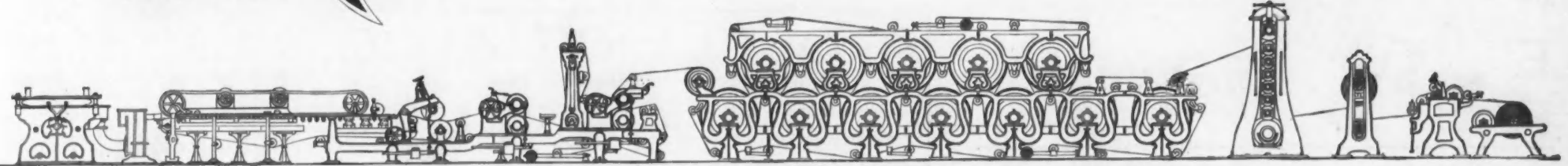


THE PAPER TRADE JOURNAL.

316263
JUL 29 1895



"The Consumption of Paper is the Measure of a People's Culture."

VOLUME XXIV.—NO. 30.

NEW YORK, JULY 27, 1895.

WHOLE NUMBER 1108.

Trade Topics.

Manufacture of Sulphite Fibre.

A new process of manufacturing sulphite fibre is intended to prevent the formation of calcium monosulphite on the interior of a digester by heating the acid solution in a separate vessel prior to introducing it to the digester, allowing the calcium monosulphite to subside, and then transferring the hot solution to the digester wherein the wood is contained.

The sulphurous acid evaporated during this preliminary process is condensed and utilized as a solvent for the monosulphite formed in this preliminary operation.

The apparatus for heating the solution as described is herewith illustrated, Figure 1 being a central vertical section of an upright heater with condenser; Fig. 2 a longitudinal central sectional elevation, and Fig. 3 a transverse section of a horizontal heater, the condenser being omitted.

The upright heater consists of a boiler, *a*, containing a steam coil, *b*, to which steam is admitted through the valved pipe *c*, the water of condensation being collected in a suitable trap, *e*, connected with the opposite terminal of the coil *b* through a valved pipe, *d*. At its upper end the heater has a manhole normally closed by a cover, *m*, provided with a pressure gauge, the heater having also a thermometer, *l*, at its upper and lower ends respectively. In the bottom of the heater is provided a valved purge pipe, *n*, so that the apparatus may be cleaned from time to time, the sulphite solution being introduced through the valved pipe *f*, and discharged through the valved pipe *g*. At its upper end the heater is connected by a valved pipe, *h*, with one terminal of a condenser coil, *j*, the other terminal of the coil being connected by a pipe, *k*, with a suitable receiver for the products of condensation.

The condenser *k* is composed of two concentric vessels, between which the condenser coil is arranged, the inner vessel having ports in its walls at its lower end, through which inner vessel the discharge terminal of the coil is carried. The cooling agent is fed to the inner vessel through pipe *l*, thence passes through the ports into the space between the inner vessel and the outer vessel and up through the overflow *l*.

The sulphurous acid gases and vapors evolved during the heating of the sulphite solution are condensed in the condenser *k*, and thence flow to a suitable collector, which also collects all non-condensed gases, which latter, as well as the products of condensation, are pumped back or otherwise returned to the heater, which is again charged in order to dissolve any calcium monosulphite formed during the heating of the previous charge of sulphite solution.

In order to facilitate the separation of the calcium monosulphite, and also to hold the same in suspension as much as possible during the preheating of the solution, and thereby prevent its too rapid deposition, the heater is provided with an agitator, which keeps the monosulphite in motion and prevents its deposition as far as possible, as shown in Figs. 2 and 3. These figures show a horizontal heater, *a*, inclosed within a protecting casing or jacket, *r*, to avoid loss of heat by radiation, and with a revolvable stirrer, *s*, and a dome, *g*, which admits of the expansion of the solution as it becomes heated, *h* being the connection with the condenser, *b* the steam coil, *c* the steam inlet pipe, and *d* the connection between the coil and the trap *e*. The sulphite solution is introduced through a perforated pipe, *f*, connected with a valved inlet pipe, *f*, and *s* is what is termed an "oil bag" for the reception of a thermometer, *n* being the purge pipe and *g* the valved exhaust pipe.

The operation may be briefly described as follows: The heater is charged with sulphite solution, which is heated, preferably, to a degree higher than its boiling point, the agitator being kept in motion to prevent the deposition of the monosulphite formed

by the decomposition or partial decomposition of the sulphite solution under the action of heat. When the solution has been heated to the desired temperature, the rotation of the agitator is stopped, and the calcium monosulphite separated from the solution is allowed to subside, after which the hot solution is transferred to the digester or digesters previously charged with wood. The gases evolved during the heating of the sulphite solution, which consist chiefly of sulphurous acid (SO₂), are conducted to the condenser *k*, and from the latter to a suitable storage vessel, to which are also conducted the gases evolved in the digesters and drawn off after the reduction of the fibrous material.

After the discharge of the hot solution from the heater, and before it is again charged with sulphite solution, the sulphurous acid from the storage vessel is introduced into the heater for the purpose of dissolving the calcium monosulphite separated from the previously heated sulphite solution, after which the heater is, or may be again, supplied with cold sulphite solution. In this manner the separation of the calcium monosulphite from sulphite solutions in the digesters is provided against, owing to the fact that the sulphite solution is not heated therein from a normal temperature to the boiling point, during which the monosulphite is chiefly formed, but the solution is supplied to the digester at that or even a higher temperature, so that a sufficient pressure can be maintained within the digesters to prevent the formation of calcium monosulphite.

On the other hand, the calcium monosulphite, together with the sulphurous acid gases separated during the heating of the sulphite solutions, are utilized by combining the same to form a sulphite solution.

From Apprentice to Superintendent.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

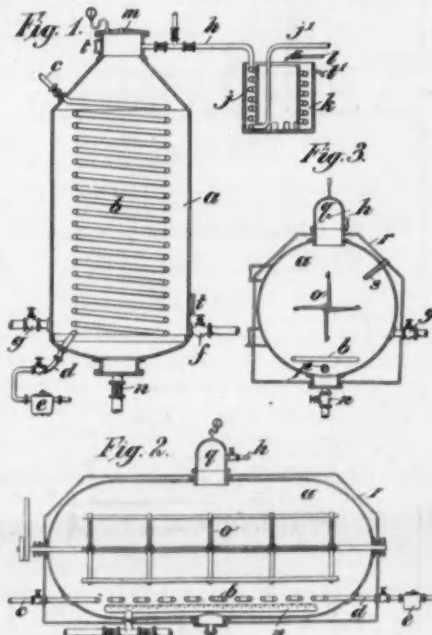
By B. F. Fells.

During the last decade we have seen and heard of many changes in the processes of paper manufacture. The more we see of the real good machines which are adopted in our mills the more we see the need of a more intelligent class of workers; not alone for the real production expected from these machines, or for the quality of the work, but for the care of the machine itself. The best equipped pulp mills will not produce the desired profits if the management is inferior, from the superintendent down to the apprentice. In the mill the character of the help in general and their skill are very important, as much of the success of the mill depends on how the latter is equipped with skilled help.

An unskillful overseer causes greater loss, as much depends on his knowledge of the business. To prevent those under his charge from making blunders and inferior work, he must understand the work and the machinery by which it is carried on. The apprentice aiming to be an overseer, and eventually superintendent, has several things of importance to confront, among the chief being those pertaining to ability to direct and govern, also faculty to plan and execute. To lead he must be better educated to his trade than those below him. To make a good executive officer he must be generally skilled in paper making, and in this is involved ability to make a profit, for no superintendent, no matter what his attainments are, can call himself a success until he can make money for his employers.

Under the head of making money comes the item of correct economy, for a dollar saved is as good as earned. This must not be confused with false economy. It is a

good thing for a manager of a paper mill to keep down expenses during hard times; it is both justifiable and necessary; yet it is worth while to remember that true economy does not always show itself in the purchase and use of cheap things. Under wise management the matter of quality will always be considered before the matter of cost. While I was yet an apprentice I had under my observation cases in two mills, run by different parties, both making the same class of product. One bought and used good material, and the



SULPHITE FIBRE APPARATUS.

other very inferior. I was in a position to know that the former got the best annual returns from his output. Cheap oil and gritty, watered or inflammatory oil will do a great deal more damage than the price saved in buying it in preference to good oil. Inferior bleaching ingredients may be bought cheaply, but will prove in the end far more costly than good. Cheap shafting and other machinery for the transmission of power will enable the buyer to avoid a large outlay at the start, but he will soon discover that he would have saved money by getting the best to begin with. This principle will hold good all through the mill.

The right way to force economy in the mill is to obtain the most perfect equipment of machinery that money can buy, to hire the best labor, and then watch for and prevent waste of any kind. Wastefulness in small things is the most glaring fault in our mills. The amount of loss from this cause in some mills would equal in each year a good profit on the investment. Of course we all know that cheap help are worth less than skilled but; there is a point here to note. An inferior or worn out machine is not capable of achieving good results, for it is a hopeless thing to deal with. The machine will never do better than botch work, no matter how great the skill of the operator. It will spoil good material, cause loss of time and give a bad name to the products of the mill. It gets worse as it gets older. Not so with the unskilled hand. The cheap hand is cheap principally because he is untrained. He learns and improves as the days go, and with careful teaching may become a useful and skilled employee after a few years' service. Consequently the hiring of a limited number of comparatively low waged young men is not against any rule of improvement, for these can learn and become competent if they have it in them.

It is a grand thing to live up to the correct side of the economy question. In such a mill each department will be turning out perfect work, and as much of it as can be made. Strikes seldom occur in mills which are run this way. You generally

find the employer and employee on terms of friendliness, and the overseers are listened to when they suggest what is needed to cheapen the cost in their department.

There are some thoughts on locating the drainage of steam heating pipes which may be profitably considered by those contemplating running a plant on their own hook some day. In mills the heating apparatus consists of long stretches of nearly horizontal pipes, and the conditions are such that long distances must be covered in returning the water from the various circulations to the common receptacle where the water is finally collected. All horizontal pipes should be inclined so that the outlet end may be at an appreciably lower level than the end where the steam is introduced. In nearly all systems water collects in small quantities in low places, even when other conditions are about right, and to keep up the circulation resort must be had to increased pressure at the steam end, so as to bring force to bear upon the water and carry it forward in its proper course. An air pump at the outlet end will create a vacuum, which aids considerably. That undesirable knocking so often heard in steam heating systems is the result of poor arrangement of the pipes. The main thought is to keep the pipes free from air and water, so as to give free passage for the steam. Of all the methods with which the writer has tinkered and operated those systems which are supplied with an apparatus for removing the air and creating a current give the best results. By employing an air pump attached to the end of the main return pipe the air contained in the system at once pushes forward toward the outlet end, and the current thus produced carries along whatever lies in its path, thus draining the complete apparatus. The steam then being introduced enters spaces which are free of water. It meets with nothing in its path but air, which is ready to move on toward the outlet as soon as its place is otherwise filled. The steam, therefore, finds easy entrance to the heating pipes.

There is something in the idea worth thinking about in the matter of an apprentice learning to adapt some of his ideas to the requirements of work which may fall to his lot in the future. He may never be called on to plan a paper mill, but all superintendents, and frequently overseers, are consulted regarding the establishment of additions to mills. If I were in position to advise a would-be mill builder I would say make the workrooms high studded and have large windows to admit all of the light possible. The ceilings and walls should be painted white, or, if this is considered too expensive, kalsomined or whitened; anything that lights the room will add to the production. Light in mills is valuable. For artificial light gas is superior to kerosene, but for determining color electric light is of course ahead. The floor of the rooms should be of some smooth, hard material, free from slivers and protruding nails. Substantial flooring is particularly needed for the heavy machinery of the paper mill.

In the digester department there is particular need of close attention to business. There must be no weak spots here. Irregular grades of finished stock and poor output may often be traced to incompetency during the cooking stages. The night runs of paper mills necessitate two crews of men, and it sometimes happens that the defective work of one shift is thrown upon the shoulders of the other. First and foremost we want in the digester house a system of recording which will compel the putting down in black and white of all of the particulars pertaining to the cooking from start to finish. The watchmen of mills make hourly reports through the time clock method, and strict attention to duty is necessary. If the same principle was applied to cooking increased attention to the operation would follow. There should be a system of time cards and an hourly report

specifying details of the process. The hours of entering the chips should be first recorded, then an account of steam, testing, temperature, pressure, relieving, and any change whatever as the work goes on, so that the foreman can at any time ascertain just what has been done and at what hour of the day or night. This does away with all guesswork.

(To be continued.)

Waiver of Exemptions.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

The collectibility of credits constitutes the essence of the assets of many firms engaged in commercial pursuits, and it is as important to know what one may not do as to know what he may do in endeavoring to reduce these intangibles to ready money, or to secure them so that they may become such in the near future. In the statutes of the several States there are provisions that certain property (naming it) of private individuals shall be and shall remain exempt from forced levy and sale, and if the debtor is the head of a family there is usually further exemption provided. The justice, wisdom and sound policy of exemption laws are well recognized, and these laws are as fully the settled policy of the States as the exemption from imprisonment for debt.

In the recent case of *Mills v. Bennett* (30 S. W. Rep., 749) the Supreme Court of Tennessee said: "It will be observed that the defendant in this case, upon the face of the note, waives all his exemptions—those secured to him as the head of a family and those to which he is entitled independent of the family. Is such a contract valid and enforceable? Laws enacted from considerations of public concern and to subserve the general welfare cannot be abrogated by mere private agreement. Where no rule of law or principle of public policy is concerned the parties may by contract make a law for themselves. One object of municipal law is to promote the general welfare of society. The exemption laws seek to accomplish this by taking from the head of the family the power to deprive it of certain property by contracting debts which shall enable creditors to take such property on execution. The parties to this contract sought to set aside these laws so far as this debt was concerned. This they could not do."

It was said in the case of *Recht v. Kelley* (82 Ill. 147) that a person contracting a debt cannot agree with a creditor that, in case of nonpayment, he shall be entitled to levy his execution upon property exempt from execution by the general laws of the State. If effect shall be given to such provisions it is likely that they will be generally inserted in obligations for small demands, and in that way the policy of the law will be completely overthrown. Every honest man who contracts a debt expects to pay it, and believes that he will be able to do so without having his property sold on execution. No one worthy to be trusted would therefore be apt to object to a clause subjecting all of his property to execution in case of nonpayment. It was against the consequences of this overconfidence and the readiness of men to make contracts which may deprive them and their families of articles indispensable to their comfort that the Legislature has undertaken to interpose. The law was designed to protect him against his own improvidence in giving consent that the necessities of family existence shall be taken.

The Supreme Court of Iowa, after a full consideration of the subject, said (*Curtis v. O'Brien*, 20 Ia. 376): "We are agreed in the conclusion that a person contracting a debt cannot, by a contemporaneous and simple waiver of the benefit of the exemption laws, entitle the creditor, in case of failure to pay, to levy his execution, against the debtor's objection, upon exempt property."

The Supreme Court of Florida in an elaborate opinion held: "In view of the recognized policy of the States in enacting

PAPER

PAPER

A. STORRS & BEMENT CO.,
85 and 87 Franklin Street,
BOSTON, MASS.

LARGEST MANUFACTURERS OF

COVER PAPERS

IN THE WORLD!

Send for New Sample Book and note additions to line.

CROCKER MANUFACTURING CO., HOLYOKE, MASS.

NONOTUCK PAPER COMPANY,

HOLYOKE, MASS.

TWO MILLS—TWENTY-FIVE TONS DAILY.

FLAT AND RULED WRITINGS, ENVELOPE PAPERS, ENAMELED BOOK, COATED LABEL, SUPERCALENDERED AND MACHINE FINISHED BOOK.

PIEDMONT PULP AND PAPER CO.

WEST VIRGINIA PULP CO.

WEST VIRGINIA PAPER CO.

MILLS AT PIEDMONT AND DAVIS, WEST VIRGINIA.

MANUFACTURE PER DAY.

- 20 Tons Best Quality Bleached Sulphite Pulp.
- 25 Tons High Grade Unbleached Sulphite Pulp.
- 20 Tons Extra Machine Finished and Supercalendered Book and Lithograph, Engine Sized Flats and Envelope Papers. Express and Manilla Papers.

OFFICE: } MUTUAL RESERVE BUILDING,
Broadway and Duane St., New York.

PEPPERELL CARD AND PAPER COMPANY,

EAST PEPPERELL, MASS.,

ENAMELED BOOK PAPERS,

Coated Lithographic and Label Papers,
Cardboard and Cloth Stock. Surface Coated Blotting—in shades.
SAMPLES AND QUOTATIONS ON APPLICATION.

WHITMORE MANUFACTURING CO., HOLYOKE, MASS.

MANUFACTURERS OF—

COATED LITHOGRAPH AND CHROMO PLATE PAPERS AND CARD BOARD.

WHITE, TINTS AND COLORS.

PASTED WEDDING BRISTOL A SPECIALTY.

POLAND PAPER COMPANY,

MANUFACTURERS OF

BOOK PAPER,

Mechanic Falls and Gilbertville, Maine.

Eagle, Star, Diamond, Poland, Union, Androscoggin and Canton Mills.

G. R. MILLIKEN, Treasurer.

NEW YORK OFFICE, TIMES BUILDING, ROOM 131.

LOOK.

If you are in the market for BRISTOL and CARD BOARD correspond with the largest manufacturers and dealers in the United States.

LARGE SPECIAL LOTS ALWAYS ON HAND.

LINTON BROS. & CO.,

PAWTUCKET, R. I.

JAMES LINTON,
BENJAMIN M. JACKSON.

OSBORN & WILSON.

WHOLESALE DEALERS IN

HARDWARE, BOOK, NEWS,
AND MANILLA PAPERS.

No 54-56 FRANKLIN STREET, NEW YORK.

A. G. ELLIOT & CO.,

30, 32 & 34 South Sixth Street, Philadelphia.

BEING AGENTS FOR ALL THE LEADING MANUFACTURERS, OUR STOCK IS UNEQUALLED AND FACILITIES ARE AMPLE TO EXECUTE ORDERS PROMPTLY.

MERRIMAC PAPER CO., LAWRENCE, MASS.,

MANUFACTURERS

ENAMELED BOOK PAPERS.

COATED LABEL AND LITHOGRAPHIC
ENGINE SIZED FLATS
SUPER-CALENDERED AND MACHINE FINISH
SAMPLES AND QUOTATION ON APPLICATION.

Chelsea Paper Mfg. Co.,

MANUFACTURERS OF

Coated, S. S. and C., Machine Finish.
Coated Label and Lithograph Papers.

Loft Dried and Engine Sized Flat
Writings and Envelope.

Superfine
Book Papers.

OFFICE: 140 NASSAU ST., NEW YORK CITY.

MILLS AT NORWICH, CONN. CAPACITY THIRTY TONS DAILY.

THE OAKLAND PAPER CO.,

MANCHESTER, CONN.,

MANUFACTURERS OF

No. 1 High Grade, ALL RAG Pure Linen Flat Writings.
White and Colored Flat Particularly adapted for Type-
Writings. writer use.

We carry in stock Blue, Pink, Amber, Lilac, Canary, Melon, Dark Green, Cherry
Orange, Fawn, Gold, Dark Blue, in 18, 20 and 24 pound; Folios, 28 and
32 pound Double Caps and 24 pound Royals.

Send for Sample Book. N. T. PULSIFER, Treasurer.

FREDERICK BERTUCH & CO.,

Rooms 308, 309 & 310 Temple Court Building, New York,

AGENTS FOR—

CHR. CHRISTOPHERSEN,
CHRISTIANIA.

Chemical and Mechanical Wood Pulp.

BRANCHES:

CHR. CHRISTOPHERSEN & CO., - London. LAMMETH & CO., - Paris.
CHR. CHRISTOPHERSEN'S FILIAL, Göteborg. GEO. v. d. BUSOHE, - Hamburg.

J. GLOVER SMITH.

C. G. THOMAS.

J. GLOVER SMITH & CO.,

SELLING AGENTS

PAPER AND SPECIALTIES,

23 Stevenson Street, San Francisco, Cal.

WHOLESALE TRADE ONLY. Correspondence Solicited.

OUR FIBRE IS MADE BOOK PAPER MANUFACTURERS.
ESPECIALLY FOR

For a good, clean and strong UNBLEACHED SULPHITE FIBRE
write for prices and samples to the

MICHIGAN SULPHITE FIBRE CO.,

75 HOME BANK BUILDING,

Factory, Port Huron, Mich. Detroit, Mich.

PLEASANT MILLS PAPER CO.,

MANUFACTURERS OF

ROPE MANILLAS.

OFFICE: 608 CHESTNUT ST., PHILADELPHIA.

MILLS: PLEASANT MILLS, N. J.

STONE & FORSYTH,

268 Devonshire St., BOSTON.

TISSUE PAPER,

White, Colored and Manilla.

LOWEST PRICE TISSUE MADE.

JAMES M. FITZGERALD,
Paper and Paper Makers' Supplies.

ENGINE SIZED FLATS AND
MACHINE FINISHED BOOK A SPECIALTY.

Dealer in

Book, News, Colored and Manilla Papers.

A large line of Paper and Paper Stock always on hand.

OFFICE AND PAPER WAREHOUSE:

135 & 137 South Fifth Avenue.

PACKING HOUSE FOR PAPER STOCK:

268 & 269 West Street, New York City.

GEO. H. TAYLOR.

JAS. T. MIX.

GEO. H. TAYLOR & CO.

Paper Dealers,

207 and 209 MONROE ST., CHICAGO.

—IN—

EXTRA SUPERCALENDERED,

No. 2 SUPERCALENDERED

ALL GRADES AND COLORS.

Print, Manilla, Colored, News,
COVER PAPERS, PLATE AND CHROMO.

We have excellent facilities for disposing of job lots of
all grades that can be purchased at low prices. Samples
of same and regular line are solicited.

A SPECIALTY OF LARGE CONTRACTS
FOR ROLL PAPER.

CLARENCE W. SCOTT.

CARBOLL T. O'MEARA.

SCOTT & O'MEARA,
Commission Paper Dealers,

Room 806 New York Life Building,
CHICAGO, ILL.

PAPER.

G. N. FRIEND. J. M. JOHNSTON.

FRIEND & JOHNSTON,

MANUFACTURERS' AGENTS,

Representing Leading Paper Mills to
the Jobbers Only.

820 Medinah Temple, cor. Fifth Ave. and Jackson St.,
CHICAGO, ILL.

IRWIN PAPER CO.,

QUINCY, ILL.,

Jobbers of Paper of Every Description.

SAMPLES FROM MILLS SOLICITED.

HYDRAULIC PRESSES.

HYDRAULIC LIFTS.

Geyelin Jonval Turbines.

DOUBLE, HORIZONTAL and INVERTED.

HIGH EFFICIENCY and
GREATEST DURABILITY.

CAST IRON PIPE.

R. D. WOOD & CO.,

Engineers, Iron Founders, Machinists,
400 CHESTNUT ST.,

PHILADELPHIA, PA.

Root & Moore,

PAPER,

6, 8 and 12 Pine Street,

PROVIDENCE, R. I.

W. J. THOMPSON & CO.

CORPORATION.

PAPER.

35 FEDERAL STREET

(HANCOCK BUILDING),

BOSTON.

THE GLEN MILLS PAPER CO.,

MANUFACTURERS OF AND DEALERS IN

Parchment Papers,

WILLCOX WATERLEAF,

Music Papers and Rag Specialties,

518 and 520 Minor Street,

PHILADELPHIA, PA.

MILLS: GLEN MILLS, DELAWARE CO., PA.

exemption laws and of the practically universal concurrence of the authorities, our conclusion is that the waiver of the benefit and protection of the exemption laws contained in this note is not valid to defeat the present claim of exemption."

Possibly the only court out of line is that of Pennsylvania. Such contracts are sustained in Alabama, but on express statutes. Most of the cases reaching the upper courts of late years on this subject have been in these two States. The tendency in the former is to limit its extension to the precedents established and not to widen the privilege, and in the latter State the statutes are strictly construed in favor of the debtor class.

A debtor may sell or mortgage such property and in such deed waive his exemptions, except that in some States the household goods cannot be included unless the wife joins and the document is regularly acknowledged. By delivering exempt property to another for the purpose of having work done upon it one impliedly waives exemptions as to such property to the extent of the expense of such labor or work.

One may also by implication waive his right of exemption by failure to claim the same within a reasonable time after levy and before sale; and in Illinois, when demand on execution has been made and a schedule of property has not been presented within ten days, it cannot be claimed as exempt thereafter. Nor, generally, can a person claim exemption as to property which he has failed to put in a schedule of property returned to an officer holding an execution, as he will have been deemed to waive, or lose, his rights in such property by his neglect to submit it for appraisalment.

Correspondence.

HOLYOKE.

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., July 25, 1895.

Midsummer dullness is fully as noticeable this year as ever, and the mills are nearly all doing a hand to mouth business in the way of filling orders.

This is not confined to a few mills, but all feel the influence of the heated term. The mills are not accumulating large stocks of finished goods, as they were a year ago.

The movement of fine paper is as free as could be expected at this season of the year. Orders are none too plentiful, however. Book papers are moving quietly on small orders and other grades are in medium demand. There is no change in prices and quotations of a week or two ago are maintained. The demand for specialties is as good as usual.

Stock dealers say that business in their line shows some signs of picking up. There has been some improvement of late in the call for foreign rags, and manufacturers are manifesting more interest in orders for future shipment. Domestics are moving fairly well, and the demand is likely to increase somewhat. Prices are inclined to be changeable in some grades, but there is no marked change.

Low water has made some trouble among the mills of late, but not enough to cause

any serious inconvenience. We need some wet, rainy days to increase the water supply, and we may get it now that "dog days" are at hand.

Many of our manufacturers are away at the shore or mountains, and others will go before the summer is over. They believe that "all work and no play makes Jack a dull boy."

The Morgan Envelope Company, of Springfield, which has long occupied its present quarters, has felt the need of more room for a great while, and it has determined to carry out plans which have for some time been contemplated. Therefore a new brick building, 140 feet long, 46 feet wide and six stories high, will be erected on Harrison avenue immediately, to accommodate the increasing business. Seventy thousand square feet of floor space will thus be added.

William Kelly, an Irish-American citizen, who has been identified with the paper industry here for many years, died last week. Mr. Kelly was sixty-four years old, a native of Ireland, and had lived in Holyoke since 1860. He was first employed by the late J. C. Parsons on his farm at Agawam, and was afterward given charge of the Parsons Paper Company's rag room, a position which he held until 1892, when ill health compelled him to retire.

Mr. Kelly was an estimable citizen, and he will be missed. He was one of the founders of the St. Jerome Temperance Society, one of the strongest temperance organizations in the State, and he also represented Ward 4 in the school board for several years. He was deeply interested in the Land League movement. A widow and five children—three sons and two daughters—survive him.

James M. Sickman, of the Holyoke Water Power Company's hydraulic department, has been selected by the commissioners of Hampshire County to serve as their engineer. These gentlemen could not have made a better choice, as Mr. Sickman has had many years' experience and is well versed in all matters pertaining to his profession.

B. J. Griffin, formerly connected with the Holyoke Transcript, is to publish a book entitled "The Irishmen of Hampden County." It will contain portraits and biographies of prominent Irish citizens, and buildings and institutions controlled by these people will be illustrated. Three thousand copies will be issued.

The employees of the Whitmore Manufacturing Company are arranging for their annual clambake.

William Whiting joined a party of friends last week for a two weeks' outing in the Maine woods.

S. R. Whiting has been in New York for a business trip. H.

FOX RIVER VALLEY.

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., July 25, 1895.

The most interesting news in this valley at present is in regard to the water power situation. There has been no change in the condition of things on the river since last report. All of the water wheels are shut down tight, and Appleton and De Pere have been going through an electrical famine which has deprived them of lights

street cars and electric power. There is a prospect of a settlement of the situation one way or the other very soon, however, as the War Department has been complained to so vociferously that Assistant Secretary of War Jos. B. Doe is now in the valley to make a personal investigation and acquire a knowledge of the situation upon which the department can base its future determinations. Mr. Doe reached Oshkosh last night, where he received a delegation of the steamboat men and logging men, who represent the Oshkosh side of the matter, and who insisted that no water ought to be drawn for power purposes. To-day he is making a trip up the Wolf River, which is one of the sources of Lake Winnebago, and to-morrow he is expected to arrive in Appleton, which he will make his headquarters while in the Fox River towns, and where the question from the side of the manufacturers will be presented to his attention. It seems probable that no change in the condition of things here will be made by Mr. Doe before consulting with the authorities at Washington, so that no alteration of existing conditions may be expected for a week or two.

Notwithstanding the fact that the wheels on the river are idle, there seems to be no appreciable rise in the level of the lake. A party of Appleton fishermen went to Shioc-ton on the Wolf River yesterday for a day's sport, and made an accidental discovery which may have a bearing in the matter. The Oshkosh men claim that there is not sufficient water to float their logs off the marshes, but the fishermen found that the Wolf was bank-full and that logs were going down with a rush. The inference is that the lumbermen during the time that they have been complaining about the low water have been holding the water back in the logging dams at the sources of the lake, which would account for the small amount of water going into the lake for the past few weeks, and for fluctuations in the measurements which have been made in that amount. The state of things here has awakened widespread interest, and many of the Chicago and Milwaukee daily papers have had special correspondents on the ground, who have gone over all the details with great minuteness in their journals. What the final outcome will be cannot be stated, but it is thought that some arrangement will be made to allow the mill men to draw a certain specified amount, as was the case before the order for the shut-down came.

The mill of the Patten Paper Company, of this city, will to-morrow be in condition to begin getting out its full product by steam power. For some little time past the mill people have been at work getting all of the machinery connected up to the steam engine, so that the whole mill could be put on to the engine, and their labors will be completed to-morrow.

As was predicted last week in this correspondence, the Fox River Paper Company, at the meeting of stockholders held last week, decided to put in a steam engine large enough to run the entire Lincoln Mill, and the same was ordered at once of the E. P. Allis Company, of Milwaukee. The engine will be of 500 horse power, and will be ample for operating the entire plant. Boilers were also ordered to furnish the additional steam power necessary. A new boiler and engine building will be put up

on the ground, at present vacant, just north of the Lincoln Mill. The plans for the same are now being made by O'Keefe & Orbison, of this city, who will also have the job of putting in all of the additional shafting necessary and connecting it up to the engine. The engine will be delivered in about ninety days, and by that time the new building will be ready to receive it.

Two important improvements were decided upon last week by the Marinette and Menominee Paper Company. One was the purchase of a filter plant and the other was the decision to erect a sulphite plant. The water at Marinette is taken from a logging stream and has always been yellow and dirty. The recent decision of the company to make print and finer papers has made it necessary to get better water, and this will be provided by the filters. The plant will have a capacity of a million gallons a day, and will be installed at once. The details about the sulphite plant are as yet not fully determined. The plans are being prepared by C. B. Pride, of this city, and it is expected that the new plant will cost between \$50,000 and \$60,000, but just how many digesters there will be and of what kind is something now undetermined.

The new steam engine for the mills of the Kimberly & Clark Company in this city has been shipped, but has not yet arrived on the ground. It is expected in a day or two. It will be set up in the mill building and the work of installation will not have to wait for the completion of the new boiler house.

About 100 men are now employed on the work of building the new mill of the Grand Rapids Paper and Pulp Company, at Biron, on the Wisconsin River. Many of the coffer dams are already in, and work has begun upon the dam proper. Excavation is going on for the flume and tail race and the foundation walls for the paper mill are well under way. About a carload of cement a day is being used. Nels Johnson, one of the stockholders of the company, is acting as general manager of the work.

Shipment of pulp wood from the docks of the Pulp Wood Supply Company, at Long Tail Point, was stopped last Saturday. No more shipments will be made for a time, which will enable an accumulation to be made of several rafts which are now on the way from the "Soo." With this store of wood ahead shipments will be rebegun and continued without delays until the end of the season.

The Ashland Sulphite Fibre Company last week elected officers as follows: President, Peter Kettenhofen; vice-president, Nicholas Palm; secretary and treasurer, Robt. Morgenier.

Jos. Thomas has resigned his position as bookkeeper for the Pulp Wood Supply Company, in order to accept a similar position with the Nekoosa Paper Company.

Warren French, of Neenah, has been engaged to take charge of the new machine shop at the mill of the Wisconsin River Paper and Pulp Company.

Alex. Fraser, for many years foreman at the Whiting Paper Mill, in Menasha, has resigned his position there and departed on a pleasure trip to England and Scotland, where he has several brothers in paper mills.

A. K. Paul, of the Paul Paper Company, of Menasha, has been elected vice-president

of the Fox River Valley K. of P. encampment.

D. Buchanan, of Chippewa Falls, who is introducing a new paper clay of his manufacture, was in the valley this week calling on the paper makers.

C. G. Price, of Ticonderoga, has been engaged as superintendent of the mill of the Whiting Paper Company at Menasha, and the work of making book and writing papers, for which the mill has been preparing for some little time past, will be immediately undertaken.

H. M. French, of the Graham Paper Company, of St. Louis, was in the valley last week. He reports that business with his company has been better of late than it usually is at this time of year.

FOX RIVER.

BOSTON.

[FROM OUR REGULAR CORRESPONDENT.]

EASTERN OFFICE PAPER TRADE JOURNAL, 67 FEDERAL STREET, BOSTON, July 25, 1895.

To-day at noon were performed the last sad rites over the remains of the late lamented ex-Gov. Alexander H. Rice.

News of his death reached the trade on Monday afternoon, and the report cast a feeling of gloom over the paper trade of the city, for no man connected with the Boston paper business was more highly respected or more dearly loved than he.

As an ex-Governor of the State the deceased was buried with military honors, and the services at the Emmanuel Church were witnessed by a very large attendance. Representatives of the city and State governments were present, with many representative men from Boston's varied interests.

Between the hours of 12 and 2 o'clock, during the funeral services, the paper houses of the city were closed, and among the large gathering at the church to pay their last tribute of respect to the memory of their honored associate were many of the Boston trade, manufacturers and dealers. No man connected with the paper trade stood higher in the estimation of his associates than did ex-Governor Rice, and no one connected with the paper business of Massachusetts has ever been more highly honored by the people of this State.

