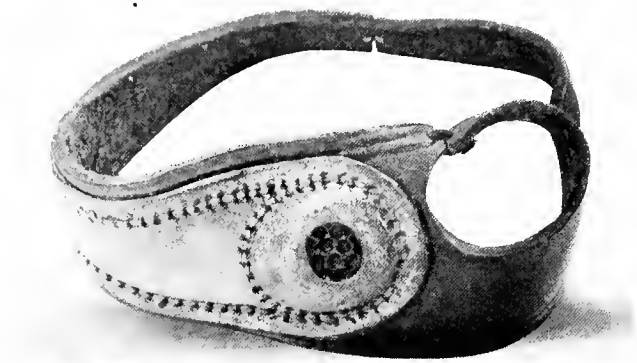
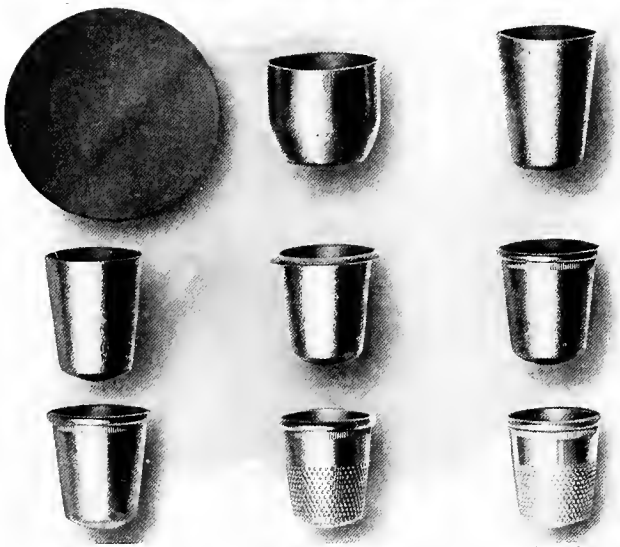
MERCHANDISE
MANUAL
SERIES

NOTIONS

SOUDER





Courtesy of Scoville Manufacturing Company

Sailmaker's Thimble

Stages in the Manufacture of a Thimble

MERCHANDISE MANUAL SERIES

NOTIONS

BY

M. ATTIE SOUDER, B.S.

Former Supervisor of Domestic Art, Minneapolis Public Schools; Director of Household Art, State Manual Training Normal College, Pittsburg, Kan.

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This Series is Dedicated

to Mrs. Henry Ollesheimer, Miss Virginia Potter, and Miss Anne Morgan, who desiring to give greater opportunity for advancement to commercial employees and believing that all business efficiency must rest upon a solid foundation of training and education gave years of enthusiastic service to the testing of this belief.

MERCHANDISE MANUAL SERIES

EDITOR OF SERIES

BEULAH ELFRETH KENNARD, M.A.

Formerly Director of Department Store Courses, New York University; Chairman of Committee on Merchandise Courses for New York City Public Schools; Educational Director, Department Store Education Association

CONSULTING EDITOR

LEE GALLOWAY, PH.D.

Professor of Commerce and Industry, Head of Department of Management, and formerly Director of Training School for Teachers of Retail Selling, New York University; formerly Educational Director, the National Commercial Gas Association

EDITOR'S PREFACE

As "Department Store Merchandise Manuals" these books were originally written for salespeople and were designed to give them reliable information concerning the sources and manufacturing processes of the merchandise which they handle. When it was necessary to deal with scientific or historical material it was treated as simply and concretely as possible and the point of view taken was that of business rather than that of the school or laboratory. In this form they have proved their practical value not only to the department store salesperson but in the specialty shop. It has been pointed out, however, that the material has a wider scope than that of sales manuals alone.

As reference books, librarians will find the short, clear statements and full indexes invaluable.

As an encyclopædia of merchandise the series contains scientific information in a simple, compact form which makes it available for children and others to whom the subjects treated are unfamiliar.

As textbooks they are adapted for use in commercial schools, high schools, night schools, settlement classes, and by teachers of household arts and domestic science.

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Mr. Nutt of the Walk-Over Shoe store, Des Moines, Iowa.
Wm. Bliss & Co., 114 Fifth Ave., New York.
Vienna Button Factory, Muscatine, Iowa.

For illustrations thanks are due to Miss Helen Roberts, American Museum of Natural History; J. Wiss and Sons Company, American Pin Company, Spool Cotton Company, Crompton Knowles Loom Works, Warren Featherbone Company, Omo Manufacturing Company, Waldes and Company, Scoville Manufacturing Company, and Art in Buttons.

M. Attie Souder.

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Chapter I

THE NOTION DEPARTMENT

Variety of Stock

The Notion Department contains merchandise assembled according to its uses and made of the most varied materials. To most people it looks like a mixture of small articles which have no relation to each other. It sometimes seems to be the place for all the things that cannot be classified under any other name.

In spite of its variety, however, the stock of this department can be divided into groups which are clear enough to the salesperson if not to the customer. The articles are small, but they illustrate the importance of small things as they may perfect a beautiful costume.

In studying this department, therefore, one should have a clear idea of the different divisions of the

stock; the things contained in each division, and the changes in fashion which make changes necessary in these important trifles.

Necessity for Classification of Stock

A classification of stock is nowhere more necessary, as it aids in finding articles quickly and in suggestive selling. A knowledge of conveniences which are just being introduced in the store or of changes in dress accessories which are suitable for a new style of collar or girdle or skirt will not only make extra sales but will give the customer added interest in the department.

Every one likes to hear of new ideas in the line of their work, and both dressmakers and women who make their own clothes are eager to know the latest style even if they do not immediately adopt it.

Experience is a good teacher, but it is not always reliable unless one has some standard to use as a guide. Some people get one idea from a certain experience while their neighbors get an entirely different one because their minds work differently. Discussions of one's own experience with some one else is always helpful. That which we call knowledge or science is simply the combined experience of many people expressed by some one who can state it in a clear and orderly manner.

Arrangement of one's stock is not very different from the arrangement of one's ideas. Every time we put a thing where it belongs we see more clearly its use and its relation to other things around it. If there are a number of articles in one class but all slightly different from one another in style, or size, or material, it is well to keep these differences in mind and, when possible, the suitability of each for certain purposes. This kind of knowledge is what distinguishes the saleswoman from the "counter server."

Divisions of the Department

We may divide the Notion Department into six general sections, though no two stores make exactly the same divisions or include all of the same articles. These sections are:

Sewing Tools and Supplies
Dress Accessories and Findings
Hair Goods
Shoe Supplies
Sundries
Buttons

Part I—Sewing Tools and Supplies

INTRODUCTORY TO PART I

The variety of articles in the sewing tools and supplies division is so familiar to both saleswoman and customer that these goods are often sold and bought with very little consideration of their quality, serviceability, or special adaptability to the purchaser's needs.

They are, however, of greater importance to the comfort and satisfaction of the woman who makes clothing than many more costly articles.

Scissors and shears with a fine cutting edge, needles of the right size, and pins suitable for the dressmaker's purpose are matters which will make the nervous occupation of sewing easy; while dull scissors, needles too small or too large, and pins which bend or rust make it unnecessarily hard. Machine oils, thread, and silk are equally important.

The saleswoman who has learned to judge the qualities of her merchandise because she knows how it is made and what are the standards of the manufacturers, may be helpful to all her customers and increase the reputation of the store for expert service.

Chapter II

SHEARS AND SCISSORS

Differences

Shears and scissors, although similar in purpose, have, as recognized by the trade, certain well-defined characteristics. Shears are usually more than 5½ inches long, with handles differing both in size and shape; the one handle round to fit the thumb, and the other oval to fit the fingers. Scissors are less than 7 inches in length and have ring handles of the same size.

Types

There are many different makes of shears and scissors and a great variety of styles, but there are only four distinct types, as follows:

Cast iron, made in the United States and Europe.
Cast steel, made in the United States and Europe.
Forged steel, originally made in Europe; now made in the United States.
Steel laid, made in the United States.

Materials

Shears and scissors are primarily tools for cutting, and as such their most important requisite is a material that will give this quality. Steel and iron are best adapted for this purpose. The various forms used are cast iron, cast steel, malleable iron, and crucible carbon steel.

Cast iron is pig iron melted and molded into shape. It contains 3 per cent carbon or more. Cast iron makes the poorest grade of scissors and shears. It is brittle, breaks easily, and neither takes nor keeps a good cutting edge.

Cast steel contains a smaller amount of carbon and can be made into a better looking tool.

Malleable iron differs from cast iron in that it contains very little carbon, has greater strength, and can be altered in shape by hammering. It has been used very extensively for the handles and backs of steel laid shears.

Crucible carbon steel is very strong and very hard, which makes it possible to preserve a fine cutting edge on a tool. It is always used in the manufacture of high grade forged steel scissors and shears, and for the blades of the steel laid.

Cast Iron and Cast Steel

Cast iron and steel shears and scissors are made, as

the name indicates, by casting or running molten metal into forms or molds of sand; this method produces the cheapest grades of shears and scissors, good only for paper cutting. The cast iron are apt to break when dropped or subjected to abrupt changes of temperature. Cast steel is somewhat better, especially in finish, but although made of steel, it is an inferior grade that does not temper well, so that the cutting edge does not remain sharp so long as in the forged steel or the laid steel types.

Forged Steel

High-grade shears and scissors are either forged steel or laid steel.

In the forged steel type the entire tool is made of crucible carbon steel. This is an expensive and difficult process. The Germans have excelled in this, probably due to the fact that for generations they worked under the home industry system, where a given family took a specific part in the manufacturing, thus learning secrets of the best methods and acquiring great skill in execution.

The first step in the manufacture of the forged steel shears is making the blanks, the first shaping of the metal into blade form. This is done by a die. The upper plate of the die which is very heavily weighted is dropped upon the bar of steel which lies upon the under

plate. (See Figure 1.) This weight is raised and lowered upon the bar many times, making each time something that looks a little more like a half of a pair of scissors or shears. From this point on the process is very similar to the treatment of steel laid blanks, and will be described later.

Steel Laid

For the steel laid shears, only the cutting part of the blade is made of the fine grade carbon steel, and this is welded to the back or frame of the blade. In the early manufacture of this type, the back or frame was of malleable iron and the two metals were welded together by very great heat and pressure. This process made very good shears, but they were not entirely satisfactory because the handles were liable to break, and the steel and iron to separate if the shears were dropped or carelessly used. Now the best American shears are made of fine crucible carbon steel welded to a stout, tough steel frame. (See Figure 2.)

For the making of these frames a forging machine is used which is similar in construction to the German machine used for forged steel, but is much larger and heavier. The metal weight weighs some twenty tons and so it is not necessary to drop it on the bar of steel so many times to forge the blanks or frames. This machine is especially adapted for making heavy shears.

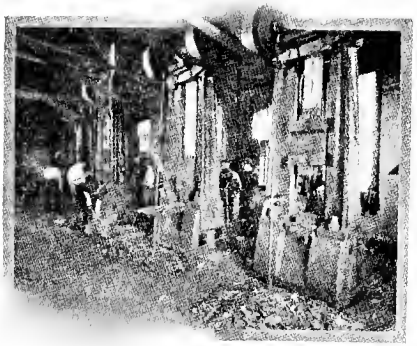


Figure 1. Steel Forging

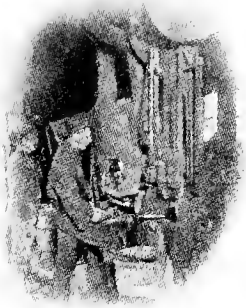


Figure 2. Welding

Figure 3. Hardening

Courtesy of J. Wiss and Sons Company

PRINCIPAL PROCESSES IN THE MANUFACTURE OF SHEARS AND SCISSORS

(See also figures facing page 12.)

The tailors' shears are the most striking example of this heavy type, some of them being 18 inches long. But it is not so well adapted to making the lighter weight tools. The German manufacturers maintain that the use of the heavy weights or drops takes the life out of the steel; that, although it is necessary to give the scissors more blows with the lighter weight drop, a better tool is produced.

After the blanks are made the succeeding processes for forged and laid steel are practically alike.

First the surplus metal is removed. Next the holes for the screws which join the blades are ground in. This is a very particular process, since the slightest variation may ruin a pair of shears.

Hardening and Tempering

Following this comes the hardening and tempering. The blades are heated to a given degree of temperature and then plunged into cold running water or oil, which hardens them and makes them very brittle. The brittleness is removed by tempering, that is, reheating in air or liquid at 330° C. Probably no other processes are more important than these two, for upon them depends the lasting and fine cutting qualities of the edge. If one blade is in the slightest degree harder than the other it cuts into the softer one, thus ruining the cutting edge. With tempering and hardening the

blade becomes warped and must be straightened, which is done by placing it on an anvil and bringing it into proper shape with many light taps of the hammer. Still it is a long way from the finely finished product. (See Figure 3.)

Grinding

The next process, grinding, gives it a more shapely appearance. Each man grinds only one part of the hundreds and hundreds of blades given him. Another man grinds another part, and so on, making many different handlings. In one factory a man was found who for twelve years had done only one kind of grinding on just one part of the blade. He could grind 8,000 blades per day. Years ago grinding was very dangerous work, for the flying particles of grindstone and steel would lodge in the worker's lungs, but now there is a suction arrangement under each wheel which draws the flying particles away from the man. The diameter of the grindstone when new is approximately six feet, but within a couple of days it is literally ground away. (See Figure 4.)

Assembling the Blades

All the processes from the bar of steel through the grinding have dealt with the blades singly. Now the blades are matched, screwed together, and carefully

adjusted, thus making a pair of shears or scissors. However, for a number of processes that follow, it is necessary to separate the blades, and in order to reassemble them easily, the operator places a number or identification mark on the inside of each blade of the same pair near the screw hole.

Plating and Final Assembling

After the blades are taken apart, all the minor irregularities and roughness left by grinding are removed by polishing; after which the blades are immersed in a strong hot alkali solution which acts as a cleansing agent preparatory to the nickel-plating. The plating is done by an electrical process. The handles of some are japanned, that is, coated with a thick, black, hard varnish, and baked.

Again the blades are reassembled. Simply to say that they are polished, adjusted perfectly, and inspected, sounds like a very simple task; but in reality it is very exacting, accurate, and painstaking. The best pair of shears may be ruined by the slightest irregularity in adjustment. It is said that the men who do the adjusting and inspecting show a very greatly decreasing ability if they are subjected to any unusually strenuous exercise, like baseball playing. Intoxication is disastrous. It takes years of experience to become efficient. (See Figure 5.)

Final inspection is done in the packing room, usually by women. Then the shears and scissors are oiled, wrapped, and packed.

Comparison of Forged Steel and Laid Steel

The best light scissors are made of forged steel, while the best heavy shears are steel laid. In the larger scissors from 4½ to 7 inches long and in the smaller shears there is little choice between the forged steel and steel laid of corresponding grades, although, speaking in very general terms, a better tool of this size can be sold for a moderate price in the steel laid. If a very finely finished tool is desired, forged steel has the advantage. The steel laid is strictly an American product, while the forged steel is made both in Germany and in the United States.

Suggestions as to Care

Always keep shears and scissors in closed cases.

Always before handing the purchaser a pair of shears or scissors, run your thumb and first finger along the inside of the blades to remove all dust. This will give more perfect action to them and also help to keep a good cutting edge.

"Firsts" or Guaranteed Shears and Scissors

"Firsts" are those shears and scissors that have passed satisfactorily all the tests of the manufacturer.

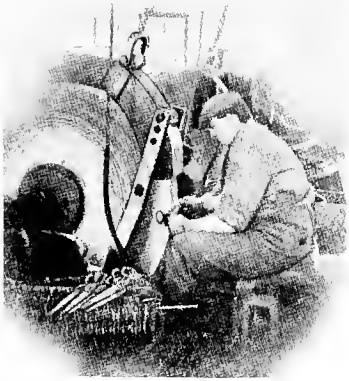


Figure 4. Grinding

Figure 5. Finishing

Figure 6. From Bar of Steel to Finished Blade

Courtesy of J. Wiss and Sons Company

PRINCIPAL PROCESSES IN THE MANUFACTURE OF SHEARS AND SCISSORS

(See also figures facing page 8.)

Generally speaking they bear the manufacturer's trademark and that means that the producer guarantees the tool.

Tests for "Seconds"

If it is the policy of a store to sell seconds, that is, shears and scissors which have some imperfection and hence rejected by the factory inspector as not up to standard, then it is very essential that the saleswoman know how to test them. Since seconds are never guaranteed by the manufacturer, the saleswoman herself should know the type to which the tool belongs, how to determine a good cutting edge and how to correct the adjustment.

For determining a good cutting edge, the method used in the factory is simple and accurate. The inspector cuts through a number of layers of cotton flannel, the thickness depending on the kind and size of the shears or scissors tested. If there is the slightest catch, they are discarded or returned for more perfect finishing.

To test for adjustment, hold the shears or scissors to the light, so that you can see between the two blades. In a perfectly adjusted pair of shears or scissors, the blades will touch only at the points and the bearings where the screw is put in. Between these two points is an open space, varying in width, but being widest just midway.

The third point is the determination of the type, steel laid, forged steel, cast steel, or cast iron. It is not good salesmanship to sell a customer a steel laid or forged steel type when a cast steel or cast iron type would serve the purchaser's purpose just as well or better.

To distinguish forged steel from steel laid is difficult, but to explain how to do it is more difficult. However, the following suggestion will help: Look carefully at the outside of the blade about one-eighth of an inch from the cutting edge. If you find tiny dots or marks at intervals you are safe in inferring that it is a laid steel shear, the dots or imperfections showing where the steel blade and frame are joined.

The cheaper scissors and shears, like cast iron or cast steel, usually have a rivet to hold the blades together, while in all high-grade tools, the blades are held together by a screw.

Suggestions to the Purchaser

The saleswoman who induces a customer to keep a pair of cheap shears for paper cutting and thereby save the better ones is performing a distinct service for that woman. Furthermore, the service is increased if she induces the customer to provide special tools for special cases, since the average household needs a pair of good shears 7 to 8 inches long, a pair

of scissors 4 to 6 inches long, and a pair of short, sharp-pointed scissors for clipping basting threads and ripping. In many cases the addition of embroidery and buttonhole scissors proves economical. Blunt-pointed scissors are made for men to carry in their pockets and for children to use in cutting. Shears and scissors come in nests of from 2 to 6 of varying sizes which are very convenient.

A good tool with proper care will give practically perfect service, but even the best tool, not so cared for, is apt to prove a bad sale for the saleswoman and the store; therefore, the following few suggestions as to the care of shears and scissors will be of assistance.

Shears and scissors should never be dropped on the floor.

When cutting, a long stroke or cut is desired for two reasons: a greater leverage is obtained, thus lessening the strain on the shears, and a straighter cut edge is made on the material.

When shears and scissors are not to be used for some time it is wise to keep them in a chamois or felt case, to prevent rusting.

They should never be allowed to lie around, but should always be hung up, or put away in a case.

Shears and scissors must be sharpened at intervals. This must be done skilfully, as one case of poor sharpening may quite ruin a pair. Usually a first-

rate tool sharpener may be found in a good hardware store. Frequently a barber will do it to the best advantage.

A drop of oil at the screw between the blades will make the shears work more smoothly.

The freer the blades can be kept from dust or rust, the better they will cut. If the purchaser would run her first finger and thumb over the inside of the blades each time she used her pair, she would have increased service at no expense, just as the saleswoman in doing the same, is apt to present her article in better shape and thus gain increased sales.

History

The words shears and scissors, although derived from different roots, have practically the same original meaning. Scissors come from the latin "scinders," meaning to cut or cleave, while the word "shears" is traced back through the old English "sceran," meaning to cut or clip, to the old Teutonic language to the root "skar," to cut.

All the earlier forms of shears and scissors resembled the modern scissors. Bronze scissors were made as early as 1000 to 1500 B. C. by the Chaldeans and Egyptians. Steel scissors were made by the Romans about 800 B. C. In very early times they were wrought out of steel by the Chinese.

