at the butt, 1-16 points, except on special orders for cuts of 5 to 2 inches. Sixteen-inch shingles are cut 5 to 2 inches at the butt, with 1-16-inch points.

There are so many designations given to shingles by various manufacturers that it would be impolitic to give anything but standard classifications. Strictly first-class shingles are always entitled to a brand of XXX, and in bunches so marked should be found only shingles of full length, full thickness and uniform points, free from all rot, shake, sap, knots, worm-holes, bastards or defects of any nature. They should be packed in uniform bunches of 250 shingles, 4 inches wide always being a standard shingle. All shingles, the manufacturers of which have adopted fancy brands, such as "Star," "Extra," etc., should come up to the standard given for XXX.

No shingle should be packed in a bunch of No. 2 shingles which is not free from all defects, sap included, to such extent that the shingle is perfect for at least 6 inches from the butt, and the defects from that to the point must be of a character which will forbid the passage of water through the shingles. These are by some makers branded "6-inch Clear," while a brand of "10-inch Clear," or "12-inch Clear," denotes a shingle free from defects for the length indicated, measuring from the butt. As a rule, no shingles can be considered marketable which will not lay 5 inches to the weather in 18 inches, and 4 inches to the weather in 16 inches, without showing defects at the butt. Eighteen-inch XXX are usually laid 6 inches to the weather, and 16-inch XXX are laid from 4½ to 5 inches to the weather.

It is not uncommon, however, to pack the coarse shingles in bunches marked No. 2, where the brands of XXX

for the best, and X or XX for the clear butts, are adopted. In connection with the brand "A" largely in vogue in the west, "Choice A" is the equivalent of XXX, and is better than "Standard A," only in some minor respects more fictitious than real, for anything which deserves the name standard is supposed in shingles to mean the best, and custom of many years' standing has decreed that XXX shall always be a standard or choice shingle.

"Shaded A" may represent a clear butt of 6, 10 or 12 inches, but if the grade is below XXX, be it so called, or be it known as choice or standard, it is a No. 2, and its value can be fixed only by knowing to what extent the manufacturer looked upon defects as admissible in packing.

The main defects in shingles of any length may be summed up as follows: Bad sawing, the butts not running of even thickness, and the points being clipped or feathered; bastard sawing, by which the grain of the timber runs across the shingles in circles instead of straight with the length; bad jointing, so that one end is wider than the other, or by leaving sap, no matter how slight, or any other defects upon a XXX shingle or its equivalent by any name; bad packing, leaving open spaces between the shingles; putting shingles that are defective in a bunch of XXX; allowing sap streaks, small knots, shake, rot, bad jointing, clips, or shingles sawed thinner or thicker than their mates, in a bunch along side with them; packing shingles narrower than 3 inches, or a large number of that width in a bunch; mixing in hard, glassy timber, doty timber, worm-eaten or discolored shingles. No brand of shingles need hope to obtain a good reputation in any market where the sorting and packing has not been as carefully performed as it would be if the buyer stood by the packing frame and inspected each shingle separately. Manufacturers cannot too strongly impress upon their packers the fact that every shingle in a bunch must be, and is, by the brand, considered as warranted to be perfect in the grade in which it is packed, and nothing will so soon take a half dollar off the price of a lot of shingles as the finding of three or four defective pieces in a bunch. When a roof is

shingled, there should not be found a single discarded shingle among the debris, and when a manufacturer brands his shingles with any of the marks denoting the highest grade, it is understood by the brand that every shingle is perfect.

A word to mill men on sawing. Never allow a wood butcher to handle a shingle saw; he will spoil more shingles and damage your reputation more than you can estimate. Discard your shingle saw and have it reground as soon as it wears to fourteen gage, unless you prefer to cut your timber into sawdust rather than shingles. The thinner saw you can use the more profit in timber. It pays to get first-class drag saw machinery and sawyers, as well as first-class shingle sawyers—a poor hand is dear, even if he works for nothing and boards himself. A jointer can make a difference of one-third the day's cut by putting the timber in the shaving heap, or by using judgment and trimming only so much as is needed, but always doing that. If you have more than two packers it will pay to keep an assorter to help and to watch them.

Weights of shingles differ according to the character and specific gravity of the timber from which they are cut. In ordinary white pine a car load of 22,000 pounds of green shingles will be about as follows:

18-inch, Green.....	52,000 to 55,000
18 " Dry.....	60,000 " 65,000
16 " Green.....	60,000 " 65,000
16 " Dry.....	70,000 " 75,000

The above for an average. The writer has loaded 90,000 18-inch shaved shingles, five butts to 2¼ inches, shingles one year old, seasoned under cover, on a 10-ton rate. One thousand shingles should lay one square, or a space of 10 feet by 10 feet.

MISCELLANEOUS INFORMATION.

SEASONING AND SHRINKING OF TIMBER.

Were the properties of timber investigated with the same care and research bestowed upon metals, it would be found that there is even a greater variation in them. A majority of the varieties of wood owe their commercial value to two particular characteristics: beauty of grain and susceptibility to polish.

The strength of a piece of timber depends upon the part of the tree from which it is taken. Up to a certain age the heart of the tree is best; after that period it begins to fail gradually. The ash, beech, elm and fir are generally considered at their best when from 70 to 80 years' growth, and the oak is seldom at its best in less than 100 years; much, however, depending on surrounding circumstances. As a rule, trees should not be cut before arriving at maturity, because there is then too much sap-wood, which is the worst part, being softer and more liable to decay.

The strength of many woods is nearly doubled by the process of seasoning; hence timber used in its green state is not only weak, but is exposed to continual change of bulk, form and stability. Wood will always warp after a fresh surface has been exposed, and will change its form by the presence of moisture. The effect of moisture on dry wood is to cause the tubular fibers to swell; hence if a board be wet upon one side, the fibers there will be distended, and it will bend. The natural law that governs the shrinkage or contraction of timber is most important to practical men, but is too often overlooked. The amount of the shrinkage of timber in length, when seasoning, is so inconsiderable that it may in practice be disregarded (except in the redwood of the Pacific slope, which is said to shrink only in length), but the shrinkage in transverse directions is much greater, and presents some peculiarities which can only be ex-

plained by examining the structure of the wood as resulting from its mode of growth.

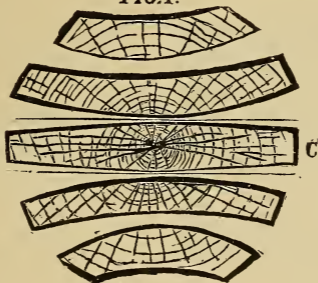
An examination of the end section of any exogenous tree, such as beech or oak, will show the general arrangement of its structure. It consists of a mass of longitudinal fibrous tubes, arranged in irregular circles, which are bound together by means of radial plates or rays, which have been variously named; they are the "silver grain" of the carpenter, or the "medullary rays" of the botanist, and are in reality the same as the pith. The radial direction of these plates or rays and the longitudinal disposition of the woody fiber, must be considered in order to understand the action of seasoning, for the lateral contraction or collapsing of the longitudinal fibrous or tubular part of the structure cannot take place without first tearing the medullary rays, hence the shrinking of the wooden bundles finds relief by splitting the timber in radial lines from the center, parallel with the medullary rays, thereby enabling the tree to maintain its full diameter. If the entire mass of tubular fiber composing the tree were to contract bodily, then the medullary rays would of necessity have to be crushed in the radial direction to enable it to take place, and the timber would thus be as much injured in proportion as would be the case in crushing the wood in a longitudinal direction.

If an oak or beech tree is cut into four quarters by passing the saw twice through the center at right angles before the splitting and contracting has commenced, the lines forming the angle of each quarter will be of the same length and at right angles to each other, or, in technical language, square; but after storage in a dry place for a year, a great change will be found to have taken place, both in the form and in the dimensions of the pieces. The lines upon the two flat surfaces will still be of the same length as before, but the exterior diameter of the quarter circle will have contracted very considerably, and the two face lines will not be at right angles to each other by reason of the collapsing of the vertical fibers, while the medullary rays will have been brought closer.

Supposing the log to be sawed into five pieces of

plank, let us consider the action of the various pieces as shown in the diagram, Fig. 1. After seasoning and contracting, it will be found that the middle of the center plank still retains the original thickness, from the resistance of the medullary rays, while the thickness will be gradually reduced toward the edges for want of support, and the entire breadth of the plank will be the same as it was at first. If, then, we take the planks at each side of the center, by the same law their change and behavior

FIG. 1.



will be quite different. They will still retain their original thickness in the center, but will be a little reduced on each edge throughout. But the side next to the heart of the tree will be pulled round or bent convex, while the outside will be the reverse, or hollow, and the plank will be considerably narrower throughout its entire length, more especially on the surface of the hollow side. Selecting the next two planks, they will be found to have lost none of their thickness at the center, and very little of their thickness at the edges, but very much of their breadth, and will be curved round on the heart side and made hollow on the outside. Suppose some of these planks to be cut into square prisms when in the green state; the shape that these prisms will assume after a period of seasoning will entirely depend upon the part of the tree to which they belonged, the greatest alteration being perpendicular to the medullary rays. Then, if the

square was originally near the outside, as shown by the black border lines in Fig. 2, the effect will be a contraction, as shown by the inside lines. After a year or two the square end of the prism will become rhomboidal. By understanding this natural law, it is comparatively easy to predict the future behavior of a board or plank by carefully examining the end wood, in order to ascertain the part of the log from which it has been cut, as shown by the angle of the ring growths and the medullary rays.

If the stick of sawed timber be cut so as to leave the heart in or near the center, it will season square in form

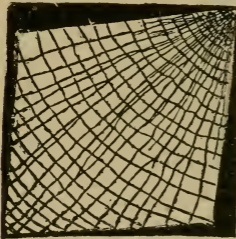


FIG. 2.

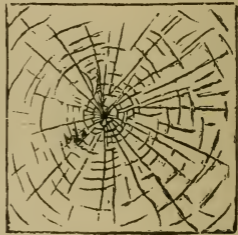


FIG. 3.

but the end will show a fracture of the medullary rays, commonly spoken of as season checking, as illustrated in Fig. 3. Here the contrast between the rhomboidal seasoning of the sticks sawed from the outside diameter of a log, and that in which the heart is left, is made quite plain. All sawyers who have been puzzled with the warping of logs upon the mill carriage will in this severance of the medullary rays find an explanation of the phenomenon, which is less marked in soft timber than in the closer grain of southern and norway pine, or of oak, beech and other hardwoods.

QUARTER AND BASTARD SAWING.

Quarter-sawing and rift-sawing are the same. To secure the minimum of shrinkage or warp, a board must be rift-sawed, which means cutting the medullary rays

at right angles with the circles of growth. Quartered oak is simply rift-sawed, the designation "quartered" arising from the common method of first cutting the log into quarters, and then cutting the quarters as shown in Fig. 1 of the following diagrams. The lines *a, b, c, d* are

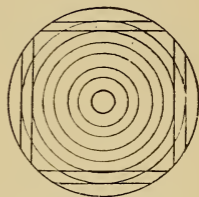
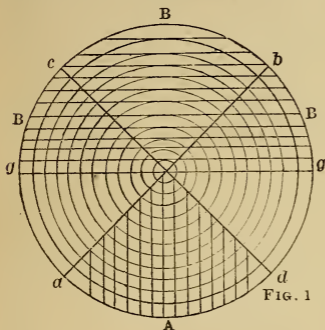


FIG. 2

those upon which the log is supposed to be quartered. The circles represent the concentric rings of the tree's growth. The straight lines across the upper half of the log, *B*, show the ordinary method of slicing it up into boards with a circular or gang. Wherever the cut of the saw crosses the circles at right angles, or nearly so, that much of the board is rift-sawed; when it runs nearly parallel with them it exposes the grain, and is what is rather inelegantly termed bastard. The board nearest the middle, *g g*, will be almost a perfectly rift-cut piece, while the fourth one from it toward the outside will be just about half rift and half bastard. Supposing the lower quarter, *A*, to be cut out from the log, the common and most simple method of quarter-sawing it is to make the cuts, as shown by the straight lines which cross the concentric rings at sufficiently near right angles for making good flooring. Each piece, however, will have a bevel edge as shown, which must, of course, be squared by the edger. Special arrangements of mill carriage and head blocks are in use for rift-sawing when great accuracy is desired.

The method of bastard-sawing is illustrated in Fig. 2. It simply consists of so turning the log upon the carriage as to expose the grain as much as possible. The diagram only shows cuts that would make an ordinary cant of the piece, but the judgment of the sawyer must be exercised to so turn the log as will make its form square, octagon or hectagon, as may be best to expose instead of cut across the grain, and allow its curve to show in the center of the board. Both of these methods of sawing, as will be seen, are wasteful to the timber, a matter that cannot be well avoided. Judicious bastard-sawing in certain kinds of wood, such as oak or ash,



FIG. 3. BASTARD SAWED.

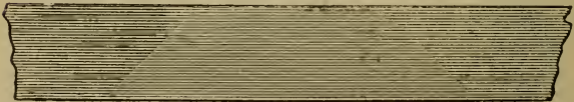


FIG. 4. RIFT SAWED.

develops some very beautiful grain effects, and for ornamental finishing purposes enhances the value of the wood to as great or even a greater degree than by rift-sawing it, as the latter is mainly required where the stuff is to withstand continuous wear, as in the case of flooring, or is to fill a place where it must neither shrink nor warp, as in the case of sounding or reed boards in musical instruments. The appearance of pieces of lumber cut rift and bastard may be seen in Figs. 3 and 4. If laid in a floor Fig. 3 will wear rapidly and unevenly, and always have a tendency to sliver, while Fig. 4, having the ends of the grain exposed to receive the wear, will

greatly outlast it, wear more evenly and present a much better appearance. On the other hand, as the panel to a desk or other piece of furniture, Fig. 3 would be much more handsome than the other.

The methods of quarter-sawing, adopted and cham-

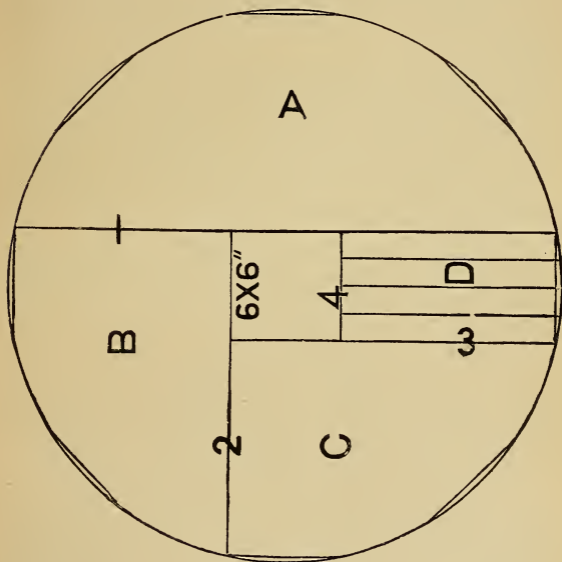


FIG. 5.

pioned by experienced sawyers, are numerous, but the following are some of the most approved plans. It should be remembered that the variety of timber and also the purpose for which the product is to be used determines what is and what is not practical and practicable quarter-sawing. In oak and similar woods, where

it is desired to show as much as possible the typical figure produced by quarter-sawing, the line of sawing should be almost directly between the heart and the outside of the log. The same is necessary where the purpose is to avoid warping, as in material for wide panels, table tops, etc. The difficulty in this method of cutting is that almost every piece has a beveled edge and has to be run through an edger. The product is also of all widths.

Where, however, mere resistance to wear is required, without regard to beauty of grain, and also where the piece is to be securely fastened in place, much less attention need be paid to an exact rift-sawing. In flooring, for example, it is sufficient if the annual layers of growth be cut across at an angle of, say, 45 degrees, or even less. Thus the cant need be turned much less frequently on the carriage than when genuine quarter-sawing is required.