To quote an editorial from one of the city papers: "The sense of loss in the death of Alexander H. Rice will be universal among the people of Massachusetts, nor will State lines bound that feeling, for he was honored by the nation as well as by the State. In private life, in business life, and in political life he acquitted himself as New England would gladly have all her sons acquit themselves. Twice he was mayor of Boston, three times Governor of Massachusetts, four times elected a member of the United States Congress from this State; in every station he discharged the duties devolving upon him with ability and fidelity."

Concerning business very little of special interest comes to notice from paper trade circles. To say that trade is quiet would be only a repetition of previous statements, and yet conditions prevailing justify the repetition. Such is the state of the local paper jobbing trade.

Among paper manufacturers conditions seem to vary, some mills having all of the business necessary to keep the machines up

THE GLEN MFG. CO., OFFICE: **THE HAVERHILL PAPER CO.**
244 WASHINGTON STREET, BOSTON,
NEWS PAPER AND WOOD PULP.

CHAS. D. BROWN & CO. 154, 156 & 158 Congress St., BOSTON, MASS.
FOREIGN AND DOMESTIC PULPS AND FIBRES. PAPER MAKERS' CHEMICALS AND MILL SUPPLIES.

BURGESS SULPHITE FIBRE CO.,
OFFICE, BERLIN FALLS, N. H. — PRODUCT, 50 TONS A DAY, DRY WEIGHT.
BEST QUALITY OF UNBLEACHED SULPHITE PULP. SAMPLES AND QUOTATIONS FURNISHED ON APPLICATION.

WATER POWER IMPROVEMENT.
Estimates on Construction.
Contracts Taken and Mills
Built on Short Notice.

MILL ARCHITECT.
CHAS. B. PRIDE, APPLETON, WIS.

Modern Improved Plans
—FOR—
PAPER MILLS,
SULPHITE FIBER MILLS,
GROUND WOOD PULP MILLS.

J. L. & D. S. RIKER, 45 CEDAR STREET, NEW YORK. Importers and Manufacturers' Agents.
—ALL TESTS SODA ASH AND ALKALI.—

Sole Agents for the United States and Canada of **THE UNITED ALKALI CO., Ltd.,** of Great Britain.

FOR THE SALE OF THEIR VARIOUS BRANDS OF **BLEACHING POWDER.**

to full capacity, while other mills are not so much crowded.

Another week without heavy rains makes the anxiety incident to the scarcity of water more intense, and if dry weather is much longer continued New England paper manufacturers will be greatly inconvenienced.

Owing to low water, wood pulp is said to be getting scarce, and higher prices are now quoted.

Some little movement in paper stock is reported in response to immediate needs, but there is nothing like a general stocking up in anticipation of future wants. Under such conditions the paper stock business just about holds together, but importers are encouraged to think that a change for the better will come in the fall.

W. H. Parsons, with his sons, W. H. Parsons, Jr., and M. Parsons and David Cowles, all of New York, were in town yesterday en route to Brunswick, Me.

A delegation from Bellows Falls, Vt., which included such solid paper makers as A. C. Moore, A. W. Flint, S. T. Coy and Charles E. Robertson, was in town to-day, but left on the good steamer Yarmouth for a trip to the home of Evangeline, where the crowd will spend a week.

A. W. Flint and family are located for the season at the Hotel Preston, Swampscott, one of Boston's nearby summer resorts.

Herbert I. Wallace, of Fitchburg, Mass., passed through town Monday on his way to Nantucket, where his family is summering.

Other recent visitors reported were Charles R. Milliken, of Portland, Me.; W. J. Morton, of Livermore Falls, Me.; A. N. Burbank, of Bellows Falls, Vt.; Eugene F. Daniels, of Franklin, N. H.; W. S. Holt and Frank P. Carpenter, of Manchester, N. H.; W. A. Whitney, of West Dudley, Mass.; C. S. Mayo, of Lawrence, Mass.; Arthur Hills and Mr. Sturtevant, of Holyoke, Mass.; Mr. Williams, of Worcester, Mass.; William Angus, of Canada, and Hugh R. Blithen.

In the midst of summer, as the season now is, every house is shorthanded, many of the employees being off on vacations. The heads of the firms likewise have their attention divided between office duties and summer recreations, so that only matters of pressing importance are transacted. Anything which will keep until to-morrow is gently put aside until to-morrow comes, and then the weather is too hot for much work, anyway.

By way of record let it be noted that the exports of paper from this port for the week to July 19 were valued at \$1,855, and books \$949.

DELESDERNIER.

WANDERING NOTES.

[FROM A SPECIAL CORRESPONDENT.]

ON THE ROAD, July 23, 1895.

For some time writers, for various purposes, have occasionally wasted considerable space in extending sympathy to the magazines whose publishers have so magnanimously reduced their subscription, and have announced the fact as being a most reckless step and worthy of increased patronage, feeling assured that it meant death and destruction unless the public flew to the rescue. Well, I should like very much to reach the attention of these philanthropic pen pushers, and suggest that while dealing with this subject they could make a very readable article for THE PAPER TRADE JOURNAL if they would tabulate some of the variations in the cost of the production of the self same publications for the last fifteen years, and show reason why the subscription has not been lowered before.

Of course our interest centres in the paper end, and it needs no "ghost to come from the grave" to tell that our trade has done enough to have entitled the public to a re-

duction long ago. As an instance that the cheaper paper has been of much importance to publishers, I beg to offer an incident which was brought to my attention not long ago, which developed the fact that it was a common practice now for a great many publications to regularly over-issue liberally in order to furnish evidence of their large circulation, and the present price of paper made the investment small and very remunerative by reason of their increased advertising rates. Again, my informant astonished me by showing conclusively that as the patron continued his ad. they advanced the rate. In other words, a certain per cent. advance was added from year to year, and he claimed that they had always conducted their business on this plan. His present rating is a sufficient guaranty that his business has been successfully managed. His theory as to the inability of paper manufacturers to handle their customers in a like manner was that we had not educated our trade properly, and, without being personal, our salesmen were weak. At the end of a few hours what he had said fully dawned on me; I returned and told him that if ever his publishing failed to pay I would suggest that he syndicate his idea on the above plan and start a kindergarten for paper salesmen.

As everybody seems to be taking a fling at the condition of trade, present and future, and seeing no good reason why I should be barred, especially if my efforts be masked by the claim that is freely admitted that "words of wisdom sometimes fall from the lips of a fool," I will give the result of a careful inquiry conducted during the past six weeks, and covering all the markets east of the Mississippi. The most conservative buyers and manufacturers in large majority have reported a surprising steadiness in the demand. Opportunities have been extended me to examine monthly statements, showing not only an equal amount of business, but in several instances a decided increase over corresponding periods before the panic, this, too, of months usually the dull ones of the year. Reputable representatives of various mills have assured me of an actual supply of orders that hindered their annual repair period, and jobbers have reported a slowness of delivery which verified this statement. The natural deduction from such talk would be to anticipate a good healthy fall trade, not a boom in any sense of the word, far from it, as nothing could be more unfortunate in my opinion than to attempt any such united movement which could be construed as being a boom.

While I am not one of the oldest inhabitants in the trade need I call attention to the last boom we had, along in 1879-80, when everything in our line was boosted out of sight, and do you remember the dull sickening thudness with which prices came down? If I am not mistaken prices declined so rapidly that I was sometimes obliged to go to the post office to recall and alter bills. The gentlemen who engineered that boom should have provided a parachute attachment for their advance in values, and with all due respect to the superior judgment of the august proprietors who are now gathering together advancing prices in various branches of the trade and swearing eternal allegiance, let me say, Don't do it. Let the demand act for you. If your profit is not as desired it certainly is better than making such a bluff at an advance, and in perhaps less than six months you would be selling at lower prices than to-day. I offer this suggestion in the face of the fact that I have always been regarded as a bear until now, when I find my sentiments have, of necessity, undergone a change. I actually feel so bullish that two small horns appear about to break through my head on either side, but they are not large enough to warrant my getting out and bellowing and "pawing up the dust" in my own and everybody else's eyes and raising a "devil of a row," which is about the way some advances are being made.

I learned recently that the last time C. R. Milliken, of the Poland Paper Company, was in Chicago, he was instrumental in saving the life of his intimate friend, Otis Harlan, the actor. It seems that Mr. Milliken arrived rather unexpectedly, and found his friend deathly sick, and at once summoned his physician, a Dr. Mille, who succeeded in reviving the patient. In recognition of his services C. R. M. now carries a life pass to all of the performances in which his friend may appear, and is of course very proud of it. Should you happen to meet him ask him for the details and a peep at the precious document.

The Lukes have added an improvement to their plant at Piedmont in the shape of a filter which will take care of all the water they may need, costing them complete about \$30,000. Realizing the importance of the step they had taken, they concluded to celebrate the event with a grand ball, the details of which I am unfortunately unable to furnish, as I was away from home when my invitation, did not arrive. "Billy" Stewart, of Cincinnati, however, in return for the favor of borrowing my dress suit, condescended to inform me that it was a grand affair, that he met very many charming young ladies, that he was more convinced in that representing them in the West he had one of the whitest companies in the country at his back, and that the filters furnished water of unequalled purity. His opinion on the young ladies must be accepted without question, and no one will gainsay his report on the company if ever they have had any personal experience, but his ideas on purity of water are not so reliable. However, out of respect for his family I prefer not to make any comments.

Stewart's partner, "Billy" Brown, has gone to Canada on a fishing trip. He seemed to be unnecessarily worried about the custom house duties on the fish he expected to send to his friends. Some one maliciously suggested that he had better secure a franking privilege on the bait he was taking or he would probably have more trouble with the Internal Revenue officers than the Custom House. This reminds me of an experience of a prominent Northwestern manufacturer who was invited to attend the "rounding up" of a watermelon filled with Jamaica rum, frappee. Watermelon with a champagne contingent, I have been told, is a successful "furnish," but rum seems to run to "broken" too much and necessitates an unprofitable amount of "working over." Unfortunately I have not the statistics at hand for a complete report, but any one unduly actuated by morbid curiosity can probably learn more by writing "Billy" Gilbert (reference by permission). I cannot swear to it, but it may be possible that it was this occasion which gave birth to the remark, "that while it was hardly consistent to criticize nature, yet there was no doubt she fell down when she didn't grow handles on watermelons."

While in Boston, as a duly accredited representative to the recent Christian Endeavor meeting, I was pleased to also claim connection with the paper trade, as I heard many of the strangers speak of the royal manner with which the trade had assisted in their entertainment. Too much could not be said concerning the hospitality of our friends "Sam" Train, "Billy" Clafin, "Charlie" Brown, "Charlie" Barton, et al. It developed that these whole souled fellows had all "chipped in" and entertained without "limit," and anyone who knows that charming city can easily imagine what a revelation this meant to a delegation of us Christian Endeavorers. A few strawboard men—Bell, of Cincinnati, and O'Connell, of New York, and Fairly, of Toronto—it seems managed to palm themselves off as delegates, and "Charlie" Baird, the resident representative, deemed it wise to invite them to a little side trip to Salem Willows for a day. He was a trifle surprised and mystified at the unusual excitement his invitation caused and finally began to explain that there was practically nothing to

expect but the boat ride of about 40 miles and a generally quiet day. "Where do the widows come in?" said O'Connell. "What widows?" said Baird in surprise. "Didn't you," said Dan, "invite us to go up and see some Salem widows?" "No," said the disgusted host, "I said Salem Willows," and all that day they smoked in silence and drank root beer, silence and root beer being the only possible ways to dissipate at that place.

HALF STUFF.

CHICAGO.

[FROM OUR REGULAR CORRESPONDENT.]

WESTERN OFFICE PAPER TRADE JOURNAL,
36 and 58 La Salle Street,
CHICAGO, July 24, 1895.

Although the usual interval between letters of this series has, on account of necessary absence from the city, been prolonged a week between the last preceding letter and this—giving the dog days that much greater chance to lower the average of business—yet it may be safely said that there has been no abatement of the favorable conditions last reported.

I have talked during the past few days with some seventeen men more or less prominent in the paper trade—mill representatives, commission men and jobbers—not one of whom reported any falling off, while several said that improvement was still going on. No one classed the situation as less than "fair," and only two or three struck so low as that. Nearly everybody said, "Very good for July." "About normal for the season; we have no complaints to make," the expression of one gentleman, pretty nearly embodies the general feeling.

Some say that July so far has been better than June—a very unusual circumstance in any summer—while the agreement is quite general that things are in far better shape than at the same season a year ago.

One big jobber says that the constant "boom" talk in the papers has had the effect to bring buyers into the market early with their orders so as to avoid the higher prices which seem to be inevitable in the near future. A healthy "sign of the times," truly. Not one seems to entertain a doubt that we are on the eve of a good, brisk fall trade.

About the only "fly" of any magnitude in the trade's "ointment" is found in the fact that, while the volume of business is greatly enlarged, prices as a rule continue low. Nobody seems able to account for this satisfactorily to himself or to anybody else. One gentleman gives as a reason the fact that owing to the anticipated stimulation of all lines of trade—paper among the rest—a number of mills long out of business are starting up again, and so increasing the supply. But is not this practically offset by the decreased production of those which are suffering from lack of water? Be this as it may, low prices are still with us, especially in the matter of book papers. One who handles these goods largely says: "S. and S. C. book is produced at an increased cost; the output is shortened, and yet the price is declining. It is an unaccountable situation." Now will some bright economist crack this nut?

One of the leaders among the younger men of the trade, the bulk of whose business is confined to book papers, from being one of the most bullish men in the market has lately become quite blue over the conditions surrounding his great specialty. It would seem to a layman, however, that book must come up in due course with other papers, and this worthy young gentleman's accustomed spirits be restored.

Coarse papers are doing well. There is a good inquiry for manillas. Straw paper has advanced \$1 a ton, the price, delivered in carload lots, being from \$18 to \$22.50 per ton, according to locality and consequent freight charge. Mill prices from \$16 to \$17.

Considerable strawboard is being sold at low figures, but that is in cases where it had been contracted for previous to the advance announced in my last letter. Such contracts cannot last much longer, however, and

then everybody will have to pay more for the article. Meantime the new schedule is being maintained in all cases not covered by such contracts, except when some dealer who is loaded up at low cost is "chump" enough to sell to others at less than market price. This kind of competition cannot well be met while it lasts, but will soon reach the end of its tether.

As for print paper (particularly roll print), the mill man so often quoted, who as an authority is second to none in the country, says: "The situation is the most promising that has existed in years. While consumption has dropped off somewhat, as it always does in midsummer, the drop is considerably less than in previous years. Under this condition of affairs prices are holding firm. There is every indication that fall trade will begin early, and that the demand will be heavy. All this will have an undoubted tendency to advance prices still further."

There has lately appeared in the advertising columns of THE PAPER TRADE JOURNAL, and will be found there for some time to come, the card of the Irwin Paper Company, of Quincy, Ill. This house does a general jobbing business in papers, carrying a full line of everything from bond to strawboard.

Besides its large and handsome establishment of three stories and basement on Hampshire street, one of the principal thoroughfares of the city, the company has a storage warehouse, 42x160 feet, which is kept well filled with goods of sufficient variety to meet all demands.

Quincy is a live town, and Seaton Irwin, president of the Irwin Paper Company, is one of its live men. Mr. Irwin desires mill men to know that he is ready to buy, and buy largely, whenever the time seems to him propitious. Moreover, he wishes it understood that he pays cash for all he gets.

"Our bank connections," said he to the writer recently, "are such that we can discount all bills. During the very worst of the depression (now happily passing away) we did not fail to discount a single bill. Here are the books, if you choose to look at them, proving my assertion. That is my mode of doing business, and that is where a goodly proportion of my profit comes in. When, if ever, I find that I can no longer discount bills I propose to go out of business."

Here, surely, is a customer worth cultivating, there being no mill in the country, it is believed—not even the richest—which is not always glad to get the ready cash.

No further movement has yet been made in the litigation over the assets of the Columbia Straw Paper Company.

That it is expected to be long drawn out is evidenced by the policy of Geo. P. Jones, receiver for the bondholders. Mr. Jones some weeks ago obtained the authorization of the court for leasing the mills in his hands for six months instead of ninety days, as had formerly been in vogue, and the twelve mills now in operation are nearly all held in that way. Propositions are pending for the leasing of two more mills. When these begin to run only two of all those fit for use will be left idle. The Columbia Company, as is well known, owned many more than sixteen mills; but a number of them have been dismantled and others are so out of repair that it would take thousands of dollars to put them in order for running.

Mr. Jones has a big job on his hands, but he seems to be managing it in the best manner possible and to the satisfaction of all concerned.

Although the strawboard agreement so long talked of was practically fixed three weeks or more ago, yet one more meeting was necessary in order to settle details. This meeting was held in Pittsburg last week. Results, so far as given out by the best sources of information available, are as follows: (1) The inclusion of the producers of 98 per cent. of all the strawboard made in the country in a binding agreement upon the lines stated in my last letter, viz., the Standard Strawboard Company to handle the entire product and regulate prices. (2)

THE PUSEY & JONES COMPANY,
— Builders of —
WILMINGTON, DELAWARE.

PULP & PAPER MACHINERY

— Sole agents for the —
SALOMON-BRÜNGGER SULPHITE PATENTS.

WELDED DIGESTERS furnished only by THE PUSEY & JONES COMPANY, —
— CORRESPONDENCE SOLICITED —
WILMINGTON, DELAWARE.

MARSHALL'S PATENT PERFECTING ENGINE.

USED ON ALL CLASSES OF STOCK AND EVERY QUALITY OF PAPER.

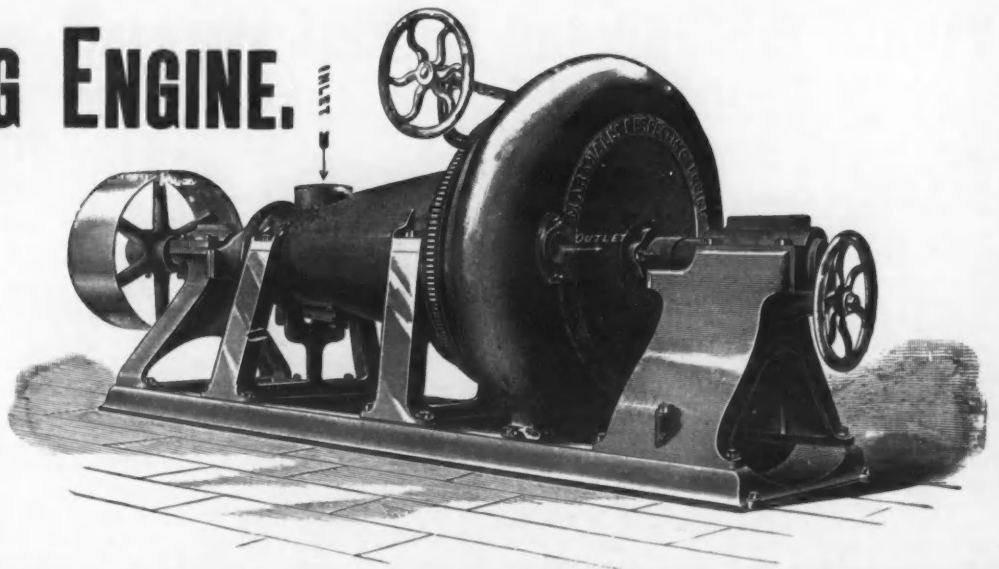
This Engine will produce a better finished, stronger and more even sheet of paper from the same materials than can be produced by any other mechanical process, and at the same time will greatly REDUCE the TIME and POWER required for Beating.

MARSHALL ENGINE CO., Turner's Falls, Mass.

BENTLEY & JACKSON,
Bury, England,
Near Manchester.

USED IN THE LEADING MILLS
OF THE WORLD.

A. KAINDLER,
60 Rue St. Andre Des Arts,
PARIS.



YOU CAN USE THE AEROPHOR  PAPER DAMPENER AND IMPROVE THE FINISH QUALITY OF YOUR NEWS, BOOK AND MANILLA.

MANUFACTURED BY THE U. S. AEROPHOR AIR MOISTENING AND VENTILATING CO., West Exchange St. and Brayton Ave., Providence, R. I.

76,125,000 GALLONS OF WATER A DAY Are Purified in PAPER and PULP MILLS by the use of the **WARREN FILTER,** A PAPER MAKER'S INVENTION FOR PAPER MAKERS' USE. MANUFACTURED BY CUMBERLAND MFG. CO., 220 Devonshire St., BOSTON.

HOLYOKE MACHINE CO., HOLYOKE, MASS.

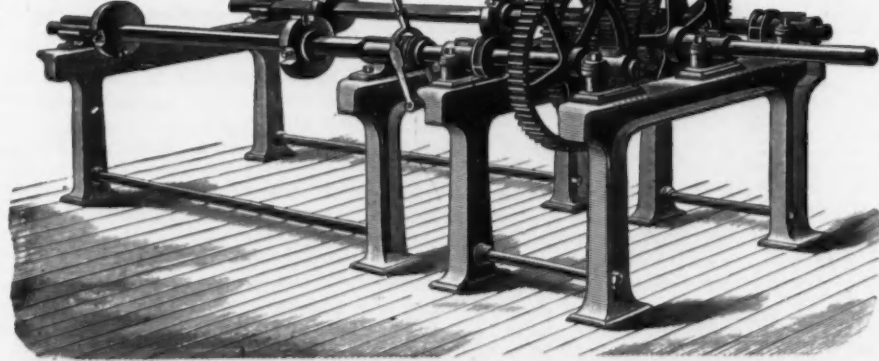
All Kinds of CALENDERS for PAPER MILLS, GLAZED PAPER and CARDBOARD MANUFACTURERS.

CORRESPONDENCE SOLICITED.

The Taylor Patent Cleaner and Duster.

Dusters, Engines, Turbine Wheels, Cotton Rolls, Husk Rolls, Paper Rolls, Chilled Iron Rolls, Elevators, Wood Pulp Machinery, Hydraulic Presses.

THE BAGLEY & SEWALL CO., Watertown, N. Y.



THE BINGHAM COMPENSATING WINDER. FOR TWO REELS.

FOURDRINIER PAPER MACHINES.

LATEST DESIGNS. GREATEST RECORD OF PRODUCTION. HIGHEST DEGREE OF WORKMANSHIP. INSURING MINIMUM OF AFTER EXPENSES FOR REPAIRS.

- Compensating Winders for any desired number of rolls.
- Two and Three Plunger Stuff and Suction Pumps.
- Hard Maple Press Rolls and Suction Box Covers,
- Bronze, Rubber Covered and Chilled Iron Press Rolls,
- Hydraulic Feed Pulp Grinders, Screens and Wet Machines—all of late and improved designs.

WHEN YOU WANT ANYTHING IN OUR LINE WRITE US BEFORE ORDERING ELSEWHERE.

DO NOT FORGET

That every *New England Pulp Grinder* ever made or sold in this country has been designed, built, and first sold by me; and I am sole owner of the right to use the name "New England" as applied to a pulp grinder, as the United States Patent Office records will show, and no other person is or has ever been interested with me in the manufacture of Pulp Machinery.

All the rights and interest of the Scott & Roberts Company and the New England Pulp Machine Company which were organized for the purpose of selling my pulp machinery were acquired by me more than four years ago, since which time many changes and improvements have been made in the New England Pulp Grinder.

I am prepared to furnish at short notice everything required for making ground wood pulp, including plans and specifications, and estimates for which I will furnish same; and erect the whole, if required, *guaranteeing a greater production of pulp*, with a given power and at a less cost for manufacture, than can be done by any other machines; and no pay asked until machines perform as stipulated.

I have on hand for prompt delivery six heavy Pulp Grinders, lately made to order, three pockets, to carry Grindstone 18 inches thick, 50 inches diameter; also eight Grinders, heavy pattern, three pockets, to carry stone 25 1-2 inches thick and 52 inches diameter. These will be sold at reduced prices and on extra favorable terms, fully guaranteed in every particular. Also on hand Barkers and Splitters.

Can furnish any of the leading *Turbine Water Wheels*, fifteen styles *Pulp Grinders*, *Noiseless Screens*, *Wet Presses*, *Sawing Machines*, *Barkers*, *Splitters*, *Pumps*, *Shafting*, *Mortise Gears*, *Pulleys*, &c.

Remember you can have a *guaranty* of the cost of your mill; also of the cost per ton to manufacture the pulp. Liberal terms.

I have on hand six Pulp Grinders, three pockets, to grind wood 17 inches long; and eight Grinders, heavy pattern, to grind wood 24 inches long; also Barkers and Splitters.

Many of the old style New England grinders can be rebuilt so as to greatly improve them. More than **FOUR HUNDRED** New England Grinders in use.

Don't use an old superannuated machine, nor an inferior imitation, when you can buy a genuine, good Grinder at the low prices at which they are now offered.

OLIN SCOTT, Bennington, Vt.

FARREL FOUNDRY AND MACHINE CO.,

ANSONIA, CONN., U. S. A.

THE LARGEST MANUFACTURERS OF

Chilled Rolls

IN THE WORLD.

ALSO MANUFACTURERS OF GRINDING MACHINES FOR ALL KINDS AND SIZES OF ROLLS.

CHILLED AND DRY SAND ROLLS

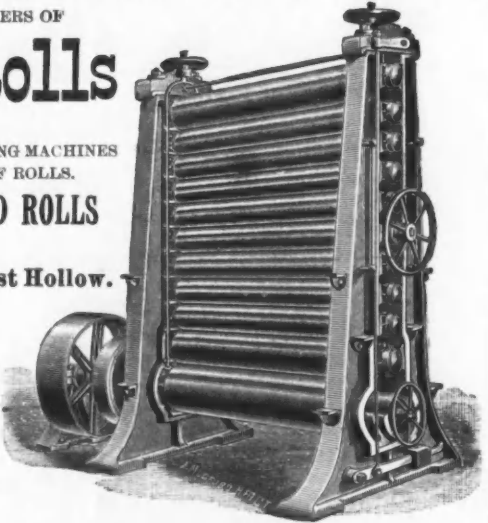
FOR ALL PURPOSES.

Rolls Bored for Steam or Cast Hollow.

COMPLETE CALENDERS.

Lift Rods operated by wheels above for raising any number of the rolls. Mousings so made that the rolls may be taken out endwise through frame.

OLD ROLLS RE-GROUND AT SHORT NOTICE.



ALL TYPES

PAPER MILL MACHINERY,

High Grade in Every Respect, Embodying All Late Improvements.

WET MACHINES, STUFF PUMPS, WATER PUMPS, FINISHING CUTTERS, BUNDLE CUTTERS, &c., &c., &c.

Brown Beating Engine.

NEW PRINCIPLE.

A Great Stride in Advance of Anything yet Produced.

Write for full information.

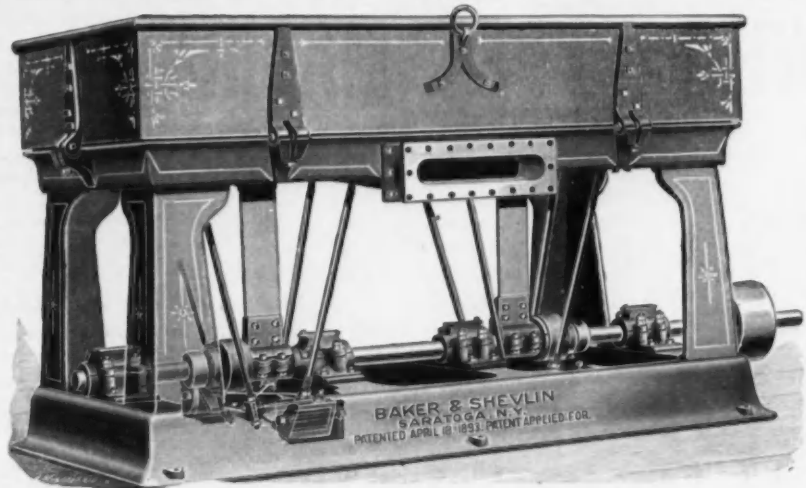
Rewinders.

The only one in the market that will rewind into small rolls, all on one shaft, up to any length.

"LEADER" SCREEN. 48 Sold.

BELOIT IRON WORKS,

Established 1858. BELOIT, WIS., U. S. A.



THIS illustration gives quite a correct idea of the mechanism and appearance of our **BELLOWS SCREEN**, which is the best to be found the world over.

WRITE US FOR PARTICULARS.

BAKER & SHEVLIN,

SARATOGA SPA, N. Y.

ESTABLISHED 1848.

JOHN WALDRON, New Brunswick, N. J.

MANUFACTURER OF ALL STYLES OF

WALL PAPER MACHINERY,

Coating Machinery for Lithograph, Label, Fancy, Glazed, Book and Sand Papers.

Also Cardboard Machinery. Hilbers, Staib and Waldron Patent Hanging-Up Machines. Patent Power Reeling Machines for Coated Papers and Cardboard. Embossing Machines, Paper Rolls, Polishing Machines, &c.

Machinery is universally used by the manufacturers of above goods in the United States and Canada.

NOW READY!

The Chemistry of Paper Making,

OF

R. B. GRIFFIN AND A. D. LITTLE.

Octavo, 532 Pages, ILLUSTRATED.

PRICE \$5.00, POST PAID.

"An epoch in paper making technology is marked by the publication of 'The Chemistry of Paper Making.' * * * No work of this kind has appeared before, strange as it may seem, and as a contribution to industrial science it will rank among the leading publications of the day."—The Paper Trade Journal.

CONTENTS.

INTRODUCTION.

General Laws of Chemistry; Principles of Chemical Physics; Chemical Arithmetic.

PART I.

General Chemistry.—With a short account of each element and its principal compounds; source, manufacture and properties of such compounds as are used in paper making.

PART II.

CHAPTER I.—Cellulose. Its chemical and physical properties, chemical relations and reactions.

CHAPTER II.—Fibres. Cellulose in its relations to the plant; the vegetable cell; the cell wall; changes which occur in the cell wall; lignin or incrusting matter; its chemical properties; characteristic markings of the cell wall in different fibres; characteristic cells other than fibres in different pulps. Classification of fibres: 1. Seed hairs; cotton, chemical and physical character of fibre, dimensions, analyses. 2. Bark fibres, as linen, jute, hemp, manilla, rhea, ramie, agave, sisal, adansonia, &c.; occurrence in plant, separation of filaments; character, size, distinguishing features of filaments and ultimate fibres, analyses and chemical properties. 3. Fibres and other cells from whole stems and leaves, as straw, esparto, bamboo; measurements and characteristics of fibres, yields, analyses; characteristic cells found with fibres. 4. Wood fibres; growth of wood; cambium layer; spring and autumn wood; sap and heart wood; resins; bark and knots; analyses of woods; specific gravities; ash; fuel values; occurrence and character of all woods used for pulp making.

CHAPTER III.—Processes for Isolating Cellulose. Rag boiling; special treatments for various fibres, as jute, straw, esparto; review of miscellaneous processes for treating wood; the water process, aqua regia, &c.; the soda process, history; preparation of liquors, boiling, washing, recovery, sources of loss; analyses of chemicals and liquors; the sulphite process, history; general principles; the different systems; liquor apparatus; preparation and analyses of liquors; digesters; linings; boiling; subsequent treatment of pulp; waste liquors recovery. The sulphite and sulphate processes.

CHAPTER IV.—Bleaching. General principles; bleaching agents; bleaching powder; deterioration; analyses; preparation of bleach liquors; use in chests, engines, drainers; hot bleaching; acid bleaching; use of alum; chlorination and oxidation of fibre; washing stock; antichlor; loss in bleaching; ozone bleach; hydrogen peroxide; permanganate; sulphurous acid; special processes for various fibres.

CHAPTER V.—Sizing and Loading. Resin; preparation of size; free alkali; free rosin; alum; analyses of alums; free acid; basic alums; sizing power; residue of alumina; moss; casein; starch; animal sizing; preparation and use; drying; loading; analyses of clays, agalite, pearl hardening, &c.; use; retention; ash; combined water; effect of alum and starch.

CHAPTER VI.—Coloring. Mineral colors; vegetable and animal colors; aniline colors; chemical properties; effect of alum and traces of bleach or alkali in different colors; distinguishing tests; effect of different waters.

CHAPTER VII.—Water and Water Supply. Character and analyses of different waters; ground waters; surface waters; river water; artesian well water; hard and soft waters; boiler scale; effect of waters on size and color; various systems of filtration; use of alum; softening water; self purification of streams; natural filtration; effect of storage; vegetation in ponds; crenothrix; consumption of bleach by waters.

CHAPTER VIII.—Chemical Analysis. Description of apparatus and methods for testing the purity and strength of all paper making chemicals, colors, &c.; common impurities and adulterants given; full description of methods of analysis for sulphite and soda liquors, bleach solution, alums, &c.

CHAPTER IX.—Paper Testing. Full account of the latest German methods for testing and classifying papers; determination of ash; kind of sizing; amount of sizing; free acid and chlorides; strength; proportion of ground wood; kind and condition of fibres.

CHAPTER X.—Electro-Chemistry, with reference to bleaching, manufacturing of pulp, manufacturing of chlorine and soda.

APPENDIX.—Metric system; tables of specific gravities; strength of solutions; list of sulphite patents, &c.

This handbook is practical, and hence will be useful to the Trade. Several hundred orders for it have already been received from various sections of the world through the advertisement which has appeared in THE PAPER TRADE JOURNAL. A copy of the book should be owned by every person interested in the subject.

Subscriptions filled in rotation as received.

Address all orders to the publishers, **HOWARD LOCKWOOD & CO.,** N. W. Cor. Bleeker Street and West Broadway, NEW YORK.

International Ultramarine Works

(LIMITED)

71 & 73 DUANE STREET, NEW YORK.

Works,

Rossville, Staten Island.

P. O. Box 2553.

A. KLIPSTEIN & COMPANY.

BRANCH OFFICES: 120 Arch St., Philadelphia. 283-285 Congress St., Boston. 124 Michigan St., Chicago.

122 PEARL ST., NEW YORK.

AURAMINE.

WM. PICKHARDT & KUTTROFF,

98 Liberty Street, New York,

BRANCHES AT BOSTON, PHILADELPHIA, PROVIDENCE AND CHICAGO,

—IMPORTERS OF—

Aniline Colors, Carmine, Pulp Colors, Ultramarines.

LIQUID CHLORINE.