Modern Industry

Shears as the trade now designates them were first made in the United States. Seventy-five years ago Mr. Heinisch established a factory at Newark, New Jersey, and it was there that the first steel laid shears were made. Progress and improvement have marked the industry in America. Even now, however, there is a rather prevalent impression that the finest shears and scissors are "made in Germany," but this idea as to fine ware is no longer entirely justified. Today the American made product not only equals the imported, except possibly in some of the lighter scissors and fancy goods, but in the large-sized shears it surpasses the foreign makes. The magnitude of the industry in America is apparent when one knows that one factory alone makes over 500 varieties of shears and scissors, ranging from the most delicate little manicure and embroidery scissors to the heavy pruning and tailor shears. There are 90 different operations in the making of one pair and some 500 handlings.

Chapter III

NEEDLES

Types

Needles are indispensable tools in sewing. They may be divided into two groups according to their use:

Hand-Sewing Needles
Machine-Sewing Needles

Hand-Sewing Needles — Material

The best needles are manufactured from a fine grade of carbon steel, which gives them toughness and strength and yet allows them to be sharply pointed. All the best needles are manufactured at Redditch, England.

Manufacture of Hand-Sewing Needles

The modern manufacture of needles presupposes a great mass of specialized machinery and a high degree of skill on the part of the workman in some of the processes. The raw material comes in the form of great coils of steel wire of the desired size. As two needles are made at once, this wire is cut into pieces twice the length of a needle. It is straightened and

both ends are pointed. The first pointing is done automatically by machinery. Next the center of the wire is flattened and the two eyes are pressed in, after which the two needles are broken apart. Hardening and tempering follow. (See Chapter II, " Shears and Scissors " for detailed description of hardening and tempering.) These two processes are very exact and most important, for upon them largely depends the sharpness of the point and the strength of the needle. After these, comes the burnishing of the eyes so that the thread will not be cut. Then the point must be made perfect. A skilled grinder will point 100,000 needles per day. Even now, with all known precautions such as the use of vacuum systems that draw the flying particles of steel away from the operator and other devices for his protection, the grinding of the points remains a very dangerous operation. It also demands a high degree of skill.

The finishing processes of scouring and polishing make the needles ready for inspection. They are then sorted and stuck in papers which are folded and labeled. Out of $75 worth of steel wire about $1,000 worth of needles is manufactured. When one considers the apparent simplicity of the needle, it is difficult to believe that it must pass through the hands of a hundred skilled workmen, and that its journey through the factory takes from 6 to 8 weeks.

Standards in Hand-Sewing Needles

The best hand-sewing needles are all imported. The Roberts, Kirby Beard, Crowley, and Milward needles rank among the standards. In quantities they come 25 needles to a package, 40 packages or 1,000 needles in a bundle.

Tests

There are three most important points to consider in judging a needle. First, comes the matter of temper. A good needle should neither bend nor break easily. When one is selling needles for the use of children, it is best to advise a make that will bend just before the breaking point. Broken pieces of sharp steel are far more dangerous than a bent needle. A second point is the condition of the needle. Carelessly finished needles may have a rough eye which cuts the thread. A good needle when rolled on a flat surface will be straight. A third consideration is the point, which of course must be perfect.

Types of Hand-Sewing Needles

In designs and shapes there is an almost unlimited variety, a type for every kind of work. The following are the best known and most frequently used:

Type	*Size*	*Description*	*Use*
Sharps	00–12	Medium length.	Ordinary sewing.
Betweens	00–12	Shorter than sharps.	Tailors'.
Millinery	1–10	Extra long.	Milliners' and for basting.
Crewel	1–12	Very large eye. Length same as sharps.	Embroidery.
Chenille	18–28	Very large eye.	
Tapestry	18–28	Large eye; blunt end.	
Darners	1–10	Large eye.	Darning.

For those who find threading a needle difficult, the Milward Company put out a variety with what they call the calyx eye, an eye which has a slit in it, through which the thread can be slipped.

Sizes of Hand-Sewing Needles

Next to the suitability of the type of needle for a given kind of work, the size is of great importance. The same size in all makes of needles, however, does not carry the same size of thread. For example, the eye of the Crowley needle of a given number is larger than in the Milward and Roberts. There is a swell in the central part of this needle which makes a space in the cloth so that the eye of the needle with the thread passes through with ease. Therefore, one can use a smaller size needle of the Crowley than in the other makes. The smaller the needle, the larger the

number and *vice versâ*. The following chart gives approximately the size of needle best adapted for different sizes in thread, both cotton and silk:

Needles	*Six-Cord Cotton Thread*	*Silk Thread*
No. 1	Nos. 5 and 10	D
2	10 and 12	D
3	12 and 16	C
4	20 and 24	C
5	30 and 36	B
6	36 and 40	B
7	40 and 50	A
8	50 and 60	A
9	60 and 70	O
10	80 and 90	O
11	90 and 120	OO
12	120 and 200	OOO

Standards in Machine Needles

Sewing-machine needles are perhaps the cause of more real trouble to the sewing-machine manufacturer and to the consumer than any other sewing-machine accessory. The various makes of sewing-machines call for different sizes and shapes of needles. Therefore, it should be impressed upon the purchaser that she should buy needles of reliable make with the name of the machine stamped on the shank of the needle, a custom followed by all reputable manufacturers. But this is not always possible, for all sewing-machine fac-

tories put out many machines of the same model under different names. These names are often put on to suit a merchant's ideas and sometimes they are confined to a local district. In view of this fact the difficulty of getting the proper needle for a machine not marked with the factory's name is very great. Consequently, a number of needle manufacturers have classified all the different makes of machines (approximately 8,000) and make needles for each of the types of machines. The Boye and Crowley needle outfits are put up in a large circular cabinet, with needles of different sizes in small wooden tubes for different machines and shuttles. The Bryson needle cabinet contains needles in wooden tubes or in papers or they come loose. The Singer needles for all machines are generally sold in larger cities by the Singer representative. The Boye, Bryson, and Crowley outfits come in very convenient form for use in a Notion Department.

Sizes of Machine Needles

The following chart shows the sizes of needles and thread which should be used in a few of the better known sewing-machines.

Size of Cotton	150 to 300	90 to 150	70 to 90	50 to 70	30 to 50	20 to 30	8 to 20
Size of Silk	OOO	OO	O	A	B	C	D

American, Howe, White, Wilson	00	0	1	2	3	4	5
New Home, Singer	0	B	½	1	2	3	4
Willcox & Gibbs	00	0	1	2	3	4	5
Domestic, Eldridge, Household, Standard, Wheeler & Wilson	2	3	4	5	6	7	8

There is greater danger in using a needle too small than one too large. On power machines a special needle larger at the eye than in the blade is used to overcome friction. The manufacturers are also able to use a thread that has fewer strands and still produces a seam as strong as that made on the home machine, for with a larger needle there is less wear on the thread in sewing. For each stitch completed the thread has passed backward and forward through the eye of the needle nine times.

Setting a Needle in the Machine

In setting a needle in the bar of the machine, great care should be taken to see that it is pushed up to the stopping point and that the flat part of the needle shank is turned toward the sewing-machine bar.

Manufacture of Machine Needles

For a good machine needle a fine grade of carbon steel wire is necessary. When the needles are made in the United States the wire is imported from England, where most of the best needles are manufactured. The first process in the manufacture is cutting off the desired length of wire for a single needle. Then the needle wire is delivered to a machine that automatically grasps and draws out the wire to form the blade, clips it off to a given length, lays it in an appointed place where the groove is cut in, then passes it to another part of the machine where the eye is punched in and finally runs the point to-be over the grindstone. Following this comes the hardening and tempering. The operations of finishing the needle into a perfect tool include polishing the eye, so as to not cut the thread; making the point smooth and sharp; and grinding a flattened place on one side of the shank so that the needle will fit perfectly into the machine bar. These processes all take finely specialized machinery and a high degree of skill on the part of the workman.

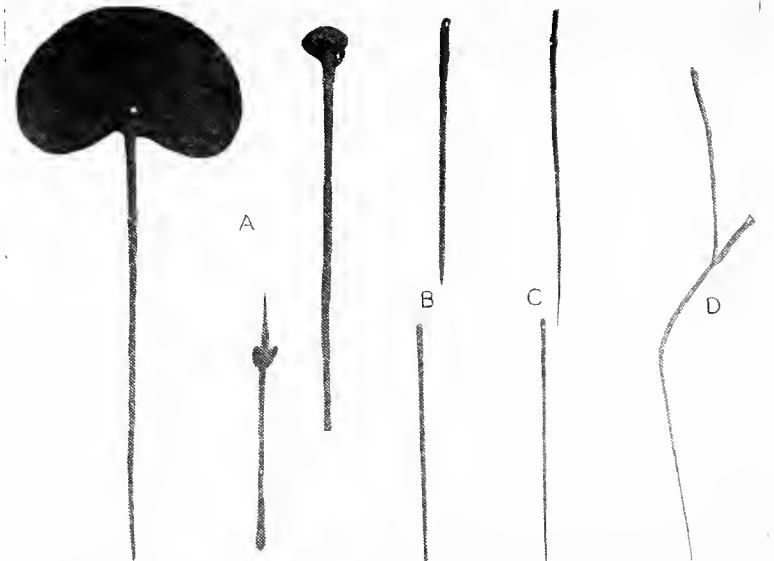
The prices of sewing-machine needles vary greatly.

History of Needles

Needles are not a modern invention. The steps in the development of the race can be traced from primitive to modern times by the form and the materials of

needles. Eyeless needles of thorns, ivory, bones, or fish-bones were used by all early peoples who wore skins or woven materials for clothing. With the discovery of the use of metals, bronze needles gradually replaced the more crude ones. The first metal ones were eyeless and it is supposed that the Chinese were the inventors. Bronze needles are found in Egyptian tombs. Some silver and copper ones have been unearthed in ancient Peruvian graves. Europeans learned to make metal needles about 100 years before the discovery of America, probably through the Moors. Steel needles were first made in Nuremburg. Later, Spain became almost as noted for her fine needles as for her steel blades. Several primitive needles are illustrated in Figure 7.

For the past two centuries England has produced the best steel needles. Needle industries are found in Redditch and several of the other towns in Worcestershire. Although the colonies made their own needles for a short time during the Revolutionary War, today all hand-sewing needles are imported by the United States. In New Jersey and New England at the present time the manufacture of machine needles has developed into a very successful industry. English steel wire is imported for all first-grade steel needles. The reason that it is practical to make machine needles in the United States and not hand-sewing needles is



Courtesy of American Museum of Natural History

A—Ancient Pins. B—Copper Needles with Hook Eyes. C—Thorn Needles.
D—Yucca Thorn Needle.
(The fiber is split, wet, and wound around the needle.)

Figure 7. Ancient Needles and Pins

first, because it does not require quite so high a degree of skill to produce the former as the latter, and more automatic machinery can be used; and secondly, machine needles retail for about ten times the price of sewing needles, and as the relative cost of production is not proportionately so great, this leaves the margin of profit large enough to enable Americans to compete, even with their higher cost of labor.

Chapter IV

COMMON PINS

Types

The service that a pin gives is largely dependent upon the material of which it is made.

Pins are grouped according to the material of which they are made, into three classes:

Brass, made in the United States and Europe.

Steel, made in England and Germany.

Iron or adamantine, made in the United States and Europe.

Materials

Brass pins are made of brass wire and are electro-plated with tin. For the highest grade of brass pins pure block tin, which is 99 per cent pure, is used. This tin will not turn black nor discolor light fabrics.

Steel pins are made of a carbon steel which can be hardened and given a fine point. They are plated in the same way as brass.

Iron or adamantine pins are made of iron bessemer

steel wire, and are coated with tin or zinc or whitened so as to look like tin.

Method of Manufacture

The general method of manufacture for all types of pins is the same. Wire of the desired size and quality is purchased by the factory in large coils. A coil is put on the pin-making machine. One can picture the wire from the coil passing into the machine. A small hammer automatically presses a head on the end of the wire and at the same time the length of a pin is cut off the coil. This pointless pin drops into a slit in an inclined bar. The width of the slit is such that the body of the pin drops through and the head remains on top. Gravity carries it down the incline, where along with a large number of other pins it is grasped firmly by the head in iron fingers which twist the ends of the pins back and forward over a revolving emery wheel that points them. All this is done on one small machine not over 3 feet square. Usually one man operates twelve machines, and turns out on the average of 120,000 to 150,000 pins per day on each machine, according to the size of the pin, making a total output per man of about 1,500,000 pins. Then the pins are cleaned, plated, stuck in papers, and boxed.

Finishing

All pins are cleaned and polished by tumbling them

in a revolving barrel filled with sawdust, that to all outward appearances resembles a butter churn. If the pins are brass or steel they are plated with tin. A very small percentage of brass pins are japanned, either in the dull or shiny finish. Iron or adamantine pins are either plated with a thinner coating of tin than the better varieties, or whitened to look like tin.

Putting into Papers

Pins are stuck into papers entirely by machinery. They are placed in a hopper, from which they fall upon an inclined bar which has a slit in it similar to the bar on the pin-making machine that carries the pointless pins to the cutters. Iron fingers grasp a given number of pins by the heads. From another part of the machine the paper is brought folded ready for one row of pins. The iron fingers stick the pins through the folded paper. This continues automatically until one paper is filled, whereupon it is cut off and folded up — a finished paper of pins.

Cost of Production

From the method of manufacture it is very evident that the difference in the cost of the different types of pins is due to the material used rather than to the variation in the amount of labor required in their manufacture as the labor is practically the same for all kinds of common pins.

How Sold

The standard brass pin comes in papers of 360. There are 12 papers in a package. Brass pins are

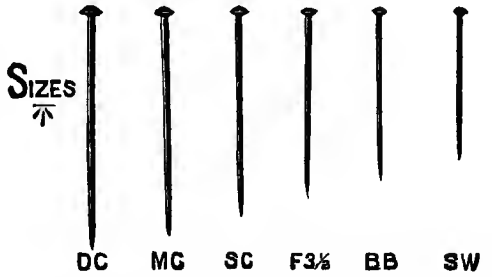


Figure 8. Sizes of Common Pins
(Courtesy of American Pin Company)

made in 12 different sizes, the most common being F 3½, SC, MC. Brass pins of a cheaper grade come in papers that contain 300 and 160 pins.

Iron or adamantine pins when plated with tin are sold in papers usually without any printing, containing 200 to 280 pins. Adamantine pins that are finished by whitening are generally packed in boxes weighing a pound or a fraction or multiple thereof. A pound contains approximately 4,320 pins.

Steel pins are sold in boxes of a pound, a fraction or multiple thereof, usually in one-fourth or one-half pound boxes.

Suggestions to Purchaser — Use of Each Type

The material of which a pin is made, determines to a large degree its use. Brass pins, particularly those plated with pure block tin, are by far the best pin for general use, because brass does not rust.

Steel pins, because they are very slender and made of hardened carbon steel, which can be given a fine point, are especially suited for dressmakers who work on fine qualities of textiles and for all uses where care must be taken to avoid pin holes.

Iron or adamantine are not desirable, because of their poor points and their tendency to rust.

Tests

Although the pins put out and guaranteed by the best manufacturers are marked as to the material of which they are made, this is not true of all brands. Often the consumer does not especially desire the guarantee of the manufacturer and would be glad to buy a cheaper article provided that it would meet her needs. The following are simple tests:

1. A magnet will always draw iron and steel but never brass.
2. When iron and steel pins are exposed to moisture they rust. Brass never rusts.
3. When the plating of tin is scratched off the

bright gold-like color of the brass can easily be recognized. Iron has a silvery look.

Tests for distinguishing steel from iron and adamantine:

1. Steel pins are slenderer, stiffer, and have a better finish and a sharper point than the iron.
2. Steel pins are usually so marked, are imported, and cost from 3 to 5 times as much as iron pins.

Qualities of a Good Brass Pin

A good brass toilet pin:

1. Is made of stiff spring brass wire.
2. Has a round full head without burrs underneath.
3. Has a point with a long smooth taper ending in a sharp sticker, thus making the point strong, obviating the possibility of its bending, and enabling the point to be easily pushed through the material without pulling the threads.

History

The earliest forms of pins were thorns, fish-bones, pine needles, and the like. Later on, women changed these natural forms into more effective tools by sharpening the points and smoothing the surface. Still

later, metal pins were fashioned. Pins of bronze and copper have been found in ancient Egyptian tombs. Figure 7 shows several primitive pins and needles.

In Europe, metal pins were first made in the fifteenth century. They were very expensive as they were made by hand and of precious metals. Common pins were made in two pieces; the head, a spiral coil of wire, soldered to a metal shank. One of the ladies at the court of Henry the Eighth cut herself on the end of a spiral coil, whereupon Henry ordered all pins to be made of one piece of wire —" solid heads and needle points." From this incident dates this inscription which is now found on most papers of high-grade pins. The origin of "pin money" belongs to this period, when a certain amount of money was set aside by each woman at the first of the year for her supply of pins.

When first made in the United States pins sold for $1 per paper. In 1824 Lemuel Wright secured a patent for a pin-making machine which practically revolutionized the common pin industry.

Chapter V

THREAD

Cotton Thread — Types

The principal kinds of cotton thread used in the home and sold in the Notion Department are as follows:

Sewing:
- (a) Soft-finished six-cord
- (b) Glacé, three-cord
- (c) Mercerized
- (d) Waxed

Basting
Darning
Millinery

Raw Material

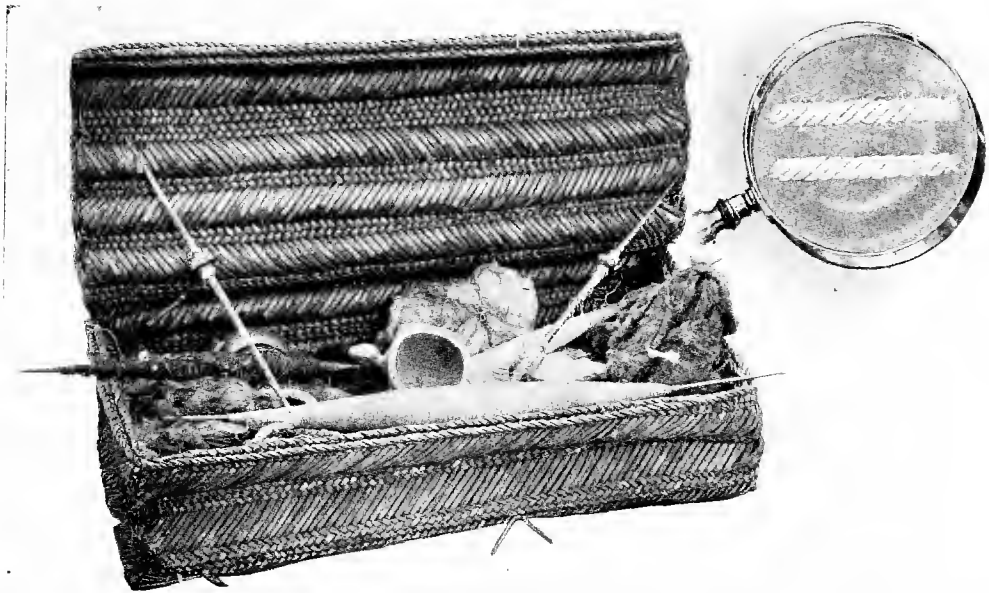
The quality of cotton thread depends upon the length of the cotton fibers used in making it, which range from the short-fibered Upland cotton to the beautiful long-fibered Sea Island and Egyptian cottons. Cotton is raised in the sunny moist climates, like our great southland.

In the late summer, fall, and well into the winter months the negroes and poorer whites gather the big snowy boll. The cotton is taken to a gin where the seeds are separated from the fiber and the cotton is weighed and baled. It is then sent by boat or rail to the north and to many European ports to be made into thread.

Manufacture of Cotton Thread

After the cotton arrives at the thread mill, the bales are opened and the cotton is mixed. The processes that follow mixing all help to clean the fiber, make the cotton uniform in thickness and strength, and prepare it for carding. A sheet of fluffy cotton goes into the carding engine and out of it comes a big untwisted rope or sliver. For the better grades of yarn, the cotton is combed, in a machine which separates the long fibers from the short. Figure 10 shows the differences between combed and uncombed cotton thread.