One of the most popular methods of rift-sawing in hardwoods is as follows: Halve the log, put one-half back on the log deck, and place the other with the half-

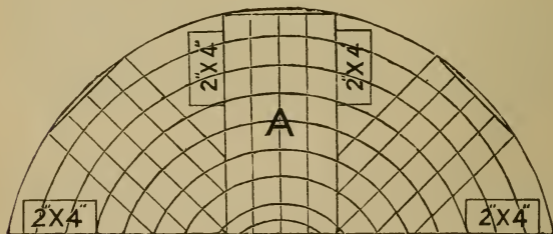


FIG. 6.

round on the carriage and against the knees, with the sawed surface sloping down from the top of the knees toward the saw at an angle of 45 degrees. Cut off boards until the heart is reached, then turn down the side against the knees until the last surface cut is at an angle of 45 degrees, and cut as before. Turn down again in

the same direction another eighth turn, and repeat. Thus each half of the log takes four positions. This method requires for its most convenient application an under dog, but good work is often done by the careful use of a wedge under the log. In this method the whole log is reduced to lumber which is all pretty close to the true rift-sawed, but the waste in edging is great.

In the method illustrated by the diagrams, Figs. 5, 6 and 7, the whole contents of the log are more nearly utilized. The larger diagram shows the preliminary work. The two smaller ones show how the different parts are to be treated. The different steps are as follows: First, take off eight slabs, reducing the log to an octagon. Second, cut on the lines 1, 2, 3 and 4 in the order given, leaving a heart piece which may be 6x6, as shown in the first diagram, or 4x4. Third, cut the piece

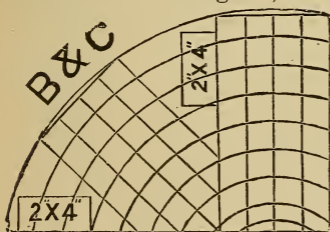


FIG. 7.

D, as shown. Fourth, cut the piece A, as shown in the second diagram. This piece, somewhat less than one-half the log, requires three turnings. Fifth, saw the parts B and C, which are alike in size and shape, as indicated by the lines in diagram, Fig. 7. It will be observed that the wedge-shaped pieces may be converted into 2x4's, or larger.

Too little attention has been paid to quarter-sawing yellow and norway pine flooring, but as an exact quartering is not necessary, the process is comparatively simple and inexpensive. The Barney & Smith Manufacturing Company, of Dayton, Ohio, who also furnished the preceding plan, recommends the method illustrated by the engraving, Fig. 8. First, square the log, 8-inch face heart. Then saw lines 1, 2, 3, 4 and 5, after which rip up the cants A and B together. This plan is particularly adapted to gang mills. All the lumber inside the circle indicating the heart-wood is near enough a true quarter-sawing for flooring.

A modification of this design is shown in Fig. 9, the only difference being that a square piece is left inclosing the heart.

Either of the methods outlined in Figs. 8 and 9 is, as stated above, especially adapted to mills using gangs.

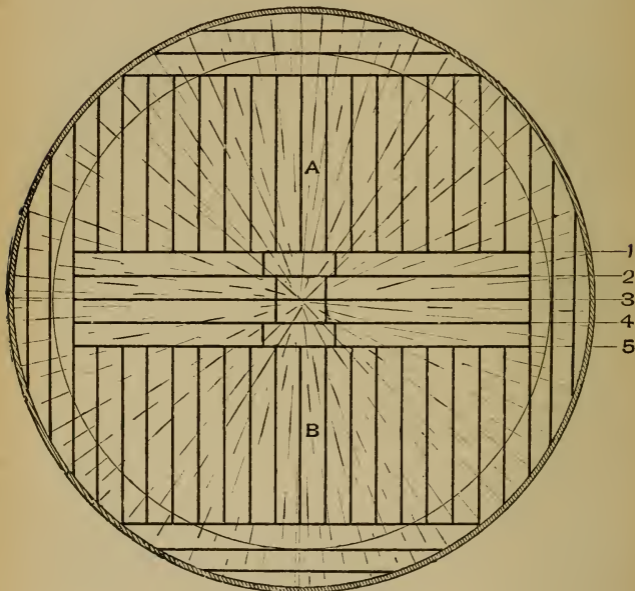


FIG. 8.

If two gangs are in use, part of the saws can be taken out of one of them, leaving blades at the center and sides of the frame, to cut in Fig. 8 the numbered lines and those parallel to them. Then the cants A and B may be sent to the second gang to be ripped up together. In

mills where there is no gang the two large cants produced by either method may be placed on the carriage, the one on top of the other, and sawed together.

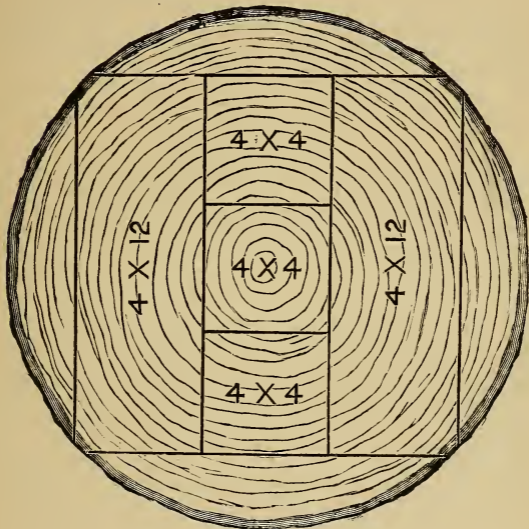


FIG. 9.

STATE LAWS.

Concerning Log Liens, Personal Property Liens, Inspectors and Measurers, River Driving, Boom Companies, Log Marks, Damage and Larceny, Etc., Condensed from the Statutes and Arranged Alphabetically by States.

ALABAMA.

DAMAGE TO LOGS.

3862.—Any person who, without authority of the owner, cuts loose and sets adrift any log or timber fastened to the bank of any navigable stream, or who runs or floats any log or timber of another into any creek, bayou, lagoon or lake, with the intention of concealing or appropriating the same, must, on conviction, be fined not less than \$100 nor more than \$200, and may also be imprisoned in the county jail or sentenced to hard labor for the county not more than one year.

SELLING FLOATING LOGS UNLAWFULLY.

3863.—Any person who takes up any floating logs or timber which are branded or marked, and sells or disposes of the same without the consent of the owner or his agent, and without a compliance with the law touching the salvage of the property taken adrift, must, on conviction, be fined not less than \$100 nor more than \$200, and may also be imprisoned in the county jail or sentenced to hard labor for the county not more than one year.

3964.—Any person who conceals, destroys, injures, obliterates or defaces any mark upon, or sells or disposes of, or carries beyond the state, any property taken up adrift before the expiration of the time allowed for the owner to prove his property, must, on conviction, be fined not less than \$100.

PERSONAL PROPERTY LIEN.

3049.—Any blacksmith, wood workman or other mechanic who contributes his labor and material, or either, to the production, manufacture or repair of any vehicle, implement, machine or article of any kind, shall have a lien thereon in the hands of a party for whom such vehicle, implement or article was made or repaired, or to whom sold, and in the hands of a purchaser, with notice of such lien, for the value of the labor and material, or either, contributed to the production, manufacture or repair of the same.

Here follow details regarding attachments, notice, joinder of parties, etc.

3053.—Proceedings for the enforcement of any lien created by the provisions of this chapter must be commenced within six months after the demand becomes due, and unless commenced within that time, the lien is lost,

ARIZONA.

FRAUDULENT USE OF LOG MARKS.

Every person who cuts out, alters or defaces any mark made upon any log, lumber or wood, or puts a false mark thereon, with intention to prevent the owner from discovering its identity, is guilty of a misdemeanor.

DAMAGE TO LUMBER.

Every person who shall willfully and maliciously burn, injure or destroy any pile or raft of wood, plank, boards or other lumber, or any part thereof, or cut loose or set adrift any such raft or part thereof; or shall cut, break, injure, sink or set adrift any boat, canoe, skiff or other vessel or water craft, being the property of another, shall, on conviction thereof, be punished by fine not exceeding \$500, or imprisoned in the county jail not exceeding six months.

INJURY TO DAMS, ETC.

Every person who shall willfully and maliciously cut, break, injure or destroy any bridge, mill dam, canal, flume, aqueduct, reservoir or other structure erected to create hydraulic power, or to conduct water for mining, manufacturing or agricultural purposes, or any embankment necessary to the same, or either of them, or shall willfully and maliciously make or cause to be made any aperture in such dam, canal, flume, reservoir embankment or structure, with intent to injure or destroy the same, shall, on conviction thereof, be fined in any sum not more than \$1,000, or imprisonment at hard labor in the territorial prison not more than two years, or by such fine and imprisonment.

PERSONAL PROPERTY LIEN.

Any mechanic or artisan who shall make, alter or repair any article of personal property, at the request of the owner or legal possessor of such property, shall have a lien on such property so made, altered or repaired, for his just and reasonable charges for his work done and materials furnished, and may hold and retain possession of the same until such just and reasonable charges shall be paid; and if not paid within the space of two months after the work shall be done, such mechanic, artisan or laborer may proceed to sell property by him so made, altered or repaired, at public auction, giving 20 days' notice of such sale, by advertisements in some newspaper published in the county in which the work may be done, or if there is no such newspaper, then by posting up notice of such sale in three of the most public places in the town or township where such work was done, and the proceeds of such sale shall be applied, first, to the discharge of such lien and the costs and expenses of keeping and selling such property, and the remainder, if any, shall be paid over to the owner thereof.

Nothing contained in this act shall be deemed to apply to or affect any lien hereinbefore acquired.

MECHANICS' LIENS.

All persons who may labor or furnish material in the construction or replacing of any building, superstructure or other improvement shall have a lien on the same, and on the lot of land whereon the same is situate and connected therewith,

LOG LIEN.

All persons who cut or cord wood, cut, saw or skid logs, cut, saw, hew or pile ties, at the request of the owner or his agent, shall have a lien thereon for the amount due him for the labor performed.

ARKANSAS.

DAMAGE TO LUMBER.

1663.—If any person shall wilfully and maliciously burn, injure or destroy any pile or raft of wood, plank, boards or other lumber, or any part thereof; or cut loose or set adrift any such raft or part thereof; or shall cut loose, break, injure or sink or set adrift any canoe, skiff, boat or vessel, being the property of another, he shall be adjudged guilty of a misdemeanor, and on conviction shall be punished as in cases of larceny.

INJURY TO DAMS, ETC.

1667.—Every person who shall wilfully and maliciously cut down, break, injure or destroy any bridge or mill dam, or other dam, or levee, erected or constructed to create hydraulic power or to prevent the overflow of lands, or any embankment necessary to support such dam or levee; or shall make or cause to be made any aperture in such dam or embankment, with intent to destroy or injure the same, shall be deemed guilty of a misdemeanor, and on conviction shall be fined in any sum not exceeding \$5,000.

MALICIOUS MISCHIEF, TRESPASS AND INJURY TO PROPERTY.

1658.—Every person who shall wilfully commit any trespass by cutting down or destroying any kind of wood or timber standing or growing upon the lands of any other person, or carry away any kind of wood or timber that may have been cut down, and that may be lying on such land, or shall maliciously cut down, lop, girdle or otherwise injure any fruit, ornamental or shade tree, or maliciously sever from the freehold any produce thereof, or anything attached thereto, shall, upon conviction, be adjudged guilty of a misdemeanor, and be fined in any sum not less than \$50.

As to repeal of this clause by implication, see sections 1659, 1660-1662.

1659.—Any person who shall, without lawful authority, wilfully and knowingly enter upon any land belonging to this state, or lands belonging to any corporation or person, and shall cut down or destroy, or cause to be cut down or destroyed, any tree or trees standing thereon of the value of more than \$10, or any person who shall induce, assist, aid or abet any other person so to do, shall be deemed guilty of a felony, and shall, upon conviction, be punished by imprisonment at hard labor in the state penitentiary not more than two years.

1660.—Any person who shall take and carry away any trees or parts thereof, or any logs, timber, lumber, staves or shingles cut from such lands, with intent to convert the same to his own use or the use of his employer or principal, of the value of more than \$10, shall be deemed guilty of felony, and shall be punished as provided in section 1659.

1661.—If the owner of any saw mill, stave mill or shingle mill, or any person operating such mill, or if any person as agent of any person owning or operating any such mill, or if any person as officer or agent of any corporation owning or

operating any such mill, or if any other person shall, by himself, his agent or servant, knowingly receive or purchase any trees, logs or timber, knowing the same to have been cut contrary to the provisions of this act for the purpose of sawing or manufacturing the same into lumber, staves or shingles, or for the purpose of selling the same, of the value of more than \$10, he shall be deemed guilty of a felony, and shall, upon conviction, be punished as provided in section 1659.

1664.—Every person who shall cut or carry away any timber on any lands within five miles of Little Rock, on the south side of the Arkansas river, without permission or license from the owner or legal possessor of such lands, shall also be entitled to sue and recover damages according to the laws heretofore existing.

INSPECTION OF TIMBER, LOG MARKS, RIVER DRIVING, ETC.

3849.—The commissioner of state lands shall be ex officio state timber inspector.

3853.—Said inspector is prohibited from purchasing any of the public lands, directly or indirectly, whether in his own name or in the name of any other person in trust for him; and for every tract or parcel of land purchased in violation thereof, he shall forfeit \$250.

3854.—The state timber inspector may divide the state into such districts as he may deem best, and for each district, as well as for any specific purpose, may appoint one or more deputies, for whose conduct and fidelity in the discharge of their duties as such said inspector, shall be responsible upon his official bond; and said state timber inspector and his deputies shall have power and authority to administer oaths for any purpose relating to the duties of their office.

3855.—Said state inspector shall, in person or by deputy, at the request of any owner of logs, timber or lumber, after a scalement or measurement thereof, make a bill stating therein the number of logs, the number of feet (board measure) contained in such logs and lumber, and the number of feet, cubic, running or board measure, contained in said timber, and at whose request the same was scaled or measured, and to whom scaled or measured, a copy of which bill he shall enter upon the books of his office, to be provided by him and kept for that purpose, with the marks as they occurred upon the logs. A correct bill of the same shall be given to such owner, with a certificate thereto attached that it is a true and correct bill, which bill, so certified, shall be presumptive evidence of the facts therein contained, and of the correctness of such scalement or measurement in all courts except in favor of the inspector or deputy inspector who made the same.

3856.—Said state timber inspector and his deputies shall, in surveying or measuring logs, make such allowance for hollow, rotten or crooked logs as would make them equal to good, straight merchantable logs; and all logs that are straight and sound are to be measured at their full size, inside the bark at the small end; and all logs over 20 feet long, and not exceeding 36 feet, shall be scaled or measured as two logs, allowing such rise from the first to the second log as the same may require, or as may seem proper in the opinion of the inspector or his deputy.

3858.—The Scribner rule shall be the standard rule for scaling or measuring logs in the state, but other rules may be used at the request of the owner of logs; but in all such cases the bill of the inspector shall state by what rule the logs were scaled or measured.

3859.—Any owner of logs or timbers in this state may use thereon any mark not before recorded and used by any other person, but shall leave mark with the inspector or his deputy, and the same shall be recorded in the office of the inspector, and the inspector's books shall be at all times open for the inspection of all persons.

3860.—No person shall use any mark or any logs or timber until the same shall have been recorded by him as aforesaid; and no person shall use any mark previously recorded and used by another, and no person shall mark any prize log.

3861.—All mortgages, liens, bill of sale or other written instruments in any way affecting the ownership of any marked logs, which shall specify the marks placed upon said logs, and when they were cut, shall be recorded in the office of the state timber inspector.

3862.—All prize logs shall be divided between the owners in each district in proportion to the number of logs owned by each person or company respectively in each district; and prize logs are hereby defined to mean such logs as bear no mark or marks, and all logs bearing marks not recorded or claimed within one year after any general drive.