Schoellkopf Aniline and Chemical Co.,

BUFFALO, N. Y.

WRITE FOR NEW AND COMPLETE SAMPLE BOOK OF COLORS.

BOSTON: 103 MILK ST. NEW YORK: 3 CEDAR ST.

PHILADELPHIA: 50 NORTH FRONT ST.



APPLETON WOOLEN MILLS, MANUFACTURERS OF **PAPER MAKERS' FELTS.**

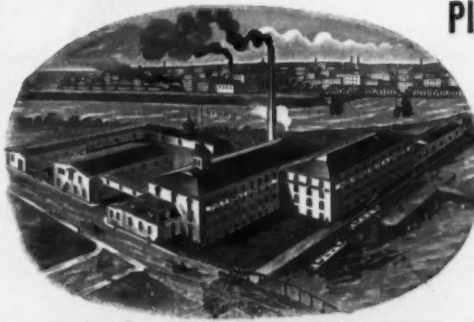
The only Mill west of Ohio.

We have demonstrated our ability to compete in

Fourdrinier, Press, Cylinder, Pulp Felts and Jackets.

APPLETON,

WISCONSIN.



PIQUA WOOLEN MILLS.

The F. GRAY CO., Piqua, Ohio,

MANUFACTURERS OF

FOURDRINIER, HARPER and CYLINDER

FELTS.

PRESS FELTS AND JACKETS FOR ALL KINDS OF PAPER.

Try our Special Five X Jackets; they have no equal.

GEO. WOOLFORD,

Manufacturer of all kinds of **WOOD TANKS** FOR PAPER MILL WORK, DRAINERS, STUFF CHESTS, ACID AND WATER TANKS, ETC.

In sending for estimates state if measurements are inside or outside and thickness of wood desired.

2238-40-42-44-46-48-50 NORTH NINTH ST., PHILADELPHIA, PA.

FIDELITY STEAM TRAP.

BEST IN THE WORLD.

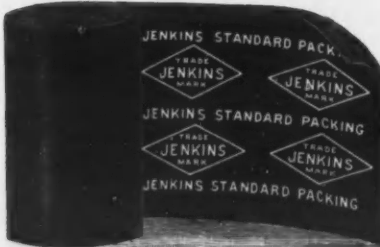
Made for High and Low Pressure expressly for

PAPER MILLS.

Sent on thirty days' trial. Guaranteed for one year.

MADE BY THE VAN AUKEN STEAM SPECIALTY CO.,

201-207 SOUTH CANAL STREET, CHICAGO.



JENKINS' PACKING

Is all right, so say thousands of Engineers. We have positively refused many times to cheapen the quality to compete with other makers. It is better to-day than when first put on the market twenty years ago. It is cheaper than many other kinds because it does not weigh as much per yard. It is honestly made, and will do all that any other Packing will do, and has advantages that no other has.

JENKINS BROS.,

New York, Chicago, Philadelphia, Boston.

A five years' contract to the foregoing effect made by each mill and handed over to the "Standard." (3) The payment on the part of each mill of the first instalment for the stock of the "Standard." The odd amount of this stock, by the way—\$266,000—is accounted for in this way: it was found upon computation that the total daily output of strawboard, figured upon a close basis, was 665 tons. It was then agreed that the capital of the new selling company should be furnished by a subscription of four shares for each ton of board, making 2,660 shares; these at \$100 each amount to \$266,000, the sum given.

The officials of the American Straw Board Company being all absent from the city, no comment upon the final outcome could there be obtained. Other strawboard men, however, express themselves as more than pleased with the situation as it now stands, and fearless of any competition that may arise. All are looking forward to good, substantial profits from this time forth.

The Crown Lubricator Company did a wise thing in placing an advertisement in THE JOURNAL. C. W. Jones, secretary of the company, is in receipt of inquiries from various parts of the country, a sure indication that a better lubricator than those formerly in use was needed.

An ex-superintendent of a large paper mill where the Crown compound has been used for some time writes enthusiastically of its merits, and has made arrangements with Mr. Jones to introduce it throughout the East.

Several Valley mills which have been using the compound give most flattering accounts of the results attained.

Chicago dailies have for some days past been devoting considerable space to the much talked of combination of news mills. I append a specimen clipped from the *Tribune* of last Saturday:

"Some of the largest paper manufacturers in the country, representing about three-fourths of the total output of the rolls used in the newspaper business, have been at work several weeks trying to perfect the details of a combine of the several companies in one big corporation. While many dealers and consumers have known for some time that such a deal was contemplated, interested parties denied the rumor until yesterday, when it was practically admitted the plan would probably be carried through.

"The deal involves at least \$30,000,000, and possibly several millions more. By the plan proposed the mills are to be purchased outright by the new concern, and the prices paid will be as nearly uniform as possible, but will be graded according to the equipment of the various plants. The average price will be about \$20,000 for each ton of daily production. Plants equipped with modern machinery will get the best rating, while the smaller ones, using ready made raw material, will be appraised lower.

"According to the promoters of the plan the prices of paper will not be advanced. They say the only object in the consolidation is to save money in putting their product on the market. With a central office and branches in the larger cities the total output can be marketed at an estimated saving of \$5 a ton.

"William A. Russell, president of the Montague Paper Company, of Massachusetts, is the prime mover in the project, and has held numerous conferences with prominent paper manufacturers in New York and Boston. The question has been widely discussed and met with favor everywhere. The total daily output of the country is said to be about 30,000 tons, and of this amount nearly one-half is represented by the concerns already supporting the 'centralization' plan. The movement has been worked up almost exclusively in New York and New England, and the Western manufacturers have not yet been approached on the subject."

Alas and alack for the errors of the average daily paper when it sets out to write about trade matters! Now, here is our most important diurnal sheet treating of a matter wherein it should be reasonably well informed, seeing that it is a large user of news print, and yet mark the inaccuracies in this one article!

In the first place, as the trade all know, Wm. A. Russell is president, not of the "Montague," but of the Fall Mountain Paper Company. Secondly, the alleged "daily output of 20,000 tons" is—to put it mildly—"away off." I have it on the very best of authority that the country's daily production of all kinds of paper but little exceeds those figures, and that the actual output of roll print is from 1,400 to 1,600 tons a day. Thirdly, the *Tribune* speaks of "weeks" having been consumed in work upon this gigantic deal. Now, it is known to many people that efforts in the desired direction have been in progress for at least five years past, and some say seven.

Great and wonderful is the daily paper; the world could not get along without it; but when it attempts to invade the field of trade journalism it would be well to have in

mind the old maxim: "*Ne ultra crepidam sutor.*"

J. C. Brocklebank, secretary and Western manager of the Manufacturers' Paper Company, whose name has been so freely mentioned both by the daily and trade press in connection with the Western end of the news "combine," being approached in regard to the matter, merely replied in his usual suave and courteous manner that he had nothing to say.

The Fort Dearborn Transfer Company is handling quite a number of consignments for paper mills, but is still in the field for more. Mill men who will read the company's advertisement carefully will readily see how great a saving can be effected and how much convenience secured by utilizing its facilities. The secretary will cheerfully and promptly answer all correspondence.

Assistant Secretary of War J. B. Doe was at the Sherman House on Saturday morning, and left on an early train for Appleton, Wis., to make investigation of the water supply in the Lower and Upper Fox rivers:

"The pulp manufacturers," said General Doe, "have millions of dollars invested, and they are complaining bitterly to the Secretary of War of the loss of water supply during this, their busy season. On the other hand, the Government has expended over \$3,000,000 for the improvement of the navigation of the river, and passage of vessels is paramount to the interests of the pulp men; yet with the mills closed down there is very little shipping business. I shall investigate the matter and see what can be done for the mills."

Rawhide belting, lace leather and pinions are still being furnished at moderate prices by the Chicago Rawhide Manufacturing Company, notwithstanding the fact that the price of hides continues to mount higher and higher. The company may be compelled to make an advance after a while, but not until it is inevitable. The company is showing a laudable regard for the honorable doctrine of "live and let live," and its action should be duly appreciated by mill owners.

The Lakeside City Directory for 1895 has appeared. The new volume is somewhat larger than its predecessor, and the publishers claim for it the distinction of being the largest directory in the United States and second in size to those of London and Paris only. The 1895 edition contains 2,320 pages, as against 2,288 pages last year. There are 1,781 pages of names, of which there are some 60,000 more than a year ago, when 1,766 pages sufficed for them.

The compilation of the present volume was attended with unusual trouble on account of the many changes recently made in the names of streets. In many instances three or four streets were united under one name, as in the case of West Fourteenth place, where ten short streets were grouped under that one name. This naturally caused many duplicate numbers, which will require some time to straighten out. Wherever this duplication occurs the old street name has been printed in brackets after the new name. The present issue of the directory is remarkable for one other thing. For many years the Smiths far outnumbered any other name, but this year they have been forced to give place to the Johnsons.

Even the publishers do not know how many names are contained in the volume, the number of pages, and not names, being used as a basis for calculating the population of the city. According to Mr. Donnelly's estimate there are 1,695,000 residents in this city, a considerable gain over last year.

Several well-known men of the Chicago paper trade are whiling away the summer days by toying with the finny tribe after the manner of Izaak Walton. W. G. Gillett, treasurer of the Chicago Paper Company, is in Northern Wisconsin. The frisky muskellonge is his chosen quarry. F. P. Tyler, secretary of the American Paper Company, is having great luck on the Wisconsin River. F. J. Clappitt, Western manager of the Whiting Paper Company, is making it lively for anything that will nibble a hook on the waters of Twin Lakes, Wis. M. J. Fitch, president of the company bearing his name, returned a few days ago from Mineral Springs, Ind., bringing with him a goodly string caught in the streams of that neighborhood. George W. Moser, of the Moser-Burgess Paper Company, is at Nantucket blue fishing. So far Mr. Moser has been having too good a time to write a word about business. Pretty soon, however, the men of Holyoke and other Eastern paper manufacturing centres will find him among them.

H. E. Whitcomb, secretary of the Whitcomb Envelope Company, Worcester, Mass., passed through Chicago last week on the homeward stretch of his wedding tour, after visiting Mackinac Island and other Western points of interest.

The many friends of George Nye, of Linton Brothers & Co., will be glad to hear that he is rapidly recovering under the treatment of Dr. Paquin, of St. Louis. James L. Rubel, of the Mead Paper Com-

pany, Dayton, Ohio, who was in Chicago the other day, had just come from St. Louis, where he saw and talked with Mr. Nye. Mr. Rubel expressed himself as delighted with the progress made by his friend in the short space of a few weeks.

Other visiting members of the trade since I last wrote THE JOURNAL were Major Bowker, of the Holyoke Envelope Company; Arthur Hill, of the Springfield Envelope Company, Springfield, Mass.; Chas. Toomey, of the Nashua Card and Glazed Paper Company, Nashua, N. H.; Frank Keeny, of the White-Corbin Company, Rockville, Conn.; H. J. Wood, of the Plimpton Envelope Company, Hartford; E. McCready, of the Catawissa Fibre Company, Catawissa, Pa.; Mr. Thornton, of the Richmond Paper Company, Richmond, Va.; I. Kraft, of Robinson & Hughes, Louisville; Mr. Stewart, of Brown & Stewart, Cincinnati; Wm. Beckett, president of the Beckett Paper Company, Hamilton, Ohio; J. C. Brown, of the Franklin Paper Company, Franklin, Ohio; G. C. Jacoby, president of the Jacoby Paper Company, Middletown, Ohio; Mr. Beveridge, of the Beveridge Paper Company, Indianapolis; J. A. Kimberly and W. Z. Stuart, of the Kimberly & Clark Company, Neenah, Wis.; William Gilbert, of the Gilbert Paper Company; John Strange, of the John Strange Paper Company, and C. A. Babcock, of the Wisconsin River Paper and Pulp Company—all of Menasha; Mr. Hattersley, of the Fox River Paper Company, Appleton; Mr. Edmonds, of the Falls Manufacturing Company, Oconto Falls, Wis., and George D. Dutton, treasurer of the National Envelope Company, Milwaukee. R. B. D.

MIAMI VALLEY.

[FROM OUR REGULAR CORRESPONDENT.]

DAYTON, Ohio, July 24, 1895.

Business conditions remain practically unchanged. Paper manufacturers in this city and valley point to the improvement in other industries besides their own as an additional index to the revival. As long as they feel secure in their present opinions the world at large may not anticipate complaint from this section.

The Horr-Harvey dispute, debate, or whatever it may be called, has had considerable attention given to it by the local trade. Readers may consider that political prejudice would enter into a resumé of opinions of a local character, or the same would be given publication. Some are decidedly opinionated; others are liberal and broad. Certainly they all favor safe money, but on what basis? "Ah!" as Willy Shakespeare says, "there's the rub."

George Neder, one of Dayton's oldest journalists, passed away this week. He was the editor and publisher of the *Daily Volkszeitung*, the only German newspaper in the county. Mr. Neder was born on June 15, 1828, in Bavaria, Germany. He established a paper in Wurzburg, known as the *Journal*, which is yet in existence, and emigrated to this country in 1862, during the civil war. Soon after his arrival he was employed upon one of the Buffalo German newspapers as local and political editor. However, in 1866, he came to Dayton and began the publication of the *Volkszeitung* first as a weekly, then semi-weekly, later tri-weekly and finally, daily paper. Mr. Neder was also part owner of the *Democrat*, the county's official organ, which later merged into the *Times*, and is now the most prosperous morning paper in the city.

Franklin, one of the substantial little cities of the State, is extending much vim and energy in behalf of its coming centennial celebration. The success of Franklin as a business centre has been greatly due to her manufactories in the paper industry. In 1869 Wm. A. Van Horne by his own effort built the magnificent hydraulic water power and in 1872 the Perrine & Forgy Paper Company leased the first water power, and erected a large paper mill. Other companies followed, and there are to-day in Franklin many extensive plants, including the Alpha Paper Company, successor to the Perrine & Forgy Company; the Harding Paper Company, the Eagle Paper Company, the Eagle Pulp Mill, the Perrine Paper Company and Franklin Paper Company. Each concern has an output of 20 tons of manufactured paper daily, while the Alpha Company, a recently organized business firm with capital and brains as support, manages a paper bag factory in connection with the mill with a capacity of 50,000 bags per day.

Another phase of the Columbia Straw Paper Company's affairs came up this week, when the City National Bank, of Dayton, brought suit in the Court of Common Pleas of Greene county against the Xenia branch of the combination for \$20,000. The suit is for the collection of three promissory notes, one for \$20,000 and two for \$5,000, respectively. F. C. Trebein, of Xenia, is the indorser on the notes.

The Middletown Roll Printing Company has removed its plant to the building for-

merly occupied by the Pleasant Valley Paper Company.

A fire broke out at the tablet mill of the George H. Friend Paper Company's plant at West Carrollton the other day. The blaze gained considerable headway before it was discovered, although in twenty minutes after the alarm the mill force had extinguished it. The fire was caused by a spark from a passing train, and the loss on stock and property was small. There are no mosquitoes on the Carrollton fireladdies. Every member of the crew is a paper maker.

That hustling town is now considering the establishment of a system of water works, for fire protection chiefly. That little excitement has aroused greater sentiment in favor of the improvement, and it is quite likely will result in the adoption of a system.

Manager George Pontius, of the defunct twine factory at Middletown, is filling a sixteen carload order for Chicago. Twenty carloads of cordage will remain in the factory after this order has been filled. This stock is being negotiated for, and when sold the plant will be repaired and refitted for a possible resumption. The report that the factory was in working was not founded on facts as they exist—rather an anticipatory condition.

Paper manufacturers, paper stock men, bag makers, box, tablet and novelty men who remained at home during the first fortnight of the current month on Prognosticator Foster's prediction of a cool wave, will now bestir themselves. They are already beginning to hunt the out of town resorts, principally in the East and Northwest. The mercury has hovered at the century mark for a week, and weather conditions are doubly depressive in the warfare against business; but that big, fat drought keeps prices near the sky.

Thomas M. Boyd, as trustee of the Louis Snider's Sons Company, will sell at public auction at the court house in Hamilton on Saturday, August 10, the four paper mills of that company. The appraised value, it is understood, is \$267,000.

IN THE MOUNTAINS.

[FROM OUR SPECIAL CORRESPONDENT.]

WILMINGTON, Vt., July 20, 1895.

Midway between Bennington and Brattleboro, on the old stage coach turnpike and on a pretty acreage of broken or rolling table land, the village of Wilmington is nestled, somewhat like the nest of an eagle as regards its height and distance or isolation from the busy, throbbing, outside world. Its one hostelry, the old Vermont House, is a large, roomy, shambling, original structure, to the west end of which a string of additions has been made from year to year until it stretches out like an old time string of dried apples. Like the State House at Montpelier, this old-time inn, which is supplied with not a single trace of the "modern conveniences," is backed up against a steep side hill to protect it from the too rigorous winter breezes of the old Green Mountain State.

No nerves overtaxed and overstrained by the inexorable demands of metropolitan and manufacturing cares and life can resist the tempting quiet of the Vermont House ancient piazzas, or fight with closing, weary eyelids on being lighted up to its airy bed-chambers with a tallow dip. Really the old Vermont House is a good place to spend at least a week among the peaceful solitudes of the mountains to learn how the forefathers and their families used to live and rear sons and daughters to fill the quota of the green Mountain State in helping the other States of this Union build up and bring the Republic to its present high rank among the nations of the world.

Wilmington is just 24 miles from the Eastern portal of the famous Hoosac tunnel. From it to this point the upper Deerfield River comes leaping down over the rocks in a narrow ravine banked with frequent small levels, and walled in with sparsely wooded and bare hills, many of which are devoid of vegetation. While in the summer season this stream has a steady flow of water of no great but of a steady, reliant volume, in the spring and fall freshets it is the most turbulent and angry river in all New England. Then its huge supply of water seems to make its waterway insufficient to hold it, and the floods often times roll down huge boulders of tons in weight from the highlands and deposit them in the broader bed of the stream in the famous Charlemont Meadows, a distance of from a dozen to 15 miles.

It may be of interest as to how the present 24 miles of narrow gauge railroad, which runs over the foot hills of the eastern side of this wild ravine and follows upward the winding course of the Deerfield River, came to be constructed through Monroe, Readsboro, Whitingham and Jacksonville to Wilmington, and also the causes which led public spirit, harnessed with enterprise, to open the prison doors of nature for commercial and steam transit.

A dozen years ago the three Newton

brothers, of Holyoke, so prominent in paper making in the past and present history of that city, turned their attention to the use of wood pulp. The Newton brothers were born in Vermont, and had a knowledge of its great primitive spruce forests, which were then so far away from railways and so difficult of approach, so securely locked up in mountain fastnesses, as to be held by their owners as comparatively worthless. They found large and inexhaustible spruce forest tracts and mill privileges in a certain portion of the State, but after a good deal of negotiation were unable to secure forests and water power which would enable them to carry out their plans, owing to the obstinacy of a large Vermont forest owner, and the consequence was that this field of operations was deserted, and the location is yet a woodland wilderness.

Nine years ago James C. Newton dropped quietly down from a stage into Readsboro, whose only outlet to the commercial world then was by team down the mountains a dozen miles to North Adams. Here he found one Titus Stowe, a leading and well-to-do character of this mountain town, who as the inventor of several patents in woodwork had failed to establish any successful business therein. In ten days' time, with Mr. Stowe silently working in his interest, he secured twenty-one different tracts of land and 2 miles of river privileges running southward from the village proper, for \$5,000. After purchasing a great tract of spruce woodland, he built a huge log dam 175 feet in length, spiked down for 100 feet in width on the solid ledge bed of the stream and 50 feet in height, at an expense of \$40,000. Then with explosives he tore out of the rocky bank ledge a site for a big pulp mill, with $\frac{1}{4}$ mile solid rock raceway leading thereto from the dam. This dam gave him 88 feet fall and the best power privilege on the stream.

After completing this dam, erecting his pulp mill and buying up thousands of acres of woodland in Readsboro and at the head waters of the river in Glastenbury, Somerset and other remote Vermont mountain towns on the main stream and branches, the Newton brothers turned their attention to constructing the outlet narrow gauge railroad. This was first constructed northward to Readsboro, the Newton brothers bearing the whole expense above \$1,000 given by the town of Readsboro toward this improvement.

This pulp mill and railroad enterprise have developed Readsboro into one of the busiest and most prosperous inland Vermont towns. Within a few years the great pulp mill has been reinforced by a mammoth mill, which is principally devoted to making stock from pulp for the Metal Edge Box Company, which does an immense business and markets its goods direct from this point all over the world. The paper machine which turns out this pulp box board stock in all colors is the largest machine now running in New England, and writing paper from wood pulp is also made here. The pulp mill, whose product is used here and at Holyoke principally, is supplied now with logs which are floated down the river in the spring freshets, several acres of the back fowage of the immense dam being covered with log booms. All of these works are under the immediate supervision and management of D. H. Newton. Besides this, he is largely interested in the Readsboro Chair Company, which employs eighty men in building chairs, settees, fancy tables, sap pails and covers and many other articles, using the birch timber cut from the Newton timber land holdings.

Midway between Readsboro and the Hoosac Tunnel station, and on the west side of the river, which is spanned at this point by a high bridge, is the immense James Ramage pulp and cardboard mills, at Munroe Bridge. This cardboard is made of pulp from timber cut in the towns of Munroe and Florida; it is in all of the leading colors, and is a favorite in the markets, seventy-five hands being employed in its production.

The Newton brothers made their masterstroke in developing the timber resources of the extreme upper waters of the Deerfield River and its tributaries, and locked the whole resources from such for all time up in their own conduct and management by extending their narrow gauge railroad from Readsboro to Wilmington. This was not entered upon, however, until their plans had been fully perfected and got under successful operation at Readsboro. The James Ramage works had been constructed at Munroe Bridge, and all of the available forests on the upper waters of the river had been bought in.

Some three years ago the town of Wilmington bonded itself in the sum of \$84,000 to aid in its construction, the town of Whitingham bonded itself in \$6,000 and secured the right of way, and other localities helped. For two years the road has been in successful operation, with a single passenger train to the Hoosac Tunnel in the winter, besides freight, and two passenger trains in the

summer. The three brothers have purchased and built each a fine summer residence in Wilmington, which they occupy with their families. A mile south of Wilmington in 1894, they built an 80 rod dam across the stream with gravel puddled down solid with water, over which the narrow gauge road has a spur to the west shore of the river.

This dam has a width of 125 feet on the bottom, is 35 feet in height, and sets back over a great acreage, one-half of which is covered with logs, 10,000,000 feet of such having been added to the stock therein last spring. The logs are run through a spacious raceway right into immense lumber mills, where the finest of them are cut by band saws into shape for building purposes, and the poorest are consigned to an immense pulp mill. Here not a single particle of fine, soft timber is wasted, except in sawdust, even the slabs being cut up into lath and firewood. All of the hardwoods are sawed up, dressed and finished for house flooring, inner furnishings and trimmings and such purposes.

By a labor saving system of machinery a log is taken from the boom, run into the mill, cut up and finished, the timber being carried from a 3 to 6 acre lumber yard, covered with sheds, between which many parallel lines of railroad tracks are built. This establishment is called the Mountain Mill, and it is managed by Moses Newton. The great wood pulp and lumber business owned and conducted by the Newton brothers in southwestern Vermont must be seen to be fully comprehended, and they have worked silently in its development until they hold it entirely in their hands with a grip which cannot be disturbed. W. H. P.

Supplies—Department of Justice.

The following is a list of awards for annual supplies for the Department of Justice:

- Bidder 1. Manhattan Supply Company, New York city.
- 2. Easton & Rupp, Washington.
- 3. J. H. Chesley & Co., Washington.
- 4. R. Carter Ballantyne, Washington.
- 5. Shoemaker & Busch, Philadelphia.
- 80 rms letter paper, 8x10 in, single sheets, \$3, bidders 2 and 4.
- 8 rms do 12 lb, \$1.56, do.
- 60 rms cap paper, 8x12 1/2 in, Crane's antique laid, \$3.58, do.
- 3 rms do 8 1/2 x 13 1/4 in, Oriental linen, \$3.30, do.
- 30 rms letter paper, Oriental linen, \$2.90, do.
- 10 rms note paper, Crane's parchment vellum, unruled, white, 70 lb, \$2.75 and \$2.35, do.
- 10 rms do Crane's antique laid, \$1.80, bidders 2 and 4.
- 10 rms do Whitney Paper Company, 6 lb, 90c, bidder 2.
- 3 rms blotting paper, Treasury, white, \$7.35, do.
- 3 rms wrapping paper, manilla, 2 rms 30x40 in, 100 lbs, 1 rm 24x30 in, 50 lbs, \$5 and \$2.50, do.
- 1/2 rm envelope paper, \$2.80, bidder 4.
- 300 tablets, perforated and ruled, \$2.70 per 100, do.
- 200 office scratch books, No. 4070, \$18.60 per 100, bidder 2.
- 300 do No 4030, \$3 per 100, bidder 4.
- 300 do No 4068, \$13.60 per 100, bidder 2.
- 200 writing paper, packet, foolscap, \$13.70 per 100, bidder 4.
- 200 shorthand note books, \$8.50, bidder 2.
- 8,000 cards, 4,000 3x5 1/4 in, 4,000 2x3 1/4 in, \$1.60 and 80c per M, do.

Two dollars buy a copy of the new volume of LOCKWOOD'S DIRECTORY.

A European firm has adopted the practice of packing pieces of leather one against the other in the grooves of wheels used for wire rope driving, securing the leather at intervals by wire cord passing through the leather and holes in the pulley rim. The resistance to slipping is immensely increased, and the rope in some cases wears 50 per cent. longer.

WANTED—MILL TO FURNISH RAG PULP for responsible paper manufacturer. Address MANUFACTURER, care Paper Trade Journal.

CROWN LUBRICATING COMPOUND.



Best Lubricant ever manufactured. Especially adapted for heavy machinery. Now in constant use in many of the largest paper mills in the country. Send for sample and circular.

CROWN LUBRICATOR CO., 7924 Wallace Street, CHICAGO.

New Inventions—LXXXV.

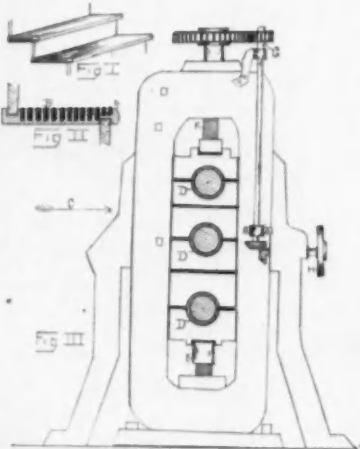
[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By GEO. DAMON RICE.

An objection to subways and tunnel systems is found in slippery steps leading to the passageways. Many disasters are recorded as resulting from persons slipping on metallic steps in underground places, for the moisture and general dampness creates slipperiness. The growing popularity of the subway system for relieving congested sections of large cities makes the question of safe stairways important. Wooden steps are used in some tunnels, but these soon wear out. In some places iron steps are covered with rubber, but this material wears very quickly and is soon useless. Not only is there an extraordinarily large number of subways now in successful operation for traffic purposes, but there are many new ones under way, and experiments are being made with the view of constructing non-slippery stairways.

A prominent engineer lately interviewed gave some interesting facts regarding the problem. At the tunnel under the Thames at Blackwall, now in process of construction, a series of steps is made of a leaden material where the foot contacts, and slipping is obviated until the surface is worn smooth. At the Budapest subway there is a step consisting of strips of lead set into an iron base, and this works fairly well. The Glasgow subway, now being built, and which is over 6 miles long, is to be equipped with many lines of stairways, but no definite non-slippery style has as yet been decided upon. The Paris subway, a handsome structure of glazed brickwork and porcelain paneling about all of the stations, is defective only in its stairways, but these are well protected by railings, and accidents are few. The Mersey tunnel, Liverpool, 4 miles long, has to employ many pumping stations to keep out water, and the dampness from this augments the slipperiness of the stairways, making footing more difficult. There are many tunnels in this country. New York has some excellent underground passages. Boston is soon to have a subway, work having already started. Thus the scope for a perfect system of non-slippery stairways is large. All hard metallic substances are too smooth; wood, rubber, &c., are too soft and wear away.

It has been proved that paper pulp possesses the proper elements for the prevention of slippery steps. Paper pulp has many of the properties of lead, when the former is rightly compounded, and everyone who has had occasion to walk on lead knows what the sensation is. The sole of the shoe seems to cling to the lead, and will not slip a fraction of an inch, even if inclined. Paper pulp alone would not stand the wear of heavy traffic, so a specially arranged step system is built and is explained in the drawing.



MAKING COMBINATION PAPER PULP METALLIC STEPS.

Figure I. is a view of the steps, which are like the ordinary kind so far as build is concerned. A sectional view is given in Fig. II., in which the step surface A is grooved and the grooves are filled in with the paper pulp B. The effect is the same as having thin strips of pulp and metal combined. If the pulp strips were simply run into the grooves there would be a lack of hardness and the pulp would not be able to stand the wear; but these pulp strips are prepared in the powerful pressing rolls of the machine shown in Fig. III., this being a side view showing the heavy iron frame in which are three bearings for supporting the shafts of the rollers D, D, D.

The arrangement is such that the pulp sheets are fed into the two lower rolls; whence they go to the upper rolls and receive a double compression. The degree of

pressure is governed by the wheel H, which, when turned, revolves the shaft and gear connections at G, and the threaded shafts F and E are acted upon and the rolls are brought closer together, so that whatever passes between them receives a high degree of pressure.

The paper pulp employed in this operation consists of a promiscuous collection of substances usually used in paper stock. Pulp from wood answers the purpose as well as pulp obtained from rags, rope, jute, &c. The chief aim is to get a tough material resembling lead as closely as possible. A liberal application of the most inferior and cheapest grade of white lead is given. Ozokerite, borax and shellac are also applied to the pulp after it has passed through the regular preparatory stages of digesting, &c. This is followed by drying in sheets, cutting, rolling in the press, finishing, and finally inserting into the grooves of the steps. Moisture has no effect upon the pulp strips. The affinity of sole leather or rubber shoes for the pulpy strips is remarkable, and slipping is wholly overcome.

Electricity from Water Power at Sacramento.

Electricity generated by the falls of the American River at Folsom, Cal., has been successfully turned on in Sacramento, 24 miles away. The power so transmitted will be used for street cars, industrial establishments and to light and heat the city. Several years have been spent in the work just completed. A large masonry dam was

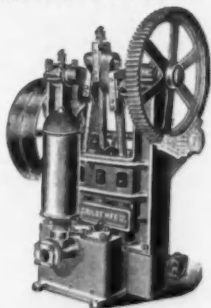


THE BEST AND CHEAPEST



W. W. TUPPER & CO., 39-41 Cortlandt St., NEW YORK.

"Efficient Power Pumps."



Economy of Operation

can only be secured by using the best

Pumps A Gouls Triplex Power Pump

can be operated with less energy than ANY direct acting steam pump. This means a reduction in

Operating Expenses and in consequence Increased Earnings.

Our Catalog "Efficient Power Pumps," may be had for the asking.

THE GOULDS MFG. CO., Works and Main Office: Seneca Falls, N. Y., U. S. A. Warehouses—16 Murray St., New York. New England Office, 25 Wendell St., Boston.

GENERAL BRANCHES AND AGENCIES: The Gould Company, 22 N. Canal St., Chicago, Ill. L. M. Bates, 221 Vine St., Philadelphia, Pa. W. O. Nelson Mfg. Co., 212 & St. Charles St., St. Louis, Mo. Woodin & Little, 312-314 Market St., San Francisco, Cal.

thrown across the American River at Folsom, creating a reservoir 3 miles long and furnishing a flow of 85,000 cubic feet a minute. The water, after passing through four horizontal shaft double turbine wheels, is used for irrigation purposes, and 800,000 acres of land will be supplied.

The turbine wheels are 30 inches in diameter, and under a head of 55 feet develop 1,300 horse power each. The shafts of the wheels are coupled direct to the shafts of four three-phase alternating current generators of the general electric type, each capable of developing 1,000 horse power. These dynamos weigh about 40 tons each. They

are the largest in the world except those built for Niagara Falls. The electric current is passed through "step-up" transformers which raise the voltage up to 16,000 volts, and it is then transmitted by overhead copper wires to this city. Two separate lines have been built as a precaution against accidents or shut-downs for repairs. One line will always be held in reserve. It is calculated that 50 per cent. of the electric power generated at Folsom will be transmitted 24 miles to Sacramento.

The new volume of LOCKWOOD'S DIRECTORY now ready. Price \$2, postpaid.

G. RAU, IMPORTER, TIMES BUILDING, NEW YORK. Sulphite and Soda Pulps.

HUGHES BROTHERS,

Nos. 62, 64 & 66 NORTH SECOND STREET, BROOKLYN, E. D., NEW YORK, (Three Blocks from Grand Street Ferry, Brooklyn Side.)

IMPORTERS AND PACKERS OF PAPER STOCK, AND DEALERS IN PAPER MAKERS' SUPPLIES.

Special attention called to Our Own Packing.

"RUDDER" BRAND



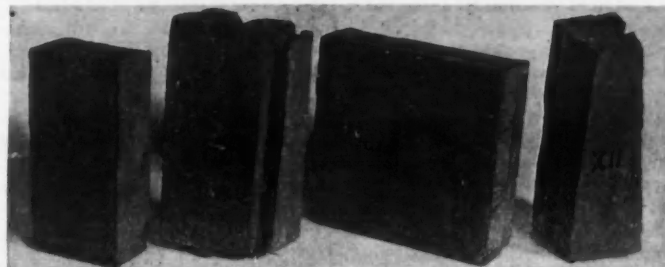
PURE AMMONIA-SODA ALKALI

HIGH STRENGTH BLEACHING POWDER

ARE THE BEST FOR PAPER MAKERS' USE.

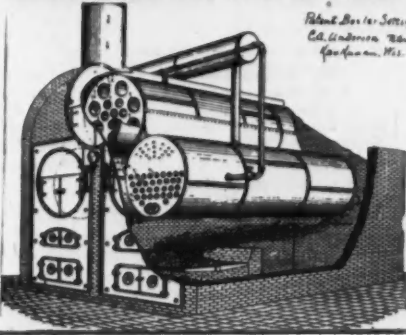
Consignments regularly received at all Ports.