The long fibers are again formed into rope-like "rovings," which in turn go to a group of drawing machines that pull them out, double, and again pull them out; repeating this process again and again until a very fine long roving of uniform thickness is formed. Then the roving passes to the spinning machine, where it is stretched still farther by being spun. Now it



Courtesy of American Museum of Natural History

Figure 9. Ancient Peruvian Work Basket

Figure 10. (above) Combed and Uncombed Cotton Thread
(Courtesy of Spool Cotton Company)

is called yarn. Still more must be done, however, before the thread is made. Figure 9 shows a primitive way of winding cotton thread.

A thread is composed of two or more plys or cords twisted together. The best sewing cotton is six-cord; that is, two yarns or plys are twisted together and then three of these are twisted together in the opposite direction. By this means a proper "balance" is obtained. The higher grades of thread are a combination of Sea Island and Egyptian cotton. Basting threads and the cheaper grades of sewing cotton are generally made from low-grade Egyptian, Gulf, and Upland cotton, but are not usually combed, because of the additional cost.

Sewing Cotton Standards

Fortunately for the average salesperson and shopper, the problem of buying thread is comparatively simple. Certain very definite standards as to size or number, elasticity and strength of thread, etc., have been set up by the larger manufacturers. For example, the standard brands of the J. P. Coats Co. are J. P. Coats, Clark's O. N. T., Clark's Mile-End, and Brook's, and of The American Thread Co., the Willimantic and Merrick six-cord, and the Alex King, Red Cross and Dragon three-cord. The best sewing cotton is a six-cord soft-finished thread. The slight

variation in the shape of spools makes a notable difference between the various brands of standard six-cord of a given size. Each heretofore contained a full 200 yards, but at present, owing to the higher cost of cotton, labor, etc., the spools in some sizes contain less.

Sizes

Standard brands of spool cotton for family use are put up in 21 sizes, from Nos. 8 to 200 in black and white. Nos. 8 to 100 inclusive are six-cord, but above 100 the thread is usually three-cord, since to spin a yarn fine enough to produce a six-cord thread in these very fine sizes would be not only very expensive, but impractical. Between Nos. 100 and 200 there are often but three or four different sizes, although there are six different numbers. So if you have not, for example No. 130, but have No. 120, the chances are that the size of the threads will be about the same; the size of the spools may vary a little. The differences between the sizes in these finer grades is so minute that it is not worth while to adhere too closely to them either from the standpoint of manufacturer or customer. Among the cheaper brands of thread a similar condition exists among the coarser numbers.

Colored threads come in sizes 50 and 60.

Suggestions to the Purchaser — Manufacturers' Tests

Every effort is made by the manufacturers of standard brands to keep the quality of their thread up to certain requirements. Carefully adjusted testing apparatus is kept at the mills, and at the selling agencies. Sewing cotton is constantly examined as to its tensile strength, elasticity, smoothness, number of twists per inch, and many other features which determine its quality. Therefore, any dissatisfaction on the part of the consumer is immediately investigated to determine its cause, for the manufacturer recognizes that a satisfied customer is the best advertisement.

Time lost in using rotten or inferior thread, through breaking and lack of wear converts a small saving into an expense.

Soft and Glacé Finishes

Most spool cotton used on the family machine or for hand-sewing is now the soft-finished, round, six-cord thread. Glacé thread is to some extent still used on single-thread sewing machines, because the construction of the machine requires a thread whose surface is hard rather than soft. Brook's is the standard spool cotton of this type. It is a three-cord thread of unusual strength.

Mercerized Thread

There are some mercerized sewing cottons upon the market which are sold as a substitute for silk. It is invariably a three-cord thread of basting quality; it weakens and disintegrates with washing, and the colors are not always dependable. It also lacks elasticity, an essential characteristic of any successful thread. Silk has the greatest elasticity of any sewing fiber, and long-fibered cotton when properly spun comes next, but mercerized cotton has almost none. It is this lack of elasticity which makes a mercerized thread used on the seams of a garment, especially silk fabrics, tear and pull the cloth where the strain comes. Mercerized thread is not adapted to hand-sewing, but is used very effectively in embroidery.

Waxed Thread

Waxed threads are generally six-cord. Many women prefer them because they kink so little in hand-sewing, but they do not realize that when the finish is once washed away in the laundry, the thread is weaker than the regular soft-finished threads.

History of Sewing Cotton

The development of sewing cotton, as we know it today, has paralleled that of the sewing-machine. The problem of the early thread manufacturers, in the

United States especially, was to produce a thread that would run smoothly and not break or kink when used on a sewing-machine. The problem of the sewing-machine manufacturers, on the other hand, was to perfect a machine that would not fray, split, or break the thread. At first, glacé or silk-finished thread was used on all sewing-machines, as well as for hand-sewing. Later, soft-finished thread replaced glacé on all shuttle or double-thread machines and now soft-finished thread can be used on single-thread machines.

These changes have been due to improvements in both the thread and sewing-machines. With the coming of machines operated by power, putting a uniform strain upon the thread, manufacturers have produced threads of improved qualities for every requirement. For instance a few years ago, manufacturers of the best grades of men's shirts used six-cord thread almost exclusively. Today with the improvements in the power-propelled machines, where the wear and tear on the thread is far less than with the older machines, very little six-cord is used. It has been replaced largely by four- and three-cord thread, yet the seams are just as strong as before. It is not so much a question of cord as a question of correct spinning and twisting, freedom from knots and slugs, and the maintaining of that proper " balance " which insures against kinking. The wear and tear on thread in machine-

sewing is far greater than in hand-sewing. It has been ascertained that the amount of thread necessary to make a stitch on the sewing-machine passes through the needle backward and forward nine times in making a stitch. It can be readily seen that the sewing-machine has had an important part in the development of thread.

Basting Cotton

Basting cotton is not so carefully standardized as the six-cord spool cotton. It may be a two- or three-cord thread made from any of the lower grade cotton yarns. For the cheapest grades of basting thread, the short staple Upland cotton, a plant grown far back either from the gulf or ocean, is invariably used. The best basting cotton is three-cord, and put upon large and small spools.

It is wise to notice the number of yards of thread on the spool label as well as the quality, for the number of yards in some makes is very short, although the spool is from outward appearance of standard size.

Darning Cotton

A good darning cotton is fast in color and made of a fine hosiery yarn which insures softness after laundering. It is eight-ply; that is, made of four strands or

ends, each of which consists of two strands or plys. In the best grades these four strands can be easily separated, so that one to four can be used. It is made in black, white, and sixteen staple colors.

Cheaper darning cottons, two- or four-ply with fewer yards on a card or spool are made of a lower grade hosiery yarn and when laundered, are apt to fade and become heavy and hard from the shrinkage of the yarn, making the place darned feel uncomfortable.

Mercerized darning cotton is used with good results in mending silk and lisle hosiery and underwear. It is a very fine grade of eight-ply, four-end, lustrous-finished darning cotton. It makes a good substitute for silk, because of its softness and brilliancy. The inelasticity is, as in all mercerized thread, objectionable, but can be largely overcome by leaving a small loop of 1/16 of an inch at the end of each row in the process of darning. It usually comes 40 yards to a spool or ball, in black, white, and staple colors.

Millinery Thread

For millinery purposes, particularly for sewing straw braids, a highly glazed cotton thread is best, as the straw does not cut this as it does soft-finished threads. It is a three-cord thread, put up on large spools, in black and in white, in Nos. 15 to 70.

Silk Thread — Types

The types of silk thread sold in the Notion Department are:

1. Sewing-machine silk
2. Hand-sewing silk
3. Darning silk
4. Buttonhole twist

The Silk Worm

There is no other fiber whose history is so full of romance and color, whose culture is so unique and wonderful, as silk.

Commercially there are only two varieties of silk: (1) the cultivated, produced by the cultivated silk worm; and (2) the wild silk, such as the tussah, produced from uncultivated moths.

The silkworm passes through four stages in its life: the egg, larva or worm, chrysalis, and moth. After mating, the female lays several hundred eggs; when hatched these eggs become little worms, less than three-fourths of an inch long and no thicker than a hair. The worms grow so rapidly they really outgrow their skins, which becoming too small, are shed four times. The best food for the silkworm is the perfect leaves of the white mulberry. The two essential requisites of high-grade silk, as far as the culture is concerned, are perfect eggs and good food. Within a few weeks

the worm is full grown, about 3 inches long, with fully developed spinning glands. Now the worm loses its appetite and grows restless, seeking for a place in which to spin a cocoon about itself.

From two openings on each side of the head are expelled two delicate threads of white transparent liquid. These threads upon coming together form a single fiber or filament and soon harden upon being exposed to the air. The silkworm, like the common caterpillar with which we are all familiar, first throws out threads or ropes to suspend itself, and then begins to spin the cocoon by moving the head as if making the figure 8. The threads of filaments are held together by a gum. In one cocoon there will be from ¼ to 1 mile of thread.

The silkworm wastes away as it spins its cocoon and becomes a chrysalis. If undisturbed, the chrysalis changes in about 15 days into a moth that pierces one end of the cocoon and escapes. But if the silk on the cocoon is to be reeled for making silk, the silkworm is killed by heat. The cocoons are floated in a basin of boiling water preparatory for reeling.

Reeling Raw Silk

In reeling, filaments from 5 to 7 cocoons are run off together and form one strand of raw silk. In this form it is sent to the mills to be made into thread or

cloth. When one cocoon gives out, the filament from another replaces it, thus keeping a uniform thickness and strength.

The outside and the extreme inside of the cocoon cannot be reeled. This with other waste silk is used to make spun silk, the manufacturing processes being practically the same as in spinning cotton yarn.

Silk Importation

The reeling of silk from the cocoons is seldom done in America. Silk comes here from China and Japan in the form of skeins weighing from one to several ounces and packed in bundles or books weighing from 4 to 8 pounds. These, in turn, are packed in bales weighing from 100 to 140 pounds. When these bales of reeled silk arrive at the factory, they are opened and the silk is sorted. Then it is soaked over night in warm water, soap, and oil to soften and separate the filaments. It is next wound off on bobbins.

Manufacture of Silk Thread

The reeled silk is very fine, having from 5 to 7 silk filaments. From 2 to 100 of these threads, according to the thickness of silk thread desired, are wound off together. This process is known as doubling. Then the silk is twisted. It is not even now a thread. Two or 3 of these strands are joined together and twisted

in the reverse direction from that by which the twist was put into the strands. If the thread has been tightly twisted, it must now be stretched.

Among the American manufacturers of silk thread are: M. Heminway & Son Silk Co., Corticelli Spool Co., Belding Brothers, Brainerd and Armstrong, and the Richardson Silk Co.

Silk Dyeing

Next the dyeing process begins. The silk is first boiled to extract the gum. The gum is later used in the water with the dye stuff to set the colors. It is in the dyeing process that the process of "loading" the silk takes place. If more metallic salts are added than are necessary they are precipitated into the thread. Of course, with the addition of any amount of dye, the weight cannot but be somewhat increased. It is estimated that if no more weight is added in dyeing than was lost in boiling off the gum, the silk is not injured. High-grade manufacturers of silk thread have accepted on the basis of 12 oz. of undyed thread 13½ oz. of dyed thread as a legitimate weight for machine thread. Up to 16 oz. the strength is but little decreased. Some manufacturers load their thread up to 25 oz.

Sewing-Machine Silk

Sewing-machine thread is a three-cord silk thread.

It is sold either by the number of yards to a spool or by the weight of silk on the spool. The coarser sizes are sold by weight only. The following table shows the sizes, colors, and form in which silk machine thread is sold.

Sizes	*Colors*	*How Sold*
OOO	Black, white	50 & 100 yd. spools
OO	Black, white	50 & 100 yd. spools
O	Black, white	50 & 100 yd. spools
A	Black, white, colors	50 & 100 yd. spools
C, D, E, EE, F, FF, FFF	Black, white	⅛ oz. spools

Colored machine silk thread comes in but one size, A, but in many colors and shades. The color number is found on the end of the spool opposite the end bearing the size letter.

Hand-Sewing Silk

Machine-sewing silk thread kinks and knots somewhat when used for hand-sewing. Therefore, for this use a special thread is made which comes only in black and white. It is a two-cord thread with a reverse twist. It is put up on long slender spools, 50 yds. to a spool, in sizes A, B, and C. It is also sold in ½ oz. flat spools in black and white.

Darning Silk

Darning silk is composed of several strands of soft-

twist, spun silk stock. It is put up on small spools, ¼ oz. balls in individual boxes, and ½ oz. balls in individual boxes.

Buttonhole Twist

Buttonhole twist is a tightly twisted three-cord silk thread. In black it comes in sizes A, B, C, D, E, EE, and F, in 10 and 20 yd. spools. In colors and white, there is but one size, D.

Linen Thread

Linen thread is made from the flax plant. The plant, its cultivation, and the manufacture of linen is described in the manual for the "Cotton and Linen Departments," which see.

The long fibers of flax, called the "line" are used for strong fine thread. The line is cut into three parts. The middle portion, the strongest and most uniform, is used for the best thread. As in cotton the fibers are formed into a sliver, which is drawn out and doubled many hundreds of times to give a strong roving. Linen is always spun in a more or less damp condition. A number of threads or plys are twisted together in the opposite direction from the spinning to form the thread.

Thread made from high-grade linen is stronger and less elastic than cotton thread. Cheap linen thread,

made of a poorer quality of linen fiber or of tow lacks these qualities.

In the Notion Department, linen thread is sold generally in the form of carpet thread, put up in small skeins, or on spools. The latter is the usual thread for domestic use. It is three-cord, comes 200 yards to the spool, in sizes 25 to 100, in black, white, and natural linen color.

Worsted and Woolen Darning Yarn

Worsted yarn is a tightly-twisted yarn made of long, straight, lustrous wool fibers with little felting or matting qualities, while woolen yarn, which is a loosely twisted yarn, is made of the soft, short, staple, curly wool fibers having saw-like edges. It shrinks little in laundering.

Wool — Raw Material

Wool is sheared from the sheep on the ranches or farms, packed into bags, and sent to the mills. After the fleeces arrive, they are sorted, that is, certain qualities and lengths of wool are put together. Then the wool is cleaned, scoured or washed, and dried. In the cleaning processes the fleeces lose about two-thirds of their original weight. If there are burrs or other foreign matter on the fleeces, they are removed by machinery or by carbonizing, which is a burning

process. The wool is now so fluffy that it must be oiled for further manipulations.

Manufacture of Worsted and Woolen Yarn

Up to this point, the treatment of worsted and woolen yarn are practically alike. For the worsted the processes of carding, gilling, and combing all tend to lay the fibers parallel. Combing separates the short fibers, or noils, from the long fibers, or tops. These tops pass through machines that form the wool into slivers, or untwisted ropes; these are doubled and drawn out many times until they are uniform in thickness and very thin. The twist is then put in by spinning and we have a yarn. A number of yarns or plys are twisted together loosely to form darning thread.

Darning worsted comes on cards in 20 and 25 yd. lengths. It is dyed in colors to match all kinds of hosiery: black, white, brown, tan, gray, and blue.

Chapter VI

THIMBLES

Materials

Thimbles vary little in shape and are classified according to the materials of which they are made. These are:

Celluloid
Steel
Aluminum
Brass, plated with nickel, German silver, sterling silver, and silvered.
Gold
Silver

Methods of Manufacture of Metal Thimbles

The method of manufacture of all metal thimbles is practically the same. Brass plated with nickel is a typical process. Round flat blanks are cut from sheet brass. They are drawn up over molds, forming the crude foundations of the thimbles. The tops are trimmed off to a given height; and the edge is curled over by the pressure of a die. The indentations for

the head of the needle and any ornamentations are stamped or knurled upon the surface of the thimble. Next, preparatory to plating, all dirt is removed by cleaning and burnishing. The Frontispiece shows the steps in making a thimble.

Plating

Plating may be done with nickel or some silver preparation. There are three kinds of silver preparation: German silver, in which 8/1000 of the plating preparation is silver; sterling, where the silver approximates 90+%; silvering, where proportions of silver vary from German silver to sterling. Electroplating is the method used and is the same for all types. All thimbles are polished after plating.

Aluminum Thimbles

Aluminum thimbles are made in much the same way as brass, except that they are not plated.

Steel Thimbles

Steel thimbles are manufactured in practically the same way as brass but are seldom plated. When they are plated it is only on the inside, and then the inside is covered with brass to prevent rusting.

Solid Gold and Silver Thimbles

Solid gold and silver thimbles are not usually sold in the Notion Department.

Celluloid

The celluloid for thimbles comes in the form of tubing.[1] A piece sufficient for a single thimble is cut off and put into a heated press, the core of which molds the inside of the thimble. The mold for the outside of the thimble is in two parts. Under hydraulic pressure and heat, the thimble is molded completely into shape with indentations for the needle and the roll at the edge. If there is any surplus celluloid at the points of joining of the molds, this must be buffed off. Polishing finishes the article. The celluloid used in all thimbles is practically of the same quality, except when colored where there may be more pigment used and less celluloid.

Suggestions to Purchaser

Steel and aluminum are the lowest-priced thimbles. Steel should be sold where a strong, heavy thimble is desired. Aluminum, being very light in weight, is especially good for children. Celluloid, nickel-plated, silvered, and German silver thimbles usually sell for about the same price. Celluloid fits nicely on the finger, but some people find it clumsy to handle. The silvered thimbles are very apt to tarnish. Nickel-plated thimbles and those of German silver give very good service. Sterling silver thimbles are satisfactory, but sell at a higher price.

1 For manufacture of celluloid see Chapter XVII.

Sizes

Thimbles come in eleven sizes, Nos. 2 to 12. They are usually put up for children in sizes 2 to 5, and for adults, 7 to 11.

History

Thimbles were first used in Europe during the Middle Ages and were probably introduced by the Moors at the same time that metal needles were introduced. They were made of leather and worn on the thumb. The name "thimble" or "thymelle" comes from "pinna," a thumb, and "el" or "l," an instrument for. In the course of time, the thimble ceased to be worn on the thumb, except in a few cases such as the sailmaker's thimble, which is a piece of leather holding a metal form used to push heavy sail needles through cloth. The metal piece is fastened at the base of the thumb. The Frontispiece shows the sailmaker's thimble.

Metal thimbles were first made in the seventeenth century in Holland. In 1695, John Loflington went from Holland and established a factory in England. At that time all thimbles were made by hand and many were very beautifully wrought out of fine metals and set with precious stones.

Modern thimbles are all made by machinery. The engraving and decorating of the more expensive ones

may be done by hand, but in this industry as in many others, machinery is universally used.

Finger Shields

A finger shield is worn on the first finger of the left hand to protect it from the pricking of the needle in sewing.

Celluloid finger shields are cut out from flat sheet celluloid and shaped to fit the finger over heated forms. They are made in such a way as to be adjustable to any size of finger. They are manufactured in white, pink, blue, and amber.

Rubber finger shields consist of a cap or thimble of rubber to be worn over the first finger.

Chapter VII

MISCELLANEOUS SEWING SUPPLIES

Tape Lines

Service in tape lines demands that they measure accurately and continue to do so indefinitely. This should always be kept in mind in considering the different types of tape lines which may be classified as steel, cloth, oilcloth, and fancy.

The steel lines satisfy this most important requisite, but with the exception of some of the fancy kinds, they are rather unwieldy for home use. They are used extensively by tailors.

Cloth tape lines are never completely satisfactory; even the best will shrink and stretch. However, the double ones, stitched firmly and with brass tips at both ends give much better service than the single cloth tapes.

Oilcloth measures of the best grade are the best for general use. They are accurate and give a reasonable amount of wear. Carelessness or long, hard use will crack them.

There are so many varieties of fancy tape lines that a discussion of them cannot be considered adequately here. They are usually made of a light-weight tape line which is wound up in some fancy cover. Most of them have little real service value, although fancy steel lines are compact, neat, and accurate.

In selling tape lines, remember that real satisfaction is enjoyed by the purchaser when the markings are clear and plain, when the numbering begins at one end on one side and at the other end on the opposite side. Occasionally a dressmaker may desire a tape marked in the metric system, but usually there are few calls for these.