3863.—Any person with whose logs or timber, in any waters of this state, such prize logs or timber shall become so intermixed that they cannot be conveniently separated for the purpose of being floated to the market or place of manufacture, may drive all such logs or timber with which his own may be intermixed toward such market or place, when no special or different provision is made by law for driving the same, and shall be entitled to reasonable compensation from the owner for driving such logs or timber, to be recovered after demand therefor on said owner or agent, if known; and he shall have a prior lien thereon until 30 days after they arrive at their place of destination, to enable him to attach the same; and if the owner thereof cannot be ascertained, the property shall be liable according to law, and enough disposed of to defray the expenses thereof.

3864.—Every person rafting logs on any of the rivers of this state shall have the marks thereon on the upper side of every log when rafted, open to view and inspection to all persons interested, and every person violating this section shall forfeit \$1 for each log the mark of which shall not be so exposed, one-half to the use of the person prosecuting therefor, one-fourth to the state, and the other fourth to the prosecuting attorney.

3868.—Any person who shall knowingly cut down, destroy or carry away any tree, timber, lumber, staves or shingles made therefrom, and any person who shall aid or abet or assist any other person in so doing, and any person who shall purchase or receive any trees, timber, lumber, staves or shingles, knowing the same to have been cut contrary to the provisions of law, shall be jointly and severally liable to the owner in double the value thereof.

4425.—Laborers who perform work and labor for any person under a written or verbal contract, if unpaid for the same, shall have an absolute lien on the production of their labor for such work and labor.

4439.—Proceedings under this act shall be commenced within eight months after the work is done: Provided, that the employer may bring the laborer to settlement before a proper officer any time after the labor is performed by giving the laborer or his agent 10 days' notice.

CALIFORNIA.

2389.—The word "timber" is used in this article to designate all timber, whether in logs, boards, planks or beams, and whether in rafts or otherwise, but does not include the sort of wood commonly called driftwood.

PRIVILEGES TO CONSTRUCT BOOMS.

The board of supervisors of any of the counties of this state are hereby authorized and empowered to grant the privilege of constructing booms for the purpose of holding logs and timber to companies, corporations or individuals, and to prescribe the conditions on which the same shall be maintained, and the prices which may be charged for the use of the same.

STRAY TIMBER.

2390.—Whenever any lumber drifts upon any island in any of the waters of this state, or upon the bank of any such water, the owner of the lumber may remove it on payment or tendering to the owner or occupant of the land the amount of the damages which he has sustained by reason thereof, and which may accrue in its removal; and if the parties cannot agree as to the amount of such damages, either party may have the same appraised by two disinterested citizens of the county, who may hear proofs and determine the same at the expense of the owner of the lumber.

2391.—If the owner of such lumber does not, within three months from the time it was so drifted, take the same away, the owner or occupant of the land must deliver a bill of his charges and appraisement of damages, together with the lumber, to the sheriff of the county, and thereafter the sheriff must dispose of the same as is required by Article IV of this chapter with regard to wrecked perishable property.

2392.—When sold, the proceeds of the lumber must be applied, first, to the payment of the charges of the sale, and in liquidation of the expenses and damages awarded to the person entitled thereto; and the residue must be paid to the county treasurer, to be by him paid over to the owner, or his representatives, or assigns, on the production of satisfactory proof of ownership to the judge of the supreme court of the county, and on his order thereof, made within one year after its receipt.

2393.—The rejection of the judge of any claimant's right to such proceeds is conclusive, unless within six months there-

after he commences action therefor. In case no claim is made or sustained to such proceeds, the same must, by the county treasurer, be placed in the common school fund of the county.

IMPROVEMENT OF STREAMS.

4085.—The board may provide for widening, deepening, straightening, removing obstructions from, and otherwise improving all streams within the county for use as public highways for rafting and floating lumber, when such streams are not declared by law to be and are not in fact navigable for commercial purposes, and provide regulations for the use thereof, but no regulations of the board, nor improvements directed, may in any manner interfere with the private rights or privileges of riparian owners, miners or others.

DEFACING MARKS UPON LOGS, LUMBER OR WOOD.

356 —Every person who cuts out, alters or defaces any mark made upon any log, lumber or wood, or puts a false mark thereon with intent to prevent the owner from discovering its identity, is guilty of a misdemeanor.

BURNING OR INJURING RAFTS.

608.—Every person who wilfully and maliciously burns, injures or destroys any pile or raft of wood, plank, boards or other lumber, or any part thereof, or cuts loose or sets adrift any such raft or part thereof, or cuts, breaks, injures, sinks or sets adrift any vessel, the property of another, is punishable by a fine not exceeding \$500, or by imprisonment in the county jail not exceeding six months.

MALICIOUS INJURY TO SAW LOGS, ETC., FELONY.

1.—Every person who maliciously drives into or places within any saw log, shingle bolt or other wood, any iron, steel or other substance sufficiently hard to injure saws, knowing that the said saw log, shingle bolt, or other wood is intended by the owner thereof to be manufactured into any kind of lumber, is guilty of a felony, and shall be punished by imprisonment in the state prison not less than one nor more than five years.

PERSONAL PROPERTY LIEN.

3052.—Any person who makes, alters or repairs any article of personal property at the request of the owner or legal possessor of the property, has a lien on the same for his reasonable charges for work done and materials furnished, and may retain possession of the same until the charges are paid. If not paid within two months after the work is done, the person may proceed to sell the property at public auction by giving 10 days' public notice of the sale.

COLORADO.

PERSONAL PROPERTY LIEN.

2120.—Any mechanic or other person who shall make, alter, repair or bestow labor upon any article of personal property

for the improvement thereof, at the request of the owner of such personal property, or of the materials from which the same is made, shall in like manner have a lien upon such articles of personal property for his reasonable charges for the labor performed and materials furnished and used in such making, alteration, repair or improvement.

CONNECTICUT.

DAMAGE.

Every person who shall wilfully or maliciously burn or otherwise destroy or injure any bridge lock, dam or flume, or any pile or parcel of wood, boards, timber or lumber of another, shall be imprisoned not more than seven years, or fined not more than \$500.

DELAWARE.

LUMBER INSPECTOR FOR TOWN OF LAUREL.

Annually, at the March session of the levy court and court of appeals in and for Sussex county, there shall be appointed by said court an inspector of lumber in and for the town of Laurel, Little Creek Hundred, Sussex county, whose duty it shall be to measure and inspect the quality and quantity of the lumber brought under his notice, and render his services whenever and only when called by one or more of the contracting parties in a purchase or sale of lumber.

MALICIOUS MISCHIEF.

5.—If any person shall wilfully and maliciously burn or set on fire any wheat or other grain, hay or straw, any boards, shingles or other lumber of another, he shall be deemed guilty of a misdemeanor, and shall be fined not exceeding \$1,000, shall stand one hour in the pillory, shall be imprisoned not exceeding one year, and, in case of the destruction of private property, shall restore and pay to the owner thereof two-fold the value thereof; and if a fire so set to such wheat, grain or other property, or to any building, ship or vessel, shall spread, the person so setting the same on fire shall be deemed guilty of burning or setting on fire every dwelling house, ship, vessel, building or other property to which such fire shall extend.

THE DAKOTAS.

BOOM LAW.

It shall be lawful for any person having logs or lumber in any stream navigable for water crafts in this territory, to boom such logs or lumber along the shore, and to secure the boom by means of piles driven in the stream, or by chains, ropes, timber or traverse poles made fast at points along the

shore; that there shall be at all times sufficient channel left clear for the free passage of any crafts or rafts usually navigating such streams.

LARCENY.

Any person who shall wilfully and without authority take any saw logs that may be on any river, or on the land adjoining, or near a river, which may be floated down said river or on to said land, and shall remove or attempt to remove the same, or who shall cut or split said logs or otherwise destroy or injure them, shall be deemed guilty of a misdemeanor.

Any person who shall purchase, receive or secrete saw logs so taken or removed, or who shall cut or otherwise injure logs so taken or removed, knowing them to have been so taken or removed, shall be punished as prescribed.

DEFACING LOG MARKS.

Every person who cuts out or defaces any mark made upon any log or lumber, whether said mark be recorded or not, or puts a false mark upon any log or lumber floating in any of the waters of this territory or lying upon land, is guilty of a misdemeanor.

PERSONAL PROPERTY LIEN.

Every person who, while lawfully in possession of an article of personal property, renders any service to the owner thereof by labor or skill employed for the protection, improvement, safe keeping or carriage thereof, has a special lien thereon, dependent on possession, for the compensation, if any, which is due to him from the owner for such service.

FLORIDA.

INSPECTORS OF TIMBER AND LUMBER.

1.—It shall be the duty of the governor to appoint a sufficient number of timber and lumber inspectors in each county in the state, who shall hold office for four years, subject to removal by the governor for good cause shown.

3.—When any person or persons shall desire the attendance and services of either or any of such inspectors of lumber, he or they shall give notice and inform all parties concerned and interested, of his intention of calling in such inspector, at least three days previous to the time when he shall require said inspector to inspect and measure the lumber in question; and it shall be the duty of the inspector, when summoned to attend at the place and the day to which he may be called, and faithfully measure all lumber he may be required to do, and any report and return he may make concerning thereof shall be received as the correct measurement of the same; provided, nevertheless, that the several parties interested may, at all times, be at liberty to establish the incorrectness of such return and report, in any suit regularly commenced in any court of this state having jurisdiction of the same.

5.—The said inspectors shall receive the following fees for their services, to wit: \$2 for every 20 miles they may travel in going to and from this place at which they may be required to

attend, and 12½ cents for every thousand superficial feet of ranging lumber, and 25 cents for every hundred cubic feet of live oak or cedar lumber or timber, and 50 cents for every thousand staves they may inspect and count.

STRAY LOGS AND LUMBER

1.—When any person or persons shall find any raft or rafts of sawed, hewed or rounded lumber adrift in any of the bays, rivers, lakes, bayous, lagoons or creeks of this state, it shall be the duty of such person or persons to secure such raft or rafts in the place or places where found, or in the nearest place of safety, and to proceed as soon as possible thereafter to advertise the same at the door of the courthouse of the county where found, stating the kind and probable quantity of lumber, the place or places where found, and where deposited.

2.—No person or persons other than the owner or owners, or other appointed agents, shall hereafter stay or take possession of any such sawed lumber in rafts, hewed timber, round saw mill logs or spars before the same shall have reached the mouths or outlets of such rivers, and have passed out into the open sea or bays where they empty their waters, under the penalties imposed by the fourth section of this chapter.

3.—If, after the expiration of 60 days from the advertising thereof, no person or persons shall have claimed and established their right of property to said lumber to the satisfaction of the justice of the peace (to prove which right the person or persons claiming as the owner or owners of said lumber shall not be required to produce testimony upon oath to the identity thereof, but such circumstantial proof as the nature of the case admits), then it shall and may be lawful for such person or persons finding the same to take it to the nearest market and deliver it to some acting justice of the peace, whose duty it shall be forthwith to sell the same to the best advantage; to pay to the finder or finders all necessary and reasonable expenses; to reserve to himself 5 per cent as compensation for his services, and to place the balance in the hands of the clerk of the circuit court, whose receipt he shall take. But if, before the expiration of the 60 days, the owner or owners shall appear and establish their right to said lumber, such owner or owners shall pay all expenses and reasonable charges for securing the same, to be determined, in case of difference between the parties, by an arbitrator appointed by each; but if, after the expiration of another term of 60 days, no right shall have yet been established to same lumber, then the balance to said money remaining in the hands of the clerk shall be paid over, one-half to the person or persons claiming in consideration of the finding thereof, and the other half to the county treasurer, to be applied in common with other funds to county purposes.

5.—The restrictions herein contained shall not extend to lumber broken asunder from rafts and driven ashore on the coast.

A public custodian of lost timber and lumber is appointed for all ports into which have come during the last five years not less than 50 vessels a year of not less than 200 tons burthen.

It shall be his duty to furnish the master of each vessel loading from the water a suitable stamp, and the master shall stamp all timber and lumber immediately on its receipt alongside his vessel. The custodian shall search the harbor for lost logs and lumber, and when any are found he shall place them in a boom kept by him for that purpose. He shall give notice by publication in a newspaper published at said port that such logs or lumber will be sold if not called for in five days. If not so called for he shall sell the same, and if the proceeds are not claimed in 90 days they shall be forfeited and paid into the county treasury. The sale is to be at public auction. The stamp is prima facie evidence of the ownership of the logs in all courts of the state. It shall be unlawful for any person except the owner or the public custodian to pick up stray logs in such harbor.

LARCENY OF LOGS.

Stealing logs or timber of less than \$100 in value is punishable by imprisonment not exceeding two years and by fine not exceeding \$500.

LOG MARKS.

6.—All persons floating lumber or timber down the current of rivers, streams or water-courses in this state, may hereafter adopt a particular mark, brand or stamp, to be used and applied on all such lumber or timber, to distinguish and designate their ownership thereof, and such person or persons so adopting any certain mark, brand or stamp, shall make record of the same with the clerk of the circuit court within the district, describing it particularly, and its usual mode of application, and any person or persons who thereafter shall fraudulently use said mark, brand or stamp, or who may alter, deface or destroy the same, shall, upon proof thereof, be deemed to be guilty of larceny and punishable accordingly.

BOOMS.

7.—It shall be lawful for owners of lumber or timber floating down rivers or water-courses to make use of floating booms on such streams, for the purpose of securing such lumber or timber from loss; provided, always, that the said booms shall not be used in such manner as to cause any unnecessary delay to boats and vessels engaged in the navigation of such rivers or streams, nor to be permitted to remain stretched out upon or across such rivers or streams any longer than is absolutely necessary to secure their timber or lumber from loss. Any person or persons who shall maliciously turn loose or cut away such boom or booms, to the injury and loss of the owner or owners of timber or lumber contained or held by such boom or booms, shall be guilty of a misdemeanor, and, on proof thereof, shall be punished by a fine at the discretion of the court, and also be answerable in a suit for damages to the owner or owners thereof.

LOG LIEN.

Laborers and contractors contracting and engaging to cut, raft or sell logs or timber of any kind, to perform any labor in connection with the sale and delivery of any such logs or timber, shall have a first lien upon such logs or timber or any lum-

ber, boards, staves, lath or shingles manufactured therefrom, until the compensation for services shall be fully paid and satisfied to the amount agreed upon by the contracting parties, unless a contrary stipulation be entered into at the time the contract is made or work done, which lien shall be enforced in like manner as the lien provided for builders, mechanics, material men, laborers, etc.

PERSONAL PROPERTY LIEN.

Whenever any person shall entrust to any mechanic or laborer materials to construct, alter or repair any article of value, such mechanic or laborer, if the same be completed and not taken away, and the fair and reasonable charges not paid, may, three months from the time such charges became due, sell the same, and such sale shall be at public auction, for cost; provided, that before any such sale such mechanic or laborer shall give public notice of the time and place thereof.

GEORGIA.

PENALTY FOR DISPOSING OF DRIFTED TIMBER.

No raftsman or other person shall dispose, or attempt to dispose, of any drifted timber or lumber taken up by him within this state, on pain of paying not exceeding \$500 for such offense, to be recovered in any court having jurisdiction of the same, one-half of the penalty to go to the informer, and the other half to the use of the county wherein such offense may be committed, or the offender may be imprisoned not more than six months; but nothing herein contained shall prevent the finder of drifted lumber or timber from requiring or receiving from the owner reasonable compensation for delivering to the owner such timber or lumber.

The fee for receiving lumber shall not exceed 3 cents per thousand feet, which fee shall be charged only at the time of receipt, and the fee for boomage shall not exceed 30 cents per day, for each raft.

If any person detected in purchasing drifted lumber or timber as aforesaid, except from factors or timber cutters, shall be liable, on conviction, to pay a fine of \$50 for every offense, or to be imprisoned for a term of not exceeding six months.

ILLEGALLY MEASURING LUMBER.

If any measurer or inspector of timber, appointed under the laws of this state, shall measure any timber otherwise than is required by the laws of this state, he shall be guilty of a misdemeanor, and upon conviction thereof shall be punished for each offense (as prescribed in section 4310 of this Code); provided, that this provision shall not apply to any case where the measurement is for the purpose of being used in the sale of the timber, or any case where the parties buying and selling contract to have the timber measured other than according to the laws of this state.