AMERICAN OFFICE: **BOWMAN, THOMPSON & CO., Ltd.,** 66 BROAD STREET, NEW YORK. NORTHWICH, ENGLAND.



These "SYRAGUSE" ACID PROOF DIGESTER LININGS are used by the leading manufacturers of Sulphite Fibre in the United States and Canada. We make Bricks any shape or size. Foreign orders solicited. **NEW YORK BRICK AND PAVING CO., SYRACUSE, N. Y., U. S. A.,** SOLE MANUFACTURERS.

ANDERSON'S PATENT BOILER SETTING.



Boiler Setting, C. A. Anderson, Seneca Falls, N. Y.

Practical Test.

NEENAH, Wis. C. A. ANDERSON, Esq., Kaukauna, Wis.: DEAR SIR—We have been using your Patent Feed Water Boiler eleven months and it has given us perfect satisfaction. We are perfectly satisfied that it saves us from 15 to 20 per cent. fuel; it purifies the feed water and keeps the lower boilers free from scale, and is so simple and durably constructed that it causes no extra trouble to run it. We can heartily recommend your Boiler to anyone wishing to improve their steam plant. WINNEBAGO PAPER MILLS, (Dictated.) W. L. DAVIS, Secy. and Treas.

Address all communications to **C. A. ANDERSON, KAUKAUNA, WIS., U. S. A.**

AMERICAN STAVE & COOPERAGE CO.,

Manufacturers of Cedar, Cypress, Pine or Oak

Round and Square Tanks OF ANY SHAPE OR CAPACITY.

OFFICES: 66 Broad St., NEW YORK. 6 Drayton St., SAVANNAH. 160 State St., BOSTON.

Illustrated Catalogue upon application.

ALUM!

THE MERRIMAC POROUS ALUM is unsurpassed for purity and good results. All other grades of Alum for paper makers' use and for filtering purposes. Address

MERRIMAC CHEMICAL CO., 13 Pearl Street, Boston.

Imports and Exports.

IMPORTS AT NEW YORK.

FOR THE WEEK ENDED JULY 19, 1895.

Table with columns for various goods like Alum, Soda, Paper, and their respective values.

Imports General Merchandise for the week ended July 19, 1895. \$6,717,759

IMPORTS OF PAPER STOCK AT NEW YORK.

FROM JANUARY 1 TO JULY 24, 1895.

Table with columns for 'Whence Imported', 'Rags', 'Old Papers', 'Chemical Fibre', 'Ground Wood', and 'Manilla Stock'.

NEW YORK IMPORTS.

FROM JULY 17 TO JULY 24, 1895.

Text listing various paper stock imports from sources like Castle & Gotthel, Jessup & Moore, etc.

F. B. Vandergrift & Co., Fuerst Bismarck, Hamburg, 20 cs. C. S. Abbott & Co., Edam, Rotterdam, 10 cs.

BOSTON IMPORTS.

FROM JULY 18 TO JULY 24, 1895, INCLUSIVE.

B. D. Urdike, Barrowmore, London, 1 cs. paper. Wm. Guild & Co., Scythia, Liverpool, 6 bs. periodicals.

Paper Stock.

Train, Smith & Co., Barrowmore, London, 272 bs. rags, 96 bs. flax waste. Horace Dutton & Co., by same, 368 bs. rags, 350 bs. flax waste.

PHILADELPHIA IMPORTS.

FOR THE WEEK ENDED JULY 30, 1895.

Jessup & Moore Paper Company, British Princess, London, 180 bs. old papers. Pennsylvania Salt Manufacturing Company, Kensington, Liverpool, 300 bags.

EXPORTS of Paper, &c., from New York for the Week Ended July 23, 1895.

BOOKS, to Antwerp, 2 cs.; Argentine Republic, 6 pkgs.; Chili, 1 cs.; British West Indies, 20 pkgs.; British Australasia, 17 cs.; Bremen, 4 cs.; Bolivia, 1 pkg.; Central America, 5 cs.; British possessions in Africa, 2 cs.; Ecuador, 1 cs.; Havre, 21 cs.; Hayti, 2 cs.; Hamburg, 4 cs.; Liverpool, 6 cs.; London, 18 cs.; Nova Scotia, 1 cs.; Southampton, 2 cs.; San Domingo, 1 cs.

CARDBOARD, cases, to Cuba, 8; Colombia, 1. SHOWCARDS, cases, to British possessions in Africa, 3.

AGGREGATES AND VALUES.

Table with columns for Paper, reams, Paper, pkgs., Paper, cases, Books, cases, Stationery, cases, Rosin, bbls., and Totals.

Exports General Merchandise for the week ended July 23, 1895. \$5,380,338

JUTE AND LINEN Paper Stock.

J. & W. SMITH, DUNDEE, Scotland.

Packers and Shippers of Clean Jute Threads, Clean Jute Ropes, Gunny Bagging, Manilla Ropes, Bleached Linen Cuttings and Bleached Linen Threads.



WOOLWORTH & GRAHAM, COMMISSION Paper Warehouse. OFFICIAL EXPORT AGENTS FOR American Paper Manufacturers.

WILL. MUNDS, Dresden, Germany. Sulphite, Sulphate and Soda PULPS.

Eighteen Mills for Chemical Wood Pulp represented. Bleached and Unbleached; supplied in all qualities and by all processes.

CASTLE & GOTTHEIL, IMPORTERS OF

Sulphite and Soda Pulps, LINEN AND COTTON RAGS, JUTE STOCKS, SIZING, &c. TIMES BUILDING, 41 PARK ROW, ROOMS 188, 189 & 190. NEW YORK.

TRAIN, SMITH & CO., IMPORTERS OF AND DEALERS IN

Paper Makers' Supplies, 24 FEDERAL STREET, BOSTON. BRANCH OFFICES: 140 NASSAU STREET, NEW YORK. 14, 16, 18 & 20 ST. MARY AXE, E. C., LONDON. EDMUND ST. CHAMBERS, LIVERPOOL.

WM. J. CORBETT & CO., WHOLESALE DEALERS IN AND PACKERS OF

Woolen Rags and Paper Makers' Supplies, 86, 88 & 90 COVE ST., BOSTON, MASS. WOOLEN RAGS GRADED IN COLORS AND QUALITY. OUR SPECIALTIES: "EXCELSIOR" AND "STAR" PACKINGS.

ESTABLISHED 1855. DARMSTADT & SCOTT, IMPORTERS AND PACKERS OF

PAPER STOCK. Offices: 257 Front Street. Packing House: 812 Water Street, New York. SPECIAL ATTENTION CALLED TO OUR OWN PACKING.

F. BREDT & CO., No. 194 Fulton Street, SOLE AGENTS FOR New York City, U. S. A.

JOSEPH PORRITT & SONS' ENGLISH FELTINGS. TRADE MARK. ALSO IMPORTERS AND DEALERS IN MARINE BLUE (Aniline) for News Paper Mills, Jacketing, Roll Cloth, Double Extra Canvas, Ultramarine Blue.

A. D. LITTLE, GRIFFIN & LITTLE, PAPER MILL CHEMIST,

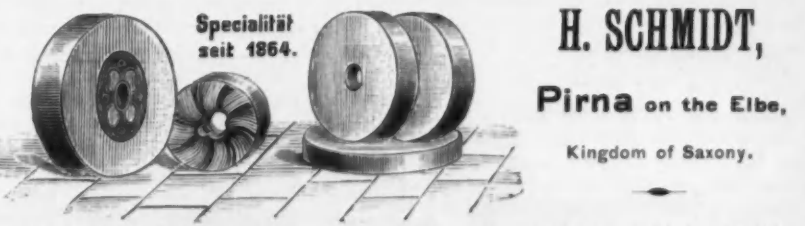
Office and Laboratory: 103 Milk Street, Boston. EXPERT IN THE SULPHITE PROCESS AND ALL CHEMICAL MATTERS PERTAINING TO THE MANUFACTURE OF PULP AND PAPER.

A. WERTHEIM & CO., HAMBURG, GERMANY,

Exporters of all Grades of Sulphite and Soda Pulps. SIGMUND GOLDMAN, Agent for the United States and Canada, BENNETT BUILDING, 99 NASSAU STREET, NEW YORK.

COCHRANE CHEMICAL CO., 55 Kilby Street, BOSTON, MASS.

Alum. Manufacturers of Alum. Highest tests, free from iron, and all other grades used by paper makers. Also manufacturers of ACETIC ACID, SULPHURIC ACID and other chemicals.



H. SCHMIDT, Pirna on the Elbe, Kingdom of Saxony. GRINDSTONES FOR WOOD PULP IN ALL GRAINS AND MEASURES.

The Quality is acknowledged THE BEST in the world!

The Paper Trade Journal.

DEVOTED EXCLUSIVELY TO THE INTERESTS OF

The American Paper Trade.

Weekly, \$4.00 per Annum.

Single Copies, 10 Cents.
 Subscription per annum and postage for Great Britain, £1 5s.
 Subscription and postage for France, per annum, 30% francs
 Subscription and postage for Germany, per annum, 25 reichsmark
 Payment for subscriptions or advertising may be made by express money order, draft, post office order or registered letter.

LOCKWOOD PRESS PUBLICATIONS.

Per Year
 Paper Trade Journal, Every Saturday, \$4.00
 American Stationer, " Thursday, 2.00
 American Bookmaker, Monthly, 2.00
 American Mail and Export Journal, separate editions, English and Spanish (EL CORREO AMERICANO Y DIARIO DE EXPORTACION), Monthly, 3.00
 Lockwood's Directory of the Paper, Stationery and Allied Trades, Annually, 2.00
Per Copy
 All Pioneer Publications, ALSO, Per Copy.
 American Dictionary of Printing and Bookmaking, royal octavo, half bound, 600 pages; net price, delivered, \$12.00
 Chemistry of Paper Making, octavo, cloth, 592 pages; net, price, delivered, 5.00



LOCKWOOD PRESS BUILDING.

HOWARD LOCKWOOD & CO.

Publishers,
 Northwest Corner of Bleeker Street and South Fifth Avenue, New York.

WILLIAM PINKNEY HAMILTON, Managing Partner.

Telephone—309 Spring.

Cable Address—Catchow, New York.

BRANCH OFFICES:

Western Office—R. B. DUVALL, General Manager, 56-58 LA SALLE STREET, CHICAGO, ILL.
 Boston Office—A. L. DELESDENER, General Manager, 87 FEDERAL STREET, BOSTON, MASS.
 London Office—ARTHUR MORRIS, General Manager, No. 1 MITRE COURT, FLEET STREET, LONDON, ENGLAND.

NEW YORK: SATURDAY, JULY 27, 1886.

PART 3 of HOFMANN'S TREATISE ON PAPER-MAKING was sent to subscribers on Thursday last, the 25th inst. Claims for duplicates must be made on or before August 25; after that date each duplicate part wanted will cost the full price, \$1.00.

THE apparatus illustrated and described on the first page of this issue of THE PAPER TRADE JOURNAL is designed to effect an improvement in the method of manufacturing wood fibre by the bisulphite process. The process itself consists in preventing the formation of monosulphite of calcium in the digesters while the solution is being raised to the necessary temperature for acting on the wood, by utilizing apparatus for heating the solution and separating the monosulphite of calcium therefrom prior to passing the solution into the digesters.

We are called upon to make a sad announcement this week. Alexander H. Rice, distinguished in private as in public life, is dead. The paper trade thus loses one of its jewels, one of its most honored members. As a business man Governor Rice was an example of the highest class, thorough and without courtesies. As a public man it may well be said that he conferred honor and dignity upon the trusts confided to his care, discharging the duties of the various positions held by him with

fidelity and consciousness of his obligations to the people and the Commonwealth. His career may well stimulate others to follow his example, for it was characterized by uprightness and perseverance, qualities well combined to make the perfect man.

"So his life has flowed From its mysterious urn a sacred stream, In whose calm depth the beautiful and pure Alone are mirrored; which, though shapes of ill May hover round its surface, glides in light, And takes no shadow from them."

ONE of the changes in patent methods which the Commissioner of Patents will recommend to the next Congress is a reduction in the charge for official copies of patents and accompanying specifications now fixed at a minimum of 10 cents by law. In itself this seems to be a very small sum, but it is said to be greatly in excess of the cost of production, and that alone is a sufficient reason for a reduction of the charge. There are further reasons, however, chief of which is that intending applicants for patents usually require specifications &c., of entire classes of inventions, especially if there is any doubt about the prior use of any principle involved. In such cases the expense attending the settlement of the doubt can only be measured by the number of specifications required, which may cover whole classes of inventions and run into the thousands, often extending over a period of fifty years. This expense is a serious obstacle to the poor inventor. The Commissioner thinks that the minimum limit should be removed; that 10 cents may be a fair charge for single copies, but for whole classes half of that sum, and even less, is enough. Beside this, these specifications are accumulating, 50,000,000 being already piled up in the Patent Office, the law requiring that 102 copies of each patent shall be printed. At a reduced price for whole classes the Commissioner thinks that many more complete sets could be sold than under a charge of 10 cents for each, and doubtless he is right.

BUSINESS continues to improve both in volume and tone throughout the country. The trying season of mid-summer is passing, and it is encouraging to note that during its continuance there has been no break in the growth of confidence; but that, on the contrary, there has been a steady advance in the favorable conditions which have characterized trade generally. Crop reports both from the Northwest and the South are cheering, although cotton is suffering somewhat in certain sections for want of rain. Crop news from foreign countries add to the general feeling of confidence, as they are of a character which seems to promise well both for a good market and a fair price for our own staples. The corn crop will be very large, and other grain reports make the crop prospects nearly perfect. In the large centres of trade everywhere the outlook for a good fall trade is regarded as highly promising, although just how far these hopes will materialize cannot be told until the travelers have visited their circuits. Prices of staples hold firm, and in many lines of manufacture there is either an advance in price or a disposition to take such action in the near future. Wages continue to advance, the movement having now reached the railroads of the country, whose earnings seem to justify a return to the old scale. Labor itself shows a little restiveness in some quarters not yet fully involved in the upward trend, but with patience to wait and a restraining disposition not to unsettle conditions all will ultimately feel the effects of returning prosperity. Bank clearings receded a little from the high level of the previous week, and the call for small bills is growing more clamorous as a consequence of an improved retail trade.

THE controversy between the Niagara Power Company and the aldermen of the city of Buffalo has a bearing on the question of substitution of electricity for steam as a motive power. In granting the franchise the aldermen imposed a short term of life and an arbitrary maximum price per horse power. To both of these the company objected for two reasons; i. e., because electrical

power could not be conveyed from the Falls to Buffalo in a volume of less than 10,000 horse power, and also because the expenditure of money involved in conveying the power would not justify them in accepting a franchise having term less than that of the bonds issued to meet the expenditure. Regarding the price at which power would be sold, the company held that it was a private matter between buyer and seller, not to be held subject to municipal control any more than the price of any other commodity that depended upon various factors affecting the price and upon the competition offered by steam. The company made three offers as to price: To allow the city to develop and convey electrical power from Niagara to the city by the use of wheels of its own (the city's) construction at \$10 per horse power per annum; or it might develop power on the shaft of the company's turbines at \$13 per horse power; or it might have the electrical alternating current of the usual commercial voltage at \$18 per horse power per annum. The question of the cost of power generated by steam having thus been raised, it was shown that 1,000 horse power per day of ten hours could not be produced for less than \$32 per horse power per annum. In point of fact, after a series of careful tests applied to an existing steam power plant of the most approved type, it was found that the cost of producing 1,000 horse power for an eleven hour day was not less than \$32.70 per horse power per annum. At the Buffalo City Water Works the production of 3,600 horse power by steam cost in 1893 and 1894 \$77.55 per horse power, and for the present year it was estimated that 3,000 horse power would cost over \$60 per horse power. The Milwaukee City Water Works, one of the most economical steam plants in existence, showed for 500 horse power a cost of \$73.83 per horse power per annum. A flouring mill in Buffalo, using steam power for twenty-four hours per day, reduced the cost to \$45 per horse power per annum. The conclusion was therefore reached that the rates for steam power against which the Niagara Company had to compete in Buffalo varied from \$45 to \$60 per horse power per annum. As bearing on the subject of the comparative cost of the two kinds of power, the Niagara Falls Company cited a contract of its own with a manufacturing concern on adjoining lands which called for the delivery of 1,000 electrical horse power at a cost of not less than \$20,000 per annum. While the problem of long distance transmission has not yet been solved, it is fair to assume, with due regard to all conditions and attending circumstances, that the cost of steam power has been cut in two wherever electrical power is generated under the conditions which obtain at Niagara.

Watermarks.

BY DANDY.

The news men continue to report progress, and it is said that about all of the details of the plan have been settled, and that the next step will be to incorporate either under the laws of New York or New Jersey, with the former State in the lead.

The mills which the new corporation will purchase are to be paid for at a rate not exceeding \$15,000 per ton of product, and that figure is only for those mills which have sulphite and ground wood plants, water powers, timber properties, &c. In other words, the new corporation does not propose to load itself up with plants which cannot earn their full proportion, and it does not want plants which after being taken in will have to be shut down. Therefore some which want to come in are going to be left out, and there will be several, both in this State and in Maine, which can tack "independent" on their shingles after the new company takes hold.

The arrangement of the plan has been a great labor, and in some instances men have been available who have had experience in special lines. For instance D. O. Mills, who is a stockholder in the Niagara Falls Paper Company, has been of decided value in outlining and perfecting the financial department, while Mr. Hall, of the same company, who is an old lumber man, brought to a consideration of the timber interests a large fund of special knowledge and experience.

The business ability of A. N. Burbank has also smoothed many of the bumps

on the road, and his excellent judgment has come into play, very frequently. Warner Miller has also taken an active part, and his services have proved of great advantage.

It is said that the new company will begin business with the new year, and that its headquarters will be in New York, with branches in the principal cities.

Meantime there is in circulation a paper which non-combination mills are being asked to sign, by the terms of which they agree to maintain a price of 2 cents f. o. b. at paper mill. Just who has signed it has not yet been reported.

The managers of the combination are pretty independent, and owners who, for one reason or another, want to be "coaxed" to come in will be left out.

A well-known paper stock broker in this city was greatly amused at an incident which occurred the other morning while he was at breakfast. It was at an out of town hotel, and down the centre aisle of the dining room came a colored waiter holding aloft a tray on which was a varied collection of berries, cream, steaks, chops, coffee, &c. Another waiter bumped into him, and there was a tremendous crash, and while the coffee and cream mingled in streams down the waiter's head and face, the berries, steaks and chops slid down his shirt front in great style.

At once the voice of the head waiter was heard: "What's the matter with you, No. 17?"

"Nuffin, sah, nuffin; I'se right in it, sah."

The roar of laughter from the guests gave everybody an increased appetite.

That story about the farmer finding a wood pulp mine up East seems to have stirred them up across the water, for here comes the *Canterbury Times* and says: "Ammonia is extracted from the Thames mud, and the residuum, after the operation, is mixed with iron ore and made into brown paper."

Why put in the iron ore? It is just as good a story without it, and I do not believe that the quality of the paper is improved in the least.

In dilating on the beauties of his new mill a manufacturer said: "With our new appliances 'furnishing' the engines is no work at all. The beater man has almost nothing to do, and so clean is his work he can wear collars and cuffs if he wants to—that is if he has them." Which is quite right.

The Brooklyn *Eagle* in closing a news story has the following: "Owing to indisposition on the part of counsel an adjournment was taken until Thursday. Inou 55" .jciaso taTfl MM "(:|!"

The disposition to place the indisposition on counsel may be all right, but it doesn't account for that line of fireworks at the end, and which suggests that the bird had been celebrating.

Trade Talks.

Simon F. Bleyer, of J. S. & S. F. Bleyer, New York—We have been in the paper business for about twenty-eight years, and I suppose that to-day we are one of the smallest houses in the trade. We are not a pushing house, and are not out looking and hustling for new customers, but rather depend upon those we have had for years. We began in a small way, selling goods in the street with a horse and wagon, just as many others began, and finally located on East Houston street. Since then we have made several changes and have finally located here, where we have been for some ten or eleven years. We find that profits are cut badly, and that sales are about the same in amount that they have been. No, profits are surely not any better; if anything they are poorer now than they were two or three years ago, while sales on the other hand are, if anything, a little better in the aggregate. All business men with whom we have dealings are quite confident as to an improvement in business in the near future, just as the present state of things is an improvement over that of several months ago; and personally I think, from the way it looks, that trade is fast mending for the good. I think that dealers have no surplus stock on hand, and that prices on stock will in the future, if they go anyway at all, go higher. Dealers, too, are receiving more orders, and are not so able as usual to fill them quickly. Do you know what is hurting the paper trade, and especially in such business conditions as now exist? It is credits. They are too easy and are ruining the trade. Anybody now can get credit. Take a small dealer who cannot show a dollar's worth of assets, and a manufacturer will sell him goods on

credit simply to get rid of them. When I ran a cart in the street over twenty-five years ago I never used to ask for any credit. When I went to pay my bill at night, if I did not have enough money to settle it, I would tell the dealer to take enough goods off the cart to foot the balance. Closely connected with trade in these and all other times as well is the question of the size of margin of profit upon which business is conducted. In the paper line a house cannot afford to sell goods at a smaller profit than 5 per cent. We cannot live on less than that. I mean net profit. The gross profit must be at least 8 or 10 per cent., and anybody who sells closer than that is not wise, to say the least. Out of this gross profit must come the expenses of commissions, rent, clerk hire and so forth. These items I figure will cost 5 per cent., no matter what amount of business may be done, whether \$10,000, \$100,000, or \$1,000,000. Large or small it will cost 5 per cent. to carry it on. With a broker, who has no responsibility, it is different. He has no commissions to pay, he attends to his small business himself, and can conduct it without an office if need be; or if he wants an office where he can have a sort of headquarters and receive his mail, he can get desk room, which may cost him the trifle of \$5 or \$10 per month. He can take contracts at 2 or 3 per cent. and make money, because he has none of the responsibilities of a business man to bear such as I have spoken of. It is this wrong estimation of the margin of profits which has caused many failures. No business can fail on a margin of 5 per cent. net profit.

Changes, Removals and New Firms.

The *Times*, Navarre, Ohio, is a new paper.

Oakland, Pa., has a new paper called the *Enterprise*.

The *Daily Register*, Brunswick, Ga., is a new paper.

The *Fortnightly*, Batavia, N. Y., has resumed publication.

Benno Muchlen, publisher, Grand Rapids, Mich., has sold out.

The *Tribune*, Inkster, N. Dak., has been purchased by J. O. Reese.

Chattanooga, Tenn., has a new paper called the *Silver Journal*.

A. S. Wood, stationer, Newburgh, N. Y., has sold out to J. H. Horton.

Henry Watson, publisher of the *Cricketer*, Redlands, Cal., has sold out.

Progress, Phoenix, N. Y., is a new paper published by W. F. Daggery.

The *Daily Anthracite*, Carbondale, N. Y., has suspended publication.

The *Business Journal*, New York, is a new illustrated monthly paper.

John B. Carpenter has opened a wall paper store at Fitchburg, Mass.

The *Review*, Watervliet, Mich., is a new paper, published by R. W. Bird.

The *Advocate*, North Adams, Mich., is a new paper published by W. D. Burseson.

The *Trade Journal*, Guthrie, Okla. Ter., is a new paper published by T. K. Tingle.

Hughes & Braxton, dealers in wall paper, Richmond, Va., have dissolved partnership.

W. J. Partridge, stationer and bookseller, Carmi, Ill., has sold out to Herbert Pomeroy.

Lynch, Cole & Meehan, publishers, New York, have been succeeded by Lynch & Meehan.

R. E. Pace, publisher of the *News*, Mount Vernon, Ill., has been succeeded by Sumner & Baker.

H. A. Smith, dealer in wall paper, Madison, Wis., has sold his interest to F. C. Sheasby.

Bernard Quinn, stationer and newsdealer, Albany, N. Y., has sold out to Pyke & McClasky.

Edward Perry & Co., stationers and printers, Charleston, S. C., have been incorporated.

Beard Brothers, publishers, Knightstown, Ind., have been succeeded by the *Sun* Publishing Company.

The *Current Publishing Company*, Chipewa Falls, Wis., has sold out to the *Herald* Printing Company.

A. E. & N. S. Macubise, publishers of the *Advocate*, Yates Centre, Kan., have sold out to Hudson & Font.

L. W. Shannon has sold his interest in the *News*, Kingston, Ont., to J. P. Oram and A. A. Moore.

The business of the late C. M. Utter, stationer, Rockford, Ill., has been purchased by S. Fletcher Coan.

Sugrove & McKey, publishers of the *Herald*, Stockton, Ill., have been succeeded by John Sugrove.

The *Travel Publishing Company*, East Orange, N. J., has been incorporated to publish a monthly magazine, called the *Magazine of Travel*, by Elisha Talbot,

Wants and For Sale.

Twenty-five words or less, one dollar each insertion. Over twenty-five words, four cents a word each insertion, up to eighty words. Cash should accompany order.

Over eighty words, or displayed advertising, will be charged for by the inch, according to our regular schedule of rates.

Answers can come in our care and will be promptly forwarded without extra charge.

WANTED-A FIRST-CLASS MACHINE tender for four cylinder machine for manilla and box board. Address CORNELL PAPER CO., Southford, Conn.

WANTED-A SALESMAN TO SELL A LINE of fine writings for an Eastern mill; one acquainted with the wholesale trade in New York, Philadelphia and Baltimore. Address, with references and qualifications, H., 1479 Broadway.

WANTED-COMPETENT SALESMAN; MUST be well acquainted with the newspaper trade, to sell a good article on commission; no samples to carry. Address COLUMBIA SMELTING AND REFINING WORKS, 309 Water street, New York.

WANTED-CALENDER MAN; ONE WHO fully understands running stack supercalenders; state references, experience and wages expected. Address H., Paper Trade Journal.

NO SWEDISH, WITH TWELVE YEARS' EXPERIENCE in manufacture of sulphite cellulose, is open for engagements as superintendent. Offers, stating salary, under W., care of this paper.

WANTED-STOCK OF 56 INCH CHILLED iron rolls consisting of five rolls, bottom 12 inch, balance 10 inch; also one 56 inch old-fashioned stop cutter; also set of upright reel stands. Address V. H., Box 1900, Boston, Mass.

STEAM BOILER WANTED-ANYONE HAVING for sale a horizontal tubular steam boiler of about 100 horse power, please address with full particulars regarding time in use, &c., BOILER, care of Paper Trade Journal.

WANTED-POSITION AS SUPERINTENDENT in book mill, by man who understands his business. Address F., care of Journal.

WANTED-YOUNG, SOBER, ENERGETIC man to take charge of calender and cutter room; also one first-class machine tender and two first-class back tenders; none but best need apply; all modern improvements; mill runs steady; highest wages, but will expect excellent work. Answer at once WANAUKE RIVER PAPER CO., Wausau, N. J.

WANTED-POSITION AS SUPERINTENDENT in a mill making hanging, book, news or manilla, by practical paper maker. Apply PRACTICAL, care of Paper Trade Journal.

WANTED-A FIRST-CLASS MACHINE tender for four cylinder machine. Address NEW ENGLAND, care of Paper Trade Journal.

WANTED-POSITION AS FOREMAN in cylinder mill, best of reference, on all kinds of paper and box board. G., care Journal.

WANTED-POSITION AS SUPERINTENDENT in manilla mill; thoroughly understand manilla; experienced in constructing and starting mills; open for engagement about August 1. M. S. H., care Journal.

THE PRESENT MANAGER OF A WELL-known sulphite fibre mill in this country, which is shipping most of its product to England to compete with the best Norwegian and German pulp, wants to change his position. Address W. F. S., care of Paper Trade Journal.

SITUATION WANTED-AS FOREMAN OR assistant superintendent by practical paper maker, fifty-one years old; accustomed to running on envelope, book and flat writings; used to treatment of chemical fibre; also card papers; first-class references. Address SPING, care of The Journal.

SITUATION WANTED,

By young married man, as boss in color department; understands mixing colors for fine colored, white, plated and chromo papers, enameled and glazed, ivories and satins for lithograph, bristols, boxboards and wedding cards; can give good references. Apply to COLOR MIXER, Box 818, Holyoke, Mass.

FOR SALE-A SECOND-HAND COPY OF HOFMANN'S Treatise on Paper Making, in first-class condition; edition of 1873. For further particulars address SACRIFICE, care of The Paper Trade Journal.

FOR SALE.

Two Digesters, 6 ft. x 20 ft.; 1/2 in. steel; double riveted. Two Babcock & Wilcox Boilers, 60 and 61 H. P. One Backers Engine, 18 1/2 x 21 x 30 H. P. One Worthington Boiler Feed Steam Pump, good as new. One 5 in. Discharge Deane Power Pump. One 4 in. Discharge Fan Pump. One New Winder for 54 in. machine to wind from the reel. All in good condition and will be sold cheap for cash, f. o. b. Amsterdam, N. Y. Address E. H. OVERTON & SON, 104 Times Building, New York.

FOR SALE.

One 72 inch Six Revolving Reel; in perfect order. One Gun Metal Press Roll, 14 x 78 inches. One New Improved 86 inch Drum Winder. BLACK & CLAWSON CO., Hamilton, Ohio.

FOR SALE.

Two second-hand Jordans. One Marshall Engine. Two Backers, 6 x 20 ft. Two Daniels Rag Cutters. Two Revolving Paper Cutters. All guaranteed in good condition; nearly new. NOBLE & POSS MACHINE CO., Hoosick Falls, N. Y.

NOTICE.

My attention having been called to the fact that certain parties are infringing certain Letters Patent granted to me, to wit: No. 212,866, dated March 4, 1879, covering a new form of carpet lining, and No. 235,698, dated December 21, 1880, covering the method of and apparatus for making the same, this is to notify all such persons, whether manufacturers or dealers, that any infringement of either of said patents will be prosecuted to the full extent of the law. MOSES NEWTON, Patentee.

PAPER MILL

For Sale or Rent.

ADDRESS JOHN A. DUSHANE, 44 South Charles Street, Baltimore, Md.

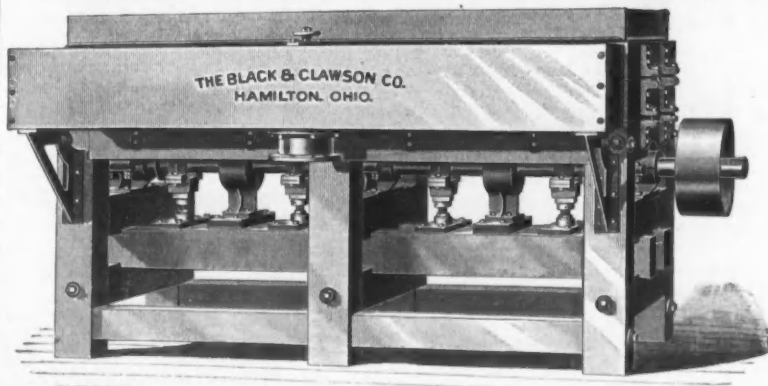
TO LEASE.

The Hammer & Forbes Company's Manilla Mill.

BURNSIDE, Conn. C. F. HAMMER, Secretary.

April 10, 1891.

THE BLACK & CLAWSON CO., MANUFACTURERS OF Paper Mill Machinery,



FOURDRINIER, HARPER IMPROVED FOURDRINIER AND CYLINDER MACHINERY. DIAPHRAGM SCREENS. Over Forty now in use.

Jordan Engines. Jordan Engines Refilled. Screens, Calenders, Rag Cutters, Cylinder Molds, Decker Straps, Paper Cutters, Screen Plates, Dandy Rolls, Stuff Box Trucks, Iron and Brass Castings. REVOLVING REELS AND STACK REELS.

FOR PARTICULARS ADDRESS

We Make the Only Perfect Dryer. THE BLACK & CLAWSON CO., Hamilton, Ohio. MEDAL AWARDED AT WORLD'S FAIR FOR OUR SEAMLESS DRYER.

MACHINERY FOR SALE.

One 82 inch Fourdrinier machine complete, with press rolls; nine 36x78 inch dryers; stack of chilled rolls; reel, cone pulley cutter; Marshall driving train; made in 1887 and used three years. One 76 inch Fourdrinier machine which takes 42 foot wire; gun metal press rolls; nine 48x72 inch face dryers; heavy stack chilled rolls; reel, cutter and Manning winder. Machine set up as last used. One 54 inch cylinder machine; two molds, vat, first and second presses; seven iron dryers, 28x54 inch face; new revolving reel; cone pulley cutter. Two new Jones double lighter beating and washing engines; iron rolls 52 inch face. One 74 inch double cylinder machine, consisting of screens, two molds, 30x74 inches; first and second presses; wood and iron rolls; fifteen iron dryers, 30x72 inches; stack of nine chilled rolls, revolving reel, slitter and winder, with Marshall driving train. One 56 inch double cylinder machine, consisting of knocker screen, two molds, 30x56 inches; good, sound vat; first and second presses; three iron and one wood roll, 12x56 inches; nine iron dryers, 30x54 inches, with heavy frames, siphon packing boxes and patent exhaust; one stack of five chilled rolls, two 12, three 7x54 inch face; one cone pulley cutter, with 54 inch knife; upright reel; in excellent condition. Two Stout, Mills & Temple double lighter, 1,000 pound beaters, rolls 48 inch face and 53 inches diameter; tub, 3 inches cypress, 20 feet 9 inches long and 9 feet wide, with one cylinder washer to each. One Pusey & Jones slide valve engine, 15x26 inches; 12x19 1/2 inch face wheel, and shaft, 8 1/2 inches. One Chambers Brothers 16x26 inch slide valve engine, with wheel, 12 feet by 24 inches. One large sized heavy patent Marshall engine. SEND FOR CATALOGUE. F. H. DAVIS & CO., Exchange B'd'g, Boston, Mass.

FORT DEARBORN TRANSFER CO. TEAMING, Transferring & Forwarding.

OFFICE: Room 25, 53 River Street, CHICAGO. TELEPHONE: MAIN 2704.

STORAGE FACILITIES. Consignments of Car Lots for City Distribution or Reshipment solicited. RATES FURNISHED TO ALL POINTS.

NOW READY!

THE TWENTY-FIRST ANNUAL EDITION OF LOCKWOOD'S DIRECTORY OF THE Paper, Stationery and Allied Trades 1895-6. Price, Two Dollars a Copy, POSTAGE PREPAID.