Bodkins

Webster defines a bodkin as "an instrument of steel, bone, ivory, or the like, with an eye for drawing thread, tape, or ribbon through a loop or casing."

Bodkins are made of bone, celluloid, and nickel-plated steel. Bodkins of bone are the natural color, but those of celluloid are ivory white, blue, pink, and red.

Thread Winders

Thread winders are forms of celluloid, mother-of-pearl, cardboard, etc., upon which to wind small quantities of thread.

Tatting Shuttles

Tatting shuttles are made of a great variety of materials — black hard rubber, celluloid in white, black, and colors, composition material, and metals — ranging from nickel-plating and silver-plating to solid gold and silver. They vary in length from 2 to 3½ inches. A few of the larger ones have a detachable bobbin and a hook attachment that is used to draw the thread through the loop.

Darners

There are two types of darners: stocking and glove. The same material is used in both. Usually they are made of wood, either finished in the natural wood, or enameled in black or white. Some are made of celluloid.

Stocking darners are generally egg-shaped, with or without a handle. Glove darners are about 4 or 5 inches long in form similar to a peanut, each end of a size to fit in a finger of a glove.

Stilettos

A stiletto is used to pierce a hole for an eyelet in embroidery and to keep the eyelet either round or oval during the work.

Stilettos are made of bone, celluloid, and steel. Celluloid stilettos are molded under hydraulic pres-

sure out of celluloid wire or turned or cut out on a lathe much as one would cut wood. They are made in all colors: ivory white, blue, pink, and red. Bone stilettos are also turned on a lathe. Steel stilettos are plated with nickel and have a handle of wood. Some of the steel ones have a device that regulates the size of the hole to be pierced. Others are adjustable, and the metal part may be taken out and replaced. It has a round point at one end and an oval point at the opposite end.

The first stilettos were made in France and even now the most beautiful and finely finished ones come from France.

Hem Gauges

Hem gauges are used in hanging a skirt to mark a line around the bottom of the skirt parallel to the floor at a given distance. A very satisfactory one at a reasonable price is arranged with a piece of tailor's chalk which marks the line.

Tracing Wheels

Tracing wheels vary little in general construction, but largely in the quality of material. The cheaper ones are made of a poor quality of steel so that the cutting points on the wheel soon lose their sharpness. The best wheels are made of a high grade of carbon

steel which is hard and takes a fine temper. The points remain sharp and do not break easily.

Emeries

"The emery," as known to sewers, is a little bag, usually in the form of a strawberry, filled with emery dust. Emery, proper, is an abrasive material; that is, when it is rubbed on steel, it cleans and polishes, and for this reason it is used to keep needles bright and free from rust. Emery is a variety of corundum, one of the hardest of substances. The sapphire and ruby are also forms of corundum, but of a clear, transparent nature.

Emery derives its name from Cape Emeri on the island of Naxos in the Ægean Sea, where the best emery of the world is mined. It is also found in Chester, Mass., Peekskill, N. Y., and in Sweden, Spain, and Greenland. In color, emery ranges from bluish gray to brown. Much of the emery of commerce has been colored to a rich, reddish brown.

After being quarried, emery rock, with more or less impurities, is crushed first in great stone breakers and then in smaller ones. The resulting dust and fine stone is separated into different grades, a very fine grade being used for emery bags.

The variation in the price of different bags is due to the covering, even more than to the emery used.

A covering of closely woven, firm cotton or silk keeps the emery in. An emery should never be used as a cushion to hold needles, for the needles will make a hole and the emery will leak out. Imported emery is used for the best grades.

Wax

The wax used by the seamstress to bring the cords of the thread together and to make the fuzz adhere closely to the thread is pure beeswax.

Sewing-Machine Belts

The quality of leather contained in a sewing-machine belt determines the wear. A good quality will give a reasonable amount of service without unnatural shrinkage and stretching. As a rule, a poor belt may be detected as the leather is very soft and spongy, and lacks the smooth appearance of the better quality.

Belts are made in the lengths required by the different makes of machines. Box top machines take belts varying from 38 to 68 inches, drop head from 60 to 72 inches. If there is any question in regard to the length desired, it is wiser to sell a 72-inch belt, for it can easily be cut to the right length.

Machine Oil

The best machine oil is refined sperm oil, which is obtained from the enormous cavity in the head of the

sperm whale and from other smaller receptacles throughout the body of the animal. During the life of the whale the oil is in a liquid state, but as soon as the head matter is removed, a solid, waxy sperm-aceti or tallow is formed which may be taken out, leaving clear yellow fluid oil. This oil is purified by treatment with a solution of potash which precipitates all impurities. Refined sperm oil is a most valuable lubricant for all small and delicate pieces of machinery. It never gums or becomes sticky.

Cheaper oils are made with adulterants, but after the lubricating properties have evaporated, these leave the sewing-machine sticky and hard to run, and sometimes bind it so that the machine cannot be operated. In this case, it is valuable to know that a bath of kerosene will cut the gum and grease. Then re-oil with a high-grade machine oil.

There is on the market a certain oil called "stainless." It will not leave a yellow stain as ordinary oil does, but it will leave an oily or greasy mark which is practically as bad. It is sperm oil bleached by chemical treatment and there is some question as to whether this treatment does not impair its lubricating qualities.

Part II—Dress Accessories and Findings

INTRODUCTORY TO PART II

The division of dress accessories and findings is composed of a variety of articles which vary according to changes in fashion and differences in taste.

Some people wish to use articles to which they are accustomed; others want to try the newest thing. The saleswoman's knowledge of the most suitable material for special uses and of the type of finish or fastening which will best answer the customer's purpose makes suggestive selling simple for her and welcome to the purchaser.

Although the average saleswoman in the Notion Department knows all the different kinds of braids or tapes sold by the store, she does not keep their uses clearly in mind and, knowing nothing of their manufacture, she cannot tell why an artificial silk lace may be good for a middy blouse but bad for a shoe, or why woven elastics are stronger than braided ones, yet these points well stated will make her judgment respected and sought by her customers.

The many details of this department tend to make selling automatic, but here, too, there is really an opportunity for exceptional service.

Chapter VIII

TAPES

Types

Tapes are made of every textile fiber, in designs without number, and for purposes innumerable. In spite of the many varieties they may be grouped as:

Binding and finishing tapes
Ornamental tapes and edgings
Bobbin tapes or drawing strings
Foundation tapes for hooks, eyelets, etc.

Manufacture

All tapes are made on the narrow fabric looms. These resemble the regular looms in that the warp threads come from the warp beam to the cloth beam horizontally and the warp threads are raised and lowered in much the same way. They differ in that the warp threads are arranged in small groups, with spaces between them, instead of being a continuous series across the loom, and also in that each of these groups of warp threads has an individual shuttle which weaves the bobbin thread or filling back and forward and makes a selvage on each side of the tape. There are as many shuttles on the loom as tapes to be woven. Figure 12 shows the narrow webs and long rows of bobbins, one for each web.

Key to Figure 11

In Figure 11 the common varieties of tapes are pictured, and the following key explains the methods by which each is woven:

A. Feather-stitch braid (In construction a tape)
   1. Design made with extra warp threads in the mock leno weave.
   2. Design made with warp threads on a Jacquard or dobby head motion loom.
   3. Wrong side of "2," showing the direction of the threads that make the design lengthwise of tape.
   4. Design made by Jacquard or dobby head, in artificial or real silk.
   5. Feather-stitch design made with extra weft threads, that is, two shuttles used in making the design.
   6. Wrong side of "5," showing the thread used in making the design running crosswise of the tape.

B. Beading, made with two shuttles for the ground, one on each side of the open work and a third for the thread joining the two sides.

C. Bobbin tape
   1. Linen made with plain weave.
   2. Cotton made with twilled weave.

D. Cotton tapes.
   1. Stay tape, made with twilled weave of carded yarn that has been gassed, a cheaper grade.
   2. Fine grade of mercerized or English twilled tape.

E. Stickerei tape
   1. Web made with one shuttle, edging with second shuttle, making two weft threads. (Foreign make.)
   2. Edging made same as "1," but coarser.
   3. Edging made same as "1," but coarser. Dots made by warp threads.
   4. Imitation stickerei, with edge made by heavy warp thread caught in at intervals, the mock leno weave.
   5. Flute edging, made with either dobby head or Jacquard.

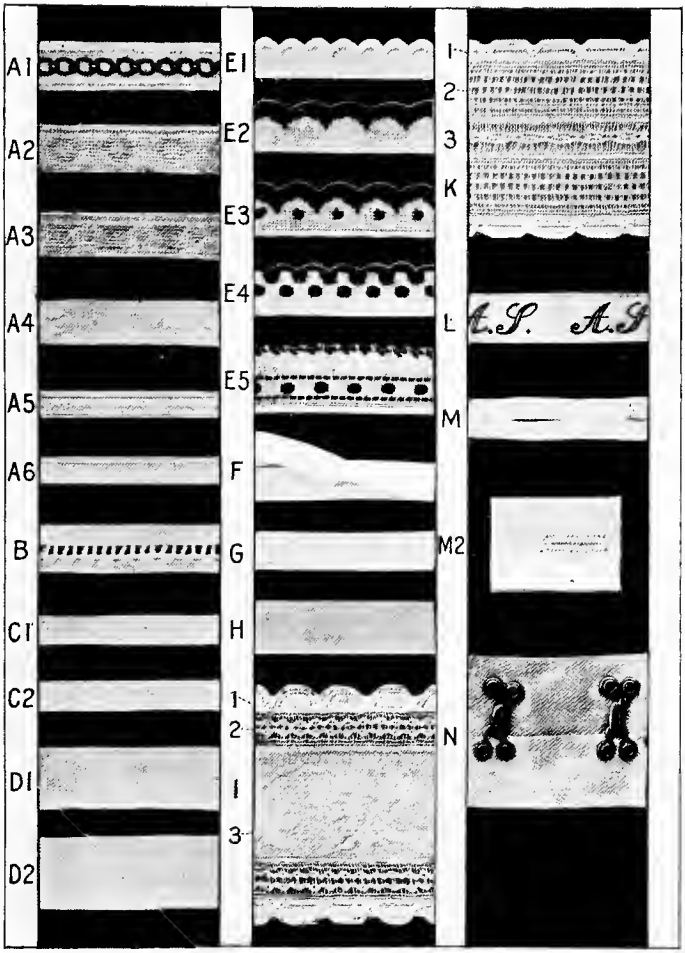


Figure 11. Common Varieties of Tapes

F. Cotton seam binding, made of bias strips of batiste or lawn with raw edges turned in and the two folded edges turned so that they come together. (Not a tape in the sense of woven tape.)

G. Cotton bias folds, made of bias strips of batiste or lawn with raw edges turned in.

H. Taffeta seam binding, silk tape made with the plain weave.

I. Corset tape made to decorate tops of corsets.
   1. Pearl edge, a false or mock leno weave made by drawing warp thread with the filling thread.
   2. True leno where the heavy threads are crossed or "douped" over the finer ones.
   3. Artificial silk design put in by warp threads.

K. Corset tape
   1. Same as "1" under "I."
   2. Real mock leno weave made without "doup" or crossing over.
   3. Same as "2" under "I."

L. Initial tape, design or initial made with extra weft thread.

M. Buttonhole tape
   1. Buttonhole woven into the tape by the use of an extra shuttle.
   2. Buttonhole worked by sewing-machine into a double piece of fabric.

N. Hook and eye tape.

Designs Made by Warp

The designs are woven in one of two ways: by manipulation of warp threads, or by the introduction of extra weft or filling threads. The former is done in the same way as any figure-weaving in broad goods. The color or figure warp is brought to the surface by the raising of certain warp threads and the lowering

of others. When the color is not desired on the surface, these figure warps are carried on the back of the fabric. The different designs are produced by different methods of tying up the harness which controls the raising or lowering of warp threads. For the more complicated designs some mechanical device like the "dobby head motion" and the "Jacquard" are attached to the loom. By these devices warp threads can be raised or lowered individually as the design requires, thus increasing the possible variety of designs. The most intricate designs are made on the Jacquard loom. (See "Cotton and Linen Manual.")

Leno or Cross Weave

Many of the open-work, lace-like narrow fabrics, such as the finishing laces for the tops of the cheaper grades of corsets, are made with what is known as the leno or cross weave. In this style of weaving the adjacent warp threads instead of being straight and parallel twist about each other letting the filling or weft threads pass through them, making an open mesh.

False or Mock Leno

Then there is the mock leno weave in which much the same effect is obtained without twisting the warp threads. It is not so strong and firm. The mock leno is made by using a weave that will allow warp

threads and also filling threads to lie in groups of three or more, leaving open spaces between. Glazed yarn, that is yarn filled with a size of starch or similar material and polished, keeps the openings distinct.

There is a third kind of weave that is sometimes called mock leno, but in reality is an adaptation of the pearl-edge weave. In this the warp threads, generally of rather large size, are drawn out of their natural position by the filling threads. This is commonly found in the cheaper feather-stitch braids and stickerei edgings.

How to Distinguish Warp Designs

A tape with a figure introduced by the warp threads can be distinguished by looking at the warp threads of the figure. Usually they may be more clearly seen on the wrong side. They will run lengthwise with the tape. The larger percentage of figure-weaving is done by warp threads, especially in cheaper fabrics.

Designs Made by Extra Weft

When a design is made by the use of extra weft or filling threads, at least two shuttles are used for each tape, one making the regular foundation weave and the other making the design. The shuttle that makes the design is adjusted so as to operate only when the design is being put in. This method of in-

troducing a design is used where the yarn for the design is expensive, the work very fine as in lettering, and for special effects such as the edging of real stickerei.

How to Distinguish Weft Designs

Designs made by an extra weft thread can be easily distinguished from the designs made by the warp. On both the right and wrong side, the figure weft can be seen running crosswise, instead of lengthwise as in the warp figures.

How to Determine the Quality of Tape

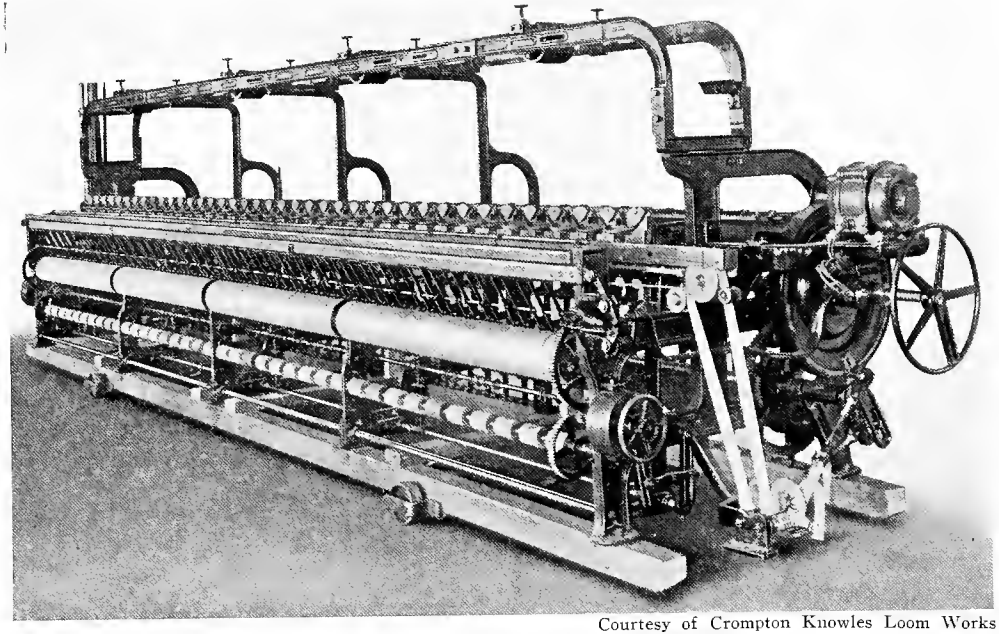
1. Unravel and note quality of yarn used.
2. Note closeness of weave in both warp and weft.

Suggestion of Service to Customer

All tapes containing colored threads should be washed quickly in warm, soapy water, always using the best white soap, for example, Ivory. Rinse several times in clear cold water. Dry. Iron with a moderately hot iron.

List of Tapes

The list of " Common Varieties of Tapes " shown on the following pages contains tabulated descriptions of the materials, colors, widths, lengths, and uses of the tapes sold in the Notion Department. The student will be repaid by making a careful study of this list.



Courtesy of Crompton Knowles Loom Works

Figure 12. Narrow Fabric Loom

COMMON VARIETIES OF TAPES

(Letters refer to illustrations, Figure 11.)

Tape	*Material*	*Color*	*Description*	*Length*	*Use*
A. Feather-stitch Braid [1]	Cotton web; designs of cotton, mercerized cotton, silk, and artificial silk.	White, with colored designs.	Usually ¼ to ¾ in. wide; designs made by extra warp or weft threads.	3, 4, and 6 yds. in piece; 36 pieces in box.	Decorative.
B. Beading	Cotton.	White.	Made with two shuttles for ground and a third for threads, joining two sides, ⅛ to ½ in. wide.	8 yds. in piece.	For underwear.
C. Bobbin	Cotton, twilled weave; linen, plain weave.	White.	⅛ in. wide.	Cotton 10 yds. in piece; linen 2½ yds.	For threading through beading, etc.
D. Cotton	Twilled, stay bindings or English twill.	White.	Widths, ⅛, ¼, ⅜, ½, ¾, 1 in.	6 and 12 yds. in piece.	Binding and finishing.

[1] Feather-stitch braid, although called a braid, is a tape made on narrow fabric looms.

COMMON VARIETIES OF TAPES

(Letters refer to illustrations, Figure 11.)

Tape	*Material*	*Color*	*Description*	*Length*	*Use*
E. Stickerei or Flute Edging	Cotton web; designs of cotton or mercerized cotton.	White, with colored designs.	Made with one or two shuttles. (See illustrations.)	3, 4, and 6 yds. in piece, 12 pieces in box.	Decorative.
F. Cotton Bias Seam Binding[1]	Cotton batiste or lawn cut on the true bias.	White, black.	¼ in. wide, upward; bias strips with raw edges turned in and folded edges brought together.		Binding and finishing.
G. Cotton Bias Folds	Batiste or lawn, cut on true bias.	White, black, colors.	3/16 to 1 in. wide; bias strips with raw edges turned.	3, 4, and 6 yds. in piece.	Decorative, and covering seams, etc.
H. Taffeta Seam Binding	Silk, plain weave.	White, colors.	½, ¾ in. wide.	About 8 yds.	Binding seams of silk and wool gargarments.

1 Cotton seam binding and cotton bias tape are included in the list although they are not strictly speaking tapes.

COMMON VARIETIES OF TAPES

(Letters refer to illustrations, Figure 11.)

Tape	*Material*	*Color*	*Description*	*Length*	*Use*
L. Initial	Cotton.	White, with initials in colors.	¼, ⅜ in. wide with initial put in with extra weft threads (two shuttles).		Marking garments.
M. Buttonhole (1) woven in fabric	Cotton.	White.	¼ in. wide, made with two shuttles	Sold by the yard.	
(2) worked by sewing-machine	On lawn or batiste.	White.	½ in. wide.	Sold by the yard.	
N. Hook and Eye Tape	(See Hooks and Eyes.)				

COMMON VARIETIES OF TAPES

Tape	*Material*	*Color*	*Description*	*Length*	*Use*
Snap Fastener Tape	(See Snap Fasteners.)				
Eyelet Tape	Cotton, with eyelet woven on edge.	White.	¼ in. wide.	Sold by the yard.	
Lingerie	Soft mercerized cotton yarn.	White, pink, blue.	¼ in. wide, made with a soft, loosely woven fancy weave.	5 and 10 yards.	Underwear.
Prussian Binding	Silk twilled face, cotton back.	White, black, colors.	⅝ in. wide.		Binding and finishing wool and silk garments.

Chapter IX

BRAIDS

Types

Braids may be divided into several groups according to their uses. For bindings which show on the outside of a garment, braids are used instead of tapes because, owing to their elasticity, they may be put on more neatly and give a better finish. For lacings they are more serviceable.