PERSONAL PROPERTY LIEN.

All mechanics of every sort, for work done and material furnished in manufacturing personal property, or for repairing personal property, shall have a special lien on the same, which must be asserted by retention of such property, and not otherwise. Said liens shall be lost by the surrender of such personal property to the debtor, and shall be superior to all liens but liens for taxes and such other liens as the mechanics may have actual notice of before the work was done or material furnished.

IDAHO TERRITORY.

BOOMS.

835.—No dam or boom must be hereafter constructed or permitted on any creek or river, unless said dam or boom has connected therewith a sluiceway, lock or fixture sufficient and so arranged as to permit timber to pass around, through or over said dam or boom without unreasonable delay or hindrance.

DAMAGE.

6866.—Every person who cuts out, alters or defaces any mark made upon any log, lumber or wood, or puts a false mark thereon, with intent to prevent the owner from discovering its identity, is guilty of a misdemeanor.

7163.—Every person who wilfully or maliciously burns, injures or destroys any pile or raft of wood, plank, boards or other lumber, or any part thereof, or cuts loose or sets adrift any such raft or part thereof, the property of another, is punishable by fine not exceeding \$300, or by imprisonment in the county jail not exceeding six months, or by both.

STRAY LOGS.

830.—The word "timber" is used in this chapter to designate all logs, boards, planks, lumber, railroad ties, poles, rails, cordwood or beams, and whether in rafts or otherwise, but does not include the sort of wood commonly called driftwood.

831.—Whenever any timber drifts upon any island in any of the waters of this territory, or upon the bank of any such waters, the owners of the timber may remove it on payment or tendering to the owner or occupant of the land the amount of the damages which he has sustained by reason thereof, and which may accrue in its removal; and if the parties cannot agree as to the amount of such damages, either party may have the same appraised by two disinterested citizens of the county, who may hear proofs and determine the same at the expense of the owner of the timber.

832.—If the owner of such timber does not, within three months from the time it was so drifted, take the same away, the owner or occupant of the land must deliver a bill of his charges and appraisement of damages, together with the timber, to the sheriff of the county, and thereafter the sheriff must sell the same after three days' notice posted in three public places of the precinct.

833.—When sold, the proceeds of the timber must be applied, first, to the payment of the charges of the sale and in liquidation of the expenses and damages awarded to the person entitled thereto; and the residue must be paid to the county treasurer, to be by him paid over to the owner, or his representative or assigns, on the production of satisfactory proof of ownership to the probate judge, and on his order therefor made within one year after its receipt.

PERSONAL PROPERTY LIEN.

A person who makes, alters or repairs any article of personal property at the request of the owner, has a lien on the same for his reasonable charges for work done and materials furnished, and may retain possession of the same until the charges are paid.

ILLINOIS.

PENALTY FOR CUTTING TIMBER WITHOUT PERMISSION.

Any person who shall cut, fell, box, bore or destroy or carry away any black walnut, black, white, yellow or red oak, white wood, poplar, wild cherry, blue ash, yellow or black locust, chestnut, coffee or sugar tree, or sapling, standing or growing upon land belonging to any other person or persons, without having first obtained permission so to do from the owner or owners of such lands, shall forfeit and pay for such tree or sapling so cut, felled, boxed, bored or destroyed the sum of eight dollars.

The penalty hereinabove provided shall be recoverable, with costs of suit, either by action of debt, in the name and for the use of the owner or owners of the land, or by action *qui tam*, in the name of any person who will first sue for and recover the same; the one-half for the use of the person so suing, and the other half for the use of the owner or owners of the land.

Revised Statutes, Chap. 136.

INDIANA.

DAMAGE.

1927.—Whoever wilfully and maliciously burns or attempts to burn any tanbark, tree, timber or lumber, the property so burned being of the value of \$20 or upwards, and being the property of another, or being insured against loss or damage by fire, and the burning, or the attempt to burn, being with intent to prejudice or defraud the insurer, is guilty of arson.

PERSONAL PROPERTY LIEN.

5304.—Whenever any person shall intrust to any mechanic or tradesman materials to construct, alter or repair any article of value, such mechanic or tradesman, if the same be completed and not taken away, and his fair and reasonable charges not paid, may, after six months from the time the charges become due, sell the same, or, if the same be susceptible of division

without injury, he may sell so much thereof as is necessary to pay such charges.

5305.—Before such sale, such mechanic or tradesman shall give public notice of the time and place thereof.

IOWA.

WOOD OR LUMBER YARDS.

911.—Cities organized under special charters are hereby authorized to prohibit, or regulate, the piling or depositing of any kind of wood, lumber or timber upon any lot or property within the city limits within a distance of 100 yards of any dwelling house.

STRAY LOGS AND LUMBER.

2345.—If any person shall hereafter stop or take up any raft of logs or part thereof or any logs suitable for making lumber, or hewn timber or sawed lumber, found adrift on any watercourse within the limits or upon the boundaries of this state, such person, within five days thereafter, provided the same shall not have been previously restored to the owner, shall go before some justice of the peace or notary public of the county, in which the same was taken up, and make affidavit in writing; setting forth an exact description of the articles found, and stating when and where the same were found, the number of logs or other pieces, and the marks and brands thereon, and that the same have not been altered or defaced since the taking up by him or by any other person to his knowledge.

INSPECTION LAW.

3245.—The board of supervisors of each county, as often as may be necessary, shall appoint one inspector of lumber and shingles, who shall have power to appoint one or more deputies to act under him. For the conduct of the deputies the principal shall be liable.

3248.—The inspectors or their deputies, within their respective counties, shall inspect all lumber, boards and shingles on application made to them for that purpose; and when inspected, stamp on the lumber, boards and shingles, with branding irons made for that purpose, the name of the state and county where inspected, and the kind and quality of the articles inspected, which branding iron shall be made and lettered as directed by the board of supervisors. And every inspector shall make, in a book for that purpose, fair and distinct entries of articles inspected by him or his deputies with the names of the persons for whom said articles were inspected.

3250.—A lawful shingle shall be 16 inches in length, 4 inches wide, $\frac{1}{2}$ an inch thick at the butt end; and all lumber shall be divided into four qualities, and shall be designated clear, first common, second common and refusal. Shingles shall be clear of sap, and designated as first and second quality; the shingles to be branded on each bundle with the quality and the name of the inspector.

PENALTY FOR MALICIOUS INJURY.

If any person wilfully or maliciously burn or otherwise destroy or injure any pile or raft of wood, plank, board or other lumber, or any part thereof; or cuts loose or sets adrift any such raft, or part thereof, the property of another, he shall be punished by imprisonment not more than five years in the penitentiary, or fine not exceeding \$500, and imprisonment in the county jail not exceeding one year.

KANSAS.

PERSONAL PROPERTY LIEN.

Whenever any person shall intrust to any machanic, artisan or tradesman, materials to construct, alter or repair any article of value, on any article of value to be altered or repaired, such mechanic, artisan or tradesman shall have a lien on such article, and if the same be completed and not taken away, and his fair and reasonable or stipulated charges be not paid, may, after three months from the time such charges become due, sell the same; or if the same be susceptible of division without injury, he may sell so much as is necessary to pay such charges, and the expenses of publication and sale.

KENTUCKY.

LARCENY, ETC.

Any person who shall feloniously cut or saw down and carry away timber growing upon the lands of another, of the value of \$20 or more, and without color of title in himself to the land upon which said timber was growing, or to said timber, shall be confined in the penitentiary for a period of one year.

LOG MARKS. TRADE MARKS.

1.—Any person, firm or corporation dealing in timber in any form shall be called and known as timber dealers, and as such may adopt a trade mark.

3.—Every trade mark so adopted shall, from the date thereof, be the exclusive trade mark of the persons, firms or corporations adopting the same.

4.—The proprietor of said trade mark shall, in using the same, cause it to be plainly stamped, branded or otherwise impressed upon each piece of timber upon which the same is to be placed; and any person who shall intentionally and without lawful authority remove, deface or destroy said trade mark, shall be guilty of a misdemeanor.

5.—If any person knowingly and unlawfully takes and carries away, secretes, destroys or converts to his own use any lumber upon which said trade mark is stamped, branded or impressed as aforesaid, shall be deemed guilty of larceny thereof, and punished as in other cases of larceny as now provided by law; and if any person shall intentionally put any such timber

in such position or place so remyte from the stream from which it was taken or in which it was afloat, or to render it inconvenient or unnecessarily expensive to replace the same in such stream, he shall be guilty of a misdemeanor and fined not less than \$20.

8.—If any person shall falsify or fraudulently place any trade mark on timber not his own, he shall be guilty of a misdemeanor.

LOG BRANDING ON KENTUCKY AND CUMBERLAND RIVERS AND TRIBUTARIES.

1.—It shall be the duty of any person or persons owning or dealing in logs upon the Kentucky and Cumberland rivers and their tributaries to have and to own an ax or branding iron for the purpose of branding their timbers. It shall be the duty of such person or persons to brand all of their timber or logs before starting the same to market.

2.—It shall be the duty of such person or persons dealing in logs to have their brands entered upon record in the county clerk's office in the county where they start their timber to market, if they reside in the state, also in the county where they reside.

3.—Any person or persons that cut or deface any brand upon the timber or logs of another, upon the Kentucky or Cumberland rivers and their tributaries, shall be deemed guilty of a felony, and upon indictment, trial and conviction in any court of this commonwealth, shall be, for each offense, confined in the penitentiary of this state not less than one or more than three years.

MAINE.

LIENS ON LOGS AND LUMBER.

Whosoever labors at cutting, hauling, rafting or driving logs or lumber, or at cooking for persons engaged in such labor, has a lien thereon for the amount due for his personal services, and the services, performed by his team, which takes precedence of all other claims, except liens reserved to the state, continuous for 60 days after the logs or lumber arrive at the place of destination for sale or manufacture, and may be enforced by attachment.

MALICIOUS MISCHIEF AND TRESPASSES.

Whosoever wilfully or maliciously, without consent of the owner, cuts away, lets loose, injures or destroys any boom, raft of logs or other lumber, or any vessel, gondola, scow or other boat fastened to any place of which he is not the owner or legal possessor, shall be punished by fine not exceeding \$500 and imprisonment for less than one year; and also shall be liable to the person injured in an accident for trespass for double the damage by him sustained.

LOG SURVEY.

25.—Surveyors of logs may inspect, survey and measure all

mill logs floated or brought to market or offered for sale in their town, and divide them into several classes, corresponding to the different quality of boards and other sawed lumber, which may be manufactured from them; and they shall give certificates under their hands of the quantity and quality thereof to the person at whose request they are surveyed.

LARCENY.

Whosoever takes, carries away or otherwise converts to his own use, without the consent of the owner, any logs suitable to be sawed or cut into boards, clapboards, shingles, joists or other lumber, or any mast or spar, the property of another, whether the owner is known or unknown, lying in any river, pond, bay, stream or inlet, or on or near the bank or shore thereof, or cuts out, alters or destroys any marks made thereon, without the consent of the owner, and with intent to claim the same, forfeits for every such log, mast or spar \$20, to be recovered on complaint; half for the state and half for the complainant.

RIVER OBSTRUCTIONS.

5.—If any boom on the Saco river, or on any other waters connected therewith, is so placed or constructed as to prevent the free and usual passage of timber down the river, the owner or occupant thereof, at his own expense, shall release and turn out timber so detained, when requested to do so by the owner thereof, if it can be done with safety; and if for two days after request he neglects or refuses to do so, he is liable to the owner of the timber in an action on the case, for all damages by him sustained.

DRIVING.

6.—Any person whose timber in any waters of the state is so intermixed with the logs, masts or spars of another, that it cannot be conveniently separated for the purpose of being floated to the market or place of manufacture, may drive all timber with which his own is so intermixed towards such market or place when no special and different provision is made by law for driving it, and is entitled to a reasonable compensation from the owner.

FOREST FIRES.

Persons who build camp or cooking fires in or adjoining any woods, shall totally extinguish the same before leaving them. Failure to do so is a misdemeanor punishable by fine not exceeding \$100 or by imprisonment in the county jail not more than one month or both. Hunters are requested to use non-combustible wads. The selectmen of the different towns are made fire wardens. It is their duty to prevent or extinguish fires and report to the forest commissioner, who has general charge of the matter.

Railroad companies are required to cut, burn off or remove from their right of way all inflammable material, and to provide locomotives with appliances for preventing escape of sparks and fire. Railroad employes are forbidden to leave fire on the track near a wooded district.

MARYLAND.

DRIFT LOG LAW.

12.—All persons claiming logs cast by wind and tide upon any shore bordering upon the Chesapeake and its tributaries, are prohibited from removing the same without the payment to the owner of said shore of the sum of 25 cents for each log so removed.

13.—The owner of any shore upon which logs are so cast may advertise such logs by one insertion each week for three successive weeks, in some newspaper published in the state of Maryland, of a public notice calling upon the owner of said logs to remove them, after the payment of 25 cents for each log so removed and the cost of said advertisement in addition thereto.

14.—If the said logs are not removed after such publication, the owner of any shore may sell such logs to the highest bidder by giving notice of his intention so to do by an additional advertisement for three successive weeks, as aforesaid, mentioning the time and place of sale.

15.—Any owner of a shore so selling shall be responsible for the excess of such sale over the sum of 25 cents for each log sold and the cost of the advertisements and sale.

16.—Nothing contained in the four preceding sections shall be construed to deny the owner of any shore a right to an additional compensation for special damages, such as the destruction of fences, the lodging of logs upon cultivated fields, or other similar injuries.

MASSACHUSETTS.

STRAY LOGS AND LUMBER

1.—When any log, mast, spar or other timber is carried by floods into lands adjoining any rivers, streams or ponds, the owner of such logs or other timber may at any time within six months remove the same from said land on paying or tendering to the owner or occupant thereof such reasonable damages as may be caused by such removal; and if the owner of such logs or other timber does not take the same from such lands within said six months, or otherwise agree with the owner or occupant of such lands, then such logs and other timber shall be deemed the property of such owner or occupant.

DEFACING MARKS.

2.—Whoever unlawfully cuts out, alters or destroys a mark of the owner made on any log or other timber put into a river, stream or pond, shall forfeit a sum not exceeding \$10 for each log or other piece of timber the mark of which he so alters, cuts out or destroys, and shall be further liable in damages to the owner thereof for treble the value of the same, to be recovered, together with said forfeiture, in an action of tort.

3.—Whoever unlawfully cuts out, alters or destroys any marks of such logs or other timber, the owner whereof is not

known, shall forfeit a sum not exceeding \$10 for every log or other piece of timber the mark whereof he so cuts out, alters or destroys, to be recovered to the use of any person suing for the same.

RAFTING.

5.—No person shall cause or permit to be driven or floated down the Connecticut river any masts, spars, logs or other timber, unless the same are formed and bound into rafts and placed under the care of a sufficient number of persons to govern and manage the same so as to prevent damage thereby. If damage is done to a bridge or dam upon or over said river by any timber so driven or floated in any manner not herein allowed, the owner of the timber and every person who causes or permits the same to be so driven or floated, shall be jointly and severally liable for all such damage, to be recovered by the party injured in an action of tort.

THEFT.

6.—Whoever unlawfully takes, carries away or otherwise converts to his own use, without the consent of the owner, any logs suitable to be sawed or cut into boards, clapboards, shingles, joists or other timber, or any mast or spar, the property of another, lying or being in a river, pond, canal, lake, bay, stream or inlet within this state, shall for every such log, mast or spar be punished by fine of not less than \$5 nor more than \$20, or by confinement in the house of correction or jail not less than 30 days nor more than six months.

MALICIOUS MISCHIEF.

2.—Whoever wilfully and maliciously burns in the night time a * * * mill of another (being, with the property therein contained, of the value of \$1,000), * * * or any other building by the burning whereof any building mentioned in this section is burnt in the night time, shall be punished by imprisonment in the state prison for life or for any term of years.