This pioneer and standard book, now in the twenty-first year of its publication, enjoys the confidence of every person in the trades which it represents. It is carefully and thoroughly compiled and edited each year. After one edition has been printed the type is distributed, and when a new edition is undertaken the data, item by item, are obtained and put into type especially for it, thus making the work reliable. Altogether about 423 pages set forth facts which must be invaluable to all engaged in the making and selling of Paper and Stationery, as well as all others in the allied branches of the trades. It enables manufacturers, buyers and sellers to come together for mutual benefit. The book includes a list of Paper Makers in the United States, Canada and Mexico; Wholesale and Retail Stationers, Paper Dealers; Leading Printers, Lithographers, Book Publishers, Bookbinders, Wall Paper Printers; Blank Book, Paper Bag, Paper Box, Envelope, Pad and Tablet Manufacturers; Railroad Buyers, &c., in the United States. Orders filled according to date of receipt. Address HOWARD LOCKWOOD & CO., N. W. Cor. Bleecker Street and West Broadway, NEW YORK.

ENGLISH EDITION

OF

K. von HOFSTEN'S

BOOK OF TRADE MARKS

OF THE

CHEMICAL AND MECHANICAL

WOOD PULP MILLS

IN

SWEDEN AND NORWAY.

PUBLISHED IN 1894.

PRICE, \$5.00, POSTPAID.

This work gives a facsimile of the Trade Marks, Names of Mills, Names of Owners, P. O. Address, Estimated Production in Metrical Tons and "Remarks." We have a stock on hand for prompt delivery. Address HOWARD LOCKWOOD & CO., N. W. Cor. Bleecker St. and West Broadway, NEW YORK.

PERRY KRUS, Prost. OTTO F. SOHM, Sec.

PIONEER PAPER STOCK CO.,

PACKERS AND DEALERS IN

PAPER STOCK,

318-324 S. DESPLAINES ST., CHICAGO.

RIVERSIDE MILLS,

Augusta, Ga., DEALERS IN

COTTON WASTE, PAPER STOCK

and GUNNY BAGGING.

MARK MAIER,

Mannheim, Germany. EXPORTER OF

COTTON & LINEN RAGS

ALL GRADES OF NEW RAGS, JUTE BAGGING, CUT RAGS, READY FOR THE BOILER. Please Ask for Samples and Prices.

CLARK & SPENCER, LEE, MASS.



Revolving Paper Cutters, Rag Cutters, Cylinder Machines, Washing and Beating Engines, Chilled Iron Calenders, Fan and Stuff Pumps, Engine Roll Bars.

TAYLOR, STILES & CO.,

RIEGLERSVILLE, WARREN CO., N. J.

Manufacturers of THEIR IMPROVED GIANT RAG CUTTERS,

Fly Bars, Bed Plates, Rag Cutter, Barker and Chipper Knives; also Paper Trimming Knives.

Auto-Telephone System.

SIMPLE AND AUTOMATIC.

Designed to Meet the Requirements of Intercommunication in Mills and Factories, and Elsewhere.

PATENTS FULLY PROTECTED. CUSTOMERS GUARANTEED PROTECTION.

SEND FOR CIRCULAR.

The Tucker Electrical Construction Company, SOLE LICENSEE, 14 to 20 Whitehall St., New York.

ORGANIZED JULY 1, 1892. CAPITAL, \$6,000,000.

AMERICAN STRAWBOARD CO.

Manufacturers of Straw Boards, Pulp Lined Boards, Lined Straw Boards, Combination Boards, Binders' Boards.

"LIGNISTRA." Friction Boards, Building Board, Plain Board, Tarred Board, Waterproof Boards, Barrel Layers, Peach Baskets, Egg Cases and Fillers.

General Office, PULLMAN BUILDING, CHICAGO.

AGENCIES: New York, 102, 104, 106 Wooster St. Boston, 46 Federal St. Philadelphia, 121-127 N. Fourth St. Cincinnati, 101-103 Walnut St. Chicago, 152-158 Michigan Ave.

MILL COGS

ON SHORTEST POSSIBLE NOTICE.

I make Cogs with blank head to be spaced and dressed after being driven; but make a SPECIALTY OF "READY DRESSED" COGS, which are ready to run the moment driven and keyed.

REMEMBER: I make ALL KINDS of Mill Cogs and have special facilities which will be of great service to you. WRITE AT ONCE for circular G and instruction sheets, FREE.

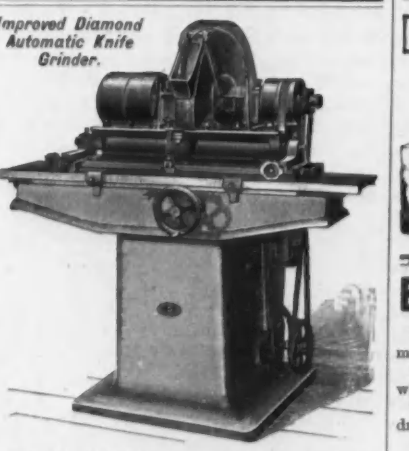
N. P. BOWSER, South Bend, Ind.

EVANS FRICTION PULLEYS.

For changing and regulating the speeds of machines, automatically or by hand. The speed can be quickly and easily varied while the machine is running. Thousands of these Pulleys are in operation, driving all kinds of machinery from 1 to 40 H. P.

SEND FOR CATALOGUE.

EVANS FRICTION CONE CO., 85 Water St., Boston, Mass.



Improved Diamond Automatic Knife Grinder.

Knife Grinders for Paper Mills, from 36 inch to 120 inch, using Disk or Cup Wheel.

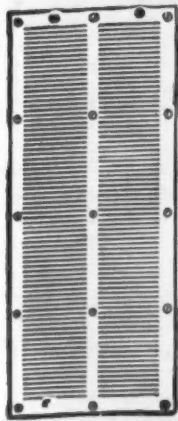
DIAMOND MACHINE CO.

PROVIDENCE, R. I.

JUDSON & WILLIAMS,

HOLYOKE, MASS.,

MANUFACTURERS OF



SCREEN PLATES
—OF—
BRASS
—OR—
CAST METAL.

REPAIRING
OLD SCREEN PLATES
A SPECIALTY.

CYRUS CURRIER & SONS,

NEWARK, N. J.,

Paper Machinery.

KINGSLAND

BEATING ENGINE.



THE ROACH PATENT METALLIC STEAM JOINT For Paper Mill Dryers. Four thousand now in use. Does away with Packing the Dryers; no leakage of steam; requires no attention and will last for years. Medal awarded at World's Fair. Send for circular and price list. M. J. ROACH, Anderson, Ind.

METAL SKYLIGHTS

Absolutely no leakage from any source; no dripping or sweating; fire-proof; ventilating.

THE CLOVER LEAF

VENTILATOR

FOR MILLS, FACTORIES AND DYE HOUSES. Made of galvanized iron or copper. Strong upward draft; exhausts foul air, odors, gases, steam, etc. Perfectly storm-proof. Send for illustrated circular.

E. VAN NOORDEN & CO.,
383 Harrison Ave., BOSTON, Mass.

THE MORRISON & HERRON TESTING SYSTEM.

THE MORRISON & HERRON IMPROVED PAPER TESTING MACHINES.

PAPER SCALE.



Three Different Machines — FOR —
Strength, Thickness and Weight.

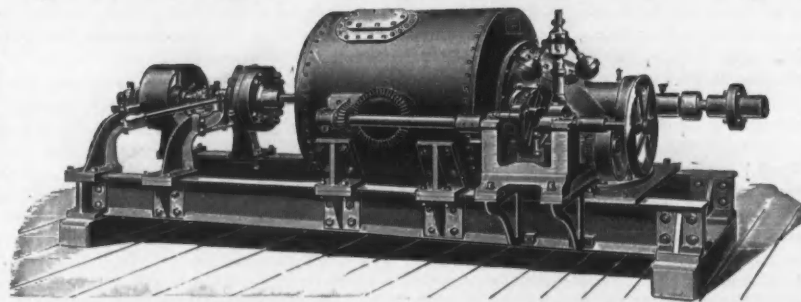
A NEW PRINCIPLE APPLIED IN TESTING PAPER. Thickness shown to the sixteen-thousandth part of an inch. Used in the GOVERNMENT PRINTING OFFICE and the DEPARTMENTS at Washington. Price, complete, \$150.00. Or Strength Indicator, 75.00. Thickness Gauge, 75.00. Paper Scale, 30.00.

ADDRESS ALL ORDERS TO
HOWARD L. MORRISON,
1009 Pa. Ave., N. W., Washington, D. C.

CAUTION.

All persons are liable to prosecution who make buy or use Paper Testers that confine and break paper within its edges, as my Patents cover that method.

THE VICTOR TURBINE.



UPRIGHT or HORIZONTAL.

In use in a large number of best Paper and Pulp Mills in this and other countries.

CYLINDER OR REGISTER GATE.

INSURING HIGHEST PERCENTAGE OF USEFUL EFFECT AT

FULL AND PARTIAL GATE.

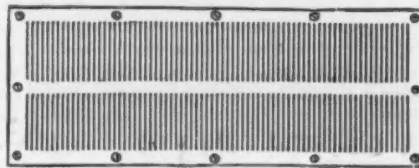
STATE YOUR REQUIREMENTS AND SEND FOR CATALOGUE TO

THE STILWELL-BIERGE & SMITH-VAILE CO., DAYTON, OHIO, U. S. A.

TESTS IN HOLYOKE FLUME.

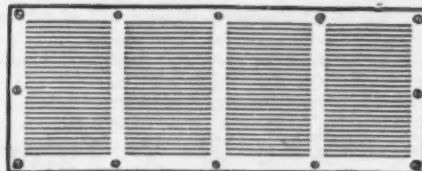
SIZE	HEAD IN FEET.	HOBBES	PER CENT. OF POWER. USEFUL EFFICE
15 inch	18.06	30.17	.8982
17 1/2 inch	17.96	36.35	.8980
20 inch	18.21	43.00	.8582
25 inch	17.90	68.62	.8584
30 inch	11.65	52.54	.8975
35 inch	17.29	132.19	.8497
40 inch	16.49	148.93	.8288
45 inch	15.51	179.29	.8202

ANNANDALE
Screen Plate Co.,
PATERSON, N. J.

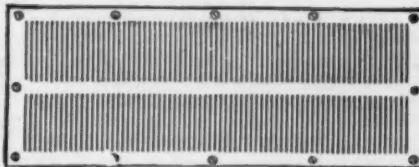


Manufacturers and Repairers of
SCREEN PLATES.

Our new Plates are made of the **VERY BEST METAL,** and for price and durability cannot be surpassed. **OLD PLATES RE-CLOSED.**



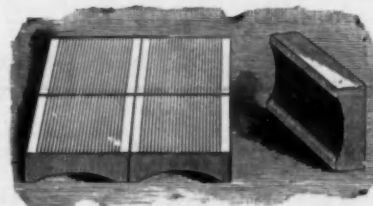
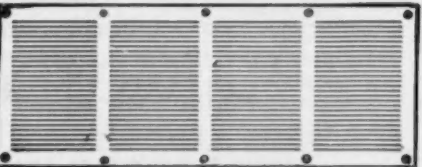
A. A. TRAIN,
21 Main St., FITCHBURG, MASS.,
MANUFACTURER OF
Screen Plates



OF BRASS OR CAST METAL, AT PRICES THAT CANNOT BE SURPASSED.

BEST STOCK USED.

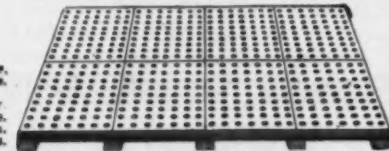
Write for Prices and Gauges. All Work Warranted.



SAMUEL SNELL,
Holyoke, Mass.,
MANUFACTURER OF
FILTERING STONES,

Under the KLARY and SNELL Patents.

- REFER TO
- | | |
|------------------------|-----------------|
| HOLYOKE PAPER CO., | Holyoke, Mass. |
| PAIBSONS PAPER CO., | Holyoke, Mass. |
| BYRON WESTON, | Dalton, Mass. |
| BREMAKER & MOORE, | Louisville, Ky. |
| KIMBERLY & CLARK CO., | Appleton, Wis. |
| ALEX. BURTEN & CO., | Montreal, Can. |
| PATTEN PAPER CO., | Appleton, Wis. |
| MORRISON, BARE & CASS, | Tyrone, Pa. |

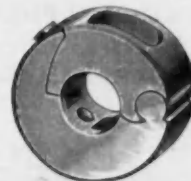


(Size No. 2.) SEND FOR CIRCULAR.

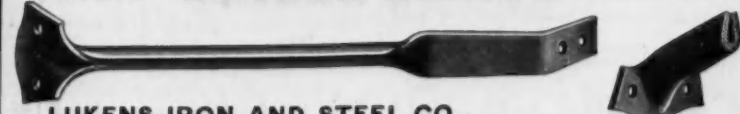
PAPER MILL OWNERS

may save lives and money and avoid annoying damage suits by the use of our **GIANT SAFETY COLLARS,** manufactured, solid or split, solely by **THE GOVERNEUR MACHINE CO.,** GOVERNEUR, N. Y.

We are also manufacturers of Tale and Stone Mill Machinery and Mine and Quarry Equipment.



THE HUSTON PATENT BOILER BRACE



LUKENS IRON AND STEEL CO.,

COATESVILLE, PENNA.

Write for Circular.

Philadelphia Office, 402 Bullitt Building.

New York Office, 29 Broadway.

HIGH GRADE CENTRIFUGALS.

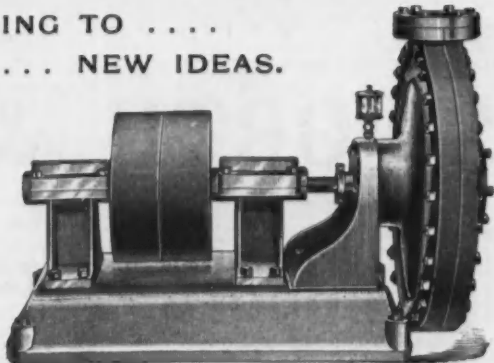
BUILT ACCORDING TO NEW IDEAS.

Run in either direction, giving highest efficiency.

MANUFACTURED BY

The Harmon Machine Co.,

WATERTOWN, N. Y.



PAPER ROLL PLUGS.

We make a specialty of the manufacture of **PLUGS** for Roll Paper of all sizes and descriptions. Write for samples and prices.

MUNCIE WOOD WORKING CO., Muncie, Ind.

FOSTER & BROWN, SACCARAPPA, MAINE.

MACHINISTS AND IRON FOUNDERS.

SPECIALTIES:

Improved Paper-Coating Machines; Hanging Machines and Power Reels for Coated Paper; the Merrill-Foster Noiseless Pulp Screens; Paper Slitting and Trimming Machines; Hardened and Ground Slitters; Automatic Elevators. BUILT UNDER OUR OWN SUPERVISION.

Some Pumps are Better than Others. **RUMSEY'S** Pumps are **THE BEST.**

Power Pumps for all Purposes.

RUMSEY & CO., Limited,
Seneca Falls, N. Y., U. S. A. 35 Dey St., NEW YORK.
Send for Catalogue and Prices. Correspondence Solicited.

FROST STEAM PUMP FOR PAPER MILL USE.

FROST STEAM PUMP condenses its exhaust steam and returns it with its heat to the boiler. A great saving made. Will earn its cost in four months' use.

WE ALSO MANUFACTURE

The Moore Independent Steam Pump.

As a Boiler Feeder it has no equal.

IT HAS NO DEAD CENTRE.

Write for particulars and prices.

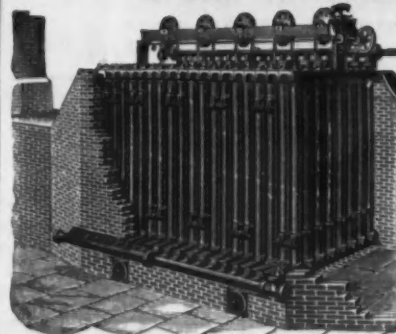
Union Manufacturing Co.,

BATTLE CREEK, MICH.

SOLE MANUFACTURERS.



GREEN'S PATENT FUEL ECONOMIZER FOR STEAM BOILERS.



ADVANTAGES:

High temperature of feed water, in many cases up to 80° degrees, thereby effecting a GREAT SAVING IN COAL. Increased heating surface, thereby increasing capacity of the boilers. A large volume of water always in reserve at the evaporation point, ready for immediate delivery to the boilers. Acting as an efficient water purifier and keeping the heating surface of the boilers clean, the result being FUEL SAVED. Can be applied to ANY TYPE of boilers without stoppage of works.

Only Medal Awarded for Flue Heater at the Columbian Exposition.

SOLE MANUFACTURERS IN THE UNITED STATES,

THE FUEL ECONOMIZER CO. OF MATTEAWAN, N. Y.

CURTIS SPECIALTIES.

Steam, Water, Pump, Temperature and Damper Regulators, Steam Traps and Separators.

MANUFACTURED BY **D'ESTE & SEELEY CO.,**

29-33 Haverhill St., BOSTON, MASS.

KAUKAUNA MACHINE WORKS.

WM. LIBERT, Proprietor.

Manufacturers of **WALL PAPER MACHINERY,**

KAUKAUNA, WIS.

All work guaranteed and at the lowest figures.

Manufacturing News.

EASTERN STATES.

The Rumford Falls Paper Company, Rumford Falls, Me., has raised the wages of its employees 10 per cent., or to the rates of two years ago.

The Cushnoc Fibre Company, Augusta, Me., has just sent a consignment of paper to China, which is a new enterprise in the export trade of that State.

Work on J. T. Shepley's new pulp mill and dam at Sheldon Springs, Vt., is being rapidly pushed.

The work of remodeling and putting in new machinery at the mill of the Pepperell Card and Paper Company, East Pepperell, Mass., is advancing rapidly, and it was expected to start up this week. A new machine room has been built; 300 feet have been added and an elevator has been placed in the building. A new tower containing a water tank with a capacity of 8,000 gallons and 650 Grinnell automatic sprinklers have been added. Extra help will be required in the enlarged mill. During the work of remodeling the Champion Card and Paper Company, of East Pepperell, has filled several orders for this company.

G. A. Robertson & Co., Hinsdale, N. H., are putting in the foundation for a new 50 horse power engine to run their paper machine.

MIDDLE STATES.

The Morrison & Cass Paper Company, Tyrone, Pa., started up its mill on July 16.

The contract for building the new dam across the Mohawk River at Little Falls, N. Y., has been awarded to Hallman Brothers. The dam will be 172 feet long and will be built just below the old one.

The West Chester Paper Company may locate in Pittston, Pa., on the old pistol factory property, if favorable water service can be procured.

It is reported that a stock company with Wm. C. Allison at the head will rebuild and manage the paper mill at Mt. Holly, Pa., which was recently destroyed.

The Hoboken Paper Mills, Hoboken, N. J., owned by Richard Stevens and Palmer Campbell, were started up this week, and will be run on roofing, sheathing and manillas. M. A. Ring is the general manager of the mills, and W. L. Sergeant, Times Building, New York, will sell the product. The mill is a substantial frame structure, two stories and basement, and is 125 feet long by 50 feet wide. In the second story is a 3,000 pound washing engine and a steam duster having a capacity of 50 tons a day. On the main floor is a 98 inch three cylinder machine with fifteen dryers. The cone driving train is of the latest pattern and runs noiselessly. There are two stacks of calenders, one of five and the other of nine rolls, revolving reels and slitter and winder. There are two screens, both of the "Keystone" pattern. On this floor there are also three 1,000 pound engines, the two large stuff chests, &c. The entire equipment of the mill, except the steam plant, was furnished by the Downingtown Manufacturing Company, East Downingtown, Pa., and it runs smoothly and perfectly. The steam plant was furnished by Russell & Co., Massillon, Ohio. The main engine is of 200 horse power and the other of 85 horse power, the boilers being of 150 horse.

The New York Brick and Paving Company, Syracuse, N. Y., is now ready to take export orders for its "Syracuse" acid proof bricks, which have demonstrated their superiority for digester linings. These bricks are said to be superior to any of European manufacture for the purpose indicated.

Keller Brothers, Fullerville Iron Works, N. Y., have put in at their pulp mill one pair of 30 inch horizontal turbines, built by the Camden Water Wheel Works, Camden, N. Y.

The York Card and Paper Company, York, Pa., has added to its plant one of the latest improved twelve color printing machines, and another which prints six different colors, making in all sixteen printing machines in operation.

The Sandy Hill Power Company, Sandy Hill, N. Y., filed a certificate with the Secretary of State on July 18 announcing the extension of its business so as to include the manufacture of paper and wood pulp. The amount of its capital stock is \$100,000.

Keller Brothers, Gouverneur, N. Y., are shipping talc for paper makers' use and are producing what is said to be a superior article. Their mines are located in a new section, and the product is reported to be of a specially good character.

Four 48 inch and one 33 inch turbines have been put in at the West Carthage Pulp Mill, Carthage, N. Y. These wheels were furnished by the Camden Water Wheel Works, Camden, N. Y.

The plant of the Tally-on-Top Sales Book Company, Philadelphia, Pa., has been re-

moved to Wilmington, Del., where it will occupy the building at Eleventh and Union streets now under construction.

Philip Beaulac has secured a contract for putting in a concrete floor covering a surface of 12,000 square feet in the mill of the Lake George Paper Company, Ticonderoga, N. Y.

The Sandy Hill Iron and Brass Works have taken a contract to build a new paper making machine for the Hudson River Pulp and Paper Company, Palmer's Falls, N. Y.

WESTERN STATES.

The Michigan Wood Pulp Company, Niles, Mich., says that the report that its mills had shut down because of low water in the St. Joseph River is incorrect, and that its book and board mills are running steadily.

The Marinette and Menominee Paper Company, Marinette, Wis., has put in a new filter at its No. 2 Mill, which will now turn out the highest grade of print paper. It is stated that the Park Mills will soon be fitted out similarly.

The Fox River Paper Company, Appleton, Wis., has given the Beloit Iron Works the contract for widening the machine at its mill, and it has shut down in order to do the work.

It is reported that the Vulcanized Pulp Company, of Kansas City, Mo., will build a pulp mill at Sioux City, Ia.

The American Straw Board Company, Kenton, Ohio, shut down on July 10 for several days in order to repair the machinery, so as to use not more than one-half the usual amount of water, and to change the settling vats in order not to contaminate the water.

The American Straw Board Company, Quincy, Ill., will shut down one of its mills in August in order to make some changes in the machinery. It is to be used for the production of building paper.

Hans Hansen is building a mill in Kansas City, Kan., for manufacturing straw wrapping paper. It will cost about \$50,000.

A survey has been made of the Pemecue Falls, about 40 miles from Marinette, Wis., where it is proposed to locate a paper mill.

SOUTHERN STATES.

It is stated that a mill will be established at Greenville, Miss., for making paper out of swamp cane.

It is proposed to build a pulp mill at or near Bristol, Tenn. Geo. R. Sherman and others are said to be interested.

General Notes.

The stock of the John Doolan Company, dealer in paper stock, Springfield, Mass., has been attached for \$1,500.

The stock of Slason & Russell, book-sellers and stationers, Bridgeport, Conn., has been attached and a keeper has been placed in charge.

G. W. Millar & Co. have been appointed American agents for the china clay business of E. E. Nicholls & Co., Charlestown, Cornwall, England.

A new, illustrated and descriptive catalogue of water wheels has been got out by the Camden Water Wheel Works, Camden, N. Y. Mill owners wanting wheels should consult this catalogue.

Emanuel Stein has put in a separate answer to the cross bill filed by Harry W. Dickerman, trustee, et al., v. the Northern Trust Company, et al., in reply to the bill of the Northern Trust Company, et al., v. the Columbia Straw Paper Company. Mr. Stein in this answer narrates in detail the proceedings in connection with the organization of the Columbia Straw Paper Company and denies all manner of unlawful combination and confederacy charged against him.

Argument was heard before Judge McAdam, of the Superior Court, on Wednesday, on a motion of Harvey M. La Follette, to make permanent a temporary injunction which he secured preventing William Noble, William Cauldwell and Thomas Ball from disposing of securities given by La Follette

to secure part of the purchase price of the Daily Mercury. The statements of Lawyer James B. Dill for La Follette and of John E. Parsons for the defendants indicated that both sides were trying to sell the paper to the silver men. It was said that Senators Dubois, Pettigrew, Teller, Jones, Mantle, Hanbrough and Shoup were interested in securing a newspaper in this city last spring. La Follette paid \$5,000 as an earnest for the purchase of the paper on April 1, and gave \$15,000 more during the same month. The contract price was \$130,000, and the remaining \$110,000 was secured by notes, for which stock was given as collateral. A note for \$27,500 fell due July 1 and was not paid. These proceedings were brought to prevent the sale of the stock in an action brought by La Follette to set aside the contract on the ground that the value of the property had been misrepresented, as it was running behind \$700 a week. It was claimed that La Follette got the option in order to sell to the silver men at an advance of \$57,000. Mr. Parsons said that he had not raised the cry of fraud until the silver men had not come to time. Lawyer Dill said that when the owners of the paper learned that La Follette was after the silver

men they had negotiated with the silver men to sell it to them for less than La Follette asked. Mr. Parsons said that when La Follette found that he could not make the dicker with the silver men he should have thrown up the contract, but he had instead got an extension to July 15.

Official announcement was made last Saturday by Vice-President J. H. Swinerton, of the American Straw Board Company, that all the arrangements for the organization of the Standard Straw Board Company had been completed; that the company is now fully organized and equipped for business. This means the end of the straw board wars and the beginning of profit in the straw board business. The Standard Straw Board Company is the company which has been organized to act as the sales agent for all the straw board manufacturing concerns in the country. The agreement which the straw board mills have entered into provides that they sell their entire product to the Standard Straw Board Company and that the company will in turn sell it to dealers and consumers. The output of the various mills will be regulated on the basis corresponding to the proportionate output of each mill during a considerable period heretofore. In that division of output the American Straw Board Company has fared well, for it has

been steadily increasing its proportion of the entire product all through the period of cut prices. The new scale of prices for the product will now go into effect immediately and there will be profit in the business from the first. Some of the most sanguine friends of American Straw Board stock believe that the company will begin paying dividends within six months.

Personals.

Urban Rabande, of the firm of Amédée Bardet, rag packers, Bordeaux, France, is now on a business trip to this country.

F. C. Trowbridge, of the Black & Clawson Company, Hamilton, Ohio, paid a visit to New York this week.

W. C. Gray, treasurer of the F. Gray Company, Piqua, Ohio, accompanied by his daughter, Miss Gracie Nellis, were at the Summit House, Mount Washington, White Mountains, July 17. They are taking an extended trip, visiting Richmond, Va., thence to Old Point Comfort and Norfolk, leaving the latter place by steamer for Boston, and from there by steamer for Bangor, Me., returning by rail to Portland. At present they are doing the White Mountains and will visit Lake George, Lake Champlain and the Thousand Islands, returning home by Niagara the middle of August.

THE "Hamilton" Felt.
"Best and Most Economical Made."
Among the Score

of Felts offered to the trade, the "Hamilton" stands without a peer. Thoroughly reliable, it is sold at the same prices as inferior makes. Lots of Felts, but only one "Hamilton."

In ordering mention kind of stock used, quality of paper made and speed of machine.

Shuler & Benninghofen, Hamilton, Ohio.



Ventilating Fans, Blowers and Engines, Paper Dryers and Heating Apparatus.

Send for Catalogue. HUYETT & SMITH MFG. CO., DETROIT, MICH.

The W. S. Tyler Wire Works Co.,
CLEVELAND, OHIO.

MANUFACTURERS OF

FOURDRINIER WIRES,

Cylinder Faces and Washer Wires.

The Van Denbergh Laboratory.

F. P. VAN DENBERGH, B.S., M.D., F.C.S. R. A. WITTHAM, A.M., M.D. ISAAC KEMOR, Ph.D. Consulting. CHEMICAL ENGINEERS, ANALYSTS AND INDUSTRIAL CHEMISTS. Analyses, processes and counsel in sulphite, pulp and paper manufacture. Ten years Chemists to the City of Buffalo, and Professors of Chemistry University of Buffalo. LABORATORY: Erie County Bank Building, Niagara and Main Sts., BUFFALO, N. Y.

THE GENERAL FIRE EXTINGUISHER COMPANY,

CONTROLLING THE INVENTIONS AND APPARATUS PERTAINING TO AUTOMATIC SPRINKLERS OF

Frederick Grinnell, William Neracher, John Hill, William Kane and others.

INFORMATION AND PROPOSALS FURNISHED AT THE SEVERAL DEPARTMENT AGENCIES, NAMELY:

NEW YORK: 413 Broadway.

PHILADELPHIA: Mutual Life Building.

CHICAGO: Pullman Building.

CLEVELAND: Society for Savings Building.

BOSTON: 173 Devonshire Street.

BUFFALO: City Bank Building.

ST. LOUIS: Rialto Building

Also at WARREN, OHIO, and COLUMBUS, GA.

AND AT THE

EXECUTIVE OFFICES, PROVIDENCE, R. I.

Noble & Johnston Machine Co.,

Moosick Falls, N. Y.,
Manufacturers of

Paper Mill Machinery.

Jordan & Beating Engines.

Iron or Wood Tubs, Laid or Steel Bars and Knives, Bed Plates and Jordan Millings of every description a specialty. Correspondence solicited.

HOLLINGSWORTH & WHITNEY CO.,

MANUFACTURERS OF ALL GRADES OF

Manilla Papers AND Pure Fibres.

PROPRIETORS OF

TACONNET PAPER MILLS, WINSLOW, ME.....Product: 40 tons Manilla Paper daily.
AROSTOOK MILLS, GARDINER, ME.....Product: 8 tons No. 1 Manilla daily.
COBOSSEE MILLS, GARDINER, ME.....Product: 10 tons No. 1 Manilla daily.
PEQUOSSETTE MILLS, WATERTOWN, MASS.....Product: 12 tons No. 1 Manilla daily.
TACONNET PULP MILLS, WINSLOW, ME.....Product: 50 tons Wood Pulp daily.

Boston Office:
44 FEDERAL STREET.

New York Office:
Mutual Reserve Building, 309 Broadway, cor. Duane St.

THE CONTINENT OF EUROPE.

[FROM OUR REGULAR CORRESPONDENT.]

PARIS, July 1, 1895.

The Society of German Paper Manufacturers, as has already been stated, has decided to take steps to have the method of ascertaining the resistance of paper against crumpling and rubbing—as practiced at present in the testing of standard papers—abolished, and to urge the creation of a board of appeals to decide in doubtful cases whether a lot of paper rejected by the Charlottenburg Institute is really not acceptable as belonging to the class indicated by its watermark. As this method of testing paper has been the subject of violent discussions in all the trade papers and trade conventions ever since its establishment by W. Herzberg, the present chief of the paper testing department of the Charlottenburg Institute, it may be of interest to the readers of THE PAPER TRADE JOURNAL to learn something in regard to the justice and importance of this method, its defects and drawbacks and the part it plays in the present official testing of papers.

It is an established fact that the determination of the breaking length and expansion of paper does not furnish a reliable indication of its probable durability, for a paper may make a good showing as regards breaking length and expansion and yet not be durable, namely, if it is very brittle. Its lack of flexibility in that case renders it incapable of withstanding the demands made on it by practical use. To ascertain the degree of flexibility, Herzberg employs the method of resistance against crumpling and rubbing, which consists in simply crumpling a sheet of paper in the hand into a ball, smoothing it out again, and catching hold of two opposite ends, rubbing the paper between the hands until it begins to show small holes. The number of motions of the hands required to thus produce holes in the paper corresponds to the degree of resistance against crumpling and rubbing, and furnishes so far the most reliable indication of the probable durability of the paper.

Although it is impossible to doubt the value of this method for the purpose mentioned, it meets, nevertheless, with much opposition, and in many cases unfortunately with very good reason, for as the test is so far made only by hand, the results are liable to subjective influences. Errors are by no means impossible under this method, and although the work is in charge of experienced officials at Charlottenburg, the committee of the Society of German Paper Manufacturers on questions of standard papers was last year in position to state that it had proofs to show that errors were committed in the Charlottenburg Institute in the application of this method. Such errors, however, may be of great importance to the manufacturer concerned, and may subject him to serious losses financially; for the paper, if it shows only one single degree too little resistance against crumpling and rubbing, is of course rejected, even if it should be above the requirements as regards breaking length and expansion. Such cases are quite frequent.

In 1893 twenty-seven lots of paper were thus rejected, and this means more or less of a loss to the manufacturer, according to whether a larger or smaller lot of paper was involved. The matter is rendered more difficult by the fact that the manufacturer is hardly ever able to determine with sufficient certainty the degree of resistance of the paper during the process of manufacture, so as to regulate his manipulations accordingly, as is invariably done with regard to the breaking length, expansion and percentage of ashes. If the judgment of several officials who are constantly employed in testing papers at Charlottenburg is apt to differ sometimes one degree one way or the other as regards the resistance against crumpling and rubbing of a certain paper, how much more uncertain must the method be if applied by a man who has occasion to practice it only once in a while? Most foremen, in fact, know nothing at all about making this test, for to be able to apply it with any degree of reliability one must have learned it in Charlottenburg.

There have been plenty of propositions to substitute other methods. Years ago Mr. Winkler, manager of the Leipsic Paper Testing Institute, proposed to adopt as a method for judging of the durability of paper the difference in strength between folded and unfolded paper. The tests made developed the fact that the best papers lost hardly anything in breaking length and expansion by being folded, while the loss of strength through folding became the greater the inferior the quality of the paper. The results thus far obtained with this method are, unfortunately, however, also much too unreliable to serve as an accurate means for judging of the durability of paper.

E. Kirchner, director of the school for paper makers in Chemnitz, recently made some unsuccessful attempts to fold paper in so uniform a way as to produce reliable re-

sults; but it was proved by figures in the *Wochenblatt für Papierfabrikation* that the results obtained by him are yet far from accurate. The demand of the paper manufacturers to have the method of testing as to resistance against crumpling and rubbing abolished will probably be refused by the authorities, and the Charlottenburg Institute will be compelled to experiment with a mechanical apparatus for applying the method, such as proposed by E. Kirchner, J. Serog and others.