The types of braid are:

Bodkin or lingerie braids
Binding braid
Stiffening braid
Decorative braid
Lacers

Origin

The art of braiding antedates historic records. Primitive women intertwined twigs into mats and built them into crude houses. Our own Indians of the Northwest Coast today are braiding wonderful baskets and mats of cedar bark. In the Middle Ages,

the maidens of Europe welcomed spring by dancing around a May-pole with vari-colored ribbons which were attached to the pole. Half of the girls went to the right and half to the left, interweaving the ribbons in a tubular braid about the pole.

Method of Manufacture

The general principle of the braiding machine is the same as that of the May-pole. The machine is circular in shape. Spindles with yarn wound around them take the place of the maidens. They are moved about on the circular framework by carriers which interweave the yarn in exactly the same way as the ribbons were intertwined upon the May-pole. The pole of the braiding machine is a hollow tube through which the braided fabric is drawn off. When the carriers make a continuous circuit of the braiding machine, one set of carriers going in one direction, the other set in the opposite direction, the braid produced is tubular. Where the carriers do not make a complete circuit but reverse at a given point and return in the direction from which they came until the same point is again reached, again reversing and returning and so on, the braid produced is flat.

Braids may be made any length desired. When the yarn upon one spindle gives out, another one may be substituted and the yarns joined. For all tubular

braids, as illustrated by some corset strings and shoe laces, an even number of spindles is used. For flat braids, an uneven number are required. The number of lines or ridges in a braid multiplied by 4, plus 1, equals the total number of bobbins or spindles used. Thus a braid having 22 lines is made on an 89 carrier machine. 22 multiplied by 4 equals 88, plus one, gives an 89 carrier.

All braiding is the same in principle, the variations in the products resulting from the size and kind of yarn used, the number of spindles, and the manner in which the gears are set. Upon the latter depends the firmness or looseness of the fabric.

Materials

Practically any kind of yarn can be braided on a braiding machine: cotton, wool, silk, artificial silk, and pyroxylin. Cheap carded cotton yarn from which the fuzz has been removed by running the yarn over lighted gas jets (called gassing) is made into the cheaper grades of corset laces, shoe laces, and rick-rack braid. Sometimes the yarn is starched or filled with clay to give it apparent firmness, strength, and finish. A fine carded or combed mercerized cotton yarn is used in lingerie braids, rickrack, corset laces, shoe laces, middy laces, and skirt braids. In the finest qualities, combed Sea Island cotton yarn is used ex-

tensively. A combed yarn has longer fibers than a carded yarn and naturally is stronger in the same weight. Mercerization of cotton yarn gives it a silky finish and usually strengthens the fibers, unless the mercerization has been carried to a too high degree, in which case the excess amount of caustic soda used weakens the yarn.

Horsehair braids are made of a pyroxylin fiber; that is, cotton is treated with an acid which reduces it to a semi-liquid. This is forced through perforations the size of the fiber desired. It is hardened to a stiff fiber resembling horsehair. It is naturally cream colored, but can be dyed any color desired. Because of its stiffness when braided it is used for stiffening dresses, and is also extensively used in making women's hats. (See "Millinery Manual.")

Uses of Different Braids

Silk is used in binding and trimming braids for dresses and also for middy, shoe, and corset laces.

Artificial silk is employed to a very large extent in middy laces and binding braids. It has a much higher luster than real silk. It can be easily differentiated from real silk because if a piece of yarn is raveled out and dampened it breaks readily. Another test is burning the yarn. If it gives off an odor

like burning hair it is real silk, but if it burns quickly with but little odor, it is artificial silk.

Artificial silk is very little cheaper than real silk. It is used extensively for middy laces as the braid is firmer and therefore more suitable, and because it has a brilliant luster. Strength is not required of a middy lace since it is only an ornament, and the firmness of the artificial silk causes it to stand out nicely.

List of Braids

The list of "Common Varieties of Braids" appearing on the following page gives a tabulated description of the types, materials, colors, widths, lengths, and uses of the braids sold in the Notion Department.

Common Varieties Braids

Braid	*Type*	*Material*	*Color*	*Description*	*Length*	*Use*
Lingerie	Flat	Mercerized cotton, carded or combed	White, blue, pink	¼ in. wide	5 to 10 yd. bolts; usually on cards	To draw up underwear
Binding	Flat	Silk, artificial silk	All staple colors	½ to 3 in. wide	Sold by the yard	Dress trimming
Horsehair	Flat	Pyroxylin	Cream, black	in. wide and upward	12 yds. in piece	Stiffening garments, millinery
Skirt	Flat	Mohair, worsted, mercerized cotton	All staple colors	¾ in. wide	5 yd. bolts and sold by the yd.	
Soutache	Flat	Worsted, silk, artificial silk	Staple colors	⅛ in. wide	5 yd. bolts	Decorative
Rickrack	Flat	Carded cotton, mercerized cotton	All staple colors	⅛ to 1 in.	4 to 6 yd. bolts	Decorative
Stickerei	Flat	Cotton	Edges in all staple colors		6 yd. bolts	Decorative
Middy Laces	Flat	Artificial silk, silk, mercerized cotton	White, pink, blue, red	Fringed tips, fabric tips beaded tips	30 in. long	Laces for middy waists
Shoe Laces	Flat round, tubular	Mohair, wool, Japan silk, heavy cotton, mercerized cotton, ribbons	Black, tan, white	Metal tips, beaded tips, fabric tips Ribbons without tips	30, 26, 40, 45, 54, 72 in.	Laces for shoes
Corset Laces	Flat, tubular	Cotton (gassed), mercerized cotton, silk	White, flesh-colored	Metal tips, beaded tips, fabric tips	2½, 3, 4, 5, 6, 7, 8, 9, 10, 12 yds.; 1 dozen in bunch	Laces for corsets

Chapter X

BELTINGS

Types

Beltings vary with the styles of skirts and girdles worn. Sometimes when they are only needed for a finish to the top of the skirt, they may be soft and light, and in this case they are covered with an outside girdle. Again they are the foundation to which the skirt is fitted and which gives it its shape.

They may be divided into three classes:

Serge belting, straight and thin.

Heavy woven beltings, either straight or curved, with or without stays.

Girdle foundations, made of light material.

1. Narrow belting, 1 to 4 inches wide, boned and bound on edges.
2. Girdle foundations proper, over 4 inches wide and boned.

Serge Belting

Serge belting is used for binding the tops of skirts when a separate belt or girdle is to be worn. It is a

webbing 1 to 1½ inches wide, made with a heavy, tightly-twisted cotton warp and a mercerized cotton or silk filling, woven in the herring-bone twill weave. It is a very fine grade, firm piece of webbing, especially constructed to withstand strain and wear. It is made in black, gray, and white. Some of the serge beltings are folded in the center lengthwise, pressed or stitched in place.

Heavy Woven Beltings

Heavy woven beltings or bandings are used as foundations for high waist line skirts and as inside belts in dresses. Those made for the former purpose are stiff, often reenforced with stays so as to prevent wrinkling at the waist, while those used for inside beltings in dresses are generally soft bands. The quality of a belting depends upon the firmness of the weave and the grade of yarn used. They are woven either in the herring-bone twill or in the plain weave with a heavy warp which gives a ribbed effect.

Curved Beltings

When these beltings were first put on the market, they were all woven as a straight web and stiffened with sizing or starch. Now, however, the demands of style have brought certain variations such as the curved belt with one edge longer than the other, and

the double-curved belt with the two edges the same length but with the center of the band shorter and reinforced to hold it in place. These, as a rule, have not been woven with a curve, but are woven straight and then given the curve after weaving, by manipulations in the finishing process. The first of these curved beltings has the curved edge arranged so that the belt fits the wearer nicely and does not pucker. The advantage of the second is that the belting is curved so as to fit the waist line and the belt stays in place. Both straight and curved belts are now reinforced with some kind of stay which prevents the wrinkling of the skirt at the waist line.

Widths

Straight beltings come in black, white, gray, and brown in widths varying from 1 to 6 inches. These beltings are sold to the notion trade ordinarily in lengths of 9, 10, and 12 yards and in rolls of 36 or 72 yards each. The curved belts are from 1½ to 2 inches wide in black, white, gray, and brown. Curved belts reinforced with stays come wider, 1½ to 3 inches in black and white.

Light Beltings

Beltings are also made of light material, like percaline, bound on the edges and stiffened with bones. Featherbones are either stitched on in a casing or

slipped into casings that form sockets on each side of the belting. Celluloid bones are also put into the latter. This style comes in widths from 1½ to 4 inches. Real girdle foundations are wider, unbound on the edges, curved to fit the lines of the figure and stiffened with featherbone. They are sold either by the yard or are made up into finished girdles of the various waist measures.

Chapter XI

BONINGS AND STAYS

Importance

Among the most important requisites for comfort and for the neatness of a dress are the bones or stays which are used to keep it smooth and in shape. For tight fitting dresses they are especially important. Boning for collars, girdles, and primarily for corsets or their substitutes is equally important when the dress is full and apparently without stiff supports. Judgment and discrimination are needed now more than in the past because of the great differences in styles and in individual taste.

Types

Bonings of four different materials are found in the Notion Department:

Whalebone, sold by the yard, used for boning waists and girdles.

Featherbone, sold by the yard, used for boning waists, girdles, skirts, and tunics, as collar stays, and stiffening for beltings.

Celluloid, used as stays in beltings, and for collar supports.

Steel, back, side, and front corset steels.

Whalebone and featherbone constitute the main supply of bonings.

Whalebone

Whalebone, because of its natural flexibility, lightness, and toughness, was the first material for waist bonings. But its use is being reduced to the minimum for two reasons: first, the increasing difficulty of getting whalebone on account of the growing scarcity of whales; second, the manufacture of an excellent substitute in the form of featherbone, which has many of the same qualities, is very much cheaper, and can be sewed into the garment with greater ease and better results.

Source of Whalebone

The name "whalebone" is a misnomer, for it is not a bone at all. It is a horny substance formed in the palate in the mouth of the whale. The popular understanding that the whale is a fish is not true. It is a mammal, very well adapted to its environment. Whalebones are really very highly developed forms of the longitudinal ridges found in the roof of the mouth of all mammals. In the whale they serve as strainers

that separate from the water all the microscopic organisms that constitute the whale's food. The mouth of the whale is larger than all the other body cavities. Some whalebones are ten and twelve feet in length. There are as many as 380, sometimes even more, on each side of the mouth. (See Figure 13.)

While the animal is alive these whalebones are soft, but after it is dead and the bones are removed, they become very hard and must be softened by soaking for 10 or 12 hours, before they can be cut into strips about one-fourth of an inch wide suitable for bonings, or into tiny bristles for brushes. Whalebone in the form of bonings comes into the retail market in varying lengths, usually about one yard long. In the seventeenth century, whalebone sold for $700 a ton. Before the recent war in Europe it was selling for about $6,000 a ton.

Method of Sewing Whalebone into a Waist

Before a whalebone can be sewed into the seam of a garment, it must be soaked from 4 to 6 hours to make it soft enough to sew through. There are two common methods of putting whalebone into a waist. The simplest method is to make a flat fell seam large enough to hold the bone. Then sew through the bone and the lining at both top and bottom of the whalebone. The better way is to use Prussian binding.

One end of the binding is folded back about one inch, making a pocket. The whalebone is put in so that it comes to within one-half inch of the end of the pocket. Whalebone and casing are then laid in place on the open seam and stitches are taken through the bone. Then Prussian binding is held loosely over the bone and sewed to the flat seam, thus making a casing, and the bone is sewed in place at the lower end also.

Featherbone

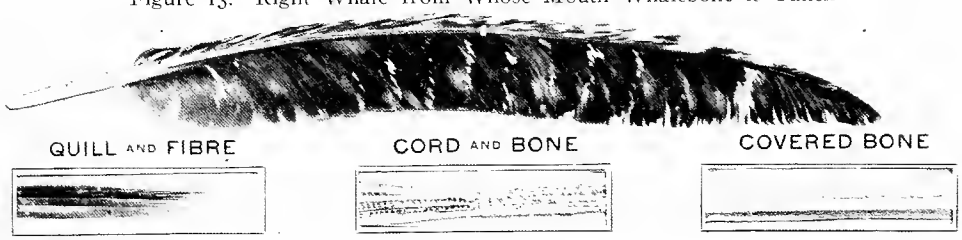
Featherbone is a monument to American thrift and ingenuity. Some years ago while Mr. E. K. Warren was at the Chicago stock yards he observed that great quantities of turkey feathers were discarded as useless and valueless. As a result he conceived the idea of utilizing them in making bones for dresses. Thus out of a waste product has grown a gigantic industry.

Method of Manufacture of Featherbone

The method of manufacturing featherbone is very interesting. The long pointer quills of turkeys are used for all high-grade featherbone. The plumage is removed from both sides of the quill, the quill is split open on one side and after the pith is removed the quill is opened out flat. Then it is shredded or split into long slender fibers which are made into a continuous cord by lapping them and wrapping them with thread. The bone is made by wrapping a number of

Courtesy of American Museum of Natural History

Figure 13. Right Whale from Whose Mouth Whalebone is Taken



All Featherbone is made directly from the quill, as shown above.

Courtesy of Warren Featherbone Company

Figure 14. Process of Making Featherbone

cords in the same way and stitching it through the center to hold it flat. It is then starched and calendered to give it finish. Some of the special bonings are made by plaiting or braiding thread or fiber around the cords. Examples of this type are found among tunic bones and skirt bonings. Figure 14 shows the method of making featherbone.

Characteristics of Featherbone

Although featherbone differs greatly in form from whalebone, it has much the same appearance when in use and few people are able to tell the difference between the two when they are once put in the lining in the same way. Featherbone is replacing whalebone to a large extent because it is much cheaper, and can be used immediately without any preliminary treatment like soaking. As it is sold in any length desired, there need be no waste in its purchase. Besides, it has better wearing qualities and makes a much better fitting garment for the real purpose of bones in a dress is not to furnish a support for the body, but to make the garment fit smoothly. This can be done better with featherbone than whalebone, for the featherbone can be stitched directly into the seam of the lining, and through the curve of the waist where wrinkles are not wanted, the cloth may be held taut. At the bottom and top of the bones the goods can be slightly fulled.

Uncovered Featherbone

There are many different grades of featherbone, but generally speaking, bones used for waists are either covered or uncovered. The uncovered bone is used practically in the same way as whalebone. The standard uncovered bone, one-fourth inch wide, comes in 12- and 36-yard coils. The stiffest featherbone made is the uncovered hook and eye bone.

Covered Featherbone

The covered waist featherbones come in a number of different qualities and in many different grades. Whether the covering is cotton tape, moire, silk, or nearsilk, there is always a stitching through the center to serve as a guide in sewing the bone to the seam.

Uses

The variety of uses to which featherbone is applied is almost unlimited. Each season brings out new variations. With the advent of the flaring skirt, tunic bones of varying widths and kinds of covering have come and also skirt bonings made of cords of featherbone held together by an artificial horsehair (a pyroxylin fiber). Thus the changing styles call on the ingenuity of the manufacturers.

The following list gives a tabulated description of and suggestions for uses of featherbones:

FEATHERBONES

Kind	*Description*	*Covering*	*Color*	*How Packed*	*How Sold*	*Use*
Waist	½ in. wide, covered	Cotton moire, satin, taffeta, Prussian binding, grosgrain	White, black	12 and 36 yd. coils	By the yard	Boning waists
	Uncovered			12 and 36 yd. coils	By the yard	Boning waists
	Hook and eye			12 and 36 yd. coils	By the yard	Bone for the front of waist
Tunic	Covered, ⅛ to ¼ in. wide; casing either of woven or braided fabric	Silk ribbon, silk, floss, mercerized cotton	White, black	12 and 36 yd. coils	By the yard	For tunics and skirts
Skirt	Uncovered, 10 cords			36 yd. coils	By the yard	For skirts
	Uncovered cords, braided with artificial horsehair		White, black	12 and 36 yd. coils	By the yard	
Collar	Narrow covered	Silk	White, black	36 yd. coils	By the yard	For collars

Celluloid Bones

In the Notion Department celluloid stays are an item of very little significance. They are found as collar supports (see "Collar Supports and Bones" in this chapter) and as stays in a certain type of belting (see Chapter X, "Beltings").

Corset Steels

There are two very important facts to be kept in mind in selling corset steels: (1) the quality of the steel and the way it is covered for protection against rust; (2) the kind, size, and length of the steel, which are determined by the place it has in the corset. There are four kinds of steels: side, back, front, and boning wires.

Side and back steels in the cheaper grades are paper-covered with metal tips. In a little better quality, the tips are dipped in celluloid to insure them against rust. Cloth covered steels with tips dipped in celluloid are still better. The best steels are now covered with a hard rubber composition that looks somewhat like whalebone. Until a few years ago whalebone was used in all high-grade corsets. The first steels covered with this rubber composition were copyrighted "walohn." At present whalebone has been completely replaced by steel, partly because of the prohibitory cost of whalebone and because steel is satisfactory.

Boning wires are the more slender steels and are used in corsets usually in groups of two. They are made of the same materials as the side and back steels.

The front corset steels have riveted upon them clasps which are nickel-plated on brass. The steels are either plated, covered with composition of rubber, or are otherwise protected against rust. The front steels are sold in a casing ready to be sewed on the corset.

Collar Bones and Supports

Collar supports and bones come in three distinct styles: silk covered wires, featherbones, and celluloid.

The most popular and practical supports for thin, transparent collars are silk covered wires. These are of two kinds: a three-strand twisted wire, silk-covered, and a wavy wire. Both of these come in ¼-inch width varying from 2 to 4 inches in height.

The twisted wires are very strong and quite invisible. They have two small eyelets, by which they are sewed into the collar. The eyelets are dipped into a celluloid composition which seals the joining so that the thread used in sewing the supports into the collar cannot slip out.

The wavy wires usually have one eyelet at each end. Those of the best quality have the eyelets protected in the same way as the twisted wires. Others have

cushioned tops that are made by buttonholing about the eyelets. These are especially satisfactory because they are soft. A third kind has the ends sewed into a tape.

Collar featherbone is narrow and usually covered with silk in black and white. It is packed in coils containing 36 yards and is sold to the consumer by the yard. For light collars these supports are a little too heavy.

Celluloid stays are made in varying heights from 2 to 4 inches. They are in casings from which they can be removed very easily, but these are not now used at all by the best trade.

Collar Frames

Collar frames of either twisted or wavy wire are made to support all kinds of collars the straight, tight fitting or the flaring, fancy sort. Each season's changes brings in new styles in these frames.

Net Guimpes

Net guimpes are made of washable net, boned, in sizes 12 to 15 inches, in black and white.

Chapter XII

ELASTIC GOODS

Types

Elastics are narrow fabrics made either on looms or on braiding machines. This difference in construction divides them into two types, woven elastics and braided elastics.

Woven Elastics

The larger number of elastics, especially in the wider and fancy goods are woven. Woven elastic is made on the narrow fabric loom. The warp threads of yarn and of rubber are set up together, the rubber being stretched to equal the yarn threads in length. The filling or weft threads are put in in such a way that they completely cover the rubber and they are held in place by being woven through the warp threads. Very intricate designs like those of fancy suspenders and garters may be woven in this type of elastic. The fancy frilled elastic garter is woven, the frilled part being made without elastic, so that when the tension of the loom is removed, the elastic rubber

draws up the center part and leaves the edges in the form of frills or ruffles. After the elastic web is woven, it is steamed, sized, and calendered to give it finish. Then it is packed in whatever form the trade requires.

Materials in Woven Elastics

Carded cotton, cotton lisle, which has been combed and gassed, mercerized cotton, artificial silk, and silk are all used in making elastic webbing. The characteristics of a good elastic are the fine strong yarn which is used in its construction and which results in a neat compact fabric, and the sturdy elasticity of the rubber.