3.—Whoever wilfully and maliciously burns in the daytime any building mentioned in the preceding section, the punishment for which, if burnt in the night time, might be imprisonment in the state prison for life, shall be punished by imprisonment in the state prison not exceeding 10 years.

4.—Whoever wilfully and maliciously burns a * * * mill or building whatsoever of another other than is mentioned in section 2, or a bridge, lock, dam, flume, ship or vessel of another, shall be punished by imprisonment in the state prison not exceeding 10 years.

5.—Whoever wilfully and maliciously burns or otherwise destroys or injures a pile or parcel of wood, boards, timber or other lumber * * * or any standing tree * * * of another, shall be punished by imprisonment in the state prison not exceeding five years, or by fine not exceeding \$500 and imprisonment in the jail not exceeding one year.

FOREST FIRES.

Whoever wantonly and recklessly sets fire to any material which causes the destruction or injury of any growing or

standing wood of another, shall be punished by fine not exceeding \$100, or by imprisonment in the jail not exceeding six months.

Whoever wilfully or without reasonable care sets a fire upon the lands of another, by means whereof the property of another is injured, or negligently or wilfully suffers any fire upon his own land to extend beyond the limits thereof, by means whereof the woods or property of any other person are injured, shall be punished by fine not exceeding \$250.

MICHIGAN.

LIEN FOR LABOR ON LOGS, TIMBER, POSTS, SHINGLES, ETC.

1.—Any person or persons that perform any labor or services in cutting, skidding, felling, hauling, scaling, banking, driving, running, rafting or booming any logs, timber, cedar posts, telegraph poles, railroad ties, tan bark, shingle bolts or staves in this state, shall have a lien thereon for the amount due for such labor or services, and the same shall take precedence of all other claims or liens thereon. The word person or persons in this section shall be interpreted to include cooks, blacksmiths, artisans and all others usually employed in performing such labor and services.

2.—No such debt, demand or claim shall remain a lien on such logs, timber, posts, ties, poles, bark, bolts or staves unless a statement thereof in writing, made under oath by the claimant or some one in his or her behalf, shall be made and filed in the office of the clerk of the county in which such labor or services are performed; provided, when such labor and services are performed upon any of said logs, timber, posts, poles, ties, bark, bolts or staves, got out to be run down, or are run down, the Manistee river or waters tributary thereto, such statement shall be filed with the clerk of the county of Manistee; provided further, when a lien is claimed for work and labor performed in running or driving said logs, timber, posts, poles, ties, bark, bolts or staves, then said statement shall be filed in the office of the clerk of the county where the drive terminates.

3.—Such statements shall briefly set forth and state the nature of such debt, demand or claim, the amount due claimant, as near as may be, over and above all legal set-offs, and a description of the logs, timber, posts, ties, poles, bark, bolts or staves upon or against which the lien is claimed.

4.—If any such labor or services be done between the first day of October and the first day of next April, such statement shall be filed on or before the first day of the next May; but if such labor be performed or done after the first day of April and before the first day of October, then such statement shall be filed within 30 days after the completion or last day of such labor or services, provided, that any sale or transfer of the logs, timber, cedar posts, railroad ties, telegraph poles, tan bark, shingle bolts or staves upon which the lien is claimed, during the time limited for the filing of such statement of lien and persons to the filing thereof, or during the time limited for

the enforcement of the same, shall in no way affect such lien, but such lien shall remain and be enforced against such logs, timber, posts, ties, poles, bark, bolts or staves in whosoever possession the same shall be found.

MALICIOUS MISCHIEF.

7.—Every person who shall wilfully and maliciously burn or otherwise destroy or injure any pile or parcel of wood, boards, timber or lumber, or any fence, bars or gate, or any stack of grain, hay or other vegetable product, or any vegetable product served from the soil and not stacked, or any standing trees, grain, grass or other standing product of the soil, or the soil itself, of another, shall be punished by imprisonment in the state prison not more than five years, or by fine not exceeding \$500 or imprisonment in the county jail not more than one year.

1.—Any person who shall wilfully and maliciously drive or cause to be driven or imbedded any nail, spike or piece of iron, steel or other metallic substance into any timber, log or bolt which may be put on the banks of or in any of the waters or in any mill yard of this state for the purpose of being made into lumber or marketed, shall be deemed guilty of a misdemeanor.

FIRING OF WOODS AND PRAIRIES.

1.—Every person who shall wilfully or negligently set fire to any woods, prairies or grounds not his own property, or shall wilfully or negligently permit any fire to pass from his own woods, prairies or grounds to the injury or destruction of the property of any other person, shall be deemed guilty of a misdemeanor.

2.—Whenever the woods or prairies in any township shall be on fire so as to endanger property, it shall be the duty of the justice of the peace, supervisor and the commissioners of highways of such township, and each of them, to order such and so many of the inhabitants of such township liable to work on the highways, and residing in the vicinity of the place where such fire shall be, as they shall severally deem necessary to repair to the place where such fire shall prevail, and there to assist in extinguishing the same or in stopping its progress.

3.—If any person shall refuse or wilfully neglect to comply with such order, he shall forfeit a sum not less than \$5 or more than \$50.

MALICIOUS MISCHIEF.

5.—Every person who shall wilfully dam up any rivers, creeks or streams in this state, or obstruct the navigation thereof, except for the purpose of milling or the use of machinery, with intent to hinder or obstruct any person to the use thereof as provided in this act, or who shall wilfully cut, untie, loosen or cast off any rope, chain, pole, timber or pile, or other fastening by which any boom containing any logs or timber shall be secure, shall be deemed guilty of a misdemeanor.

REGULATIONS FOR FLOATING LOGS, TIMBER AND LUMBER.

If any person or persons shall put, or cause to be put, into any lake, river creek or stream of this state any logs, timber or lumber, for the purpose of floating the same to the place of manufacture or market, and shall not make adequate provisions and put on sufficient force for breaking jams of such logs, timber or lumber in or upon such lake, river, creek or stream or for running or clearing the same from the banks or shores thereof; or for running or driving the same, and shall thereby hinder the removal of any logs from the banks or shores thereof; or shall thereby obstruct the floating or navigation of such lake, river, creek or stream, it shall be lawful for any other person, company or corporation engaged in floating or running logs, timber or lumber in such lake, river, creek or stream so obstructed, to cause such jams to be broken, and such logs, timber or lumber to be run, driven and cleared from the banks of such lake, river, creek or stream at the cost and expense of the person or persons owning such logs, timber or lumber; and such owner shall be liable to such person, company or corporation for such cost and expense; and such company, person or corporation so causing such jams to be broken, or such logs, timber or lumber to be run, driven or cleared, may have a lien on such logs, timber or lumber, for his or their reasonable charges and expenses for breaking jams and running, driving and clearing the same; and shall be entitled to take and retain possession of such logs, timber or lumber wherever the same may be found, or so much thereof as may be necessary to satisfy the amount of such charges and expenses and all costs thereon until the same shall be determined, satisfied and paid.

SIDE BOOMS.

7.—It shall be lawful for any person or persons having logs or timber in any stream navigable for licensed water craft, to boom such logs or timber along the shore, and to secure the booms by means of piles driven in the stream, or by chains, ropes, timber or traverse poles, made fast at points along the shore; provided, that there shall be at all times sufficient channel left clear to allow of navigation by any craft or rafts usually navigating such streams.

LOG MARKS.

1.—Every person, co-partnership or corporation who shall put any logs or timber into any river, stream or water in this state, for the purpose of rafting or floating the same to any other place, shall have some mark or marks previously selected, approved and recorded, impressed in a conspicuous place or places upon the end or surface of each of said logs or sticks of timber so put into any of the aforesaid waters.

2.—Before any such mark or marks shall be used it shall be the duty of every such person, copartnership or corporation intending to use the same, to cause a diagram and full and complete written description thereof, signed by such person, copartnership, corporation, to be recorded in the office of the clerk of each county through which any river, stream or water may run, whereon is to be floated any logs or timber upon

which said mark or marks are to be placed; and shall also give notice in writing to each log running or booming company doing business on any waters on which the logs or timber are floated or run.

6.—If any person shall falsely make, forge or counterfeit such mark, and use the same in marking logs or timber, knowing the same to be the mark of another person, and with intent to defraud, shall be deemed guilty of felony.

HUNG UP LOGS.

10.—Whenever any logs, timber, boards or planks, in rafts or otherwise, shall be drifted or float upon any island in any of the waters or streams in this state, or upon the banks or shores of such waters or lands adjacent thereto, the owner of such logs, timber or plank, or any person or corporation entitled to the possession thereof, may at any time within two years remove the same upon paying or tendering to the owner or occupant of such bank, shore or land, such reasonable damages as may have been caused by such occupancy and removal. If such logs, timber, boards or planks shall not be removed within the said two years, under the provisions of this section, the owner thereof shall be deemed to have forfeited all right thereto.

RAFTING AND BOOMING COMPANIES.

1.—Any number of persons, not less than five, may be formed into a corporation for the purpose of running, driving, booming and rafting logs, timber and lumber on any of the streams or waters within this state, by complying with the statutory requirements.

4.—Such corporation shall have authority to make and construct all proper and necessary rollways, booms, piers and other constructions along said stream or waters, for the running, driving, booming, rafting or securing said logs, timber or lumber; provided, that in all cases the consent of the riparian owner or occupants of any lands whereon such rollways, booms, piers or other constructions are intended to be made shall first have been obtained; and provided, also, that no such rollway, boom, pier or other construction shall interrupt or hinder the free use, navigation or floatage upon such stream or waters, by the public or any person interested in the same, or to be so constructed as to infringe upon the rights of individuals.

LUMBERMEN'S EXCHANGES.

1.—Any number of persons, not less than 25, residing in any town, city or county, provided that the residents of any two or more towns, cities or counties may associate themselves together as a lumber exchange, and assemble at any time and place upon which a majority of the members so associating themselves together may agree, and elect a president and one or more vice-presidents, and such other officers as they determine upon; adopt a name, constitution and by-laws, such as may be determined upon; and they and their associates shall thereupon become a body corporate under the name and style of such name by them so adopted; and by that name may sue and be sued, implead and be impleaded, receive, acquire and

hold property and effects, real and personal, by gift; devise or purchase, and dispose of the same by sale and conveyance, or by lease or otherwise; may have a common seal and may alter the same at pleasure; and shall possess and enjoy all the powers and privileges and immunities incident to corporations for the purposes herein mentioned and contemplated; provided, that no corporation hereby created shall at any one time hold real estate the value of which shall exceed \$50,000.

5.—Said corporation shall have power to appoint inspectors, as many as they shall see fit, to examine, measure and inspect lumber, shingles, logs and every other article of traffic commonly dealt in by members of said corporation, or any of them, or by persons engaged in what is commonly understood to be the lumber business, and to prescribe the rules and fix the grade by which such inspectors shall be governed in the discharge of their duties; and the certificate of such inspector as to the quality, quantity or character of such article thus inspected; and their mark thereon shall be evidence between buyer and seller of the grade, quantity, quality or character of the same, shall be binding upon the members of said corporation, or others interested, who shall obtain, require or assent to the employment of said inspector.

MINNESOTA.

RIVER DRIVING.

2242.—All rivers within this state of sufficient size for floating or driving logs, timber or lumber, and which may be used for that purpose, are hereby declared to be public highways, so far as to prevent obstructions to the free passage of logs, timber or lumber down said streams, or either of them,

2243.—No dam or boom shall be constructed or permitted on any river, as herein specified, unless said dam or boom has connected therewith a sluiceway, lock or other fixture sufficient and so arranged as to permit logs, timber and lumber to pass around, through or over said dam or boom, without unreasonable delay or hindrance.

2244.—Any boom or weir now in or on any river as aforesaid, that is to be constructed as to prevent the free passage of logs or lumber, is declared a public nuisance, which shall be abated unless a suitable sluiceway, lock or passage, as above provided, is made as aforesaid, within 30 days after written notice given by any person interested.

LUMBER DISTRICTS.

2245.—There are established seven districts for the survey and measurement of logs and timber within this state.

2246.—The Saint Croix lake and river and their tributaries constitute the first district; the Mississippi river and its tributaries above the mouth of the Saint Croix lake constitute the second district; the Mississippi river and its tributaries between the mouth of Saint Croix lake and the outlet of Lake Pepin constitute the third district; the Mississippi river and its tributaries below the outlet of Lake Pepin to the southern line of Wabasha county constitute the fourth district. All the waters tributary to Lake Superior, and all the waters in the

counties of St. Louis, Lake and Cook, the Little Fork and Big Fork rivers and their tributaries, Rainy Lake and Rainy Lake river, as far as the Lake of the Woods and all the tributaries of Rainy Lake and Rainy Lake river constitute the fifth district; the Mississippi river and its tributaries from the southern line of Wabasha county to the southern line of the State of Minnesota constitute the sixth district; the Red river, Red lake and Lake of the Woods and their tributaries, except Rainy Lake, Rainy Lake river and their tributaries, constitute the seventh district. Gen. Laws, 1893, Chap. 80.

SURVEYORS, THEIR POWERS, DUTIES AND FEES.

2247.—There shall be bi-annually appointed by the governor, with the advice and consent of the senate, a surveyor-general for each of the districts aforesaid, who shall be a citizen of the district for which he is appointed at the time of his appointment, and he shall enter upon the discharge of the duties of his office on the third Monday in April next succeeding his appointment, and shall hold his office for two years, and until his successor is appointed, confirmed and qualified.

2251.—The surveyor-general may appoint any number of deputies necessary to transact the business of his district, and for the correctness of their acts and doings has to be responsible upon his bond.

2253.—The surveyor-general, by himself or his deputy, at the request of the owner of any logs, timber or lumber, or any sheriff, coroner or constable, who has replevied, attached or levied on any logs, timber or lumber, or of any person who has a written order from the owner for the delivery of any logs, timber or lumber to repair to any part of his district, and survey such logs, timber or lumber, and upon completing such survey to make out a true and correct scale bill thereof, stating the person by whom, the time when and place where such logs, timber or lumber was scaled, at whose request and to whom scaled, if to any one; and the scale mark placed thereon, the number of logs, and when requested by the owner or any other person controlling the same, the number of pieces of the logs or timber, together with the mark or marks thereon, and the number of feet therein contained, and shall sign the name; and thereupon he shall record such bill in the books of his office, and upon being paid his fees for such services he shall deliver the original bill to the person to whom the logs, timber or lumber is scaled, if any; if not, then to the person requesting the survey; and such bill and the record thereof shall each be prima facie evidence of the facts therein stated. No surveyor-general or deputy-surveyor shall in person survey any logs, timber or lumber owned wholly or in part by himself, but either may survey any such logs, timber or lumber owned wholly or in part by the other; provided, that when logs which have been cut in any lumber district in this state have been run out of said district, it shall be lawful for the surveyor-general of the district in which said logs were cut, when requested to do so as above provided, to scale said logs by himself or deputy, and record the scale bill thereof in the books of his office; and said scale and record thereof shall be received as of the same degree of evidence as if the same had been done in his own proper district.

2256.—The said surveyors and their deputies shall, in surveying or measuring logs or timber, make such allowances for

hollow, rotten and crooked logs as would reduce and make them equal to good, sound and straight merchantable logs; and in surveying lumber shall throw off rotten, shaky or wormy stuff, and make the same equal to good merchantable lumber; and the figures showing such survey shall at the time of making the same be entered by the surveyor in pass books kept for the purpose, which books shall be preserved and filed by the surveyor-general in his office, for the inspection of all persons interested therein.

2257.—The surveyor-general shall keep posted in his office a written rule or scale of logs of all sizes and lengths, which shall govern him in his surveys, and the scale rule known as Scribner's rule is hereby adopted as the only legal rule for the survey of logs in this state; provided, that every log shall be surveyed by the largest number of even feet which it contains in length over 10 feet and under 24 feet, and all logs of 24 feet in length or more shall be surveyed as two logs or more.