The fact that paper manufacturers urge the establishment of a board of appeals composed of practical paper makers shows plainly that an exclusively theoretical and one sided method of judging the quality of paper is at variance with the demands of the industry.

Testing paper, wherever it has been officially established, has worked much good, but care must be taken not to fall from one extreme into the other and to consider and accept unreliable theoretical methods as a standard. The correctness of this may be judged best in countries where the testing of paper is not officially established. I visited the national library at Paris not long ago, and can say, after examining the paper in many books and documents dating from the seventies to the present day, that most of these valuable works will be in a very bad state fifty years from now.

Earnest efforts are being made in Switzerland at present to establish an official system of testing paper. The paper industry of Germany is far ahead of that of all other European countries, and a glance at present conditions will prove this. There exist to-day 560 wood pulp mills, with an aggregate water power equal to 70,000 horse power, and they produce annually 250,000 tons of white and brown wood pulp. The cellulose industry embraces sixty-five wood fibre mills, with a yearly production of 200,000 tons, and 38 straw pulp mills with an annual production of 25,000 tons. The straw paper and board mills turn out 75,000 tons of ordinary brown straw papers and board per year. About 50,000 tons of old paper are worked up each year, while the consumption of rags amounts to 100,000 tons.

There are 500 paper mills and 350 board mills, employing more than 1,000 paper and board machines, and fifty mills where hand made paper is manufactured, and together they produce about 600,000 tons of paper and board per year. The export trade of Germany in paper stock, paper, board and articles manufactured of paper amounts to more than 90,000,000 marks per year, while the importations of such goods do not reach the tenth part of that sum. Of all the paper and board produced in Germany, only 2 per cent. are made of rags exclusively, 7 per cent. of rags and more or less cellulose, 9 per cent. of half rags and half substitutes, 9 per cent. of pure cellulose, 45 per cent. of mostly wood pulp, with a small proportion of rags or cellulose, 13 per cent. of wood pulp exclusively and 15 per cent. of brown straw pulp.

During the last four years 158 patents were granted in Germany on inventions and improvements in connection with the paper industry. Nineteen of these are for machines and appliances for wood pulp mills, 12 for wood fibre mills, 14 for new or improved chemical processes for making cellulose, 8 for processes for changing the properties of stock and paper, 2 for rag cutters, 14 for engines, 1 for a gas bleaching apparatus, 1 for an improvement in sizing, 48 for improvements in paper machines, 16 for appliances for finishing paper, 4 for the utilization of old paper, 8 for appliances for board mills and 16 for appliances for perfecting paper generally.

In Austria energetic efforts are being made at present to effect a combination of the Austrian cellulose manufacturers. This syndicate is to be organized on the same plan as the syndicate of Austrian board manufacturers, which has existed since the beginning of the year and prospers. The Wiener Bankverein will have the sale of the products of the combined manufacturers.

In France, the Society of Paper Manufacturers has adopted the following conditions for the sale of paper:

Sale—Paper to be sold per 100 kilogs., in reams of specified weight, as well as in rolls. A ream consists of 500 or 480 sheets, according to the kind of paper. The length of the roll is to be stipulated in the order.

Allowance in Weight—A deviation of 4 per cent. above or below the stipulated weight is allowed; where a maximum weight has been specified, a deviation of 8 per cent. underweight will be admissible. In wrapping papers of all kinds and all other papers above 24 and below 120 grams per square metre, an over or under weight of 8 per cent. is allowed. In the case of special productions (as regards weight, size, color and watermark), which are not sold in the regular market, the buyer is obliged to accept without discount an over-delivery of from 5 to 20 per cent. in an inverse proportion to the amount of the order. Of these

special productions the buyer is obliged also to accept up to 15 per cent. of the total amount in "second and third choice." The price of second choice is 10 per cent. lower than first; the price of third choice is to be agreed upon between buyer and seller.

Color—The buyer must not demand that the color shall be of absolutely the same shade as the sample. The manufacturer, on the other hand, is obliged to come as near to the desired shade as the conditions may possibly permit. Slight differences in color in one and the same lot are allowed, but the different shades must be carefully separated.

Sizing—The degree of sizing depends on the use for which the paper is intended, as well as on the price and the thickness of the paper.

Composition—Special and positive agreements excepted, the manufacturer is at liberty to choose the composition of stock and loading materials as he thinks best.

Packing—The weight of the packing materials (wrapping paper and rope or twine) is included in the specified weight of the paper, but should not exceed 4 per cent. on an average.

Size—The dimensions may deviate above and below those prescribed: (1) In papers without watermark, 1 per cent.; (2) in papers with watermark, 2 to 4 per cent., according to the dimensions of the paper and the complication of the watermark.

Terms of Payment—Payments are usually in cash. They are understood to be due after thirty days from the end of the month in which the goods are shipped, in case of outside sales, and after thirty days from the end of the month of delivery in the case of sales on the spot. The usual discount is 5 per cent. on all papers except news. The payment for news "after waste" must be specially agreed upon.

For hand-made papers the above mentioned allowances are considered minimum figures. These conditions for the sale of French paper have been drawn up according to those adopted by the German paper manufacturers, but they are much less favorable for the buyers, and it is hardly to be expected that the latter will observe them very closely in these days of lively competition.

Mr. Huet, formerly manager of various paper mills, is at present erecting a large paper mill near Paris for the *Société des grandes Fabriques de Papier de Paris*. This company is said to have a capital of 2,125,000 francs. Great efforts are being made to sell shares.

New paper machines of great capacity are now being erected at several points in Germany and Austria. Dietrich Brothers, of Merseburg, on the Saale, have just put a fourth large paper machine in operation, and claim to have now, together with their four machines in Weissenburg, the largest production of any mill in Germany, turning out from 85,000 to 90,000 kilograms of paper per day.

The cellulose and paper mill at Konga, Sweden, is setting up a new paper machine. In Fraanö, Sweden, a new cellulose mill is being erected; it is to have a capacity of 5,000 tons per year.

The Perlen Paper Mill, near Luzerne, Switzerland, has paid dividends of 5 and 4 per cent. respectively for the past year.

PAPER MAKER.

W. A. List, a manufacturer of sheet roofing, Wheeling, W. Va., was assaulted by John W. Heiskell, a stationer and bookseller in that place, on July 22. Heiskell drew a revolver and attempted to shoot List, but the weapon missed fire and Heiskell was then disarmed.

Deputy Sheriff McGivney has taken charge of the place of business of the Girsch Lithographing Company, at Nos. 65 and 67 Duane street, on two attachments in favor of the Adams & Bishop Company for \$2,000 for money loaned, and in favor of the Peter Adams Company, for \$1,298 for paper. H. H. Bowman, who represents the two creditors, obtained the attachments on the allegations that a statement of the company's condition made on June 14, on which it obtained credit for the above amounts, was untrue. It purported to show liabilities, \$22,101, and assets, \$70,000, in plant, accounts, &c., whereas on July 1 another statement showed liabilities \$28,874 and accounts receivable \$7,758. President Chas. W. Girsch was taken to task by Mr. Bowman, and the latter in his affidavit alleged that Mr. Girsch said on July 16 that the company could not go on; that it had no work on hand of any account, was not getting any new work of any account, and that expenses were heavy. Mr. Girsch was called upon by the reporter to get his version of the matter, but he declined to say anything whatever. The company was incorporated under New York State laws in January, 1893, with a capital stock of \$50,000, succeeding Girsch & Rochsler, and Mr. Girsch was both president and treasurer. He was formerly in business in Boston.

Obituary.

ALEXANDER HAMILTON RICE.

Alexander H. Rice, ex-Governor of Massachusetts and head of the Rice-Kendall Company, Boston, died at the Hotel Langwood, Melrose, Mass., on July 22. Five years ago he had a stroke of paralysis, and on July 10 preceding his death a second stroke, followed by great feebleness of



ALEXANDER H. RICE.

heart, and on Sunday evening he lost consciousness, in which condition he remained until his death.

The funeral services were held in the Emmanuel Church, Newbury street, Boston, on Thursday, and were very largely attended. The Rev. Wilfred Lawrence presided, and the services were in direct charge of the Loyal Legion, of which the deceased had long been a member. The casket was wrapped in the national flag, and was borne by a detail from the first corps of Cadets, the pallbearers being Henry A. Thomas, representing the State of Massachusetts; Mayor Curtis, the city of Boston; Col. Charles S. Hopkins, Mutual Life Insurance Company, of New York; Charles S. Kendall, the Rice-Kendall Company; Richard H. Dana, the Episcopal Theological School; A. J. C. Sowdon, the Episcopal Church Association; James L. Little, the National Sailors' Home; S. Endicott the American Loan and Trust Company; John W. Candler, the Commercial Club; William A. French, the Massachusetts National Bank; Frederic W. Lincoln, the Bunker Hill Monument Association; Augustus Lowell, the Institute of Technology and Museum of Fine Arts; Hon. Henry B. Peirce, the Governor's associates in office in 1876, and Gen. W. W. Blackmar, the military order of the Loyal Legion.

The floral emblems were numerous and strikingly handsome. The interment was in the family lot at Forest Hills.

Alexander Hamilton Rice was born at Newton Lower Falls, Mass., on August 30, 1818, his father being Thomas Rice, a paper manufacturer of that place. He received his education in the public schools and at academies in Needham and Newton. His first business experience was in a Boston dry goods store, but because of impairment of his health he was obliged to return home. Two years later he returned to Boston and entered the employ of J. H. Wilkins and R. B. Carter, who were carrying on a paper business under the style of Wilkins & Carter. After three years of service he decided to enlarge his education by a collegiate course, and entered Union College, Schenectady, N. Y., where he was graduated in 1844, receiving the highest honors of his class. He intended to study law, but ill health was a bar to this and he again entered business as a partner with his old employers, the firm being Wilkins, Carter & Co., now the Rice-Kendall Company.

In 1853 Mr. Rice was elected a member of the Boston Common Council, becoming president of that body a year later. In 1855 he was elected mayor of Boston, and the next year was re-elected by an increased majority, and declined a renomination at the end of his second term. He was then elected to Congress and represented his district for eight consecutive years. In 1875 he was elected Governor of Massachusetts, being re-elected in the two following years. His administration ranks among those which have been most useful and honorable to the Commonwealth, and indeed in all of the public positions which he occupied Governor Rice's course was such as to merit and receive the commendation of all whose approbation was worth winning.

In 1876 Harvard University conferred on him the degree of LL.D. He was for some years president of the Boston Board of Trade and was at one time president of the Boston Paper Trade Association. He was president of the Great Peace Jubilee held in Boston in 1869, was vice-president of the Webster Historical Society, a member of the American Archaeological Society, trustee of the Massachusetts Institute of Technology, Art Museum of Boston and of the Episcopal Theological School at Cambridge; a member of the American Historical Association, a director of the American Loan

and Trust Company, the Massachusetts National Bank and the Bunker Hill Monument Association. He was president of the National Sailors' Home, the first president of the old Central Club of Boston, and president of the Rice-Kendall Company. He has also been president of the Boston Memorial Society and of the Boston Art Club, a member of the Athletic and Algonquin clubs, as well as many other associations.

Governor Rice was in every way and in every walk of life the genial, kindly gentleman. He carried himself with a dignity which commanded respect and esteem, and in all of his relations bore himself so that his death carries a pang to all who knew him. He was a man of broad views, of sterling integrity, ever mindful of the feelings and rights of others, and he naturally and easily attracted to him all with whom he came in contact.

In 1845 he married Augusta E. McKim, daughter of John McKim, of Washington, D. C. She died in 1868 while on a voyage to the West Indies, three children—Col. J. H. Rice, Mrs. William Davies and Mrs. W. G. Stetson—surviving her. Governor Rice's second wife was Mrs. William D. Powell, of New York, who, with a son, Arthur Stanley Rice, survives him.

On Tuesday the executive committee of the Boston Paper Trade Association held a meeting at the office of Train, Smith & Co., and adopted the following resolutions:

We meet in sorrow, for death has taken from us Hon. Alexander H. Rice. As a man he was honorable in all things and honored by all men. A native of the State, he gave to its interests the best of his manhood, serving during his honored career our city, as mayor, our State as Governor, and representing us in the halls of Congress, and all the while maintaining his business relations with the paper trade interest, with which from early manhood he was identified. In his death the paper trade of Boston loses one of its most worthy representatives, and we, his business associates, lose a friend whom we were ever proud to honor; therefore

Resolved, That the Boston Paper Trade Association, through its representatives here assembled, gives expression to its deep sorrow at the loss of its honored ex-president, Alexander H. Rice.

Resolved, That this association tender to his family and to his business associates its deepest sympathy, for the loss to them is irreparable.

Resolved, That the secretary forward to his family and to the Rice-Kendall Company a copy of these resolutions.

Resolved further, That the Boston Paper Trade Association be represented at the funeral, and that the paper firms of Boston be requested to close their places of business from 12 to 3 p. m. on Thursday, July 25, the day of the funeral.

J. Richard Carter, president; Col. Samuel P. Train (chairman); George W. Russell, C. D. Brown, J. E. Hall, Col. J. F. Jordan, executive committee of the Boston Paper Trade Association. James B. Forsyth, secretary.

The following named gentlemen were appointed a committee to represent the Boston Paper Trade Association at the funeral: J. Richard Carter, Hon. William A. Russell, George W. Wheelwright, M. B. Mason, A. L. Hollingsworth, Charles D. Brown, Hon. William Whiting, Hon. Byron Weston, F. P. Carpenter, W. D. Russell, Herbert A. Wilder and Hon. Wellington Smith.

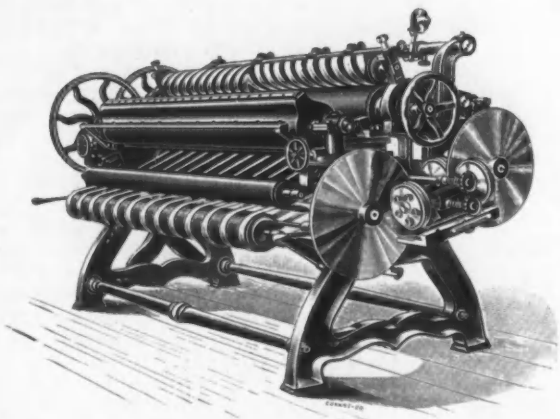
A Treasure for Tourists.

"Health and Pleasure on America's Greatest Railroad," No. 5 of the Four Track Series for 1895, issued by the Passenger Department of the New York Central Railroad Company, from the press of the American Bank Note Company, surpasses in size and beauty any volume of like character ever published. No brief description can give an adequate idea of its excellence and utility. To summarize it in a few words, the book is a handsome volume of 304 royal octavo pages, with numerous maps and illustrations, beautifully bound in illuminated covers.

The primary object of the book is to give useful information regarding the popular health and pleasure resorts of New York, New England and Canada, but it goes beyond this scope, and in a series of interesting chapters treats of the beauties of landscape and climate to be met with in California, Colorado, Utah, Yellowstone Park, Mexico, Japan and the Hawaiian Islands.

The descriptive matter relating to the various features of interest in these localities is accompanied by over 800 illustrations, depicting the most beautiful scenery of the country. In addition to these features, epitomized tables of routes, fares, hotel rates, &c., render the book invaluable to traveler and tourist. The maps are all new and up to date, and cover the Adirondack Mountains, Thousand Islands, Lake Region of Central New York and all the prominent resorts.

Everyone who intends to get out of the city for the summer should secure a copy of this book and study the 1,000 tours it describes before coming to a decision. George H. Daniels, general passenger agent of the New York Central, will send a copy to any address in the world upon receipt of ten 2 cent stamps.



THE "HORNE" FRICTION CUTTER

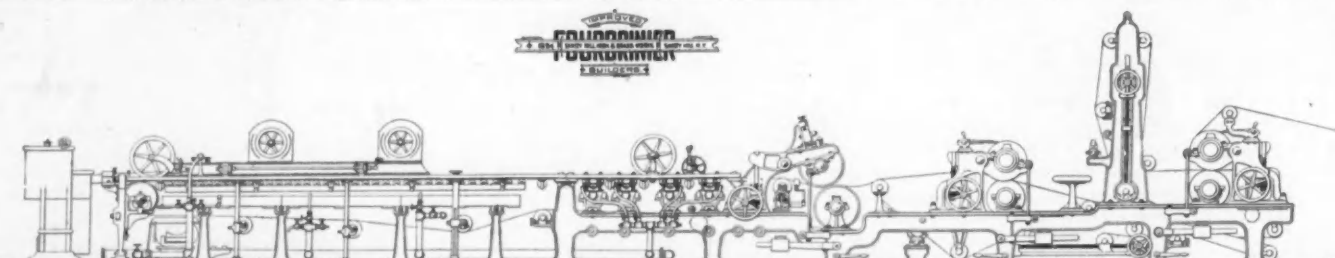
IS IN ADVANCE OF ANY CUTTER IN USE TO-DAY.

WE HAVE EIGHT RUNNING IN ONE FINISHING ROOM.

AFTER USING ONE SEVEN MONTHS
A CUSTOMER SAYS:

"You have the Perfect Cutter. We are sure it will save its cost in one year in the saving of waste paper alone."

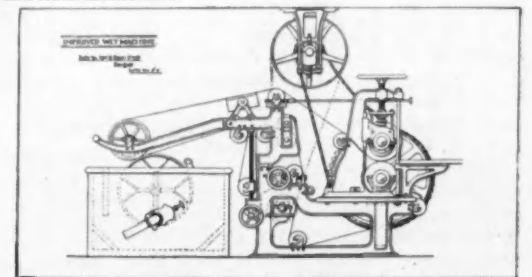
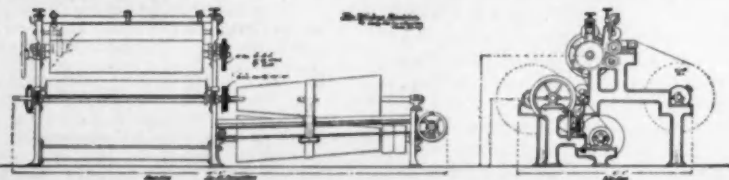
THE J. H. HORNE & SONS CO., LAWRENCE, MASS., U. S. A.,
MANUFACTURERS OF PAPER MILL MACHINERY.



SANDY HILL IRON AND BRASS WORKS,

BUILDERS,

SANDY HILL, N. Y.



WALDHOF SULPHITE PULP CO.,

MANUFACTURERS OF

SULPHITE WOOD PULP,

Dry, Unbleached and Bleached,

OF ALWAYS EVEN QUALITY.

RUDOLF HELWIG,

Sole Agent for the United States and Canada.

Temple Court Building,

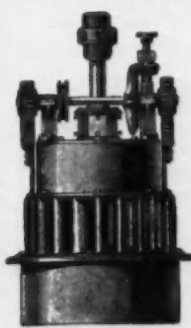
Cor. Beekman and Nassau Streets, New York.



J. & W. JOLLY,

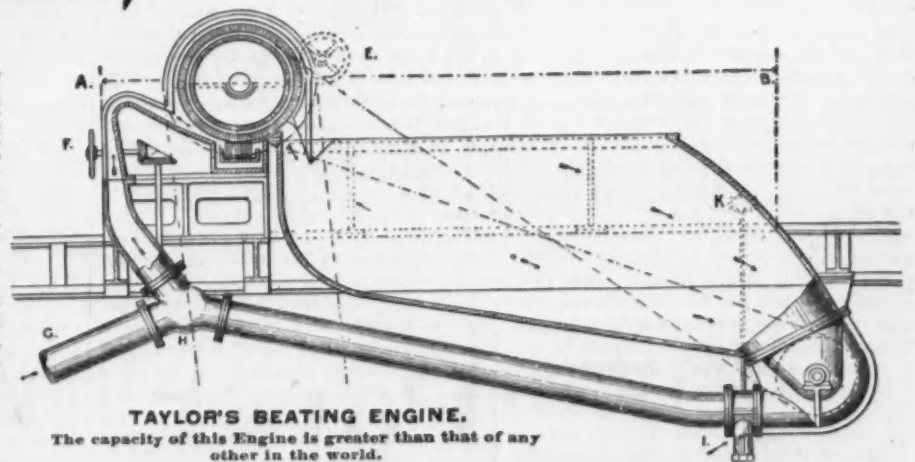
Manufacturers of McCormick's Holyoke Turbines,
BOTH VERTICAL AND HORIZONTAL.

PAPER MILL MACHINERY.



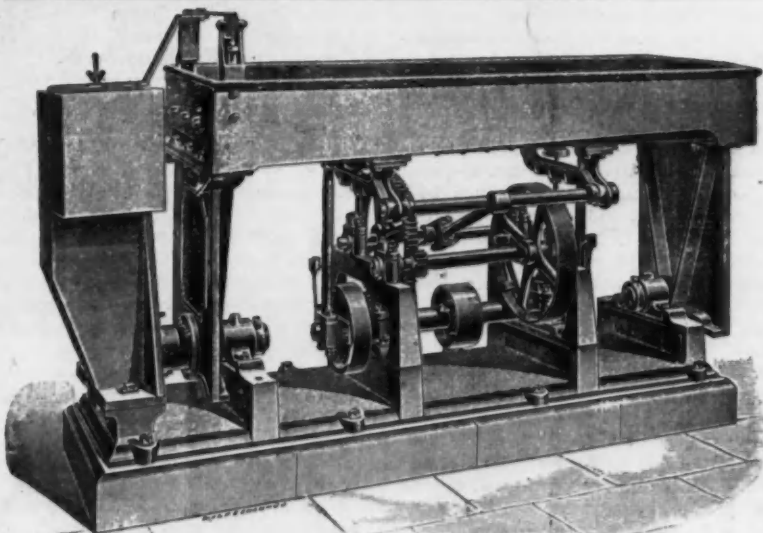
THE "McCORMICK"

Holyoke, Mass., U. S. A.



TAYLOR'S BEATING ENGINE.

The capacity of this Engine is greater than that of any other in the world.



"WHITE'S" PATENT OSCILLATING STRAINER OR SCREEN.

WE LEAD AND OTHERS FOLLOW! Over 200 "SUCCESS" Screens in use on all kinds of stock.
"THE SUCCESS" LEADS THEM ALL.

READ THE FOLLOWING LIST OF USERS AND BE CONVINCED:

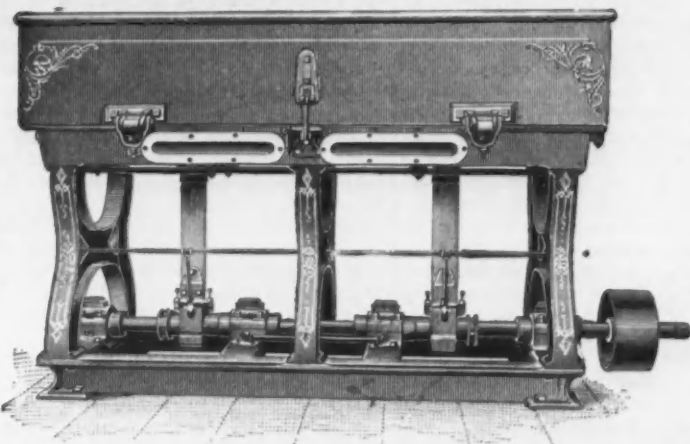
The Glens Falls Paper Mill Co., Glens Falls and Fort Edward, N. Y.	91	A. H. Hubbard Co., Norwich, Conn.	2	Jas. Barnage Paper Co., Monroe Bridge, Mass.	1
The Hudson River Pulp and Paper Co., Palmer's Falls, N. Y.	50	Agawan Paper Co., Mittleague, Mass.	1	Wildor & Co., Oicott Falls, Vt.	2
The Burgess Sulphite Fibre Co., Berlin Falls, N. Y.	13	The Worthy Paper Co., Mittleague, Mass.	1	Syma & Dudley Paper Co., Watervliet, Mich.	3
Marinette and Menominee Paper Co., Marinette, Wis.	8	Chester Paper Co., Huntington, Mass.	1	The Little Chute Pulp Co., Little Chute, Wis.	6
Combined Locks Paper Co., Combined Locks, Wis.	4	Bayless Paper Co., Binghamton, N. Y.	2	Niagara Falls Pulp and Paper Co., Niagara Falls, N. Y.	1
Wilkinson Bros. & Co., Derby, Conn.	5	Wagman & Thorp Co., Fort Miller, N. Y.	2	Kimberly & Clark Co., Kimberly, Wis.	2
Sandy Hill Power and Pulp Co., Sandy Hill, N. Y.	4	Moore & Thompson Paper Co., Bellows Falls, Vt.	1	Atlas Paper Co., Appleton, Wis.	1
The Riverside Paper Co., Holyoke, Mass.	4	Allen Bros. Co., Sandy Hill, N. Y.	1	Shattuck & Babcock Co., De Pere, Wis.	2
The Holyoke Paper Co., Holyoke, Mass.	1	Hudson River Water Power and Paper Co., Mechanicsville, N. Y.	1	The Wanaque River Pulp and Paper Co., Wanaque, N. J.	2
Franklin Paper Co., Holyoke, Mass.	1	Ohio Paper Co., Niles, Mich.	1	Nekoosa Paper Co., Nekoosa, Wis.	1
Chemical Paper Co., Holyoke, Mass.	2	Otis Falls Paper Co., Livermore Falls, Me.	19	Niagara Falls Paper Co., Niagara Falls, N. Y.	2
Bees & Holbrook Co., Holyoke, Mass.	2	J. D. Mulrenan, Hadley, N. Y.	2	The Maritime Sulphite Fibre Co., Chatham, New Brunswick, Canada.	4
		Barnage River Pulp and Paper Co., Cadyville, N. Y.	2	The Unesa Paper Co., Norwich, Conn.	1
		Herkimer Paper Co., Herkimer, N. Y.	2	Sandy Hill Pulp Co., Sandy Hill, N. Y.	1
		Winnipisaukee Paper Co., Franklin, N. H.	2	Kimberly & Clark Co., Neeah, Wis.	2

MADE IN THREE SIZES: SIX, EIGHT AND TEN PLATES.

Wood Pulp Grinders, Improved Patterns. } OTHER } Double and Single Stuff Pumps, Improved Patterns.
Wet Machines, Improved Patterns. } SPECIALTIES: } Soft Steel Slitters, Improved Patterns.
Friction Pulleys and Couplings. } } Wood Chippers.

FRICTION PULLEY AND MACHINE WORKS, SANDY HILL, N. Y.,

SOLE MANUFACTURERS OF THE "SUCCESS" SCREEN

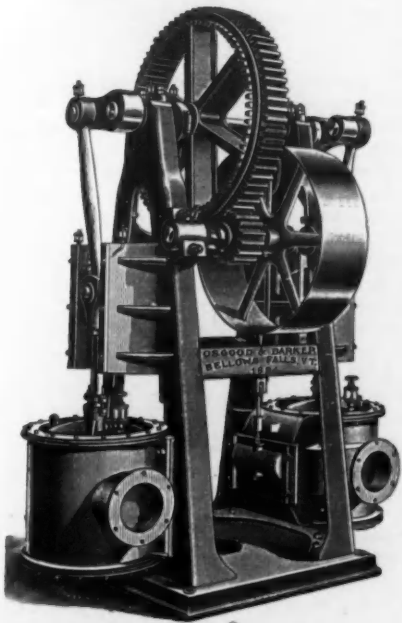


— THE —
Cedar Point Foundry,
PORT HENRY, N. Y.

**WOOD PULP GRINDERS,
WET MACHINES,
Jeffers Suction Screen.**

Made in three sizes: Eight, Nine and Ten Plates.

SEND FOR BLUE PRINTS.



VACUUM PUMP.
Weight, Four Tons.

MANUFACTURED BY

OSGOOD & BARKER,
Bellows Falls, Vt.,

MANUFACTURERS OF

Sulphur Burners,
Acid Pumps,
Barkers,
Chippers,
FOR SULPHITE PLANTS.

Fourdriner and Cylinder
Paper Machines,
With one, two, three or four stacks of dryers.

Upright Reels, with two or three Drums,
Reel Stacks and
Revolving Reels,

Rewinding and
Slitting Machines,
Calender Buffing Machines

For buffing ends of the rolls.

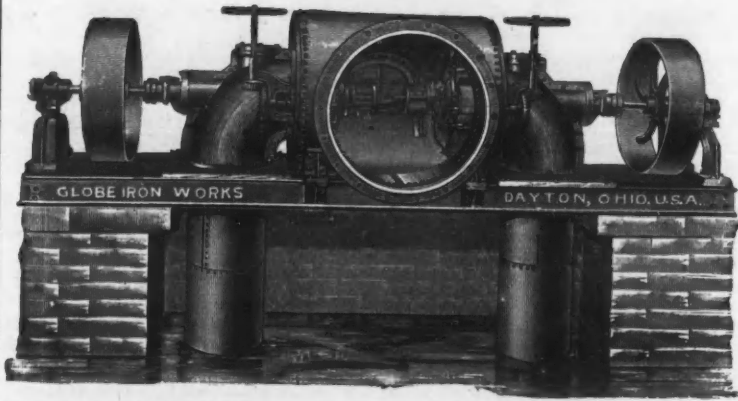
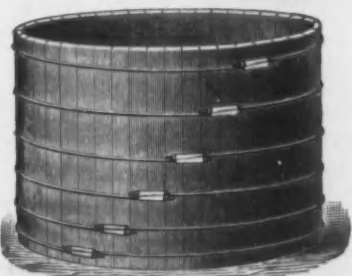
Ground Wood
Pulp Machines,
Wet Machines.

Pulp and Paper Machinery
For all kinds of Paper.

WRITE FOR DESCRIPTIONS AND PRICES.

ESTABLISHED 1840.

GEO. J. BURKHARDT'S SONS'
Cedar Tank Factory,
2831 TO 2839 NORTH BROAD ST.,
Philadelphia.



PROGRESS THE ORDER OF THE AGE! THE NEW AMERICAN LEADS!

Recent improvements made in the New American Turbine have increased the power as per their diameter, and produced greater efficiency from whole to half water than any other turbine, as evidenced by the following, copied from certified tests made at Holyoke, Mass., on the dates named, and signed by A. F. Sickman, engineer in charge of experiments, and E. S. Waters, Hydraulic Engineer.

The originals of these certificates and tests of other sized wheels can be seen at our office.

TEST OF A 45 INCH WHEEL—JULY 9, 1894.						TEST OF A 42 INCH WHEEL—JULY 14, 1894.					
	Head.	Rev. per Min.	Cu. Ft. per Sec.	Horse Power.	Per Cent.		Head.	Rev. per Min.	Cu. Ft. per Sec.	Horse Power.	Per Cent.
Whole Gate,	16.06	119.17	141.58	205.27	79.76	Whole Gate,	16.33	128.00	134.18	199.56	80.50
3/4 "	16.42	122.00	127.18	195.19	82.58	3/4 "	16.56	134.80	120.85	188.14	83.09
1/2 "	16.78	117.33	112.60	175.74	82.18	1/2 "	16.59	129.33	104.85	162.89	82.77
1/4 "	17.08	111.33	98.12	149.96	79.31	1/4 "	17.13	125.25	92.76	142.40	79.21
1/8 "	16.88	118.87	82.07	118.40	75.52	1/8 "	17.48	121.00	70.80	98.88	70.60

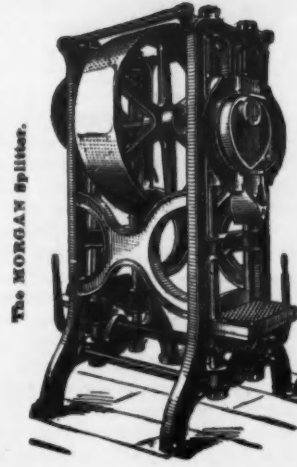
For information and catalogue write
THE DAYTON GLOBE IRON WORKS CO., Dayton, Ohio, U. S. A.

APPLETON MACHINE COMPANY,

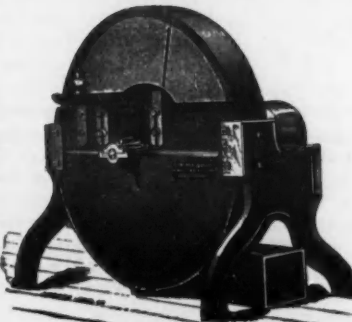
APPLETON, WIS.,

— MANUFACTURERS OF —

The New Frambach and Badger Pulp Grinders,



The MORGAN Splitter.



The MORGAN Barker.

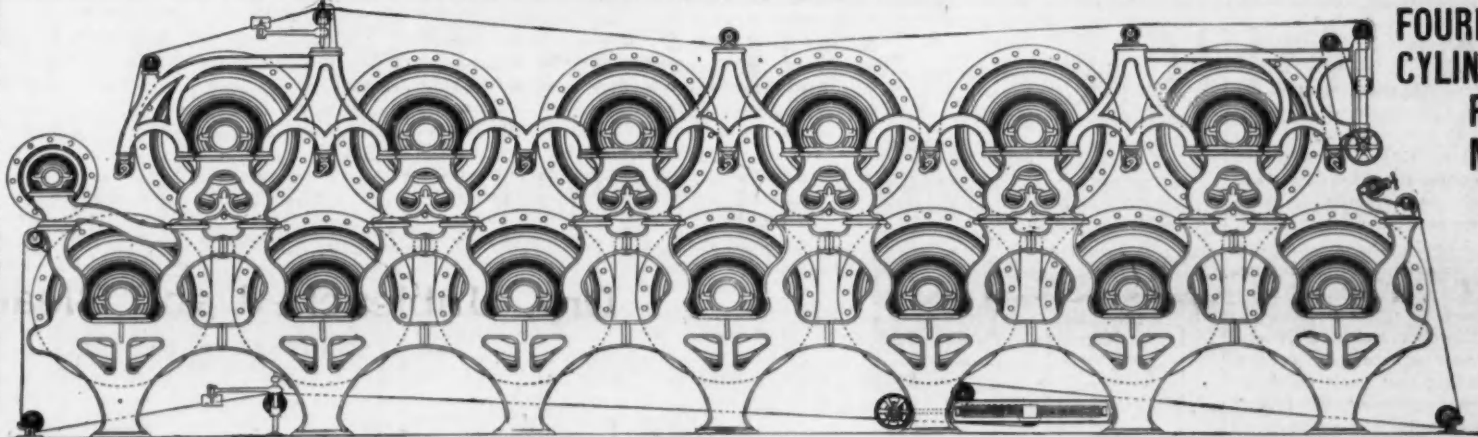
Wood Barkers,
Splitters,
Screens,
Bolt Sawing Machines,
Knot Borers,
Chippers,
Sulphur Burners
and
Wet Machines.