Kinds of Woven Elastics

There are many different kinds of woven elastic, but the following are the kinds generally handled in the Notion Department:

Garter and hose supporter
Corset
Hat
Girdle

Garter and Hose Supporter Elastics

Plain elastic webbing, used for garters and hose supporters, is made of carded cotton, cotton lisle (yarn that has been combed and gassed) of various grades,

and mercerized cotton. They are made in widths ¼ to 1⅜ inches, in black and white. In most of the qualities the wider sizes, ¾ to 1⅜ inches, are also made in colors. For rompers and bloomers, lisle elastic in widths ¼, ⅜, and ½ inch is made in colors as well as in black and white. The most approved method of putting up elastic for the trade is on reels in 12 yard lengths. Experience has proven that heat, light, and grease cause rubber to deteriorate very quickly, and the reels give it better protection.

Corset Elastics

Corset and brassière elastics are made of very firm elastic webbing with a twilled weave. They come in white, pink, and black, in widths 1¾ up to 5 and 6 inches, the 2 and 3 inch widths being the most popular. Most of these webs are constructed similar to hose supporter webs, the others like the surgical weave or loose mesh.

Hat and Fancy Elastics

Hat elastics are usually braided, but plain elastic woven webbing in the narrow widths is also used.

Fancy garter elastics with frilled edges ¼ to 2 inches in width are made of mercerized cotton, artificial silk, and silk. They are made in all colors and many designs. These fancy elastics are sold for arm bands, garters, and hose supporters.

Girdle Elastics

Girdle or belting elastic is woven with soft yarn in such a way as to make it very pliable. It comes in white only.

Braided Elastics

Just as there are two types of braids, there are two types of braided elastic, flat and tubular. The braiding machines used to make elastic are the same as those used to make braids, with the addition of spools or bobbins, set near the floor, for holding the rubber thread.

In the flat elastic the rubber threads run lengthwise and parallel to each other, while the cotton or covering runs diagonally over and under the elastic threads.

In the round elastic, the braid is tubular with the strand of elastic in the center. There is also a combination of the flat and round, called oval elastic.

Materials in Braided Elastics

Braided elastic is covered with cotton, mercerized cotton, and silk. It is used largely for hats, for cords for glasses, and in fancy work of all kinds. For the smaller elastics the braided type is especially good as it gives a finer, more finished appearance.

Comparison of Woven and Braided Elastics

There is one striking difference between the woven

and braided forms. Woven elastic can only stretch as far as the length of the warp threads, while braided elastic stretches much farther. Naturally the strain and wear on the rubber in the latter is much greater. In the wider widths therefore more satisfactory service is secured from a woven fabric.

Uses of Elastic

Innumerable uses may be found for elastic. One manufacturer has issued a suggestive list of 250 different uses, grouping them according to their uses for:

1. Bands
2. Bags or covers
3. Belts
4. Clothing—women's, misses', and girls'
5. Clothing—men's and boys'
6. Fancy articles
7. Footwear
8. Gloves, mittens, etc.
9. Garters, suspenders, etc.
10. Hats, caps, veils, hair, etc.
11. Household needs
12. Travelers' articles
13. Underwear
14. Toys
15. Miscellaneous

Many an awkward or inconvenient misfit can be remedied by attaching a bit of elastic to provide the proper support.

Chapter XIII

RUBBER GOODS

Types of Dress Shields

There are four types of dress shields and one should clearly understand their characteristics in order to meet different requirements and conditions.

Under whatever trade names they may be sold the four types are:

Rubber
Balata
Rubberized Cloth
Pyroxylin

Characteristics of a Good Shield

Probably there is no one thing that enters into the making of a dress of which so much is expected and to which so little consideration is given as dress shields. A perfect dress shield must be perspiration-proof, free from odor, hygienic, and of the proper size and shape. In attempting to attain all of these requisites at a moderate cost, the manufacturers have made use of the following materials:

Gums, such as rubber, balata, and gutta-percha
Soluble cotton, and various oxidizing oils

Para Rubber

Until a few years ago rubber came for the most part from Brazil, though some came from the Guianas, Peru, Bolivia, and Central America. Para rubber is obtained by tapping the Hevea Braziliensis tree which grows wild in the great forests of the South American continent. Because of the great difficulties attendant upon the collection of the gum, only those trees are tapped that grow in the immediate vicinity of great rivers; such as the Amazon, Rio Negro, Rio Madeira, etc. After the sap of the rubber tree has been collected, the rubber is coagulated by means of dense smoke produced by burning the nuts from the Urucuri palm. Para rubber comes to the manufacturers in large " loaves " or " biscuits." It is dark, full of dirt, sticks, stones, vegetable matter, etc. In washing the shrinkage is about 20 per cent.

Plantation Rubber

Some ten or fifteen years ago, a few slips of the Hevea Braziliensis were taken to the East Indies and planted. After several failures, the transplanting of the slips became so successful that in the year 1916, the production of plantation rubber was about 125,000 tons. Plantation rubber is the result of careful

cultivation and attention to the details of production.

The sap or latex of the rubber tree is coagulated by acetic acid and washed on the plantation. The rubber reaches the factory a light yellow color, with no odor and containing no foreign material. After washing at the factory the shrinkage is less than 1 per cent.

Balata

Balata comes from the Guianas in sheet form. It is the sap or latex of a tree belonging to the same family as the rubber tree. The latex is coagulated by exposure to the sunlight. When sufficiently dried, the sheets are packed in bales weighing from 300 to 1,000 pounds each. The balata sheets are more or less filled with impurities, which when washed out, cause a shrinkage of about 20 per cent.

Manufacture of the Gum Interlining

When the raw gum reaches the factory it must be washed and cleansed. After washing, the gum is either dried slowly during several weeks at a little above living room temperature, or it may be dried within a few hours by means of a vacuum drier. Next it is milled and compounded with mineral pigments or dyes to produce the desired color. The amount of compound may run from 5 to 50 per cent of the weight of the rubber. After compounding, the gum passes between steam heated steel rolls and is

calendered or ironed out into very thin sheets, a yard wide and of unlimited length. When the gum leaves the calender it is warm and soft. To prevent it from sticking together, it is powdered with starch or talcum. After cooling, the sheets of gum are rolled up into great bolts and allowed to remain so for at least two weeks, so that the gum may shrink.

The manipulation of rubber and balata is practically the same up to this point but in the next few steps the process is different. The rubber is cut into shield shape. The exact line of the arm curve is cut with a sharp knife, and the two pieces joined together at this curve. The rubber, not yet vulcanized, adheres so firmly that the two sections are practically one piece of rubber. The next process is vulcanization.

Vulcanization

Vulcanization is a chemical combination of sulphur with rubber to make it durable and to give it an elastic property. Unless rubber is vulcanized it is absolutely useless.

There are three methods of vulcanization: first, the "cold cure," or vulcanizing the rubber in a vapor of sulphur obtained from the vaporization of sulphur chlorid; second, the "hot cure" by which rubber is mixed with flour of sulphur and heated in steam to a temperature higher than the melting point of sulphur;

third, the " dip method " where very thin rubber sheets are dipped into liquid sulphur chlorid.

The thin sheets of balata are cut into shield shapes, and the two pieces are joined together, but are not vulcanized. From this point, the manufacture of the gum shields from the two products is again the same.

The gum interlining is covered with various materials such as lawn, nainsook, silk, satin, sateen, absorbent cloth, etc. The covers are bound with bias seam tape and after several inspections are ready for packing and shipping.

Manufacture of Water-Proofed Cloth

Cloth such as nainsook may be made water-proof by spreading or calendering on it a very thin film that will not permit moisture either to pass through the cloth or to enter its fibers. There are two types of water-proofed cloth in general use, the rubber coated and pyroxylin.

Rubber Coated Cloth

Nainsook may be coated either by running the cloth through calender rolls, forcing a very thin sheet of rubber to adhere to the cloth, or the cloth may be run on a spreading machine, whereby a solution of rubber compound is spread on the cloth to produce the desired film. After the cloth has been water-

proofed it is cut in the desired shapes, and the two pieces of the shield are cemented together and vulcanized. The rubber coated interlinings are put through the same process of manufacture as other shields.

Pyroxylin

Nainsook is coated with a combination of soluble cotton, that is, cotton very similar to "gun cotton," and castor oil. The water-proofing material is spread on nainsook in the same way as rubber, the cloth is cut into shield interlinings, cemented, and manufactured as other shields. Pyroxylin coating need not be vulcanized.

Comparison of Shields

In comparing shields, the high-grade sheet gum shield is unquestionably the best. It will give far greater value for the money invested than rubberized or pyroxylin coated shields, although these have the advantage of being lighter in weight. The gum shields can be made almost pure white or in very delicate colors. One can distinguish the two types quite easily. There is a double cover for the gum shield and generally only a single one for the coated cloth shield. The coated cloth shield is seamed in the arm curve with cement, making the chances of leaking much greater than with the gum shield. To deter-

mine the kind of shield, look on the inner side. If the seam is cemented it is made of a coated cloth.

There is very little difference in the appearance of a rubber and a balata shield. A balata shield is inclined to be stiff but this stiffness disappears when the shield comes in contact with the warmth of the body. It is odorless, comfortable to wear, and gives good satisfaction. A rubber shield is very soft to the touch but has been known to give off a disagreeable odor upon coming in contact with perspiration. Because of its vulcanization, a rubber shield will stand more heat, such as warm water, hot surfaces, etc.

Sizes

In selecting shields saleswomen and purchasers should be very careful to choose the right size. Many people are inclined to buy shields too small. There are ten sizes, the smallest being numbered 1 and the largest 10. Most women will find size 3 or 4 large enough.

Shapes and Styles of Shields

There are shapes to meet every need and if greater care were used in selection fewer dresses would be ruined and fewer women would blame the manufacturers and sellers of shields.

The standard shapes are:

Regular, with both flaps the same size and of equal width and length.

Shirt waist, with both flaps the same size, but shorter than the regular size.

Short flap, with one flap shorter than the other.

Long point, with flaps the same size, but the part of the shield that comes to the front has a higher point than the one in the back. These are especially desirable for stout women.

Coat shields, with two flaps either the same width or one wider than the other. These shields are made with a satin or sateen inside to match the color of the lining.

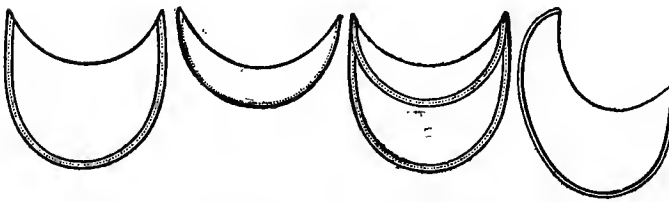


Figure 15. Styles of Shields
(Courtesy of Omo Manufacturing Co.)

Coverings are of silk, nainsook, absorbent cotton material, or linen mesh for hot weather, and satin or sateen to match the linings of coats.

Colors are white, black, flesh, and special colors.

How to Sew in a Shield

The very best shield is of very little value unless properly attached to the dress. Pinning in shields is never satisfactory, as the shield is almost sure to curl up and will thus be of no protection. If a customer does not care to be troubled with sewing in shields, she may purchase detachable shields which are desirable as they may be adjusted in various ways.

Washing Shields

Another very important thing to consider in the life of a shield is the washing. Always read carefully the directions given by the manufacturer, because not all kinds of shields should be washed in the same way.

Sheet Rubber Shields. Wash in warm water, adding a few drops of ammonia. Dry in natural room temperature and keep away from a very hot surface. When dry, iron with a moderately hot iron. Never use naphtha or soap made of mineral oils for it will injure the rubber. In fact, it is wiser never to use any soap on rubber.

Balata Shields. Soak in cold soap suds, using only a good white soap like ivory. Scrub with a stiff brush, rinse in clear cold water, shape carefully while wet, and dry thoroughly. Do not iron.

Rubberized Cloth Shields. Wash in the same way as rubber shields, but never boil as the two pieces of rubberized cloth are held together by a cement.

Pyroxylin Shields. Wash in warm water. When dry smooth out with a moderately heated iron. They are washed practically in the same way as rubber.

Standard Shields

The following standard shields illustrate each of the different types:

Sheet rubber shields: Gem, Elva, White Clover, Amolin covered with absorbent cotton cloth.
Rubberized cloth shields: Trilite, Featherweight.
Balata: Omo.
Pyroxylin: Juno, Armia, Naiad.

Sanitary Goods

It has been only within a few years that most of the articles sold in the Notion Department as sanitary goods have been manufactured, but now they are doubtless permanent goods. They may be classified as:

Sanitary aprons and other water-proof articles
Sanitary belts
Sanitary napkins

Sanitary Aprons

Sanitary aprons, sanitary sheeting, infants' pants and diapers, infants' bibs, and similar goods are all made of water-proof cloth. There are two types of such materials; cloth covered with pyroxylin and cloth

covered with rubber. (For further information see part of this chapter relating to "Shields.") The cloth water-proofed with the rubber sheet is the purer form and will give longer service. It is specially desirable for sheeting and similar articles that get hard wear.

Sanitary Belts

Sanitary belts are of two types: those made of soft woven elastic and those made of webbing, heavy coutil, or other material bound on the edges. The former are easily adjustable and comfortable to wear; the latter are designed to fit closely and are considered by many to be more satisfactory.

Sanitary Napkins

Sanitary napkins are of two types, washable and non-washable. The washable ones are made of diaper cloth or loosely knitted goods. The most desirable kind is made so that a number of thicknesses of the material are folded into a pocket in the center of the napkin and the ends are of only double material. The unwashable are made of absorbent cotton, covered with a thin open-meshed cloth.

Chapter XIV

SAFETY PINS AND FANCY PINS

Types of Safety Pins

The same types of wire are used in the making of safety pins as for common pins, but they are differently finished. The types are:

Steel safety pins, plated with copper and nickel.
Brass safety pins, plated with nickel.
Bessemer steel or adamantine safety pins, plated with tin or nickel.

Steel safety pins are first plated with copper and then nickeled rather than plated with tin as are common pins. Brass safety pins are usually nickeled, although some are polished so as to look like gold or japanned in either a dull or shiny finish. (Japan is really a black varnish that is baked on the pins.) Bessemer steel safety pins are not plated first with copper, but are plated directly with nickel or tin.

Comparison of Different Types

Steel safety pins, plated first with copper and then

with nickel, are made of a very stiff, finely tempered grade of steel wire. Owing to the stiffness of the wire, these pins are much smaller in diameter than any brass pin and therefore make a much smaller hole in the fabric. Two platings are given them as a protection against rust. They are usually put up 12 pins to a card.

The highest grade of brass safety pins has a metal guard around the coil to prevent its catching in the material, and a tongue in the center of the head so that the pin can be slipped in from either side. These sell at about the same price as steel safety pins. With the brass pin there is no possibility of rust, but the hole made by the pin is larger than in the case of the steel pin and the pin bends more easily. The cheaper grades of brass safety pins are made from smaller wire and are therefore less stiff; neither do they have a guard over the coil.

The cheapest grade of safety pins is also made of steel, but of a quality more like iron. The wire is not so stiff, therefore a larger size must be used. These pins are plated with nickel or tin. Cheap steel pins should never be used where there is any fear of rust.

The tests for distinguishing brass, steel, and iron safety pins from one another are the same as for common pins.

Qualities of a Good Safety Pin

1. The pin must be strong, sharp, and well pointed.

2. The point must be sharp and the metal "built up" well in back of the point so that the point will not bend easily.

3. The cap should allow the pin to be opened from either side.

Manufacture

In making safety pins, the caps are first cut and formed by one operation on an automatic power press into which is fed a strip of sheet brass. The wires are made on the automatic machine which cuts, points, and winds. The heads are then attached to the wire by a foot press. The better grade safety pins have a guard on the spring or coil. This guard is made on a power press similar to the type used for the head and it is attached by foot presses.

Safety pins in ordinary use are sold in sizes 00, 0, 1, 2, 2½, 3, and 4. The larger sizes, as 6, 8, and 10, are commonly called blanket pins. There are 12 pins on a card and 12 cards in a box.

History

The use of the safety pin dates back to the early Egyptian, Roman, and Greek days. Then they were hand-made of gold and silver, practically in the same

shapes as those used today. In some cases they were covered with jewels, examples of which, taken from mummies and excavations, are found in museums throughout the world.

The safety pin used today is strictly a triumph of American genius. It was made first in 1804 with the guard on only one side of the pin. It has been improved at various times since then, the latest one having the guard opening on either side, with the tongue in the center of the head. It now has also a guarded spring. All steel safety pins are imported. Brass and adamantine are either imported or made in the United States.

Shield Pins

Shield pins are smaller sized brass safety pins. Some shield pins have a small bend or twist in the back to facilitate pinning them on the shield.

Baby Pins

Baby pins are fancy pins used to fasten babies' dresses. They are made of solid and plated gold and silver, often decorated with small precious stones or engraving. They usually come in sets of two or three and often are joined to one another with chains.

Lingerie Slides or Clasps

Lingerie clasps or slides are used to hold the various

undergarments, as undervest, corset cover, and brassière, together on the shoulder. They are made of plated or solid gold and silver. Decorations, if any, are usually engraved or etched.

Fancy Headed Pins

Fancy headed pins are made with a steel shank or stem and a glass head, usually round. They are manufactured in Aachen, Germany, Coblenz, Bohemia, and England. All pins under three inches in length, with heads not larger than a pea are made by special machinery which is patented and made in the factory where the pins are produced. Fancy headed pins are put up in sheets, on cards, or in cubes in boxes.

Hat Pins

Hat pins, flower pins, and other glass headed fancy pins over three inches in length are made entirely by hand. Sometimes the heads are as large as hazel nuts. These are also made in Germany and Austria. The manufacturing process is as follows: the workman holds the stem of the pin in the left hand and a piece of glass in stick form in the right hand, over a blue gas flame; when the glass is being reduced to a liquid mass, the stem is twisted around in it. Various styles of heads are made according to the manipulation, which of course requires special skill.

Chapter XV

HOOKS AND EYES AND SNAP FASTENERS

Types of Hooks and Eyes

Hooks and eyes may be divided according to the materials of which they are made into two types:

Brass, plated with tin or coated with japan.
Iron or adamantine, plated with tin or coated with japan.

Manufacture

The wire out of which the hooks and eyes are made comes to the factory in the sizes desired. It varies from the very fine wire used in the tiny 00 size of hooks and eyes to the very heavy used in the No. 15, the horse blanket size. The manufacturing of hooks and eyes is a fascinating series of processes to watch.

The machine works automatically and at such high speed that one is unable to see the different operations. In the hook machine the coil of wire is placed so that it feeds directly into the machine. Steel fingers grasp the wire, cut off the desired length for a hook, make the thread eye, turn up the hump, and fold it together

into a hook. Another machine, not quite so complicated, makes the eyes.

Finishing

The finish depends largely upon the metal of which the wire is made and is practically the same as for brass and iron pins. The hooks and eyes are scoured and burnished.

For the white finish those made of brass are plated with tin by an electric process. Those of iron are either plated with tin or whitened to appear like tin.

For the black finish both iron and brass hooks and eyes are put through the japanning process.

Comparison of Brass and Iron Hook and Eye

Brass hooks and eyes are unquestionably the better. They are rust-proof, strong, and have a smooth finish. Iron is only used because it is cheaper. Brass hooks and eyes usually cost about twice as much as iron but they are many times safer and more serviceable. When finished, brass and iron look very much alike. It is not easy at a casual glance to tell the differences, but the following simple tests will aid:

A magnet will always draw iron but never brass.
When iron hooks and eyes are exposed to moisture they will rust but brass never will.
When the plating of tin is scratched off with a

sharp tool, the bright, gold-like color of the brass can easily be recognized, while the iron has a silvery appearance.

Manufacturers also help by usually marking the brass ones as such, or "Guaranteed not to rust," "Rust! Never!" or the like.

Styles

Although hooks and eyes in general are very much alike, they vary considerably in detail. All hooks, although made of one piece of wire, have at least two parts; the thread eyes and the bill. Most hooks today have also a hump or spring that prevents the eye from slipping out. Many have specially shaped thread eyes by which they may be sewed securely.

Eyes are of two kinds: the standard or round, and the invisible or straight. One manufacturer makes the invisible eye with heart shaped thread eyes, another with triangular thread eyes. Both of these offer a secure and easy means of sewing on the eye. Either is better than the round thread eyes that will slide even when sewed on very carefully.