2259.—In all cases of scale or transfer of any logs or timber, by one party to another, if the surveyor-general by himself or deputy surveys the same, he shall, at the time of making such survey, place upon each of such logs or pieces of timber the scale mark of the purchaser or the other transferee; and thereupon such scale mark shall supersede all prior marks upon such logs and timber, and become and be the log mark of such purchaser or transferee on the same logs and timber; and in all cases of a sale or other transfer of any logs or timber, the purchaser or other transferee shall be entitled to receive and have the scale bill, and when the surveyor-general delivers a scale bill to any person, he shall note upon the margin of the record thereof the name of the person to whom delivered and the date of the delivery.

2260.— * * * For the purpose of securing to the surveyor-general the payment of his fees, whether the same are for traveling, surveying, making scale bills or recording the same, or for all or any of such services, such surveyor-general shall have a lien upon all such logs, timber or lumber.

2262.—The surveyor-general of the first district shall keep an alphabetical list of all the log marks recorded in his office.

2263.—The surveyor-general shall not be required, except upon the request of a sheriff or constable in case of an attachment or levy thereon, to scale any logs to any person other than the owner, as the title thereto appears by the records in his office, without an order in writing therefor recorded in his office; and the surveyor-general shall record in the books of his office, in the order in which they are presented for record, all orders drawn by the owners of any logs, directing him to scale any logs of his mark or marks to any other person; and the first log scaled off of the mark given in such order and within the lien or of the lot or parcel prescribed therein, shall be scaled to the person in whose favor the order is drawn according to the priority of record; such order shall be recorded in the same books with bills and sales and mortgages, and shall have preference over any subsequent sale, transfer or incumbrance of such logs; and the fees of recording such orders shall be collected in the same manner and at the same time with the fees for scaling such logs.

2264.—The certificate of the surveyor-general of any mark which has been recorded in the office, in the district in which the logs were cut or into which they come, and that there is no transfer of such mark recorded in the book of this office, shall be prima facie evidence in any court in this state that the logs bearing such marks not superseded by any other mark, are the property of the person in whose name such mark is recorded. If the surveyor-general certifies that marks have been transferred on the books of his office, and the name of the person to whom such marks were last transferred, such a certificate shall be prima facie evidence of the ownership of the logs by the person to whom the mark was last transferred; and if the surveyor-general certifies that such mark has been superseded on any logs, naming the person in whose favor the same was last superseded, such certificate shall be prima facie evidence of the ownership of the logs bearing such mark superseded by the person owning such superseding mark, no sale or transfer of any log mark, sale, mortgage or other transfer or incumbrance of any logs cut in this state, or which come into any district of this state, shall be legal or binding, except between the parties thereto, unless such sale, transfer, mortgage or incumbrance is in writing, and in recording in the office of the surveyor-general in the district where such logs are cut, or into which they have come if cut in any other states, provided that the surveyor-general is authorized to transfer, in his district, any log mark to any person wishing to use the same, after said log mark had been recorded eight years, and the logs marked with that mark have become extinct.

2265.—No logs shall be scaled by the surveyor-general or his deputies, unless the marks upon the said logs are properly recorded in accordance with the provisions of this title.

And no survey of any logs shall be received in any court in this state except the survey of the surveyor-general or his deputies.

2266.—The surveyor-general shall report to the legislature at the beginning of each regular session thereof the total number of feet of logs and lumber which he has surveyed in his district of the year ending the thirtieth day of November last past.

2267.—He shall record all mortgages, liens and bills of sale or other written instruments in any way affecting the ownership of any mark of logs in his district, in a book kept for that purpose; provided, that said instruments shall specify the marks for that purpose; provided, that said instrument shall specify the marks placed upon the said logs when they were cut, and shall be recorded in the office of the surveyor-general, in which said marks are recorded; and no conveyances, lien, mortgages or transfer shall be valid until the sales are so recorded.

LOG MARKS.

2268.—Whoever cuts any logs in either of the districts of this state shall, before proceeding to make the same, cause to be recorded, in the office of the surveyor-general in whose district such logs may be, a copy of the log mark which is to be put upon said logs, and which mark shall be distinctly different from any other mark recorded in the same district.

Whoever cuts any logs in any state adjoining either of the districts of this state, and intends to bring such logs into any such district, may have his log mark recorded in the district into which he intends to bring such logs and into which they may be brought, with the same rights, force and effect as if such logs had been cut in such district. And when any log mark is recorded in pursuance of the provision of this chapter, such mark shall be deemed and held to be the property of any person in whose name it is recorded; and such mark borne upon any logs or timber, and not superseded by any other mark, shall be prima facie that the logs or timber bearing such mark are the property of the person owning the mark.

Any such log mark may be sold or transferred by the bill of sale recorded in the office of the surveyor-general where the mark is recorded.

STEALING LOGS. DEFACING LOG MARKS. FALSE MARKS.

2270.—Whoever takes from any of the rivers or their tributaries, in or bordering on this state, or from any slough, ravine, island or land adjoining said rivers or tributaries into or upon which any log may run, or cuts out, mutilates, destroys or renders illegible the mark or marks thereon, or in any manner wilfully injures any such logs, his own or whoever, other than the surveyor-general or his deputies, places upon any lot or piece of timber any mark except the original mark, is guilty of a misdemeanor, and shall be punished by a fine not less than \$50 or more than \$1,000, or by imprisonment in the state prison for not less than one year, or more than three years, and shall be further liable for double the market value of said logs at the time so taken, or imprisoned, to be recorded by the owner of such logs in a civil action.

BOOMS

2275.—The parties contracting and operating side booms upon any of the rivers or streams of this state shall construct and operate the same so as to reasonably exclude the logs and other floatables of other parties floating in said rivers or streams from entering such booms; and they shall also make and provide proper and sufficient openings for the admission of logs into such side booms.

In case logs, timber or other floatables belonging to other parties run, or by mistake are driven, into any such private boom or booms, neither the owner of such logs, timber or floatables, nor any other person or party shall be permitted to cut, open or in any way injure such private boom, or otherwise interfere with the same, except for as may be necessary to obtain the logs, timber or floatables, so run, or by mistake included therein, and then only when it can be done without injury to such private boom.

2276.—Whoever wilfully and maliciously opens, breaks, cuts or otherwise destroys or injures any side or other boom, or turns the whole or any part of the logs or timber contained therein loose or adrift, except for the purpose herein mentioned, and except also in case such boom materially obstructs the navigation of any navigable stream, or unlawfully intrudes upon the property of any such person, the person so opening,

breaking, cutting, injuring or destroying such boom, or turning loose or adrift such logs, or who wilfully or maliciously cuts loose or turns adrift any boom, string or raft of logs, timber or lumber, is guilty of a felony and shall be punished.

DAMS.

2296.—The board of county commissioners may grant a license to any person applying therefor to construct and maintain a dam or dams across any stream within their respective county and counties thereto attached for record or judicial purposes, for the purpose of raising a head of water sufficient to sluice logs, timber or lumber, upon being satisfied that such sluice dam is necessary at the point applied for, and that the land on both sides of the stream is in the possession or under the control of the person so applying for a license.

2297.—In all cases when the stream across which a license for a sluice dam is sought runs between two counties, the board of county commissioners of either county have a full jurisdiction in the premises as though the stream was wholly within the county of which they are commissioners; and when the board of county commissioners of either county have exercised jurisdiction under this title, and have granted a license thereunder, the county commissioners of no other county have any power to exercise any jurisdiction over the same.

2301.—Wherever a board of county commissioners of any county grant a license to construct and maintain a sluice dam across any stream within their jurisdiction, the said board shall establish the rate of tolls, which may be demanded for the sluicing of logs, timber and lumber, but the tolls for each dam shall not exceed the sum of 6 cents per thousand feet so sluiced; provided, that at the Snake river dam, in Pine county, the said toll may be 10 cents.

LOG LIEN.

2277.—Any person who may do or perform any manual labor in cutting, banking, driving, rafting, cribbing or towing any logs, railroad cross ties or timber in this state shall have a lien thereon as against the owner thereof and all other persons, except the state of Minnesota, for the amount due for such services, and the same shall take precedence of all other claims thereon; and any verbal or written agreement, expressed or implied, made by or between any person or persons or chartered company or companies, designed to act as a waiver of any right under this act, or any portion thereof, shall be wholly void.

2278.—This act is intended only for the protection of laborers for hire, and shall not inure to the benefit of any person interested in contracting, cutting, hauling, banking or driving logs by the thousand.

2279.—No such debt, demand or claim shall remain a lien on any such logs or timber, unless a statement thereof in writing, under oath by claimant or someone in his behalf, shall be made and filed for record in the office of the surveyor-general of the lumber district in which such logs or timber may be. * * * For all such labor done and performed between the first day of October and the first day of April, such statement shall be

filed on or before the first day of May next thereafter; and for all labor done and performed between the first day of April and the first day of October, such statement shall be filed within 30 days after the completion or last day of such labor or services, and unless action shall be begun for the recovery and enforcement of such claim or demand under the provisions of this act, within three months after the filing of such statement, the lien shall cease.

2280.—Any person having a lien upon any logs or timber pursuant to the provisions of this act may enforce the same by attachment against such logs or timber, in the district court of said state, in the judicial district wherein is situated the office of the surveyor-general in which the mark of such logs or timber is or should be recorded.

2283.—In all suits under the provisions of this act the person, company or corporation liable for the payment of such debt or claim shall be defendant; but any person having an interest in or lien upon the logs or timber upon which the lien or claim may apply, may be admitted by the court, so far as necessary to protect his rights in the premises.

2290.—When there are more persons than one having claims upon the same logs or timber as herein provided, it shall be lawful for any one person having such claim to purchase the claims of any of the others and take a written assignment of the same, either before or after the making or filing of the statement therefor.

Any person having a claim upon logs or timber as provided in this act, may assign the same in writing to any person, either before or after the making and filing of the statement therefor as provided in section sixty-four of this act, and the person to whom such claim may be assigned, his agent or attorney, may make and file for record the statement for a lien therefor as provided in said section sixty-four in case no such statement thereof has been filed. And when such statement, as provided for in section sixty-four of this act, and the assignment provided for in this section, has been made and filed in the office of the surveyor general of the lumber district in which said logs are situated, said person to whom said assignment is made shall be subrogated to all the rights of the original claimant, and is hereby authorized to enforce the lien against said logs or timber, in his own name, in the same manner and with the same effect, as the original claimant could have done had not such assignment been made. And any person holding the title to such logs or timber, or any lien by mortgage or otherwise thereon, as security for the payment of any sum as stumpage thereon, may, in like manner, purchase and take an assignment of any or all of such claims for labor, or may pay and discharge the same, and in either case may tack the same to his original claim and hold the same as an additional incumbrance thereon, and may enforce the payment of the same, with interest in like manner as his original claim thereon; but in no case shall he be required to pay more than the reasonable and current value of such labor.—(*Gen. Laws, 1893, Ch. 78.*)

2291.—Any person who shall desire to float to market or any place of manufacture any logs or timber in any of the streams of

the state, and who shall be hindered and obstructed in so doing by the logs or timber of another; or any person whose logs or timber in any of the waters of the state are so intermixed with the logs or timber of another that the same cannot be conveniently separated for the purpose of being floated to the market or place of manufacture, may drive all logs or timber with which his own is or may be obstructed or intermixed, toward such market or place of manufacture, to some point where the same can be conveniently separated from his own, and shall be entitled to a reasonable compensation therefor from the owner of such logs or timber; and upon the filing in the office of the surveyor-general of the district where such logs may be, within 30 days after the completion of such driving of any such logs or timber, a statement setting forth when and where the same were driven, the amount of his claim therefor, together with the mark borne upon any such logs or timber, and verified by his oath or affidavit, such person shall have and retain a lien upon any logs or timber bearing such mark, for the amount of such claim, from the time of filing the same, and may have and maintain a civil action for the amount of such claim, or for the the enforcement of such lien, against the owner of such logs or timber, or any person in whose name such mark shall be recorded at the time of filing such claims; provided, that a failure to commence such actions within 30 days after the filing of such claim shall operate as a discharge of said lien.

**AGREEMENT FOR EXTENDING TIME OF PAYMENT FOR CUTTING,
BANKING AND DRIVING LOGS MUST BE IN WRITING.**

Every agreement for extending the time of payment for manual labor, performed, as to be performed, in cutting, hauling, banking or driving logs, beyond the date of the completion of such labor, shall be void unless such agreement is in writing, subscribed by the party to be charged therewith and expressing the true consideration therefor, and unless at the time of the completion of such labor partnership or the making of such contract the person, or corporation for whom such labor shall be performed shall execute and deliver to the person performing the same, his or its negotiable promissory note for the compensation therefor, with interest, due at such time as may be agreed upon; Provided, That it shall not be competent for any such laborer to waive any of the provisions of this act, nor shall the right of such laborer to a lien upon any property to secure the payment for such labor be waived by the acceptance of such note, but such right of lien shall pass with the note and vest in and be enforceable by the holder thereof.—(*Laws 1891, Chap. 76.*)

PUNISHMENT FOR INJURY TO REAL OR PERSONAL PROPERTY.

“Injury to real or Personal Property.—A person who unlawfully and willfully destroys or injures any real or personal property of another, which is not specially described herein and where the punishment thereof is not specially prescribed by

statute, is guilty of misdemeanor, and is punishable as follows:
 "First.—If the value of the property destroyed, or the diminution in value of the property by the injury, is less than twenty (20) dollars, by imprisonment in the county jail for not more than three (3) months or by a fine of not more than one hundred (100) dollars.

"Second.—If the value of the property destroyed, or the diminution in the value of the property by the injury is twenty (20) dollars or more, by imprisonment in the county jail for not more than one (1) year, or by a fine of not more than five hundred (500) dollars, or by both such fine and imprisonment.

"Third.—And in addition to the punishment prescribed therefor, he is liable in treble damages for the injury done, to be recovered in a civil action by the owner of such property or the public officer having charge thereof."—(*Penal Code, Sec. 491.*)

MISSISSIPPI.

LOG SCALE.

953.—The table known as "Scribner's Lumber and Log Book by Doyle's Rule," be and the same is hereby adopted and declared to be the standard rule of measurement by which saw logs and square timber sold in this state shall be measured.

954.—It shall be unlawful for any person in this state to use as a rule of measurement in measuring saw logs and square timber, any table or rule of measurement that gives a measurement and computation less than given by "Scribner's Lumber and Log Book by Doyle's Rule"; and any person violating the provisions of this act shall be deemed and held to be guilty of a misdemeanor, and may be tried before any court having competent jurisdiction, and if found guilty shall be fined for each offense not less than \$50 nor more than \$250, and may be imprisoned not less than one or more than six months, or both, at the discretion of the court.

ALTERING MARKS.

If any person shall knowingly and willfully alter or deface the mark or brand of any saw log, the property of another, without his consent, and with intent to deprive the owner of his property, he shall, on conviction, be fined not exceeding \$100 or imprisoned in the county jail not more than three months, or both.

STEALING LOGS.

Cutting or rafting trees or timber on the land of another without his consent, is punishable by imprisonment in the county jail not more than five months or by fine not less than \$10 or more than \$1,000, or both.

OBSTRUCTION OF STREAM.

The obstruction of navigation in a navigable stream by logs or lumber, hindering or delaying any person in the driving or running of logs, gives the person so aggrieved the right to

break the jam and cause the obstructing logs, timber, or lumber to be boomed, rafted or run at the expense of the owner, such expense and cost being a lien on the logs, timber or lumber. Such lien may be enforced by sale.

Damage done to bridges by such logs or lumber is also a lien thereon.

MONTANA.

MALICIOUS MISCHIEF.

218.—Every person who shall willfully and maliciously burn or injure any pile or raft of wood, plank, boards or other lumber, or any part thereof, or cut loose or set adrift any such raft or part thereof; or shall cut, break, injure, sink or set adrift any such boat, canoe, skiff, or other vessel or water craft, being the property of another, shall, on conviction thereof, be punished by a fine not exceeding \$500 or imprisonment in the county jail not exceeding six months.