GOODRICK Screen.

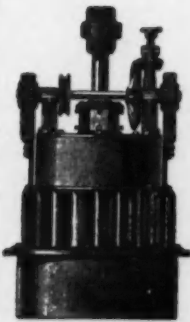
DOWNINGTOWN MFG. CO., LTD., EAST DOWNINGTOWN, PA.,

**FOURDRINER AND
CYLINDER
PAPER
MACHINES.**



Holland and
Duplex
Beating
Engines,
Keystone
Screen.

MCCORMICK AND SUCCESS TURBINES,
VERTICAL OR HORIZONTAL.



THE "MCCORMICK"

The McCormick Turbine gives more power per diameter with a higher percentage of useful effect from the water used than any other water wheel heretofore made. All sizes, both right and left hand, tested in the Holyoke testing flume.

The Success Turbine, long and favorably known in the paper trade as a first-class water wheel, possesses valuable features found in no other turbine, and gives a high percentage of useful effect from the water used.

THE MCCORMICK and SUCCESS TURBINES are especially adapted for driving Paper and Pulp Mills and are extensively used by the largest manufacturers in the United States and Canada. Parties using wheels which are unsatisfactory and those contemplating the improvement of power will find it to their interest to confer with me, as I am willing to guarantee results where others have failed, no matter what make of turbines has been tried.

State requirements and send for catalogue.

Heavy Power Transmitting Machinery a Speciality.

S. MORGAN SMITH, York, Pa.



THE "SUCCESS."

THE FAIRBANKS Co.
Paper Mill Supplies.

FAIRBANKS STANDARD SCALES,
VULCANIZED ASBESTOS PACKED COCKS,
VULCANIZED ASBESTOS DISC GLOBE VALVES,
VULCANIZED ASBESTOS SEAT GATE VALVES,
VULCANIZED ASBESTOS DISC BRONZE "Y" VALVES,
ALUMINUM BRONZE GATE VALVES.

A SPECIALTY MADE OF HIGH CLASS

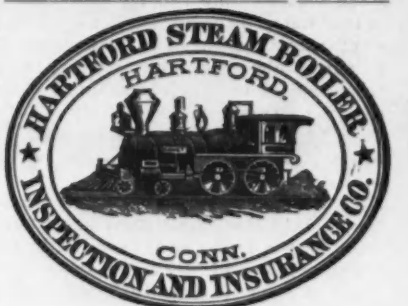
Aluminum Bronze Work for Sulphite Plants.

CATALOGUES ON APPLICATION.

THE FAIRBANKS CO.,

NEW YORK, ALBANY, BOSTON, BUFFALO, PHILADELPHIA, BALTIMORE, PITTSBURGH,
NEW ORLEANS, LONDON, ENGLAND.

JEFFREY
Roller, Steel Drag, Cable and Special Chain.
**ELEVATING
CONVEYING
MACHINERY**
FOR HANDLING MATERIALS OF ALL KINDS.
Power Transmission Machinery.
WIRE CABLE CONVEYORS.
For long & short distance conveying.
THE JEFFREY MFG. CO., 163 Washington St., N. Y.
Columbus, Ohio. Send for Catalogue.



— Thorough Inspection. —
Insurance against loss or damage to property; also against loss of life and injury by Steam Boiler Explosions.

General Agents. Offices.
THEO. H. BABCOCK, New York City, 300 Broadway.
CORBIN & GOODRICH, Philadelphia, 4th Walnut street.
LAWFORD & MCKIN, Baltimore, Md., Chamber Commerce.
C. E. ROBERTS, Boston, Mass., 126 Milk street.
H. M. LEMON, Providence, R. I., 30 Weybosset street.
C. C. GARDNER, Chicago, Ill., 118 Quincy street.
L. B. FERKINS, St. Louis, Mo., 518 North 4th street.
W. G. LINESBURGH, Hartford, 218 Main street.
BRIDGEPORT, 2 Sanford Building.
BURWELL & BRIGGS, Cleveland, 300 Superior street.
MANN & WILSON, San Francisco, 506 Sansome street.
W. S. HASTIE & SON, Charleston, S. C., 46 Broad street.
ZOLLARS & MCGREW, Denver, Col., 425 to 426 Mining Exchange Building.
E. V. CLARK & CO., Birmingham, Ala., 110 North 19th st.
PETER F. FESCU, New Orleans, 186 Gravier street.

Water in Steam Pipes.

In a discussion upon steam piping at one of the recent meetings of the American Society of Mechanical Engineers, Professor Thurston made some interesting comments. Everyone will recognize the fact that the two and sufficient principles to be adhered to in designing lines of steam piping are, first, to provide for contraction and expansion; and secondly, to provide against standing water anywhere in the line of the outside or inside. If the pipe can be arranged so that the expansion or contraction can take place without causing stress of the material, and if it can be kept dry inside or out, no difficulty will arise. It is not well understood that the strains which may be produced in a pipe by water are very severe, and sometimes fatal, the results of settlement of water in a steam pipe, which may act by condensation of steam, causing water hammer, or may be precipitated in such form that it may be carried over as a slug to strike where it will and act like a hammer.

An early experience of this sort is related by Professor Thurston. Steam was carried from the boiler room adjacent, down the opposite wall and under the floor, a distance of several feet, then up to the steam chest of the engine. In the U thus formed was placed a cock, to be opened for draining it by the engineer whenever the engine was stopped, and to be closed when the engine was running. It happened that one morning the engineer was not in the room at 7 o'clock, and his assistant came in and at once stepped to the throttle valve, which was set in the pipe lying against the wall, at the point where the steam entered the U on the way to the engine. The instant he opened the valve there was a crash; the cast iron steam pipe was broken below the floor. He went below and found the engineer dead, having been killed by the exploding pipe. He had gone down to set up a joint which had probably been loosened by this very action. This fact illustrates either the force which water may exert when forced through a pipe by the impelling power of steam, or the forces that may be set in action by the sudden contraction of a moving mass of steam when coming in contact with a mass of cold water. Either action would have been sufficient for the result described.

Another instance was mentioned where the steam pipe was not sufficiently drained, and the water collected in the pipe and was carried over into the cylinder of the engine, wrecking it. Large stresses must be produced, and it would be interesting to observe how large these stresses are. No one has yet found a way of ascertaining them accurately. The fact that such accidents do occur, unquestionably due to the impact produced by the rapid condensation of steam on the surface of a pool of cold water, shows that these stresses must be enormously great. What may happen when a rapidly moving, heavy mass of solid water, in full career, strikes an obstruction we all know; but the hammering of steam in pipes produces a local strain probably quite as severe, perhaps even more serious.

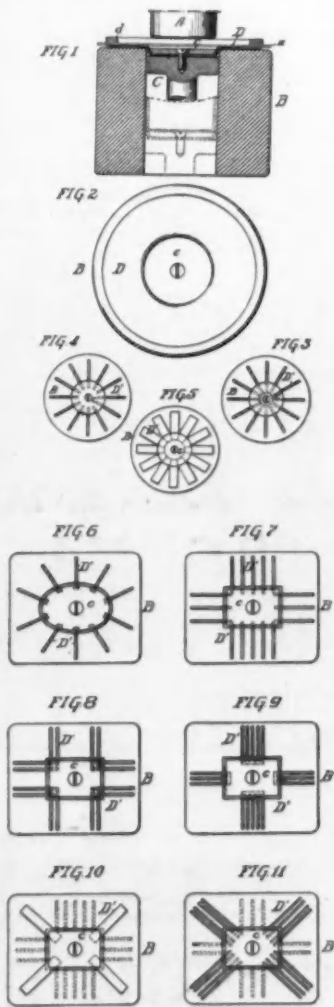
This second kind of strain is known to be enormously great, but how much we do not know. He had occasion once to examine a quantity of pipe taken out of a heating system then in operation, but now extinct. He was informed that the pipes were defective, and was asked to examine them for the purpose of obtaining a report to secure from the makers a reduction of their cost and possibly damages. Many of the pipes were split through good welds and had welds, through solid iron even, and the only report he could make was that they were injured by water hammer. A quantity of the pipe was taken to the mill where it was made and the pressures they would stand were measured, split and weakened as they were. In order to obtain a fair idea of the actual pressures that the pipes would sustain, a rubber packing was arranged on the inside of each pipe, a strip covering each crack from end to end, drilling a few holes along the crack, so that the strength of the pipe should not be affected and to insure that sealing these joints should not affect the strength of the pipe. The bolts simply held that packing up against the crack on the inside, so as to seal it by the slight pressure of a line of small bolts which were put in simply to hold the packing in place.

Pipes arranged in this way and tested in the hydraulic apparatus of the mill carried all the way from 300 to 1,000 pounds pressure to the square inch, injured as they were. The conclusion was obvious that the water hammer to which they had been subjected was enormously in excess of these figures, representing the strength of the pipe after the crack had been made. These facts are more impressive than any possible examination, without actual measurement of these quantities, and reveal the intensities of the strains that occur, and the risks of danger which occur from allowing water to stand anywhere in a pipe. After water had once collected in a pipe, especially in steam pipes leading to engines of larger size, there

is no safe way of removing this danger except by simply shutting the steam off at once, if it is moving in the pipe, or keeping the throttle shut if it is not moving; then let the steam down and drain the pipe completely before steam is again put on. If an attempt is made to drain even a still pool of water in a pipe under pressure, the water hammer may become very severe. The disturbance of the pool by the flow of steam causes condensation; condensation causes a rush of steam upon the surface of the water, and presently there may result as serious effects as when steam actually moves through the pipe with the throttle valve open, and the pool of water is set in motion to cause accident by impact.

Pressing or Stamping Articles from Wood Pulp, Etc.

The principal object of this invention is to manufacture boxes or other articles on a stretching or stamping press from materials so constituted that they do not possess sufficient strength to withstand the stretching strain to which they are subjected during the operation of the press, the materials which it is proposed to operate upon being wood or straw pulp board, inferior qualities of leather or certain kinds of sheet metal, &c., which at the present time cannot be successfully operated upon by the stamping press owing to their inability to withstand the stretching and friction to which they are subjected.



MACHINE FOR STAMPING ARTICLES FROM WOOD PULP.

The invention consists primarily in the employment of a protecting cap or projecting strips of paper, cloth, metal or other material of sufficient strength to withstand the stretching and frictional strains of the pressing or stamping machine, this protecting cap being placed under the material to be treated so as to take up the stretching and the friction caused by the entrance of the die into the mold and pressing tightly against such material so as to distribute the pressure imparted to it over a large surface area.

Figure 1 illustrates in sectional elevation a pressing or stamping machine provided with a protective cap. Fig. 2 is a plan view of the mold and protecting cap. Fig. 3 is a similar view showing a cap with a portion of the material removed so far as to form a series of strips, radiating from a central body portion. Fig. 4 is a similar view illustrating a protective cap made up of a number of separate radiating strips. Fig. 5 is a similar view showing the employment of separate strips, each strip being of such a width that when all are at a right angle to the lower face of the die their edges will meet and form a complete cup. Fig. 6 is a similar view, showing the arrangement of strips when a box or other article of oval or elliptical shape is to be manufactured, and FIGS. 7, 8, 9, 10 and 11 are similar views showing various methods of arranging the strips for the manufacture of boxes or other articles of square or rectangular form.

A represents a die of suitable construction, its form in cross section being gov-

erned by the shape and character of the article to be manufactured. Immediately below the die is a mold, B, in which is a counteracting stamp, C, adopted to co-act with the die A, and the mold to form the article.

D represents a protective cap made of strong and preferably elastic or flexible material such as cloth, paper or rubber or the like, and centrally secured to the upper end of the counteracting stamp C in any suitable manner, preferably that illustrated in Fig. 1, in which the cap is held in place by a plate, e, screwed or otherwise united to the upper end of the counteracting stamp C. With the parts in the position shown in Fig. 1 the sheet of material to be acted upon is placed on top of the protective cap, and on top of the sheet is placed the usual friction ring d, which acts, in a manner, to hold the material and cap and prevent too rapid feeding as the die descends.

On the entrance of the die into the mold the protective cap takes all of the stretching and frictional strain, and distributes it over the entire surface of the material under treatment, avoiding all danger of tearing the material as it is forced into the mold, the cap entirely surrounding the material and being pressed into intimate contact with the face of the mold, as shown by dotted lines in Fig. 1. In lieu of the protecting cap or disk, a series of strips, D', such as that shown in Figs. 3 to 11 inclusive may be employed, the arrangement of strips being to some extent dependent upon the character of material under treatment, but in all cases being so arranged as to distribute the stretching strain and friction over a large area of the material being acted upon. These strips, if of metal, are preferably of soft steel or other similar material which may be acted upon by the die and again bent out without fracture for a considerable length of time, or where flexible material is employed the outer end of each strip may be connected by an elastic cord or strip to a fixed point, say at the edge of the mold, so that as the counteracting stamp moves upward to discharge the article which has been manufactured the strips will all be turned out in a horizontal position in readiness to receive a fresh sheet of the material to be acted upon, or the strips themselves may be made of elastic material, or their outer ends may be weighted if desired. The cap or disk or the strips might also be made of spring metal, which, after the return of the counteracting stamp, will reassume its normal horizontal position in readiness for the next operation.

The employment of separate strips has been found to be more desirable than the employment of a cap or disk which will completely cover the material being acted upon, inasmuch as the cap will occupy more space when pressed into the mold than will the strips, and strips may be arranged only at such points as are subjected to the greatest strain, such as at the corners of square or angular boxes, or at the ends of oval or elliptical boxes, and the width and position of the strips may be such that when in the die they will form a cover which will entirely surround the material being acted upon when in the mold, and will press the latter into intimate contact with the die as shown in Fig. 5. Moreover, when strips are used they may be readily interchanged, and if one be broken it may be readily replaced, or the operation continued without it.

The arrangements of strips shown in Figs. 7 to 11, illustrate separate strips disposed in such manner as to meet various requirements when the material is to be protected at given points.

In Fig. 9 the strips are arranged in groups, each group having a common base from which the strips extend.

When the boxes or other articles manufactured are of oval or hexagonal or other form the die and mold are of course shaped correspondingly.

LOCKWOOD'S DIRECTORY (twenty-first volume) is now ready. Send \$2 for it.

Electricity for Factory Purposes.

The paper that was read at the Providence meeting of the New England Cotton Manufacturers' Association on the electrical driving of textile establishments by Sidney B. Paine, of the General Electric Company, was in some respects the most practically interesting paper that was there presented. The subject itself was highly interesting and commanded attention, and Mr. Paine's presentation of it made it particularly impressive. The subject of the utilization of electricity for the transmission of power is receiving the consideration of mill engineers never before accorded it. The value of electricity is recognized, and its possibilities are among the things that it is now impossible to measure or predict with any degree of accuracy. It was not long since when the transmission of power to a distance of 1 1/2 miles from generator to motor was economically prohibitive, but so rapid has been the progress in the means of handling electricity that transmission by the alternating system is regarded as perfectly feasible. Even from the same wires that carry the electricity for power it is now practicable to operate incandescent and arc lamps.

The functions of the electric power system are to replace in a large measure mechanical methods as represented in shafting, gearing, belts, &c. Mr. Paine says that mechanically driven plants are established on a compromise basis, and to sustain his point he states with much plausible reason that the mill engineer in studying the problems that are set before him, regarding the location and disposition of the motive power and its transmission and distribution, is obliged to make concessions and sacrifices here and there, in order that the plant in its entirety may be as nearly perfect as possible, to a very much greater extent than becomes necessary when he has an electric system to deal with.

One thing is very clear, and in itself immensely favorable to the electric system, that when it is used it is not necessary to subordinate everything else to the power, or to sacrifice nearly every other consideration in favor of the site for the power house. The observations of Mr. Paine are those of many others, that the transmission of power by electricity no longer necessitates the location of a factory in a valley, where the light may be poor, the air malarious and access to the buildings inconvenient. It is no longer necessary to locate a mill in a valley, as in the case with two mills near Worcester, so that the main entrance is through the attic or top floor. The factory can now be placed anywhere without regard to the location of the motive power, where it is easily accessible, the light of the very best and the temperature and air agreeable and healthy.

We speak without considering the question of economy; that is a question that can be better left to engineers and electrical experts. A very important and at once a very attractive feature in the use of the electric power system is the advantages it presents of permitting the economical subdivision into independent sections of a mill's plant; that of allowing different sections being operated separately, without necessitating the operation of others. Great saving is thus assured in the way of shafting and belting, and any stoppage of machinery in one part of a factory does not necessitate stoppage in other parts. Each section has its own motor. The best example of an electrically driven factory is the Columbia Mills, Columbia, S. C. The reports from these mills are decidedly favorable to the system. Other mills are about to try it, and each trial seems to lead to others, and each step leads to further progress. The present presents many important features in the application of electricity to mill operations; the immediate future has in store many others of greater import.—Industrial Record.

Steam Pipe Covering.

I have experimented with the different steam pipe coverings sold in the market with respect to their non-conductivity, strength, durability, &c., in the following manner:

I had constructed an apparatus with six 2 inch steam pipes 6 feet long extending from it. It was arranged with a trap so that dry steam went into these pipes. At the end of each 6 foot length was a cap and a one-quarter inch nipple and valve, by which the condensation was drawn off. Upon the four inside lines were placed 6 feet of the different coverings to be tested. All connections were thoroughly covered. The outside lines were covered (5 and 6) so as to place all of the sectional coverings under equal conditions. The samples were numbered from 1 to 6 inclusive, the composition of the first four being given in the table below. No. 5 was an asbestos cement and No. 6 a plastic form of magnesia. I purchased all of the coverings on the open market from the agents of the manufacturers.

Steam was turned on at midnight; the valves at the end of each 6 feet of the coverings were opened to allow the condensation to drift into buckets; at 7 o'clock in the morning the valves were closed, and the condensation was drawn off each hour until the pipes became thoroughly heated and the quantities of water became uniform. At 12 o'clock noon the test was started; the condensation was drawn off and measured for three consecutive hours, namely, 1, 2 and 3 o'clock, with the following results:

No. 1, 231 grams, or 38 1/2 gr. pr. ft. pr. hr.
No. 2, 228 " " 38 " " " "
No. 3, 272 " " 45 1/2 " " " "
No. 4, 316 " " 51 " " " "
No. 5, 392 " " 63 1/2 " " " "
No. 6, 382 " " 62 1/2 " " " "

Average steam pressure, 73 pounds; temperature, 315° Fahr.; average temperature of room, 28° C. or 82.4° Fahr.

Tests were then made of the strength of each of the sectional coverings in the following manner: Cross sections of pieces for 2 inch steam pipe, 1 inch high, were subjected to pressure until crushed to one-half inch in height in each case, with the following results:

Area.	Ultimate stress.	Pressure.
No. 1, .11 sq. in.	660 lbs.	60 lbs. per sq. in.
No. 2, .11 " "	1,220 " "	113 " " " "
No. 3, .11 " "	1,175 " "	107 " " " "
No. 4, .11 " "	2,900 " "	265 " " " "

Pieces carefully cut from the sections used in the test were subjected to pressure in the same manner, with the following results:

Area.	Ultimate stress.	Pressure.
No. 1, .11 sq. in.	460 lbs.	42.0 lbs. per sq. in.
No. 2, .11 " "	480 " "	43.5 " " " "
No. 3, .11 " "	390 " "	35.7 " " " "
No. 4, .11 " "	2,500 " "	225.0 " " " "

The coverings were only on the steam pipes fifteen hours. No. 4 stood the same pressure after as before.

Pieces of each were soaked in water for three weeks.

- No. 1 softened and disintegrated.
- No. 2 disintegrated completely.
- No. 3 less rigid than No. 1, more rigid than No. 2.
- No. 4 remained rigid.

A sample of each covering was then taken from the pipe, and an analysis made thereof, yielding the following results:

	No. 1.	No. 2.	No. 3.	No. 4.
Moisture.....	8.28	4.58	7.56	2.98
Asbestos and Iron.....	4.73	3.24	5.47	4.78
Alumina and Iron.....	0.62	1.21	3.73	2.65
Sulphate of lime.....	96.37	90.97	81.42	None.
Magnesia.....	trace	trace	trace	89.09

The report was made for the purpose of finding out the true relation which each covering bears to the others in non-conducting qualities, strength, &c. Having purchased all of the coverings in person in the open market, the representative character of the material as sold by the manufacturers was assured.

The coverings above mentioned were applied in my presence, in this way insuring an impartial test of all coverings under like conditions.—Louis Schmidt, in Power.

THE ESTY AUTOMATIC SPRINKLER

Has been OFFICIALLY approved and accepted by the

ASSOCIATED FACTORY MUTUAL INSURANCE COMPANIES, THE FACTORY IMPROVEMENT COMMITTEE OF THE NEW ENGLAND INSURANCE EXCHANGE, THE NEW YORK BOARD OF FIRE UNDERWRITERS and others, and fully complies with the latest standard requirements of all other Boards or Combinations of Fire Underwriters throughout the United States.



The most simple in construction; the most sensitive to heat. A fusible solder joint projects from the centre—therefore more accessible to Sudden Fire. Will stand more abuse from violence than any other Sprinkler. The most Effective Distributor of water, whether used Upright or Pendant.

A MICA SEATED VALVE is used, non-corrodible, non-adhesive, impenetrable and imperishable. Can be Resealed without being removed. Can also be opened and examined by Insurance Inspectors like other fire apparatus, which is a great advantage over all other sprinklers.

PRICE, - 60 CENTS.

For any information concerning Sprinkler Service apply to

ESTY SPRINKLER CO., 63 Mill St., Laconia, N. H., U. S. A.

Wire Rope and Its Uses.

In any wire rope installation for the transmission of power every precaution must be taken for the preservation of the rope and the lining or filling of the transmission wheels. In our last issue we spoke of attempts that have been made to render the rope more durable, but as these schemes have not been found acceptable in this country we will consider only ropes of ordinary construction. This subject has been incidentally considered to some extent in previous articles, but there are several matters of great importance in the maintenance of a transmission line that have not been mentioned.

One of the most troublesome properties of wire rope is its tendency to stretch. When the rope is put on the wheels it is spliced to the proper length, and it would seem as if the rope, being composed chiefly of iron or steel wires, would have little tendency to lengthen to an appreciable extent. However, it will be found that after a few days running the rope has often stretched to a considerable degree. Nor is this true only of transmission ropes such as we are now considering, but it occurs in all wire ropes, and is especially noticeable in elevator ropes and the like, and in these instances adjustments must be made frequently during the first few months of service. In transmission lines, unfortunately, such adjustments are not so readily made. The stretching of the rope often causes them to sag so much that they become incapable of transmitting the entire power. The sag of the rope is, of course, greater in summer, because of its expansion by heat; hence trouble from this cause is more frequent at that time of year than during the winter. There is little or no trouble to be expected from the stretching of the rope after it has been in use for a few months, as they have then attained a constant length.

Sometimes this difficulty is overcome by cutting and resplicing the rope, but this course is not generally advisable, and should be resorted to only in case of necessity. Nothing is more injurious to a wire rope than several splices. They are, of course, a detriment to the strength of the rope, when made in the best possible manner, although the weakening is not great. When many splices occur they are liable to overlap each other, and so result in a considerable reduction of the initial strength of the rope.

In every wire rope the strands are formed of wires that are twisted about each other, and these strands are in turn laid in spirals about the hemp or wire centre. The nature of the stretching of a wire rope will now be understood when it is seen that these wires, when under strain, will all have a tendency to move so as to place themselves parallel to the axis of the rope. From this it will be seen that if we wish to have little trouble from this stretching we should select rope in which the wires make the minimum angle with the axis of the rope itself.

Many manufacturers have experimented with a view to stretching the ropes as much as possible before they are put in use, but most of these attempts have resulted in complete failure to remove the difficulty. There is, however, one process that is coming into use which to some extent reduces the trouble, without injuring the rope in any way. In this process the ropes are strongly compressed radially while subjected to great tensile strain. This has the effect of placing the wires nearly in the position that they will occupy after considerable use. The ordinary wire rope with hemp centre is stretched in this way from .7 to 2.6 per cent. of its original length. Wire rope with wire centre is stretched from .23 to 1.2 per cent. of its length.

This stretching of the rope previous to its use has been found to greatly lessen the trouble that has been experienced from this

source, but it does not by any means eliminate it. With all the advance that has been made in the manufacture of ropes, we are still compelled to use means for taking up the slack in order to maintain the original tension of the rope.

Attempts have been made to take up the slack by means of an idler sheave or wheel, which is either weighted or otherwise adjustable, but its disadvantages are such that it has generally been discarded as nearly worthless. The idler sheave, to avoid a sharp bending of the rope, must be of equal diameter with the transmission wheels. If this sheave is placed either above the upper rope or below the lower one it will cause a "double bend" in the rope, which may cause it to crack. Double bends—that is, bends in opposite directions—are to be avoided wherever possible in the application of wire rope.

The simplest and probably the best way to overcome the difficulty is to refill the rims of the wheels in such a way as to increase their diameters. The manner in which this is to be done will be described in our next issue.—*Industrial Record.*
(To be continued.)

Accidents from Exposed Machinery.

It seems almost useless to write or preach about accidents from unnecessarily exposed machinery. We may read almost every day of someone falling into an exposed fly wheel, getting crushed by a belt, caught by a set screw and carried around a shaft, getting a hand or an arm crushed in gearing, or being injured in some way by machinery; such accidents never, it would seem, are to grow less in number.

It is generally difficult to tell which is the most to blame in the instance of such an accident, the proprietor who sets up death traps or the workmen—and women—who walk into them. Of course it is not difficult

to tell who are the principal sufferers. It is a well-known fact that workmen will become exceedingly reckless in such matters, taking all kinds of chances that they are not called upon or expected to take; and, on the other hand, employers will leave dangerous machinery exposed that might be covered up at a trifling expense.

While accidents from machinery are very common among those who know better than to take the risks they are taking, they are also numerous among those who, from the ignorance of inexperience, are unaware of the danger. For instance, not long ago we read of a little girl in a factory who lost her life through her hair being caught in the machinery. It transpired that she was under the age at which she could legally be employed in a factory. In such cases it is customary to lay the blame on the superintendent, and through him on the owners. But there are two sides to this. It is of frequent occurrence that the parents of children certify to their being older than they really are for the purpose of getting their scant earnings, which they may really need.

In some States there are fairly good laws in regard to covering dangerous machinery, but they are seldom closely enforced. In one instance, where the steam engine was in one end of the shop, the law called for its being fenced about, but the owner of the shop compromised with the inspector by drawing a heavy chalk line—a sort of death line, as it were—all around and a little distance from the exposed part of the fly wheel.

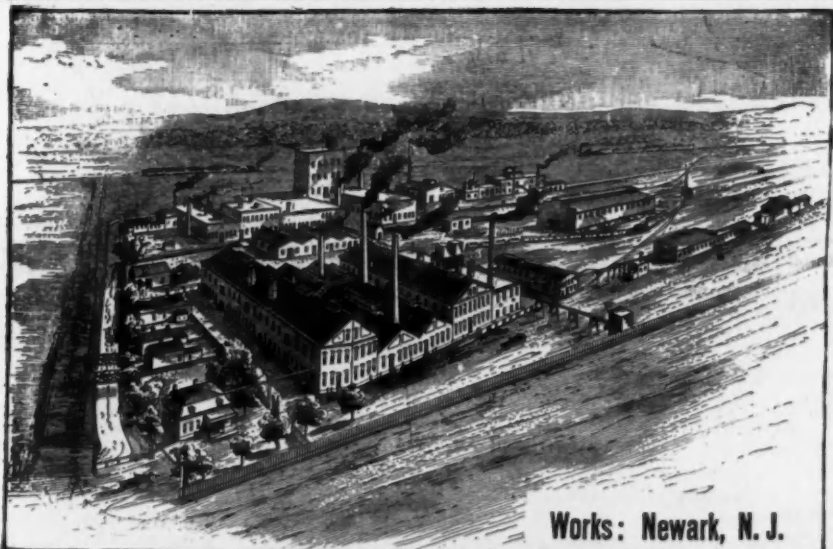
In another instance with which the writer was personally acquainted—before the existence of any law touching the subject—a heavy fly wheel similarly situated was protected by orders of the proprietor by a substantial frame, which was easily moved back when it was necessary to come at the main belt for any purpose, and as easily slid into place. It was a notorious fact that the frame would be pushed back to

take up the belt or for some other purpose—usually at night—and not replaced, remaining off sometimes for six months. This was an instance, and numerous others could be named, in which the men would not take pains to protect themselves when paid for doing so. In fact, where any machinery is protected, and it is necessary to remove the covering occasionally, nothing but rigid measures will insure its being replaced if there is any other convenient and not too noticeable place to put it.

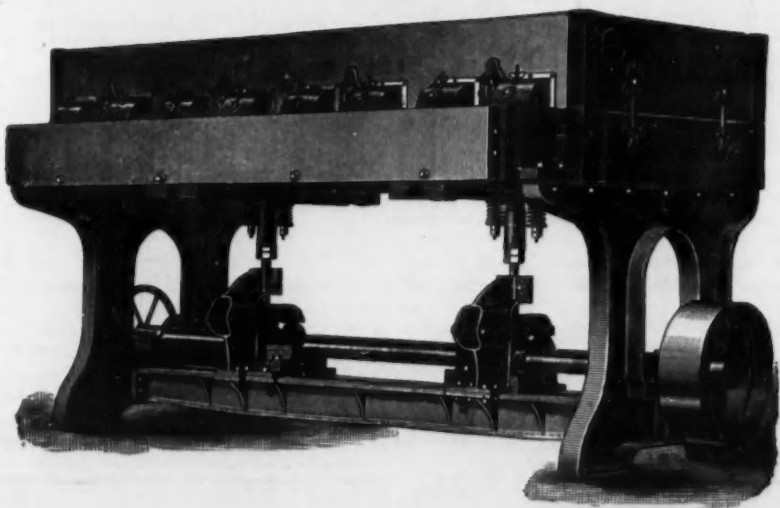
Proprietors, superintendents and workmen alike become used to seeing mechanical death traps, and it rarely occurs to either that there is any particular danger till some one is killed or maimed, while a stranger going through the works would see the danger at a glance. With the former it is a case of seeing without seeing, just as a man may daily pass through an ordinary street in a city for years without seeing enough of the buildings to really know how they look. But if he were to pass through them once with a view to noting what manner of buildings were there, he would have a very fair idea. So around many large works, if it were made the business of someone to make a thorough inspection at regular intervals for the purpose of finding dangerous places lives would be saved. Better than all statute law covering, or trying to cover, the dangers from machinery is the law of humanity that would make a personal duty of such inspection.—*American Machinist.*

When packing a piston rod always use some form of elastic packing. If a rubber core does not answer the purpose, get some with a rubber back. If the piston rod is slightly out of line, this will compensate for it and prevent the leakage of steam.

LOCKWOOD'S DIRECTORY contains a great amount of information in regard to the paper, stationery and allied trades. Price \$2, postpaid.



THE HELLER & MERZ Co.,
 PROPRIETORS OF THE
AMERICAN ULTRAMARINE and GLOBE ANILINE WORKS,
55 MAIDEN LANE, NEW YORK.
 Brands for Paper Makers: R C, #4, RSxx, APR, X
ULTRAMARINE FOR PAPER MAKERS.
SUPERIOR QUALITIES.
 Aniline Colors of all Shades. Samples Matched.



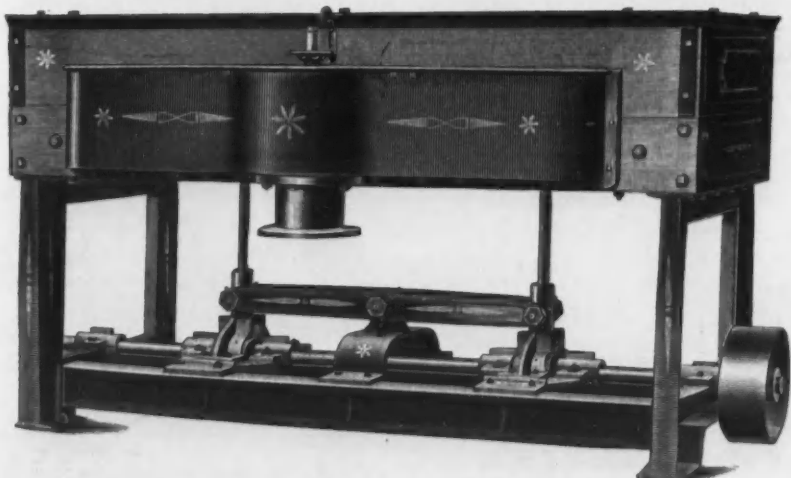
THE MILLIKEN
NOISELESS PULP SCREEN

SIMPLE, DURABLE, PERFECT, COMPACT.
 COMPLETE, NOISELESS, NO STRINGS, LESS POWER.

Plates are sure to last longer, and but two-thirds the number being necessary. No waste of stock when washing up. Occupies a small space; a simple, solid built flooring the only foundation necessary. Excellent work accomplished with eight (8) plates and 11-1000 screen plate. Six (6) hours' time only required to put in position ready for work. In ordering the Screens no particulars are required.

IT HAS NO EQUAL AS TO SCREENING QUALITIES, CAPACITY AND SAVING OF STOCK.
 WARRANTED. THREE MONTHS' TRIAL GIVEN. ADDRESS

C. R. MILLIKEN, PORTLAND, ME.



THE "AMERICAN" SCREEN.

SOME SCREENS ARE GOOD.
 OTHER SCREENS ARE BETTER.
 THE "AMERICAN" IS THE BEST.

It Runs Easier, Lasts Longer, Makes Less Noise and Does More Work than any other.

BLACK RIVER IRON WORKS

(A. D. CLARK, Proprietor),

WRITE FOR DETAILS.

Black River, N. Y.

AGALITE PULP

As now manufactured under our improved processes has no competitor as a filler, either for News or

- Fine
- Book
- Papers.