The round eye is used where the fastening requires the edges of the garment to meet only, the lap being very slight; the invisible where there is a broad lap for the fastening.

Sizes

There are many sizes of hooks and eyes. The greatest satisfaction is obtained by using the correct size for the purpose, as:

No. 00 or 0, for laces and chiffons
No. 0 or 1, for collars
No. 2 or 3, for waist linings and girdles
No. 4, for skirt bands

The smaller sizes should be used on the lighter weight materials; for example, a No. 2 size might be used for fastening a silk dress, where the same sort of closing on a serge dress would be better served with a No. 3.

How Sold

The method of sewing hooks and eyes on the cards varies with each manufacturer. However, there are usually 2 dozen hooks, and from 2 to 4 dozen eyes, some round and some invisible, on every card of the better grades of brass hooks and eyes. One manufacturer puts 2 dozen hooks, 2 dozen invisible eyes, and 1 dozen round eyes into an envelope instead of putting them on cards. In some cases where a set of both plain and invisible eyes is not given, there will be 3 dozen of the hooks and eyes instead of the 2 usually given.

Sewing on Hooks and Eyes

The main consideration in sewing on hooks and eyes is to have them secure. On a tight-fitted waist the hooks and eyes are sewed 1⅛ inches apart, alternating first a hook, then an eye. A hook should be sewed on through the thread eyes, close to the hump, and at the end of the bill; plain eyes, through the thread eyes and about ⅛ inch above on the curve of the eye proper. Cotton thread is preferable to silk for sewing, as silk stretches and gives with wear.

Hook and Eye Tape

Hook and eye tape offers a very neat and labor-saving method of attaching hooks and eyes. It is very secure as each hook and eye is riveted into the tape. It serves several purposes when used on a waist lining, as a means of fastening, as a finish for the edge, and a casing for the boning. It comes in black and white and on cotton and silk tape, the former to be used where firmness and strength is desired; the second, for a daintier finish.

History

Hooks and eyes are generally considered a modern method of fastening for garments, but they have their origin as far back as the fourteenth century in what was then referred to as the crochet and loop. Many references to hooks and eyes are found in literature.

In the "Jest Widow Edith" written in 1573 is the quotation: "The widow borrowed a cap, a hat, three kerchieus, a couple of sylver pins, a pair of hooks, and no more." Later, in about 1697, in "Aubrey Lives" is the statement: "Then their breeches were fastened to the doubletts with points, then came hook and eies."

The first hooks and eyes were crudely fashioned by hand from wire. Redditch, England, the city now so famous for needles, was the first home of machine-made hooks and eyes. Even among the early colonists we hear of their use. It is recorded that in 1643 a lady in Maryland paid ten pounds of tobacco for hooks and eyes. It was not until the first part of the nineteenth century that the industry was started in the United States. One of the greatest improvements added was the hump, patented in 1889 by the DeLong Hook and Eye Co. The unusually rapid development of the industry demonstrates the great satisfaction given by this method of fastening.

Snap Fasteners

Snap fasteners are the most modern and convenient of garment fasteners. The first snap fasteners were put on the market about 15 years ago. However, it has been within the last 10 years that they have become of real commercial importance. They are now used

for many purposes other than dress fastening; for example, attaching dress shields in a waist, fastening slip covers for cloths, furniture, pianos and pillows, and fixing rugs to the floor. One manufacturer has classified 75 different uses for his snap fasteners and suggests the proper size and strength for each use.

There are two parts to a snap fastener—the "stud" and the "socket" (see Figure 16). At the present time there are on the market two distinct types of snap fasteners, the difference being in the socket. The studs are practically the same.

In one type the socket, shaped like a dome reinforced with a wire spring, receives the stud. Of this type there are two kinds—one in which the walls of the socket are round and the spring curved, both characteristics tending to make the stud stick more tenaciously into the socket; the other in which the walls of the dome or socket are straight and the wire straight.

The second type is a much flatter snap fastener. A hole takes the place of the dome. Where this is reinforced with a spring it is a very satisfactory snap. The socket is flat, so that it lies close to the material without bulging or drawing the material in any way. The flat feature makes it almost invisible and in laundering, the iron readily passes over this smooth surface without injuring the material. The flat socket has the advantage of being reversible, that is, it cannot

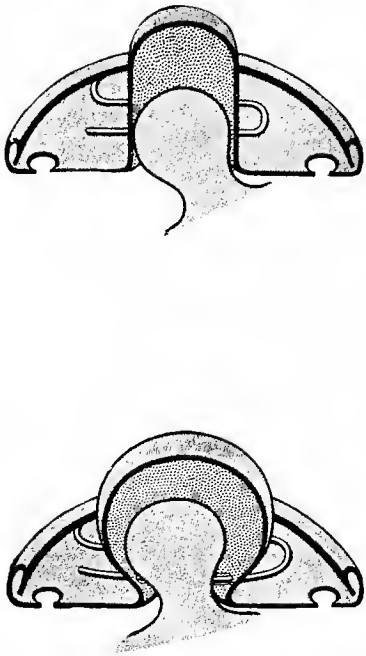


Figure 16. Construction of Two Types of Dome-Socket Snap Fasteners

be sewed on wrong because both sides are alike—flat. The flat snaps, not having a spring, are just as invisible, but are weak, standing but a slight sidewise strain.

Manufacture

Snap fasteners of the first type mentioned were originally imported largely from Austria and Germany, and the cheapness of foreign labor enabled these foreign manufacturers to sell their snaps to the American market at a price that it was impossible for the American manufacturers employing American labor to meet. The recent war, however, cut off the supply of German and Austrian goods, and gave the American manufacturers their opportunity. Today a number of concerns in this country are making first-class snap fasteners.

Sizes of Snap Fasteners

The dome-socket type of snap fastener comes in 8 sizes suitable for dresses and 5 larger sizes for heavier use.

5-0 for chiffon, lace, veiling, tulle, etc.
4-0 for organdy, voile, etc.
3-0 for light weight waists, lawn, silk, etc.
2-0 for heavier wash waists, linen, cambric, etc.
0 for light weight and wash skirts, house dresses, undergarments, bathing suits, etc.

1 for medium weight woolen skirts.
2 for heavy weight woolen skirts.
3 for slippers, etc.

The flat wire spring fasteners are made in sizes 00, 0, 1, 2, and 3.

Comparison of Grades

The better grade fastener is made of the best quality brass, with a number of coats of nickel or japan applied by the most approved methods. They are carefully finished in all particulars. The edges are curled back in such a way as not to cut the thread. This is not done in the cheaper grades, which are also made of brass but rolled much thinner. Take one between the fingers, especially the ball part, and it can be bent out of shape quite easily. They also receive less coats of nickel or japan, and the rims are raw so that they sometimes cut the thread. Furthermore, they are not subjected to the same rigid inspection as the better grade fasteners.

Chapter XVI

MISCELLANEOUS DRESS FINDINGS

Dress Weights

Dress weights are made of lead. The smaller ones are usually encased in a braided tube or a woven double tape. They are put up in black and in white, 12 yards to a box, and sold by the yard. The larger sizes are uncovered and must be covered before sewing into a garment.

Cordings

There are two types of cordings. The most desirable kind has a center core of untwisted yarn with a tubular plaited or braided fabric around it. When the cord is used for holding out a garment, the center of the yarn has a single cord of featherbone. The second type is really a three-cord cording; that is, it is made up of three cords of soft yarn twisted together. This is not as smooth a cord as the former. The irregularities of the twisted yarn will show through and wear rough, even when the covering material is properly cut on the true bias.

Cuff and Collar Buttons

Cuff and collar buttons are made of many materials: mother-of-pearl, celluloid, bone, porcelain, and plated metals.

The name " mother-of-pearl " or " salt water pearl " applies to the shell of the oyster that produces precious pearls, which are found in the Red Sea, Persian Gulf, around the South Sea Islands, and Australia. The shells are softened by soaking. Then disks or blanks of the desired size are cut from the shells by a tubular saw. The outer bark is removed from each blank and the blank is ground into various shapes and styles of cuff and collar buttons and other buttons. Patterns may be carved on the button. They are made smooth by tumbling them into a revolving tub and later polishing them on rag wheels. Collar and cuff buttons made of mother-of-pearl are very beautiful as well as serviceable.

Celluloid buttons are molded under hydraulic pressure into the form of cuff and collar buttons. These are cheap.

Porcelain and bone rank among the very cheapest of collar buttons. Porcelain buttons are made of clay and baked in about the same way that our porcelain dishes are, in kilns under great heat. Bone buttons are cut or turned out on lathes.

There are many varieties of metal buttons. Some

are made of one piece; others are combined with mother-of-pearl; some are plated with gold and silver; and others are of solid gold.

Bachelor Buttons

The term "bachelor button" is applied to a metal button which may be attached by means of a snap fastener. (See Chapter XXII.)

Neck Bands

Neck bands for shirts are made ready to sew on the shirt. These bands are either shrunk or unshrunk. The value of the former is self-evident. They come in sizes ranging 12 inches and upward in half-inch variations.

Part III—Hair Goods and Shoe Supplies

INTRODUCTORY TO PART III

Hair goods and shoe supplies are articles upon which customers are very dependent.

The differences in the wearing qualities of horn and celluloid and the different grades of celluloid may be useful and new information to all customers who use hair goods and shoe supplies. Hair nets also are sufficiently new to justify a short description of their manufacture and the reason for the cost of better ones.

Different kinds of shoe dressings are used on different kinds of leather. Few people know what is best for their shoes and should be told why one is recommended more than another, and not given an unauthorized statement which they may not believe. People who have used a dressing under a certain name and have found it satisfactory may ask for it in a store which does not carry that brand. They need to be shown that another brand may have a similar composition and an equally good effect. It is not a question of offering something "just as good," but whether the action on the material is just the same.

Chapter XVII

HAIR GOODS

Imitation Shell Goods

The largest division of hair goods is composed of combs and hairpins made of imitation shell. These may be divided into:

Side-combs, made of celluloid.
Back-combs, made of celluloid.
Barrettes, made of celluloid.
Hairpins, made of celluloid and horn.

Celluloid

Practically all imitation shell goods are made of celluloid. When one considers the great range in the quality of these goods, it is hard to believe that the differences are not due to the celluloid, but are the results of the coloring matter, the method of making the article, and the finishing.

How Celluloid is Made

All celluloid is manufactured in the same way. Cotton is spun and woven into clean cotton cloth, which is then made into tissue paper. The original

manufacturer of celluloid defines it as " an acid-treated tissue paper mixed with camphor and such coloring matter as is needed to obtain the various imitations which are made, such as ivory, tortoise shell, amber, etc." The processes in this change from tissue paper to celluloid are many. The paper is immersed in a bath of acids which reduces it to a pulp known as pyroxylin or nitrocellulose. This is mixed with camphor and then the compound is dissolved by a chemical process. The resulting substance is a plastic mass. It is worked on large, slowly turning, heated rolls much as molasses is worked after it is cooked.

When this mixture has been worked to the proper consistency, it is placed in a great hydraulic press. With a high degree of heat and tremendous pressure, it is reduced into a solid block or cake about 24 inches wide, 50 inches long and 3 inches thick, which in turn is cut into sheets of the thickness necessary for the making of the articles required. These sheets must dry and season, like lumber, or the celluloid would warp when made into hairpins, combs, and other toilet articles. The time required for seasoning varies from three weeks to a year, depending upon the thickness of the sheet. This adds an element of cost that is of great significance. Articles made of a heavy stock celluloid are proportionately more expensive than the amount of celluloid used would indicate.

Celluloid may be worked in the same manner as wood, it may be molded and pressed in hot steel dies under hydraulic pressure, or it may be dissolved and used in a manner similar to japan or varnish.

The name "celluloid" was given to the original product and this was so copyrighted. As the patents used in the manufacture expired, goods of a like nature were produced under a score of different names, as Parisian ivory, French ivory, ivory pyralin, English ivory, and fiberloid.

Side- or Back-Combs

The difference between side- and back-combs lies in the size and design of the combs, not in the manufacture or material used. Side-combs always appear in pairs and are smaller, lighter, and less elaborately decorated than the back-comb. In the medium-priced goods both side-combs and back-combs are made of celluloid or some material of similar nature, in either imitation shell, amber, or gray according to composition. Like dressing combs, there are three types:

Sawed tooth combs
Cut tooth combs
Pressed or molded

Sawed Tooth Combs

The sawed tooth combs are the most satisfactory.

This is because of the method of manufacture. A blank of celluloid or some similar form of material in the size and shape of the comb desired is used. In making the teeth, the saw cuts straight from the point to the base of the tooth and thus makes a square, rectangular opening at the base between the teeth.

Cut Tooth Combs

In the cut tooth combs, the blank is wider and is made in the shape of two combs. When the teeth are cut out, one set comes out of the space between the set of teeth of the other comb. In other words, the teeth are cut from a single blank and the two combs are broken apart. This method makes the opening at the base of the teeth wedge-shaped.

Pressed or Molded Combs

The latter are made by pressing a heated piece of celluloid under hydraulic pressure, after which the surplus celluloid is removed. Medium-priced combs are made in this way. It is not easy to distinguish them from cut combs, although they are lighter in weight. Large quantities of side- and back-combs are pressed or molded.

Comparison

It is very obvious that the sawed comb is much more expensive to produce, for two reasons: the celluloid

between the teeth is lost in sawdust, and it takes as much labor to saw one sawed comb as to cut two cut combs. But the results are worth the difference in cost. The hair is apt to catch and pull and tear in the wedge-shaped openings at the base of the cut comb, while with the sawed comb it passes easily through the square rectangular openings.

In order to distinguish the type look carefully at the base of the teeth. If square and if the distances between the teeth at the base and the point are practically the same, it is a sawed tooth comb. If the opening is wedge-shaped, it is a cut tooth or molded comb. The tooth at one end of a cut comb, when first cut and before finishing, will be spread out a little from the other teeth, as the end tooth of the opposite comb comes out of the space between this tooth and the rest of the teeth. This tooth is bent into form in the finishing operation, but a little bulge can be detected in the material at the point of bending, which will also help to distinguish a cut comb.

To prevent particles of dirt from lodging at the base of the teeth, the comb is grailed; that is, the corners of the openings at the base of the teeth are shaved off. This is done only on better grades.

Decoration of Combs

Side-combs and back-combs may be perfectly plain

or decorated. The decorations are of two kinds: open-work designs or inlaid flat forms. In the former, the open-work parts are made separately and cemented to the comb proper. This is not true, however, in the higher priced and better grades where the whole comb may be made in one piece. There are two methods of making the open work. For the less expensive combs the designs are molded or pressed out under hot steel dies in a hydraulic press. The better ones are sawed, much as a boy saws out a design in wood with a jig saw.

The flat designs worked out in metals and brilliants are made by a press similar to a printing press. The materials used are gold, silver, bronze, various other metals, and their substitutes. It is difficult to distinguish the precious metals from the substitutes. However, the former will stand a reasonable amount of wear and remain bright and untarnished, while the latter will tarnish and wear away.

Finishing of Combs

Side-combs and back-combs are finished by buffing and polishing. This gives them high luster. The cheapest ones are immersed in glacial acetic acid, which makes them shiny.

Barrettes

Barrettes are used to hold in place short locks of

hair, especially the so-called "scolding locks." Barrettes and other hair ornaments are either molded or pressed out by heated dies under hydraulic pressure, or sawed. The designs used and the perfection of finish to a large extent determine the price. Only the more expensive barrettes and ornaments are sawed; the others are pressed or molded.

Imitation Shell Hairpins

Hairpins made in imitation of shell, or amber, and in gray, are usually celluloid, although a small percentage is horn. Celluloid pins are made of celluloid wire or rod. The wire is cut in the desired lengths. It is laid on a heater to soften and then bent over a form. The better grades are polished and finished by careful buffing. The cheaper ones are immersed in glacial acetic acid, which gives the pin a bright, polished surface.

Celluloid pins come in many lengths and grades. The heavier ones are naturally the better. The lengths vary from 1½ to 4 or 5 inches.

The warping of celluloid pins is due to poor seasoning and to heat. The very light stock is apt to warp from the heat of the head, unless perfectly seasoned. The heavier ones seldom warp, but if they do, it is because they have not been seasoned long enough.

With a little comparison and experience, it is easy

to tell horn from celluloid hairpins. Horn will break by bending, especially in cold weather, much more quickly than celluloid. Horn loses its polish with wear much more quickly than celluloid and the hairpin is apt to split at the points

Wire Hairpins

Tempered steel wire is used in making black lacquered and bronze hairpins. Pins are also made of brass. A few years ago brass as well as steel was employed for all kinds of hairpins, but because of the desire for the slenderer and at the same time stiff pin, steel has superseded brass almost entirely except in the yellow pins. Steel pins are finished with the so-called lacquered japan. In lacquering or japanning cheap pins they are baked in an oven. The better pins are first hand-dipped. The hand-dipped pins are strung on a rod and immersed in the japan, and the rod with the pins on it is then placed in an oven for baking the color fast on the wire.

There are two kinds of hairpins: the tiny, invisible ones, made of very fine wire which vary in length from 1½ to 2½ inches, and the regular hairpins made of heavier wire, in lengths from 2 to 4 inches.

Hairpins are either straight or crimped in some way to aid in keeping them firmly in the hair.

Hairpins are packed either in papers or in boxes.

In papers, they are generally put up in packages of one ounce each, 16 to a bundle, each bundle weighing a pound. The method of packing in boxes varies, but assorted sizes and styles are packed usually in individual compartments.

Types of Hair Nets

There are two distinct types of hair nets, and each type is also made in two styles. These are:

1. Real human hair nets
   - Fringed or all-over nets
   - Self-adjusting cap-shaped nets
2. Silk nets
   - Circular with elastic rubber band.
   - Tied-end nets, 36 inches long.

Human Hair Nets

All real human hair nets are made by hand of long human hair especially prepared for the purpose. They are made in two distinct styles: the fringe or all-over net, and the self-adjusting cap-shaped net.

The fringe nets are constructed in a triangular shape. The sizes are known by the number of meshes they contain. For example, the smallest net used at the present time is 26 x 28; that is, the number 26 denotes the number of meshes along the width of the net and 28 the number along the length. The next size net

is 28 x 30 and each size thereafter increases according to the additional number of meshes contained. The largest is 48 x 50, the most popular 38 x 40.

The self-adjusting cap-shaped net is so constructed as to be very much like a bathing cap and can be easily drawn down over the head. Three rows of small meshes along the edge offer a means of holding the net securely. The great advantages of this net are that it can be adjusted with but little skill and held in place with but a few hairpins.

Nets made of double strands are very durable. They come in both shapes.

Colors of Human Hair Nets

Human hair nets are made in the following shades: light blond, medium blond, ash blond (drab), dark blond, light brown, medium brown, dark brown, extra dark brown, black, light auburn, medium auburn, dark auburn, brick red, white, light gray, medium gray, and dark gray. Special colors can be matched.

Packing of Human Hair Nets

Each hair net is wrapped in tissue paper and enclosed in an envelope. One dozen of a given color are sealed in a dust-proof and germ-proof paraffin paper wrapper.

Sources of Human Hair Nets

All real human hair nets are imported, most of them coming from China, and they are made of Chinese hair. Many attempts have been made to manufacture them here in the United States, but all efforts have failed, because of the lack of patience and skill of the workers and the cost of labor. A good worker will take a whole day to make one dozen hair nets of the ordinary size in the self-adjusting cap-shaped nets, or of the medium size fringe nets. Even if American workmen possessed the requisite skill, the manufacture of human hair nets would still be impractical because of the prohibitive cost of labor.

Silk Nets

Silk hair nets differ from real hair nets not only in material, but also in the size of the mesh which is generally smaller. Silk nets are made in France and England. They were formerly cheaper than human hair nets, but now the price is about the same and the demand is therefore less.

Styles of Silk Hair Nets

Silk nets come in three different styles: a circular net, a piece of flat netting, and an imitation of the fringe net. The circular net is made in imitation of

the self-adjusting cap-shaped net, with an elastic drawn through the outer meshes. This is the best selling silk net, but it has certain disadvantages. The elastic is almost certain to show and is apt to bind and give a feeling of discomfort to the wearer. The chief sale of this net is in mill towns and among the negro trade. Negroes use a net made of a rather heavy texture.