221.—Any person who shall carelessly set fire to any timber, woodland or grass, except for useful or necessary purposes; or who shall at any time make camp fire, or shall light any fire for any purpose whatever, without taking sufficient steps to secure the same from spreading from the immediate locality where the same may be used, or shall fail in any instance to put out or extinguish said fire before leaving or abandoning the same, shall be deemed guilty of a felony.

NEBRASKA.

PROHIBITING LUMBER DEALERS FROM POOLING AND FIXING THE PRICE OF LUMBER.

By Chapter 49, General Laws, 1893, it is unlawful for any lumber dealer or association of lumber dealers or any person or persons to enter into any agreement, contract or combination with any other lumber dealer or lumber dealers, association, person or party, for the pooling or fixing of prices of different and competing dealers and sellers, or to divide between them the aggregate or net proceeds of the earnings of such dealers and sellers or any portion thereof, or for fixing the price at which any lumber dealer or lumber dealers, or association of lumber dealers or any other person or persons shall sell lumber.

Any lumber dealer, persons or association, subject to the provisions of this act, who shall do or cause to be done, or knowingly suffer or permit to be done any act, matter or thing in this act prohibited, or shall omit to do any act, matter or thing, in this act required to be done, such lumber dealer or association shall be liable to the party injured thereby, to the full amount of damages sustained, together with reasonable attorneys' fee. And the court may compel any lumber dealer, or association of lumber dealers, or any director, officer, re-

ceiver, trustee, agent, employee, or clerk of them, defendant in such action or suit, to attend, appear and testify in such case, and compel the production of the books and papers of such lumber dealers, corporation or association of lumber dealers. Each day of the continuance of the violation of this act shall be deemed a separate offense, and the person or parties subject to the provisions thereof and violating the same shall be deemed guilty of a misdemeanor, and shall upon conviction thereof, be fined in a sum not less than \$200 and not more than \$1,000, or imprisonment in the county jail not exceeding six months, or both fine and imprisonment, at the discretion of the court, and shall moreover be liable to the suit of the party injured or damaged.

NEVADA.

RIVER DRIVING.

1064.—Any number of persons, not less than five, may be formed into a corporation for the purpose of running, driving, booming and rafting logs, timber, lumber and wood, on any of the streams or waters within this state, by complying with the statutory requirements. Such corporation shall have power to acquire and hold, by purchase, gift, grant, lease or otherwise, any lands, tenements, hereditaments and appurtenances, or the erection of mills, offices, houses or other buildings necessary and proper for carrying on the business of said corporation. To assess and collect all rates, dues and sums of money from the members of said corporation, by demand, suit or otherwise, in any place or court of proper jurisdiction, according to law. To make and construct all proper and necessary rollways, booms, piers and other constructions along said stream of water, for running, driving, booming or securing said logs, timber, lumber and wood: provided, that no such rollway, boom or pier or other construction, shall interfere or hinder the free use and navigation upon such streams or waters, and provided further that nothing contained in this act shall authorize any corporation formed under the same to injure or in anywise interfere with any dam, ditches or flumes that are constructed or may be hereafter constructed for milling or farming purposes; provided, that all dams hereafter constructed shall, whenever the same is required by any corporation hereafter formed under this act, provide suitable and necessary chutes and aprons, for the purpose of passing over or through said dam, logs or other timbers: and provided further, that the rights of those owning lands upon said rivers shall not be interfered with or infringed upon. To collect and remove from all islands and lowlands any logs, timber, lumber or wood belonging to such corporation, that may be carried out by the waters of overflow or the overflowage of the banks of such streams or water, and drifted or lodged upon any such island or lowland, and return the same to the main channel of the river.

LOG LIEN.

3825.—All persons who shall perform work or labor upon any tract or tracts of lands, by cutting or cording the wood or timber growing, or being thereon, shall have and may each respectively claim and hold a lien upon the wood or timber so cut or corded, for the amount in value of the work or labor performed, by retaining possession of the same until the whole amount due for such work or labor shall have been paid; provided that any lien, claimed or held as aforesaid, shall be deemed to be waived, unless an action be brought in some court of competent jurisdiction, for the recovery of the amount for which such lien is claimed as security, within 60 days after such wood or timber shall have been taken into possession by the claimant.

NEW HAMPSHIRE.

LOG LIEN.

Any person who, by himself or others or by teams, shall perform labor or furnish supplies to the amount of \$15 or more toward rafting, driving, cutting, hauling or drawing wood, bark, lumber, logs, or at cooking or hauling supplies in aid of such labor, shall have a lien thereon for such labor or supplies, which lien shall take precedence of all prior claims except liens on account of public taxes, to continue 90 days after the services are performed or supplies furnished, and may be secured by attachment.

OREGON.

LOG LIEN.

SEC. 1. That every person performing labor upon, or who shall assist in obtaining or securing sawlogs, spars, piles or other timber, has a lien upon the same for the work or labor done upon or in obtaining or securing the same, whether such work or labor was done at the instance of the owner of the same or his agent. The cook in a logging camp, and any and all others who may assist in or about a logging camp, shall be regarded as a person who assists in obtaining or securing the sawlogs, spars, piles or other timber mentioned herein.

SEC. 2. Every person performing labor upon, or who shall assist in manufacturing sawlogs or other timber into lumber, has a lien upon such lumber while the same remains at the yard wherein manufactured, whether such work or labor was done at the instance of the owner of such lumber or his agent.

SEC. 3. Any person who shall permit another to go upon his timber land and cut thereon sawlogs, spars, piles or other timber, has a lien upon such logs, spars, piles and timber for the price agreed to be paid for such privilege, or for the price such privilege or the stumpage thereon would be reasonably

worth, in case there was no express agreement fixing the price.

SEC. 4. The liens provided for in this act are preferred liens and are prior to any and all other liens, and no sale, transfer, mortgage or assignment of any sawlogs, spars, piles or other timber or manufactured lumber shall divert the lien thereon as herein provided.

SEC. 5. The person rendering the service or doing the work or labor named in sections 1 and 2 of this act, is only entitled to the liens as provided herein for services, work or labor, for the period of six months, or any part thereof next preceding the filing of the claims.

SEC. 10. No lien provided for in this act shall bind any sawlogs, spars, piles or other timber or any lumber for a longer period than six months after the claim, as herein provided for, has been filed, unless a suit be commenced in the circuit court within that time to enforce the same.

SEC. 11. The liens provided for in this act shall be enforced by a suit in the circuit courts of this State, and shall be governed by the laws regulating the proceedings relating to the mode and manner of trial, and the proceedings and laws to secure property so as to hold it for the satisfaction of any lien that may be against it.

SEC. 12. Any person who shall bring a suit to enforce the lien herein provided for, or any person having a lien as herein provided for, who shall be made a party to any such suit, has the right to demand that such lien be enforced against the whole or any part of the sawlogs, spars, piles or other timber or manufactured lumber upon which he has performed labor, or which he has assisted in obtaining or securing, or which has been cut on his timber land during the six months mentioned in sections 5 and 6, for all his labor upon or for all his assistance in obtaining or securing said logs, spars, piles or other timber or in manufacturing said lumber during the whole or any part of the six months mentioned in section 5, or for timber cut during the whole or any part of the six months mentioned in section 6.

SEC. 16. Any person, firm or corporation who shall injure, impair or destroy, or who shall render difficult, uncertain or impossible of identification any sawlogs, spars, piles or other timber upon which there is a lien, as herein provided, without the express consent of the person entitled to such lien, shall be liable to the lien holder for the damages to the amount secured by his lien, which sum may be recovered by an action against such person, firm or corporation, without bringing the suit as provided for in section 11 of this act; provided, that in such action the principal debtor shall be made a co-defendant.

LOG MARKS.

SEC. 1. That every person, corporation or co-partnership who shall put any logs or timber into any river or its branches or tributaries, small lake or its tributaries, bayou, marsh or ditch in this State, for the purpose of rafting or floating the same to any place for manufacture or sale, shall have some mark or marks, previously selected by him or them, impressed in a conspicuous place upon the end or surface of each log or stick of timber so put into any of said waters.

SEC. 2. Before any such mark or marks shall be used it shall be the duty of such person or co-partnership to cause a diagram and written description of same, certified and signed by the owner or owners thereof, to be recorded in the office of the county clerk of each county through which such logs or timber shall be floated for manufacture or sale, and also to give notice in writing to each log-running or booming company doing business on any waters on which the logs or timbers are floated of such mark. The diagram and written description to be recorded as aforesaid must be different from any diagram or description already recorded in said office claimed by any other party. For recording and indexing the diagram and certificate aforesaid the county clerk shall be entitled to demand and receive a fee of twenty-five cents.

SEC. 3. It shall be the duty of any such county clerk to record in a book to be kept for that purpose all marks and descriptions of marks furnished to him for that purpose, which are different from any other mark or description there recorded, which book shall be, at all reasonable hours, open to the inspection and examination of any person requiring it.

SEC. 4. Any logs or timbers having any such recorded mark or marks impressed thereon, shall be presumed to belong to the party or parties in whose name said mark or marks shall have been recorded.

SEC. 5. Every person, corporation or co-partnership who shall neglect to have his, its or their mark or marks recorded, as required in the second section of this act, shall be debarred from all benefits arising from the due recordings of such mark or marks, and the vendee or assignee of any such logs or timber shall be subject to the same regulations and restrictions.

SEC. 6. If any person shall falsely make, forge or counterfeit such mark and use the same in marking logs or timbers, knowing the same to be the mark of another person, and with intent to defraud, shall be guilty of felony, and shall be punished by imprisonment at hard labor in the State prison, not to exceed five years, or by a fine of not less than one hundred dollars (\$100) nor more than two thousand dollars (\$2,000).

SEC. 7. If any person, corporation or partnership shall wilfully and knowingly, or by gross carelessness, alter or deface, obliterate or destroy any of such brands or marks, hereinbefore provided for, or shall request or order the same to be altered, defaced, obliterated or destroyed in pursuance of said request or orders, said person, corporation or partnership so altering, destroying, obliterating or defacing such brands or marks, or requesting or ordering the same to be done, and it appearing the same was done in pursuance of said order or request, shall be guilty of misdemeanor, and upon conviction thereof shall be punished by a fine of not less two hundred dollars (\$200) and not more than five thousand dollars (\$5,000.)

SEC. 8. That it shall be unlawful for any person or persons, except boom companies who are compelled to catch and hold logs or other timbers of value, to take up saw logs, hewn, sawed or other timbers and lumber of value found adrift on any river in this State, or have the same in their possession that shall be marked with any mark or brand, without permission of the owner or agent thereof; provided the person

claiming such mark or brand shall have had a copy thereof recorded in the county wherein he or they reside; and any person or persons violating the provisions of this section shall be deemed guilty of a felony, and on conviction shall be fined in any sum not exceeding three hundred dollars (\$300), or by imprisonment in the penitentiary not to exceed five years.

PENNSYLVANIA.

LOG LIEN FOR CENTRE COUNTY.

56 —All wages that may be due from any person or persons to any workman or laborer, for work and labor done in, upon and about the cutting, peeling, skidding and hauling of saw logs, squared timber and other lumber in the county of Centre, shall be a lien, for a period not exceeding six months, upon all such saw logs, squared timber and other timber, and shall be paid before said lumber shall be removed by the owner or contractor under such owner, and paid out of the proceeds of a judicial or assignee's sale of such lumber.

TEXAS.

PERSONAL PROPERTY LIEN.

Whenever any article, implement, utensil or vehicle shall be repaired with labor and material, or with labor and without furnishing material, by any carpenter, mechanic, artisan or other workman, is authorized to retain possession of said article, implement, utensil or vehicle until the amount due on same for repairing by contract shall be fully paid off or discharged.

VERMONT.

LOG LIEN.

1988.—A person cutting or drawing logs shall have a lien thereon for his wages, which shall take precedence of other claims, except public taxes, and shall continue 60 days after the services are performed. But such lien shall not attach until the person claiming it files in the town clerk's office of the town where he performed the services or if the town is not organized, in the county clerk's office, a brief statement of the contract under which he claims a lien, and his purpose to enforce it against the property for the amount due for such service.

1989.—Such lien shall have no validity against a subsequent purchaser unless a suit is brought and the logs attached

thereon within 30 days from the time the plaintiff's rights of action accrue against the person for whom he performed the service; and shall be vacated as to all persons unless a suit is brought and the logs attached thereon within 60 days from such time.

1990.—Such attachments shall be made by leaving a copy of the process in the town clerk's office of the town where the services were performed and also where the logs are, and either town is unorganized, in the county clerk's office.

WASHINGTON.

LOG AND LUMBER LIEN.

1941.—Every person performing labor upon, or who shall assist in obtaining or securing saw logs, spars, piles or other timber, has a lien upon the same for the work or labor done upon or in obtaining or securing the same, whether such work or labor was done at the instance of the owner of the same or his agent. The cook in any logging camp shall be regarded as a person who assists in obtaining or securing the timber herein mentioned.

1942.—Every person performing labor upon, or who shall assist in manufacturing saw logs into lumber, has a lien upon such lumber, while the same remains at the mill where manufactured, whether such work or labor was done at the instance of the owner of the logs or his agent.

1943.—Any person who shall permit another to go upon his timber land and cut thereon saw logs, spars, piles or other timber, has a lien upon such logs, spars, piles and timber for the price agreed to be paid for such privileges, or for the price such privilege would be reasonably worth in case there was no express agreement fixing the price.

Term "lumber" as used above covers beams, joists, planks, boards, shingles, laths, staves, hoops, and every article of whatsoever nature or description manufactured from saw logs or other timber.

The liens above mentioned are preferred to other liens and as between them labor liens are preferred. No transfer or sale can divest them. They apply only to work done and logs cut within eight months prior to filing lien.

Claim for lien verified by affidavit must be filed in the office of the auditor of the county in which such work is done or logs cut or lumber manufactured within 30 days from the time such labor was performed.

Action to enforce must be brought within eight months or lien ceases.

TAKING UP STRAY LOGS.

It is unlawful for any person to take up saw logs or hewn or other timber of any value found adrift in any bay, harbor or river in the counties of Snohomish, Whatcom, Skagit or Island or to use any recorded brand without consent of owner.

FOREST FIRES.

Setting fire to timber belonging to the State or the United States is a misdemeanor punishable by one year's imprisonment.

WISCONSIN.

LOG LIEN.

3329.—Any person who shall do or perform any labor or services in cutting, felling, hauling, running, driving, rafting, booming, cribbing, towing, sawing or peeling or manufacturing into lumber, any logs or timber, or cutting any stave bolts or staves, in any of the counties of this state, shall have a lien upon such logs, timber, lumber, cordwood, railroad ties, tan and other barks, piling, telegraph poles, telephone poles, fence posts, paving timber, stave bolts or staves, for the amount due or to become due for such labor or services, which shall take precedence of all other claims, liens or incumbrances thereon or sales thereof, whether such claims, liens or incumbrances or sales are made, created or accrue, before or after the time of doing such work, labor and services.

SEC. 2. No debt or demand for such labor and services shall become or remain such lien, unless a petition thereof in writing shall be made and signed by the claimant, and verified by him or some one in his behalf under oath, setting forth the nature of the debt or demand for which the lien is claimed, the amount claimed to be due, a description of the property upon which such lien is claimed, and the averment that the petitioner claims a lien thereon pursuant to law. Such petition shall be filed in the office of the clerk of the circuit court of the county in which such labor or services were done or performed. If the labor or services be performed between the first day of November and the first day of May following, or, if such labor and services be commenced on a day prior to the first day of November, and to be continuous to a day between the first day of November and the first day of May, the petition for a lien shall be filed on or before the first day of June next thereafter; and if such labor and services shall have been done or performed after the first day of May, and shall terminate before the first day of November, or if the doing or performing of such work and labor shall be continuous from the first day of November or a day prior thereto to a date beyond the first day of May following, the petition for a lien shall be filed within 30 days after the last day of doing or performing such labor or services, and such labor or services shall be deemed continuous, notwithstanding a change of ownership in the property on which such lien is claimed. The clerk with whom such petition for a lien is filed shall receive 25 cents for filing each petition. Where the property, subject to said lien, has been transported or taken from the county where the work was done, then the person in whose favor such lien exists, may, at his option, file his petition for a lien and bring

action to foreclose the same in the county where the property is at the time of filing such petition.