FOR proof of this we refer to the most successful makers of

Book and News

in this country and in Europe. Our

AGALITE FILLER

GIVES the brightest color and most beautiful finish in all classes of paper, as it contains **no moisture**, and its retention in papers being nearly double that of other fillers, it is by far the **cheapest**.



International Pulp Co.

TIMES BUILDING, NEW YORK.



TRADE MARK

AJAX ANTI-ACID METAL,

FOR THE RESISTANCE OF ACIDS AND ALKALIES.

ESPECIALLY ADAPTED FOR

Digesters, Sulphite Machinery, &c., &c. We sell the Metal in INGOTS, furnish CASTINGS, any size as per patterns, and COCKS, VALVES and FITTINGS of every description.

THE AJAX METAL CO., INCORPORATED, PHILADELPHIA, U. S. A.

WE INVITE CORRESPONDENCE.



JAMES LEFFEL WATER WHEELS

This Justly Celebrated Wheel is built in Many Styles and Designs on

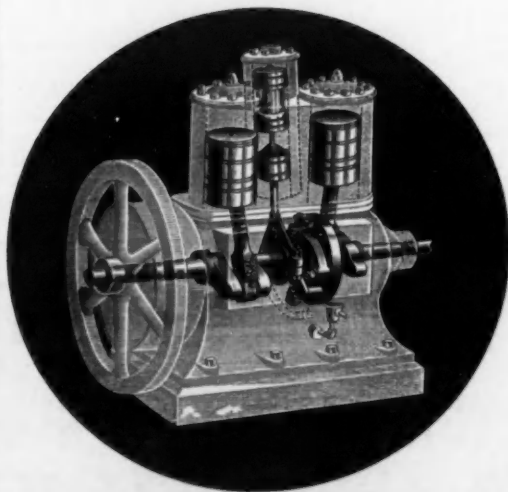
UPRIGHT AND HORIZONTAL SHAFTS.

SPECIALLY DESIGNED and ADAPTED for Driving

PAPER and PULP MILL POWER PLANTS.

Our new Wheels secure a remarkably high guaranteed percentage, and wonderful steadiness of motion, under variable loads in practice. It affords an unequalled concentration of power within a small space; and an unprecedented high velocity for a given power. Its easily and quickly operated balanced gate affords prompt and efficient control by a governor, and consequent fine regulation. These wheels are operating in many of the finest paper mills of this country, several companies using Twenty to Thirty-Two Leffel Wheels each. We guarantee satisfaction where others fail. Please send for our latest catalogue, Prices and Terms.

THE JAMES LEFFEL & CO., SPRINGFIELD, OHIO, U. S. A. AND NEW YORK CITY.



A BUSINESS PROPOSITION!

Any purchaser, so desiring, is welcome to have his engine tested by his own expert at our shops before shipment, and may accept or reject the engine on that test before incurring the expense of installation.

THE WESTINGHOUSE ENGINE.

THREE TYPES.

COMPOUND, 5 to 1,000 H. P.—Unequaled simplicity, high efficiency and moderate cost.

STANDARD, 5 to 250 H. P.—A high-class automatic, indorsed by thousands of users.

JUNIOR, 5 to 75 H. P.—A durable and efficient automatic engine at a low price.

THE WESTINGHOUSE MACHINE CO.,

Pittsburg, Pa., U. S. A.

CATALOGUE ON APPLICATION.

SELLING OFFICES:

25 Cortlandt Street, New York, N. Y.
171 La Salle Street, Chicago, Ill.
53 State Street, Boston, Mass.
Westinghouse Building, Pittsburg, Pa.
210 Drexel Building, Philadelphia, Pa.
27 College Street, Charlotte, N. C.

21-23 Fremont Street, San Francisco, Cal.
259 Main Street, Salt Lake City, Utah.
Wonders Building, Grand Rapids, Mich.
All offices of the Westinghouse Electric and Mfg. Company.
AND ALL FOREIGN COUNTRIES.

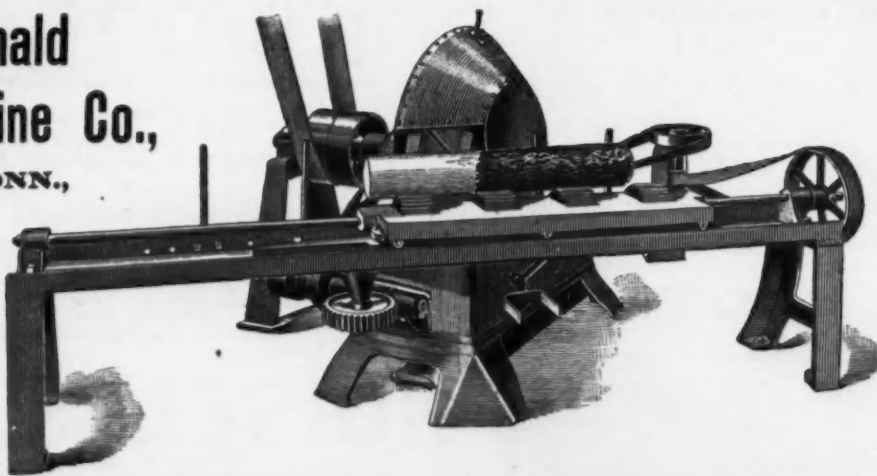
Hadley & McDonald Machine Co.,

SHELTON, CONN.,

MANUFACTURERS OF

4 ft. Barkers.

Great saving of Labor, Wood, Power and Time.
Feels equally well running backward or forward.
Wood peeled in 4 foot lengths saves Power, Time, Sawdust, Splinters, &c.



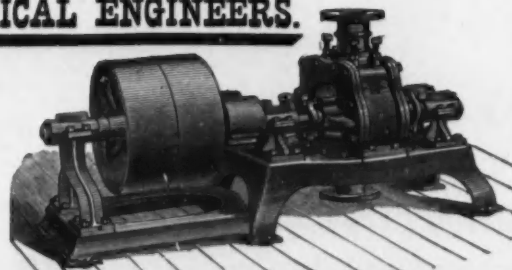
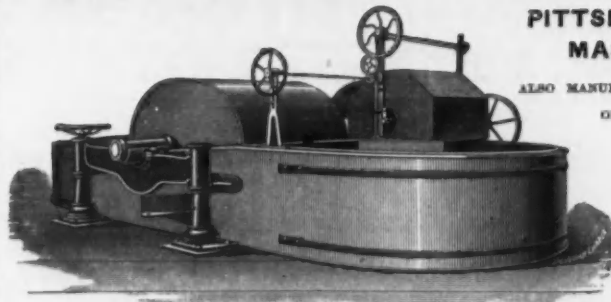
E. D. JONES & SONS CO.

MILLWRIGHTS AND MECHANICAL ENGINEERS.

Paper Mill Plans a Specialty.

PITTSFIELD, MASS.

ALSO MANUFACTURERS OF



IMPROVED PATENT RAG ENGINES, DUSTERS, ELEVATORS, ETC.

CROCKER'S

Rotary Pumps and Turbine Water Wheels.

SHAFTING, PULLEYS, HANGERS AND GEARING.

A NEW "CORLISS" ENGINE.

Embodying many marked IMPROVEMENTS, Resulting in the production of the MOST EFFICIENT and ECONOMICAL POWER in the World!



THE "FISHKILL CORLISS" ENGINE

Has the indorsement of many of the leading Manufacturers and great Corporations of the United States, as well as high Testimonials from eminent Engineers.

Also Boilers, Shafting, Pulleys and everything necessary for a complete Steam Power Plant.

DIRECTORY.

Cards under this heading will be charged for at the rate of \$15 per annum for each card of three lines or less. Each additional line \$5.

Architects.

BUSS, EDWARD A., Mill Engineer. Specialties: Paper Mill Work and Water Measurements. 85 Water st., Boston, Mass.

TOWER, ASHLEY B., successor to D. H. & A. B. Tower—Designs for Paper and Fibre Mills, Surveys and Plans for Mill Sites. Valuations of Mill Properties. Holyoke, Mass.

Bale Ties.

WILSON, H. P. & H. F., Manufacturers of Steel Wire Bale Ties, for baling all compressible material, 577 and 579 Tenth ave., New York City.

Baling Presses.

RYTHER MANUFACTURING CO., Office and Factory, 45 Mill Street, Watertown, N. Y.

Dandy Roll, Fourdrinier & Other Wire Mfrs.

HUCHANAN, BOLT & CO., Patent Seamless Wove and Laid Dandy Rolls. Holyoke, Mass.

THE GLEESON WIRE CLOTH MFG. CO., manufacturers of Fourdrinier Wires; Cylinders and Dandy Rolls made and repaired; Cylinders covered at mill; Lettering and Watermarking promptly done. Harrison, N. J.

MALTBY, F. A., Troy, N. Y., Manufacturer of Fourdrinier, Cylinder and Washer Wires. Cylinder and Dandy Rolls recovered.

Jute Butt Brokers.

CABOT, RAY & CO., 81 Water st., New York.

Oils.

DINGEE, M. H., & CO., The Royal Brands of Lubricating Specialties; especially prepared for Paper Mills. 289 Water st., New York.

Paper Clays.

BARBER, CHAS. B., 5 Beekman st., New York.

Paper and Paper Makers' Supplies.

CLARK, CHARLES S., News Paper in Rolls for Perfecting Presses; Book, Plate and Chromo Paper. Potter Building, 95 Park row, New York.

HEWITT, C. B. & BROS., Printing, Wrapping Building Papers. 48 Beekman st., New York.

HULBERT, H. C. & CO., 53 Beekman st., N. Y.

MURPHY, JOHN J., 47 John and 6 Dutch sts., N. Y.

Paper Makers' and Paper Stainers' Colors.

HUBER, J. M., Manufacturer and Importer of Carbons, Pulp Colors, Orange Mineral, Ultramarine, Paper Blue. 289 Front st., New York.

Paper Manufacturers.

DIAMOND MILLS PAPER CO., White and Colored Tissues, Copying Paper, 44 Murray st., N. Y. Send for Samples of the new "Mikado" Tissue Paper.

JERSEY CITY PAPER CO., Fourdrinier Tissues, White, Colored and Copying; Roll Tissues, all widths, to order, Cornelison ave. and Montgomery st., Jersey City, N. J.

ORIENT CARD AND PAPER CO., Pawtucket, R. I., Enamelled Lithographic Papers, Plate Papers, Chromo Boards, Glazed Papers, Cardboards, Lithograph and Varnish Label Papers.

ORR & CO., Printing and Hanging Mills at Troy, Roll Papers a Specialty, Office, 132 Nassau st., N. Y.

STOEVER, CHAS. M. & CO., Manufacturers of and Dealers in Book, News, Writing and Manila Writing and Wrapping Papers. 290 Minor st., Phila.

Printed Wrapping Paper.

O'KEEFE, THOS. A., Printed Wrapping, 48 and 50 Duane st., New York.

Rags, Paper and Paper Stock.

ATTERBURY BROS., 140 Nassau st., New York.

BOYLE, LUKE, 303 South Fifth ave., New York.

DARMSTADT & SCOTT, 257 Front st., New York.

ELLIOT, A. G. & CO., Paper and Paper Stock, 22 and 24 South Sixth st., Philadelphia, Pa.

FITZGERALD, J. M., 135 & 137 So. Fifth ave., N. Y.

FLYNN, MICHAEL, 61 Congress st., B'klyn, N. Y.

HILLS, GEO. F., 24, 24 & 26 Roosevelt st., N. Y.

JACOBS, ISAAC B., 82 Ave. B, New York City.

LIBMANN, JOSEPH, & CO., New Rags a Specialty, 191 and 193 South Fifth ave., N. Y.

LIVERPOOL MARINE STORE CO., Liverpool, England. L. M. S. Brand, Manila, Rope and Star Brand.

LYON, JOHN H., & CO., 10 and 12 Reade st., N. Y.

MCGUIRE, MICHAEL, 100 and 108 Tenth ave., N. Y.

MCQUADE, ARTHUR J., 535 & 537 E. 13th st., N. Y.

METZ, PHILIP, 49 Ann st., New York.

OVERTON, E. H., & SON, 104 Times Bldg., N. Y.

PIONEER PAPER STOCK CO., Packers and Graders of Paper Stock, 220 & 224 S. Despardine st. and 105 and 107 Law ave., Chicago. PERRY KRUS, Pres't.

RAU, G., Times Building, Rooms 112 and 113, N. Y.

SMITH CO., THE JOHN M., 440 Water st., N. Y.

SMITH, THOMAS, Cotton and Woolen Rags, Rope, Bagging, Rubber and Metals, 73 & 75 Pike Slip, New York.

SIMMONS, JOHN, & SON, Wholesale Dealers in Paper and Rags, 28 and 30 Decatur st., Phila., Pa.

WARD, OWEN, & SONS, 448 & 450 W. 39th st., N. Y.

Screen Plate Manufacturers and Repairers.

APPLETON SCREEN PLATE CO., Manufacturers and Repairers of Rolled Brass and Cast Metal Screen Plate. For accuracy of work, durability of metal and price, our Plates cannot be surpassed. Write for prices, Appleton, Wis.

HARDY & PINDER, Manufacturers of Patent Cast Metal Sectional Screen Plates, Pithburg, Mass.

Sealing Wax.

BROWNE, M. C.—Especially for Paper Mills and Wholesale Paper Dealers. Holyoke, Mass.

Straw Boards.

AMERICAN STRAW BOARD CO., 102, 104 and 106 Wooster st., New York.

Toilet Paper Manufacturers.

SWIFT, M. A., & SON, Sheet and Roll Toilet. Write for Samples and Prices. Correspondence solicited. 15 Exchange st., Boston, Mass.

Waxed Papers.

THE HAMMERSCHLAG MFG. CO., Manufacturers of Waxed Paper, 332, 334 and 336 Greenwich st., New York.

THE SPARKS MFG. CO., White and Manila Tissue and Waxed Paper, Hamburg, Sussas Co., N. J. New York Office, 105 Hudson st.

Wood Pulp Grindstones.

WOOD, WALTER R., 17 Broadway, New York "Acme" English Wood Pulp Grindstones.

LOBDELL CAR WHEEL COMPANY,

Wilmington, Del., U. S. A.,

MANUFACTURERS OF

CHILLED ROLLS

For Paper Machines,

RUBBER, BRASS, COPPER, FLOUR, OIL AND INK MILLS, ETC.

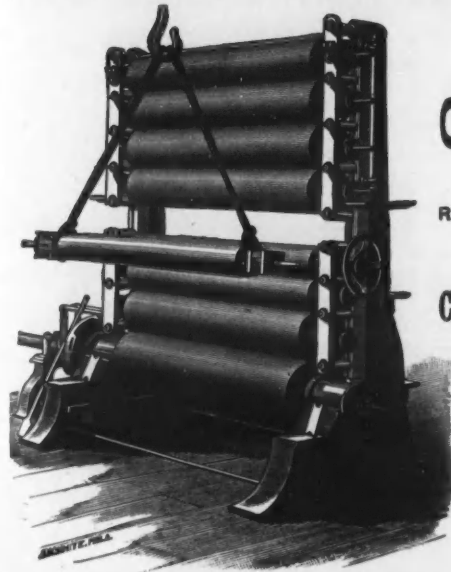
Calenders Furnished Complete,

WITH PATENT OPEN FACE HOUSINGS so arranged that any roll can be removed without disturbing the others in the stack.

ROLLS SUPPLIED FINISHED OR TURNED FOR GRINDING.

ROLLS BORED FOR STEAM OR CAST HOLLOW.

ROLLS OF ALL KINDS REGROUND.



THE LAWRENCE MACHINE CO.,

LAWRENCE, MASS.,

IMPROVED DOUBLE SUCTION

CENTRIFUGAL PUMPS,

IN IRON, BRASS OR BRONZE.

VERTICAL HIGH SPEED STEAM ENGINES, SIZES, 2 to 25 H. P.

Bronze Valves and Special Fittings for Sulphite Pulp and Paper Mills.

CONTRACTORS FOR SPECIAL MACHINERY.

Also New Improved Side Suction Pumps.

WRITE FOR CATALOGUE D.



KNOWLES STEAM PUMP WORKS,

Builders of Every Known Variety of

Pumping Machinery.

STEAM and POWER, SINGLE and DUPLEX, VERTICAL and HORIZONTAL PUMPS for

PAPER AND PULP MILLS

A SPECIALTY.

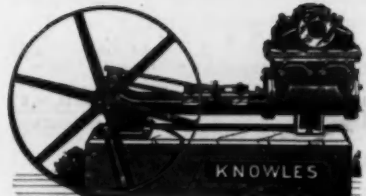
Stuff Pumps, Vacuum Pumps for Suction Boxes, Pumps for Aerophor Jumpers, Automatic Pumps and Receivers, Air Pumps and Condensers, Boiler Feed.

SEND FOR NEW ILLUSTRATED CATALOGUE.

183 DEVONSHIRE STREET, BOSTON.

93 LIBERTY STREET, NEW YORK.

163 SO. CANAL STREET, CHICAGO.



Knowles Suction Box Vacuum Pump.

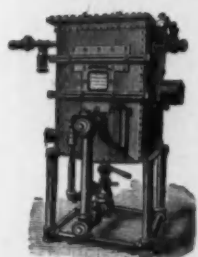
FOR FOURDRINIER PAPER MACHINES.

Successful Manufacturers are wont to investigate fully before adopting any mechanical appliances, and it is to such that we sell our Vacuum Feed Water Heater and Purifier, the Webster Separator, and Williams Vacuum System of Steam Heating. We will be pleased to send you Catalogues of these.

Warren Webster & Co.,

Camden, N. J.

NEW YORK—20 Cortlandt St. CHICAGO—Woodcock Building.



CHAS. M. JARVIS, Pres't and Chief Engineer. GEO. H. BAGG, Secretary.

BURR K. FIELD, Vice-Pres't. F. L. WILCOX, Treasurer.

THE BERLIN IRON BRIDGE CO.,

Engineers, Architects and Builders of Iron and Steel Bridges, Buildings, Roofs, Etc.

SEND FOR ILLUSTRATED CATALOGUE.



INTERIOR OF PULP MILL FOR THE MANUFACTURING INVESTMENT CO. AT MADISON, ME.

The above illustration is taken direct from a photograph and shows the interior of a Pulp Mill designed and built by us for the Manufacturing Investment Co., at Madison, Me. The photograph is taken in the basement, so as to show the construction of the iron posts and iron girders supporting the floors. The entire framework of the building is made of iron, and the heavy loads of pulp, paper, &c., are carried entirely by these iron posts and girders. The building is enclosed by a light brick wall placed between the iron posts.

OFFICE AND WORKS: EAST BERLIN, CONN.

LEVIATHAN BELTING,

Running a Beating Engine, will last longer and do more work than any belt made.

UNAFFECTED BY HEAT, STEAM OR WATER.

BELTS FOR MAIN DRIVING AND WORK OF A HEAVY NATURE A SPECIALTY.

MAIN BELTING COMPANY,

SOLE MANUFACTURER.

1219-1225 Carpenter Street, Philadelphia. 248 Randolph Street, Chicago. 120 Pearl Street, Boston.

AMOS H. HALL'S

Cedar Vat & Tank Factory.

North Second Street, above Cambria. PHILADELPHIA, PA.



Drummers, Stuff Chests, Broken Tubs, Straw Kettles, Boiling and Rise Tube, Water Tanks, &c., FOR PAPER MANUFACTURERS.

Down-Town Office: 140 Chestnut St., cor. Second.

SPECIAL NOTICE.

Hofmann's Treatise ON Paper Making.

IN 1873—twenty-two years ago—Carl Hofmann first published his TREATISE ON PAPER MAKING. He was then, and for some years had been, a practical paper maker in America. His experience in the trade abroad, as well as in this country, and his technical education and knowledge enabled him to be specially adapted for the work; hence "Hofmann's Treatise on Paper Making" took high rank at the start, and soon became a standard work on the subject throughout the world. It was published in English, German and French, and had wide sale in all three languages.

As years passed it became the standard work, and for the past decade copies have sold at large prices, often as high as \$30 each, and occasionally for more money. The original book consisted of 422 pages, 8 1/4 by 11 inches in size. Mr. Hofmann returned to Germany more than eighteen years ago and settled in Berlin. He established The Papier Zeitung, and in due course, about seven years ago, began to write his second and latest Treatise. Thus far he has printed and published probably 1,300 pages in German, and in parts of forty-eight pages, including cover, profusely illustrated by wood cuts. When finished the book will consist of about 1,000 pages (pages size same as in first book), illustrated by 1,500 wood cuts.

We have contracted to translate and publish the work in English in twenty parts, of about eighty pages each, at intervals of not less than sixty days, and at a cost of one dollar each, in advance, for each and every part. When the enterprise is completed the twenty parts will sell, unbound, for twenty dollars. The binding will be extra. Subscribers can themselves have the parts bound, or have us bind them at extra expense; but it should be noted that no money will be saved by waiting until THE TREATISE is completed and bound.

"PART THREE"

Is Now Ready for Delivery.

Subscribers can order one Part, or five, ten or twenty Parts, if preferred; cash should accompany order.

Every manufacturer of paper or pulp, every superintendent of a mill, every machine tender, every man whose life-work consists in making or selling paper in the United States, Canada, and all over the world, except Great Britain and the Continent of Europe, should send us his subscription. We will furnish each part postpaid. We will print and ship the English Edition for the European market, but cannot accept orders therefrom.

HOWARD LOCKWOOD & CO., Publishers, New York.

BOSTON BELTING CO.,

JAMES BENNETT FORSYTH, M'g Agent and General Manager,

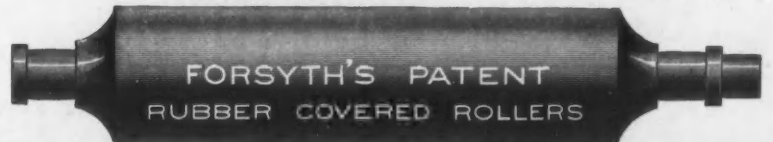
ORIGINAL MANUFACTURERS OF

RUBBER BELTING, HOSE, PACKING, DECKEL STRAPS, SCREEN DIAPHRAGM GASKETS,

"AMERICAN UNDERWRITERS" FIRE HOSE,

TRADE MARK.

AND ALL KINDS OF MECHANICAL RUBBER GOODS.



FORSYTH'S PATENT RUBBER COVERED ROLLERS

256, 258, 260 Devonshire St., BOSTON.

100 Chambers St., NEW YORK

CHENEY BIGELOW WIRE WORKS,

SPRINGFIELD, MASS.

Cylinder Molds, Fourdrinier Wires,

DANDY ROLLS,

BRASS, COPPER AND IRON WIRE CLOTH.

BABCOCK & WILCOX BOILERS

THE BABCOCK & WILCOX CO.

29 CORTLAND ST. NEW YORK

SEND FOR BOOK ON STEAM.

HARRINGTON & KING PERFORATING CO.

MANUFACTURERS OF PERFORATED SHEET METALS OF ALL KINDS FOR MILLING & MINING MACHINERY and all other uses. CHICAGO, ILL. U.S.A.

Perforators of All Metals.

PAPER MILL WORK A SPECIALTY. Perforated Iron, Copper and Brass for Vats and Drainer Bottoms, Washers, Pulp Screens, False Bottoms, Stock Boilers, both Rotary and Stationary; Sand Traps, Button Catchers, Suction Box Covers, Shower Pipes, &c., &c. Screens and Filter Plates, Perforated Tin and Brass of all sizes. Iron, Steel, Copper, Brass and Zinc punched to any size and thickness required. CORRESPONDENCE SOLICITED. SATISFACTION GUARANTEED.

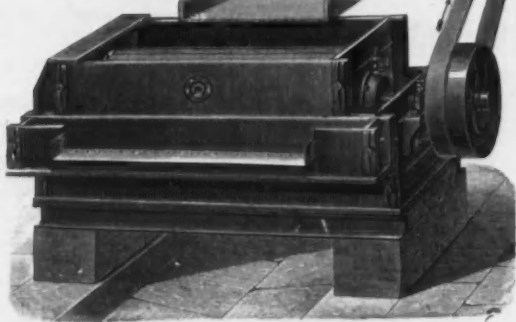
THE HARRINGTON & KING PERFORATING CO.

MAIN OFFICE AND WORKS: 254 and 256 North Union St., CHICAGO, ILL.

EASTERN OFFICE: 284 Pearl St., cor. Beekman, NEW YORK.

THE "WANDEL" Rotary Sulphite Pulp Strainer.

PATENT OVER 800 ALREADY SOLD.



ADVANTAGES.

Largest straining surface, combined with small requirement of room.

Unsurpassed straining capacity.

Absolutely reliable and noiseless work.

No contact of the Pulp with iron parts.

Practical construction.

Simple, durable, perfect.

Price very moderate.

THE "WANDEL" ROTARY SULPHITE PULP STRAINER is the only system now adopted by the most important Sulphite Fibre Mills of Europe.

FOR FURTHER PARTICULARS APPLY TO **CHR. WANDEL, Reutlingen, Germany,** OR **GEO. HAMILTON, 74 Wall Street, New York.**

THE RICE KENDALL CO.,
Manufacturers and Dealers
IN
PAPER AND MILL SUPPLIES.

FULL LINE OF
News, Book and Fine Papers,
Manilla Papers and Twines.
AGENTS FOR THE
American "Excelsior" Felts, Piece Felting
and Jacketing.
Crocker's American Matrix Paper,
Crane & Co.'s Bond and Parchment Papers,
Crane Bros.' Ledger, Japanese and All
Linen Papers,
Tilston & Hollingsworth Co.'s Plate Papers.
91 FEDERAL ST. BOSTON, MASS.

WATSON & CO.,
Paper Manufacturers' Supplies.

AGENTS FOR
CROWN FILLER.
Whitehead's Felts and Jacketing,
Curtius' Ultramarine,
Ex. Ex. Ex. Heavy Dryer Canvas.
Vanderbilt Building, 132 Nassau Street,
NEW YORK.

NEW HAVEN MFG. CO.,

New Haven, Conn.,
Manufacturers of
**Lathes,
Planers,
Drills,
Slotters,
ETC.**

**IMPROVED MACHINES
FOR MAKING
SQUARE PAPER BAGS.**

By our PATENT methods of obtaining slack
paper, severing bag lengths and applying paste, we
are enabled to make perfect bags at a speed not
attained by any other machine on the market. For
full information and prices address

The Diamond Paper Bag Co.,
WILMINGTON, DEL., U. S. A.

G. A. CHENEY,
—IMPORTER OF—
PAPER STOCK AND SIZING,
58 & 60 Federal Street,
BOSTON.

E. HATTON & Co.,
—IMPORTERS OF—
**Rags, Jute, Paper Stock
—AND—
WOOD PULP.**
3 to 9 Bookman St. (S. W. Corner
of Nassau), New York.

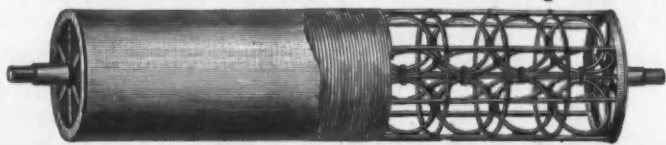
**R. H. OVERTON
& SON,**
Times Building, Room 104, New York,
IMPORTERS, PACKERS AND DEALERS IN
Paper Makers' Supplies
PACKING WAREHOUSE,
246 BEDFORD AVENUE, BROOKLYN.

FELIX SALOMON & CO.,
BENNETT BUILDING,
Nassau, Ann and Fulton Sts., New York.
IMPORTERS OF AND DEALERS IN
ALL GRADES OF
**PAPER STOCK
AND
WOOD PULP.**

H. C. HULBERT & CO.
No. 53 BEEKMAN STREET, NEW YORK,
IMPORTERS OF AND DEALERS IN
PAPER MAKERS' SUPPLIES.

Sole Agents for over Twenty-five Years for the sale of
"STUBBINS VALE MILLS" FELTS and JACKETING,
PEARL HARDENING and "BERGER" ULTRAMARINE.
Agents for "REFINED ALUM" for Sizing and Bleaching.
CANVAS DRYER FELTS, Heaviest and Best, in all Widths.

DEWITT WIRE CLOTH CO. 17 Warren St., New York;
703 Market St., Philadelphia.
SOLE MANUFACTURERS OF
Whitehead's Patent Dandy Roll.



Also Manufacture FOURDRINIER and CYLINDER WIRES. Cylinders and Dandy
Rolls made and repaired. Lettering and Designing on Dandy Rolls executed
neatly and promptly. Dealers in all kinds of Paper Mill Supplies.

ATTERBURY BROTHERS,
IMPORTERS OF AND DEALERS IN
**Cotton and Linen Rags, Flax Waste, Bagging,
AND ALL KINDS OF PAPER STOCK.**
MORSE BUILDING, 140 NASSAU STREET, NEW YORK.

No. 156 FIFTH AVENUE,
N. W. Cor. 5th Ave. and 30th St., NEW YORK.
FIDELITY PAPER CO.,
—DRYER FELTS—
These Felts are running on over 500 Machines. Send for prices by yard or pound.

**NATRONA POROUS
ALUM,**
FOR PAPER MAKERS' USE.
The Strongest and Purest Alum made and the only Alum made from
Kryolith Alumina.

PENNSYLVANIA SALT MFG. CO.,
W. M. HILLCOTT & SONS, Baltimore, Md. } Agents.
MORRY & CO., Boston, Mass. } 115 CHESTNUT STREET,
GEO. H. EMBREE, New York. } PHILADELPHIA, PA.

The Value of Color
is known to every paper maker.
Pearl Alum
is made expressly to secure good color.
HARRISON BROS. & CO.,
PHILADELPHIA,
CHICAGO,
NEW ORLEANS,
NEW YORK.

CHARLES S. BARTON, President and Treasurer. GEORGE B. WITTER, Secretary.
RICE, BARTON & FALES MACHINE AND IRON CO
(At Old Stand of Rice, Barton & Co.),
WORCESTER, MASS.,
—MANUFACTURERS OF—

PAPER MACHINERY,
HILL'S PATENT SQUARE AND DIAGONAL CUTTERS,
Iron and Brass Castings, Chilled Iron and Paper Calendar Rolls, Rag Engines,
Rag Cutters, Steam Pressure Regulators, &c.
HYDRAULIC PRESSES, FROM 8 TO 14 INCH PISTON.

JOHN H. LYON & CO.,
—IMPORTERS AND DEALERS IN ALL GRADES OF—
PAPER STOCK,
And Dealers and Packers of all Grades of
WOOLENS FOR SHODDY AND FLOCK PURPOSES.
Office: 10 & 12 Reade Street,
WAREHOUSE: 35 PARK STREET, NEW YORK.

CAMERON STEAM PUMP
SIMPLE, RELIABLE, COMPACT, DURABLE.
NO OUTSIDE VALVE GEAR.
THE A-S-CAMERON STEAM PUMP WORKS.
ADAPTED FOR ALL PURPOSES.
FOOT OF EAST 23rd STREET, NEW YORK.

LOCKWOOD PRESS, Northwest Corner of Bleeker Street and West Broadway, New York.

BULKLEY, DUNTON & CO.,
Nos. 75 AND 77 DUANE STREET, NEW YORK,
"EXCELSIOR" FELTS PIECE FELTING
and JACKETING

For Economy, Durability and Good Results they are Unequaled. Long Established and Well Known
A Trial is Solicited from Manufacturers not already Using them.
EXTRA HEAVY CANVAS DRYERS.
SATISFACTION GUARANTEED. SEND FOR PRICE LIST.

Wm. Cable Excelsior Wire Mfg. Co.

No. 43 Fulton Street,
NEW YORK.
MANUFACTURERS OF

Superior Fourdrinier Wires, Brass, Copper and Iron Wire,
Cylinder Wires, Dandy Rolls,
Brass, Copper and Iron Wire, Cylinder Molds,
Cloth of every description. Best Quality of Wire Rope.

WRITE FOR PRICE LIST.

EASTWOOD WIRE MFG. CO.,
BELLEVILLE, N. J.,
—MANUFACTURERS OF—

FOURDRINIER WIRES WITH PATENT
SAFETY EDGE.
Improved Patent Dandy.



Patented August 12, 1884.
BRASS, COPPER AND IRON WIRE CLOTH OF EVERY DESCRIPTION.
SEND FOR SAMPLES AND PRICES.

ESTABLISHED 1826.
LEWY BROTHERS,
German and Russian Linen Rag Packers,
BERLIN and KOENIGSBERG, Germany.
MORSE BUILDING, No. 140 Nassau St., New York.

RODNEY HUNT MACHINE CO
Engineers, Machinists, Iron and Brass Founders.
IRON TURBINE WATER WHEELS
VERTICAL and HORIZONTAL
HEAD GATE GEARING, REGULATORS and everything
pertaining to WATER WHEELS
MILL WORK
ORANGE MASS.
ALSO ROTARY FIRE PUMPS UNDERWRITERS' SIZES.

INCLUDING
Rotary Filling Mills, Cloth Washers
Dolly Washers for Hosiery Goods, Crank Filling Mills,
Wool Washers, Dusters, Gies, Dye Tubs, Blue Vats, etc.

ROLLS OF ALL KINDS GRIND BY "POOLE" PROCESS.
Machinery and Machinery CASTINGS OF ALL KINDS.
Pattern Making and Job Work Desired.
PAPER DRYERS.
PAPER AND PULP MACHINERY.
SEND FOR GEAR CATALOGUE.
We are fully equipped to build light and heavy SPECIAL MACHINERY
And would be pleased to furnish estimates.

THE TOWNSEND FURNACE AND MACHINE SHOP,
RUFUS K. TOWNSEND, Proprietor. **ALBANY, N. Y.**

C. K. WILLIAMS & CO., BOSTON, PA.,
Miners and Manufacturers of Mineral Pulp, American Talc, Agalite Royal Hardening, Keystone,
Imported and American Clays, Yellow and Chrome Ochres, Venetian Reds, Red Oxides, &c.
PUT UP IN PACKAGES TO SUIT THE CONVENIENCE OF PAPER MAKERS.
ESPECIALLY ADAPTED FOR PAPER MAKERS' USE

T. P. SHERBORNE, Jr. J. B. WILSON.
STAR CLAY COMPANY
MINERS AND MANUFACTURERS OF
White China Clay.
OFFICE AND WORKS:
Mertztown, Berks County,
PENNSYLVANIA.
ESPECIALLY ADAPTED TO PAPER MAKERS' USE.