3331.—In enforcing claims for driving logs on the Chippewa river and its tributaries, or any part thereof, it shall be a sufficient filing of the lien petition if it is filed in the office of the clerk of the circuit court for Chippewa county, in case the driving of any mark of logs is not completed the first season and work of driving said logs is done during a subsequent season, a notice may be filed in the office of the clerk of said court within 30 days after the last work is done, or services rendered the first season, stating that a lien is claimed for driving said logs and the amount thereof, such filing of notice shall preserve the lien until 30 days after the last service is rendered in driving said mark of logs the subsequent season at any time within 30 days after the last service is rendered, the last season, a petition for a lien may be filed in the office of said clerk, which may include all claims for driving said mark of logs during both seasons, in case the notice shall have been filed as aforesaid. An action to enforce such liens for driving may be commenced in Chippewa county at any time within four months after the lien petition is filed for such lien, and such lien shall extend to all the logs of the mark to which it relates.

SEC. 3. All actions to enforce any such lien may be brought in the circuit court of the county where the work is done when the amount claimed over and above all legal set-offs exceeds \$100, or before any municipal court or justice of the peace having jurisdiction of the amount claimed and of the parties. Where the work for which the lien is claimed shall have been done partly in one county and partly in another, the petition for a lien may be filed and foreclosed in either one of said counties. Actions may be commenced to enforce and foreclose any such lien if the same be due immediately after the filing of such petition for a lien, and such claim for labor or services shall cease to be a lien on the property named in the petition for a lien, unless action to foreclose such lien be commenced within four months after the filing of such petition. If the claim be not due at the time of such filing, the time when the same shall become due shall be set forth in such petition, and in such case such claim shall not cease to be a lien on the property named in the petition until 30 days after such claim shall have become due; provided, that such claim shall continue a lien in all cases for four months after the filing of such petition. In all such actions the person, company or corporation liable for the payment of such debt or claim shall be made the party defendant to such action. Any person claiming to be the owner of such property or of any interest therein, may be made a party defendant, on application to the court in which the action is commenced, at any time before final judgment therein.

3337.—Whenever two or more persons own logs or timber on any river in this state, or any of its tributaries, which are so intermixed that they cannot be conveniently separated for floating or driving them to the place of destination, and either owner shall refuse or neglect to make the necessary provision, or to furnish the necessary labor and materials for floating or

driving them to such place, and other owner may drive all such logs or timber to such place, and shall receive reasonable compensation, and may enforce the same by action as herein provided for the enforcement of liens upon logs or timber.

3338.—Every company incorporated for the improvement of rivers and streams, whose charter authorizes it to collect tolls on logs, lumber or timber, for such improvements or for any other work done on or about the same, shall have a lien thereon.

3340.—All persons doing or performing any labor or services by cooking food for the men doing or performing any labor or services upon such logs, timber, lumber, cordwood, railroad ties, tan or other barks, piling, telegraph poles, telephone poles, fence posts, paving timber, stave bolts or staves, at the request of the person, persons or corporation employing said men, for whom such food is cooked or manufactured, shall in all things be deemed to have performed work, labor and services, and have the right of lien therefor the same as the men for whom such food was cooked or manufactured.

3340.—All persons doing or performing any labor upon any logs, timber, lumber, cordwood, railroad ties, tan or other barks, piling, telegraph poles, telephone poles, fence posts, paving timber, stave bolts or staves, the nature of which said property shall be changed by reason of any process of manufacturing, shall have his right of a lien upon the manufactured product the same as though the labor had been performed directly upon the manufactured article.

3341.—Any person performing any labor upon any lumber, or in cutting, peeling, piling or hauling any hemlock or other bark, ties or other product of labor heretofore mentioned in this act, for or on account of the owner, agent or assignee, shall have a like lien upon such lumber, etc., as given in this act for work and services upon logs, timber, etc.

SEC. 7. When more than one person has a claim for a lien given hereunder upon the same property, any person having such claim, may have assigned to him the debt or claims of the other, subject to all defenses and set-offs to such claims against the original owner, and may file a petition for his own lien and for the claims for liens so assigned to him and bring an action to enforce the same in his own name; but such petition and the complaint in the action shall allege such assignment.

SEC. 8. Any person who shall sell or incumber any property upon which such lien exists, knowing that such lien is unsatisfied, without informing the purchaser or incumberer of the existence of such lien, shall be deemed guilty of a misdemeanor and punished accordingly.

WYOMING.

LOG LIEN.

1483.—All lien claims for labor performed in cutting or manufacturing railroad cross ties, wood, poles or lumber, or for doing any labor in reference thereto, shall be concurrent liens upon the same, and shall be paid pro rata out of the proceeds arising from the sale thereof, if the same shall be sold.

1484.—Persons entitled to a lien for labor performed in cutting or manufacturing any railroad cross ties, wood, poles or lumber, shall not be required to identify any particular tie or ties, or sticks, poles or boards, but may maintain their lien against any or all of that class of property owned and held by the person or persons from whom their pay for such labor is due, and may seize and sell the same as provided in this chapter.

CYPRESS INSPECTION.

Rules Adopted by the Southern Cypress Lumber and Shingle Association, and Amended at New Orleans, La, September 27, 1894.

LUMBER.

All lumber shall be 10, 12, 14, 16, 18, and 20 feet in length (except tank stock), 1, 1¼, 1½, 2, 2½, 3, 3½ and 4 inches thick, and be classed as Tank stock, First and Second Clear, Select, Shop and Merchantable.

Tank Stock shall be 5 inches and over in width, 1¼ to 3 inches thick, and 8 feet and over long. It may have sap 1 inch wide on one side, to extend not over half the length and half the thickness of the piece, and sound knots that do not impair its usefulness for tank purposes.

First and Second Clear shall be 8 inches and over in width, and clear up to 9 inches. Pieces 10 to 12 inches wide may have two sound standard knots of 1¼ inches in diameter, and 3 inches of sound, bright sap, and for every 3 inches in width over 12 inches an additional standard knot, and an additional inch of sound, bright sap. Pieces wider than 10 inches may be half sound, bright sap if free from other defects.

Selects shall have one face side, and be 7 inches and over in width, will admit two standard knots of 1¼ inches in diameter in pieces 10 inches and under in width, and an additional standard knot for every 2 inches in width above 10 inches. Sap not to be considered a defect. Unsound knots that do not go more than half way through the board to be allowed. Boards free from other defects on face side to admit a limited number of pin-worm holes on edge one-tenth of width of board. Season checks no defect and splits not more than 12 inches on one end to be allowed.

Above grades must be free of peck and shake.

Shop to be 7 inches or over in width, and includes all lumber that will not go into above grades, but that will cut for shop use so as to work three-fourths without waste.

Merchantable or Common may be any width, admitting sap, knots and shakes, or peck when the strength is not impaired.

DRESSED LUMBER.

All stock, after being worked, shall be divided into five classes; Clear Heart, A, B, C, and D, which shall be in lengths 10 to 20 feet, and the several grades shall be defined as follows:

Clear Heart must be clear of all sap or knots, and without blemish.

A must have heart face, but may have 1 inch of sap on thin edge, and may contain one small knot, and may have bright sap one-fourth its width for 6 inches from one end, or a check in one end, and not exceeding 6 inches in length.

B may have one-third of the face bright sap, if otherwise clear, or in lieu of one-third sap can contain two small sound knots, and may have checks at one end not over 9 inches long.

C may be all bright sap, or may have one to five knots, the whole not aggregating over 3 inches, or knots or other defects that can be removed in two cuts, with waste not exceeding 12 inches in length, or three pin-worm holes, and may have check or split at one end not exceeding 12 inches in length.

D may have stain sap, also pin-worm holes, unsound knots, shake, split or other defects that would not impair its usefulness to exceed one-third.

SHINGLES.

Bests.—A dimension shingle; each width separately bunched; 16 inches long; 5 butts to measure 2 inches; all heart, free of shakes, knots and other defects.

Primes.—A dimension shingle; each width separately bunched; 16 inches long; 5 butts to measure 2 inches, admitting tight knots and sap; free of shakes and other defects.

Extra xAx.—A random width shingle, 3 inches and over in width, and may admit shingles 14 inches long. Free from unsound knots and shakes 10 inches from butt.

Clippers.—A random width shingle, not good enough to be included in above grades.

RULES FOR INSPECTION OF WHITE PINE FOR EXPORT.

From the Port of New York.

The rules for inspecting white pine for export are governed entirely by custom. The specifications herewith given have received the approval of one of the oldest and most competent inspectors of export pine in the New York market, who states that the rules given herein, fairly and correctly explain the various grades.

SOUTH AMERICAN SHIPPERS.

South American shippers are 12 inches wide, and 12 to 16 feet long. No. 1 shippers should be sound and red knotted, and what can be designated as a good, clean board. There should be no black knots or branch knots over 4 inches in width on the edge of the piece. The lumber should be absolutely free from shake and splits. In Albany the lumber would be graded as selected dressing. The Michigan shipper would probably have to select out the cream of No. 1 common, and the Chicago grade would be about a good D stock. South American shippers are 1x12, 1½x12, and 2x12.

WEST INDIA SHIPPERS.

A West India shipper is not as good as a South American board. The requirements are 8 inches and over wide, and 12 to 16 feet long. Specifications vary. Occasionally an order will call for a car load averaging 12½ feet to a piece, while another will make it 15 feet, which of course requires a wide average to make it. The quality must be a sound knot, but not necessarily red, and small branch knots are admissible. No shake is admitted, but a split not to exceed 18 inches in one end, will pass. Generally speaking the board must be water tight, as it is used largely for purposes of packing sugar. Objection is raised to discolored lumber—stained or sunburnt—and in taking down a pile the covering boards should not be shipped. The grade corresponds to an ordinary No. 2 barn board.

AUSTRALIA.

Shipments to this market consist of the Albany grades of good fourths, selects and pickings, also No. 1 and No. 2 shelving. A No. 1 shelving corresponds to Albany dressing and better, and No. 2 is a selected South American shipper. Shelving runs from 12 to 22 inches wide, and 12 to 16 feet long, and is dressed four sides. It is imperative that all the grades shall be absolutely dry, free from splits and well manufactured.

FORM OF CONTRACT.

For Sale of Standing Timber.

This agreement made this.....day of.....189., by and between.....party of the first part, and.....party of the second part.

Witnesseth, that the said party of the first part, for and in consideration of the sum of.....dollars to him in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, has bargained, sold and conveyed unto the said party of the second part, all the following property, to wit: All the standing (pine and hemlock.....) timber which is now or may become before the expiration of the time limited by the terms of this agreement,.....inches or more in diameter, through the bole, on the following described land belonging to the said party of the first part, situate in the county of.....state of....., to wit: (Describe the land.)

That the said party of the first part has and does hereby, grant unto the said party of the second part, his personal representatives and assigns, free right and license to enter upon said premises hereinbefore described, at any and all times from the day following the date hereof, for and until the expiration of.....years next thereafter ensuing, with such workmen, teams and apparatus as may be necessary or proper for cutting, transporting or manufacturing said lumber, and to cut and carry away the same. And, further, to set up and build on said lands such saw mills and tramways as may be required for manufacturing and transporting such lumber; and also, homes and shelter for the use of the agents and workmen of the said party of the second part on said premises employed and their teams; and to clear away the undergrowth and fell such trees, not included in the terms of this agreement as it may become necessary to clear and fell for the erection of said buildings or laying of said tramways.

And it is agreed, by and between the parties hereto, that the several structures, of the kinds herein referred to, shall not be considered as fixtures; but shall, if erected remain the sole property of the said party of the second part, and may be removed by him at any time during the said.....years or within a reasonable time thereafter.

And the said party of the first part stipulates that he is the sole owner of said property hereby conveyed and has full power and perfect right to dispose of the same, in the manner as he has hereby done, and to grant the license and permission in the manner and for the time herein specified; and the said party of the first part, for himself, his heirs, representatives and assigns, covenants, with the said party of the second part, that he will and they shall defend said party of

the second part, his personal representatives and assigns, in the free and quiet exercise of said permission and license, for the term of.....years, against or under them or by reason of any defect in their title.

Witness our hands and seals the day and year first above written.

{ SEAL }

{ SEAL }

DEFINITIONS

Laid Down by Courts of Last Resort.

LOGS.

Logs means the stems or trunks of trees cut into convenient lengths for the purpose of being afterwards manufactured into lumber of various kinds, but does not include manufactured lumber of any kind, nor timber which is squared or otherwise shaped for use, without further change in form.

LUMBER.

Lumber is timber sawed or split for use in building, and is material essential for building any kind of a house ordinarily used for business or by families.

TIMBER.

Timber includes the stems or trunks of trees when cut and shaped for use in the erection of buildings or other structures, and not to be manufactured into lumber within the ordinary meaning of the word lumber.

STUMPAGE.

Means the sum by agreement to be paid an owner for trees standing (or lying) upon his land, the party purchasing being permitted to enter upon the land and to cut down and to remove the same. In other words it is the price paid for a license to cut.



PLEASE • REMEMBER

If you have a piece of Second-hand Machinery to dispose of, or want one;

If you want a Situation;

If you want an Employe for any purpose;

If you want a particular lot of Lumber, or have one to dispose of;

If you want to buy or sell Timber Lands;

That an inexpensive advertisement under the head of "WANTED" or "FOR SALE" is the quickest and easiest way to accomplish your object.

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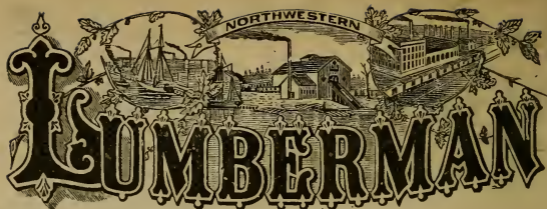
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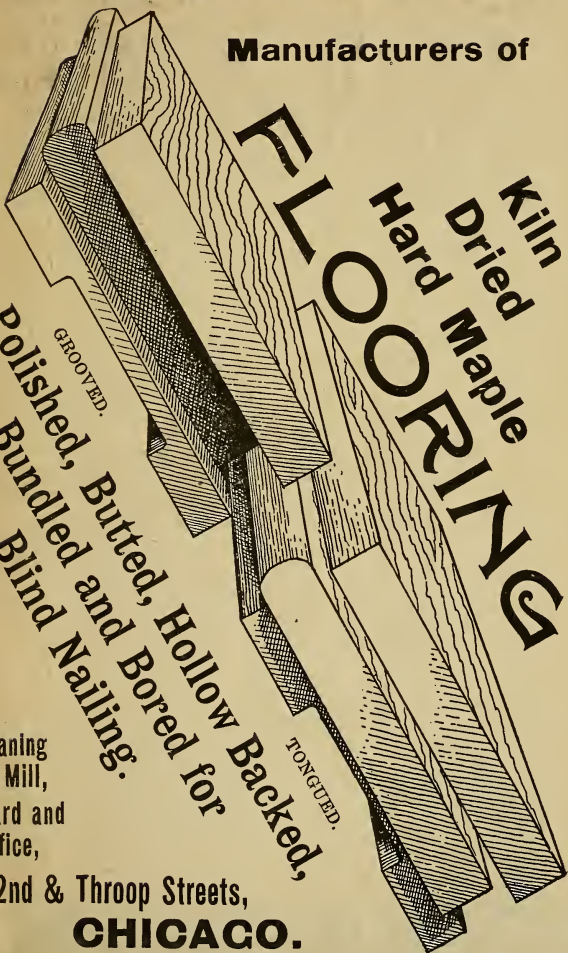
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