The second style, a piece of flat netting, is usually about 36 inches in length and about 24 to 27 inches wide. It is made on the lever lace-making machine and is cut in 36 inch lengths as one would cut lace or veiling. The ends are tied with a common knot and the net is ready for use.

The imitation fringe net is an attempt to duplicate the real hair net in silk. It has, however, a very limited sale.

Silk nets are packed in tissue paper, and enclosed in an envelope.

Silk hair nets are made in the following shades: blond, light brown, medium brown, dark brown, black, white, auburn, and gray.

Hair Curlers

Hair curlers are of many kinds, both in form and material. In all of them, however, the hair is wrapped around a part of the curler and another part of the

curler is brought over it to hold it in place. The following are a few varieties:

Soft lead or other metal curlers covered with a fabric either woven or braided.

Kid curlers.

Rubber curlers, made of a bar of rubber with a slit at one end and a knob at the other. The hair is wrapped around the bar near one end, then the knob is brought over and slipped into the slit.

Electric curlers, made of a piece of nickel-plated metal about 6 inches long, folded in the center to form a spring. It is fastened at the ends with a patented catch.

Horn curlers like the electric in general principle, except that they are made of two pieces of horn, 3 inches long and ¼ inch wide, which are riveted together at one end and fastened at the other with a catch.

Hair Curling Irons

From the standpoint of results there are two classes of curling irons: those that curl the hair, and those that wave it. In construction they are much alike, except the iron that makes the marcel wave which is made up of a number of curling prongs set side by side. The metal parts of all curling irons are nickel-

plated and the handles are usually of wood. For convenience in traveling there is a plain iron with handles that fold back. The circumference of the curling prong determines the size of the curl, so irons are made in different sizes.

Chapter XVIII

SHOE SUPPLIES

Shoe Brushes

There are three types of shoe brushes:

Bristle or hair
Dauber
Felt

Bristle or Hair Brushes

The best grades of bristle shoe brushes are made of Russian hog bristles, a cheaper quality of Chinese hog bristles, and a very cheap grade of tampico fiber. Horsehair is used to a very large extent in the better grades. The hairs from the tails are stiffer than those from the mane, and are therefore better. The mane hair is used for soft brushes. A good shoe brush is very full of bristles.

Drawing Bristles into Frame

There are three distinct methods of fastening the bristles into the frame of the brush: (1) by drawing them in with either brass wire or heavy linen thread,

(2) by stapling, or (3) by cementing. The first method is by far the best. Holes are drilled into the frame or block. If the top surface is to be veneered or otherwise covered, it is a comparatively simple process. A loop of thread or wire from the top side is drawn through the hole. A bunch of bristles folded in the center is placed in the loop and the wire is drawn back again to the top side, thus pulling the bristles into the hole and holding them there by the wire or thread. The bristles are literally sewed into the frame of the brush. If the frame is of solid wood or other material, this process of sewing is decidedly difficult. It can be easily recognized by the little holes at the end of one side of the frame which are plugged up. The best grades of hair brushes are made by this process.

See Figure 8 in manual for "Leather Goods Department" for an illustration of two methods of inserting bristles.

Other Processes

Bristles put in with staples or with cement are not so permanent as those that are sewed in. The holes are first ground in the same way as for the first process. The folded bunch of fibers is put on the staple and the staple is driven firmly up through the hole into the frame, thus drawing the fibers into the hole. This makes a fairly good brush.

By the third method the folded bunch of fibers is cemented up in the hole. These brushes are the least satisfactory. Hair or bristle brushes produce a high luster upon the shoe. A dauber of the same kind of fiber is attached to many brushes.

Daubers

Daubers are small round brushes made either of hair or bristles or some soft fur, like sheepskin. They are used to apply the paste to the shoe. Those made of hair or bristles are similar both in material and construction to shoe brushes. Sheepskin daubers make a very good, cheap brush.

Felt Brushes

Felt brushes are used for polishing, and are very desirable for they give a fine polish to the shoe.

Shoe Buttons

Shoe buttons are made from vegetable ivory, compressed paper, pearl shell, and agate. Pearl shell and agate are now being used upon women's and children's shoes as they are decorative. Vegetable ivory and compressed paper are recognized as the standard material for buttons, commercially, vegetable ivory being used for the better grades and compressed paper for the cheaper qualities. They look quite alike when new, but with wear the vegetable ivory shows little

change, while the compressed paper becomes shabby and rough and breaks apart. If one wishes to distinguish the two, the following tests will help.

Cut into the button. If it is very hard and if it grows lighter to a cream white the further it is cut into, it is vegetable ivory. (See chapters on buttons for vegetable ivory.) If the color remains the same throughout, the button is made of compressed paper.

Boil the buttons in water. There will be practically no change if they are vegetable ivory though if the dye is not the very best it may boil away a little. If the button is compressed paper, it will gradually soften and disintegrate.

Shoe Horns

The types of shoe horns are:

Steel, nickel-plated, or japanned
Celluloid
Fancy

Shoe horns are used to facilitate the putting on of slippers or low shoes. Without a horn, the slipper is apt to become stretched at the back.

Horns are made of steel, celluloid, or ivory. The steel horns are finished either in nickel-plate or japan, the latter being very cheap. They vary greatly with respect to the handles. In some the extension of the horn forms the handle, while others have fancy handles

of other metals, silver and gold, plated and solid. At present, many horns are made of celluloid or ivory.[1] Celluloid shoe horns are of two kinds: the heavy sort and the cheaper thin kind. The former are molded in dies under great heat and pressure. The cheaper ones are stamped out of a sheet of celluloid and beaten into shape under heat and pressure.

Buttonhooks

The hook proper of the buttonhook is cast steel, nickel-plated. The cheaper ones are very thinly plated and poorly finished. Many of the finely finished hooks have ornamental handles of plated or solid silver, celluloid, or wood.

Shoe and Slipper Trees

Trees are used to hold shoes and slippers in shape. There are two types of trees: those used for slippers and light shoes, and those used for heavier shoes. The slipper trees are very light in construction. They are made of two pieces of hard wood, finished either with wax or varnish, connected by a thin, flexible spring steel. The wood forming the heel of the tree is a small round ball and that of the toe, pointed and shaped to fit the slipper. The flexible piece of spring steel makes them adjustable to any size slipper or shoe.

1 For description of celluloid see Chapter XVII, "Hair Goods."

They answer the purpose in a fair way for the light shoes and slippers, but if a good fit is desired, the regular shoe trees are preferable. These are seldom sold in a Notion Department, but must be purchased in the Shoe Department. They are made of two pieces of hard wood finished like the slipper trees, carefully formed to fit the shoe. They are held together by a screw that may be used to lengthen or shorten the trees. The use of properly fitted trees will prolong the life of a pair of shoes.

Types of Shoe Dressings

The purpose of shoe dressings and polishes is fourfold: cleaning the shoe, preserving the leather, restoring the leather as much as possible to its original color, and polishing. These requirements and the variety of shoes, both in materials and colors, have necessitated the manufacture of many kinds of shoe dressings. They can, however, be classified under four general heads, according to the chief object to be secured, as:

Cleaning preparations
Polishing preparations
Coloring and dying preparations
Enameling preparations

Two or more of these properties may be combined in the same preparation. For example, a preparation

is made which cleans, rewhitens, and polishes white glazed kid all in one operation. Another preparation cleans the tarnish from silver slippers and at the same time resilvers the worn spots.

Shoe dressings may be classified according to the form in which they are put up under five general headings:

Cakes	Liquids
Pastes	Powders
Creams	

Cleaning Preparations

Castile or ivory soap and water makes a satisfactory cleaner when shoes are not too soiled, stained, or faded.

A yellow liquid cleaner is used to a large extent for brown and tan shoes. It is made chiefly of oxalic acid, yellow dyes, water, and gum tragacanth, varying somewhat according to different manufacturers.

Cleaners for white canvas shoes are made in liquid, cake, and powder form, the last two, however, should be called "whiteners," as they have only a slight cleaning value. The cake form should not be packed in a tin receiver unless the receiver is enameled on the inside. Otherwise when the cake is moistened the tin may rust and shoes be spotted with red.

Many white liquid cleaners are made with chalk,

or some whitening material, and water. Such a liquid has but slight cleaning value, acting chiefly as a whitener to cover the soiled spots. A liquid cleaner made from a cleaning compound like gasoline in which is ground white powder, will be found much more thorough. Care should be taken to understand the directions of the manufacturer thoroughly, for with careless use rings may be formed on the fabric.

White kid cleaners are made in liquid form, and polish the leather to restore the original surface as well as clean and whiten. Cleaners that contain turpentine or gasoline should not be used on white kid, as these will turn the leather yellow.

For silver slippers the only proper cleaner is a preparation which removes the tarnish and at the same time refinishes worn spots. Avoid the use of any preparation which coats or paints over the silver cloth.

Polishing Preparations

The chief essential of any polish is that it should restore the natural luster and life to a shoe. It is of almost equal importance that it should preserve the leather. Polishes that contain acids, turpentine, or gasoline will make the leather brittle and inelastic.

Paste Polishes

In all paste polishes, friction is necessary to obtain

a luster. There are two kinds: those that polish only and those that both polish and color the shoe. The latter contain dye or coloring matter. According to ingredients there are two types of polishes: water and turpentine.

The principal ingredients of water pastes are castile soap, wax, dye, and water; of the turpentine pastes, wax, dye, and turpentine. A turpentine paste can be distinguished from a water paste by its odor or by touching it with a lighted match. Turpentine paste will burn, but water paste will not. If a paste dries out it can be moistened, a water paste with water and a turpentine paste with turpentine. All paste polishes act as cleaners to a limited extent, but it is wiser to have the shoe cleaned before applying the paste.

In branded goods the quality of the paste is the same in both the large and smaller sized containers, but when not branded the smaller, cheaper qualities are often of lower grade.

Liquid Polishes

Liquid polishes are of two kinds: the liquid friction, which require rubbing, and the self-shining dressings which do not. The latter are largely used by women and children. Some of the best for black shoes are made of a combination of alcohol, shellac, dyes, and water.

Coloring and Dyeing Preparations

Leather dyes are used to change the color of a shoe or renew a faded color. Many of these are very objectionable because of the pungent, penetrating odor which does not leave the shoe for many days after the dyeing. Dyes may be had, however, in black, brown, gray, bronze, etc., which leave little odor and will dye shoes beautiful even shades. Faded light-colored shoes may often be saved for much wear by dyeing them a darker color.

Enameling Preparations

Enamels are made for finishing the heels and soles of shoes. They were originally made in white only, but are now made in all colors that shoes are made in. A good enamel will dry to a very hard surface and will not chip or peel off.

Part IV—Buttons

INTRODUCTORY TO PART IV

Buttons are both necessities and accessories—they may be used merely for fastening purposes or as ornaments. A beautiful gown may become commonplace if trimmed with cheap buttons instead of high-grade ones in keeping with the material of which the gown is made, while children's play clothes should not bear fancy trimming buttons which will not withstand the constant laundering which such clothes require.

Therefore to choose the proper button requires on the part of both saleswoman and customer a knowledge of the various materials of which buttons are made as well as of the processes of manufacture.

Chapter XIX

TYPES OF BUTTONS

Material

The raw material for buttons comes from many sources—from the depths of the sea, from the bowels of the earth, and now, in ever-increasing numbers, from the products of creative chemistry. A great manufacturer of Birmingham, the seat of the button industries in England, when asked concerning the raw materials from which buttons were made, replied that it would be easy to write a long list of materials from which buttons had been made, but very difficult to name one material from which buttons had not been made.

Following is a list of the more important buttons, classified as to raw material:

Pearl—salt, or ocean, and fresh, or sweet water	Hard rubber
	Horn
	Bone
Vegetable ivory	Galilith
Composition	Glass

Agate	Bachelor buttons
Vulcanized fiber	Wire and thread
Metal	Crocheted
Cloth-covered	3-ply linen
Celluloid	Wood

Methods of Attaching

Buttons are also classified according to the method of attaching them. Some are sewed into the garment through holes in the button, and others are attached by some kind of a shank, which may be made either of the same material as the button with a hole bored through the shank, as in vegetable and pearl buttons, or of wire bent into a loop, or of cloth, as in many metal buttons.

The chapters which follow treat of standard buttons rather than the fancy, since they are in the majority and the information is thus more practical.

History of Buttons

Buttons are a comparatively modern invention, as in the earlier periods clothes did not fit, but were loose robes held in place by pins and girdles. The earliest forms of buttons were knobs of wood or metal. The derivation of the word "button," from the French *bouton,* meaning any round thing, a projection, something sticking out, indicates that buttons were first used to fasten garments together.

But it was not long until buttons became almost equally important as ornaments. In a poem written not later than 1300 we find mention of buttons. There the hero is described as wearing buttons from elbow to hand. During the reign of Louis XIV of France, the craze of buttons became a positive mania. Louis, so it is said, spent in one year, 1685, over $600,000 for buttons. He bought two diamond buttons for $14,000, seventy-five diamond buttons for $120,000, and paid over $100,000 for the buttons on a single vest. Never since that day have buttons been so elaborate and expensive; but the variety and the artistic value has been unlimited by raw material and genius. In the state capitol at Hartford, Connecticut, is a collection of 34 strings of buttons, each containing 2,700 different styles of buttons.

Button-making in this country started before the Revolution and buttons have been made of brass and wood here since 1750, of horn since 1812, of imported ocean pearl since 1855, and of composition since 1862.

Chapter XX

PEARL BUTTONS

Kinds of Pearl Buttons

There are two kinds of pearl buttons:

Fresh water, or mussel pearl buttons.

Ocean, or salt water pearl buttons.

Fresh Water Pearl Buttons — Source of Raw Materia

Everyone who has visited the streams and lakes o the Middle West doubtless has seen the flat bivalved mussel clams. They can often be seen in clear water lying on their hinges with their valves wide open so that the food-laden water passes through, or they are found lying tightly closed high and dry on the shore. Few are the streams along the Mississippi and its tributaries that have not a good quantity of mussels. There are over 500 varieties, but out of this large number only about 40 are suitable for button-making and only 17 are at present of commercial importance.

An ideal button shell should have the following qualities: "the nacre pearly white or preferably iridescent; free from spots, stains or coloring; the inner surface

smooth; the outer surface free from ridges or protuberances; the thickness uniform; the shape flattish, oval; the size sufficient for the cutting of several blanks." [1]

Methods of Fishing

Mussel-fishing is an irregular occupation, as it must be abandoned during the long winters in the North, and it cannot be carried on on windy stormy days. The methods of fishing vary, being more or less adapted to the peculiarities of the locality and the ingenuity of the fisherman. About an equal amount of money is made from the pearls found, as from the shells sold.

The types of apparatus most generally used are: the crowfoot bar, the dip net, the basket rake, the fork, and the dredge.

The crowfoot bar is the tool most commonly found on the Mississippi and its tributaries. It is a bar of iron about the length of the flat-bottom rowboat from which it is used. From this bar hang many lines, to each of which are attached a number of three or four prong hooks. It is designed to take advantage of the mussel's lazy habit of lying on the bottom of the stream with its shells wide open until its delicately sensitive flesh is touched by some foreign matter, when it closes its shells almost instantaneously. When

[1] Bulletin of Bureau of Fisheries, Vol. 36.

the bar with its many lines is lowered close to the bottom of the river and the hooks are dragged along, many clams close their shells around the prongs. The bar is then raised and another one is lowered, while the clams are removed from the first bar, making it ready for use again. This method has certain advantages: it is inexpensive, demands little skill to operate, and can be used in deep as well as shallow water. But on the other hand it is very wasteful of clams. Many immature clams are injured in the water, so that they die. Many are caught too small to use and even when these are returned to the water, a large percentage die. As the mussel beds become more and more depleted this wasteful mode of fishing will not be tolerated.

The dip net is used in deep water where there is little current and a muddy bottom. The net, which has a capacity of two or more bushels of shells, is fastened to a heavy hoop, one side of which is flat. The net is drawn along by a rope fastened to the boat and operated by a long stick that is fastened to the iron hoop.

The shoulder rake can be used to advantage in comparatively swift water, especially when the bottom is muddy and free from snags and rocks. The implement consists of a metal rake about a foot long with 10 or 12 coarse curved teeth, each about 9 inches in length. The rake is securely fastened to a wooden

handle, the length of which depends upon the depth of the water. A basket made of poultry wire netting is attached to the rake and affords a receptacle for holding the shells as they are collected.

Shell tongs are used in rather deep water. This implement is essentially a grapple, consisting of two forks on the ends of long handles, which are pivoted together after the fashion of a pair of scissors. The tongs are especially adapted for use in the spaces between logs and other obstructions.

The dredge is operated between two boats lashed securely at such a distance that it can be dropped between them. The dredge is made of two heavy, long-toothed rakes with iron handles, so pivoted together shear-fashion that the two rakes when closed form an oblong basket. The dredge is dropped to the bottom of the stream and with the closing together of the two rakes of the dredge all the mussels are gathered into the oblong box and raised to the boats, except those so small that they drop through the tines. It makes a clean catch over a given area, and is not destructive to very young clams.

Cleaning and Sorting of Shells

After the mussels are brought to shore they are usually put in a cooker, that is, a large vat through which steam and hot air pass, killing the clams. The

shells are removed with great forks from the cooker and thrown onto the sorting table. Here the meat is carefully examined for pearls, and then removed. Sometimes the shells are sorted into different grades and sizes, thereby making it possible to sell them on a higher market than the "river run."

History of the Fresh Water Pearl Button Industry

Although button-making started in this country before the Revolution, and although mussels were gathered for pearls as early as 1857, it was as late as 1891 before the manufacture of fresh water pearl buttons began.

In 1871 a man from Peoria, Ill., conceived the idea that the pearly shell of the Illinois River ought to have some commercial importance and he accordingly sent a small box of the shells to Germany. For years they lay unnoticed, but in the early 80's a workman carried into a shop in Ottensen, Germany, this box of shells which he told J. F. Boepple, a button-turner, were sent to his father years before from a river "somewhere about 200 miles southeast of Chicago." In 1887 Boepple came to America with his button lathe in search of the shells.

Four years of hard work, disappointment, and persistent determination were rewarded by final success, and in 1891 he with two friends established in Musca-

tine, Iowa, the first fresh water pearl button factory. It has now grown to such a size that it uses $4,000,000 worth of mussel shells in a year, or one-fourth of the value of the raw materials used in all the factories producing buttons in the United States.

So quietly did this industry come that few people realized its development and so rapidly did it grow that the mussel beds almost faced extinction before the manufacturers were aware of the danger. In 1905 they appealed to the Bureau of Fisheries of the United States government for help. The Bureau responded with a program of artificial aid to propagation.

The mussel egg floats a while on the surface of the water and then drops to the bottom of the river, where it will die unless it can attach itself to a fish to which it will cling for 30 to 60 days, until it is large enough to be a self-supporting independent clam. One medium-sized fish can carry as many as 500 to 1,000 clams. The Bureau therefore loaded the fish from the government hatcheries destined for the clam-bearing regions with little clams.

Other efforts less spectacular have also been of great value. The Bureau advocated less wasteful methods of fishing and the zoning of mussel-bearing regions, giving one area a rest for a few years, then another, thus allowing the clams to mature and reproduce before they were caught.

The fishing for mussels is pursued more or less actively in the following 19 states: South Dakota, Minnesota, Iowa, Missouri, Kansas, Arkansas, Oklahoma, Louisiana, Texas, Wisconsin, Michigan, Illinois, Indiana, Ohio, Kentucky, West Virginia, Tennessee, Mississippi, and Alabama. At least 6 other states—New York, Massachusetts, New Jersey, Pennsylvania, Maryland, and Connecticut—are interested in the mussel fisheries because many of their large factories use the mussel shell, so that over one-half of the states of the union are directly concerned with the preservation of the mussel resources.

Manufacture of Fresh Water Pearl Buttons

See under salt water pearl buttons.

Salt Water or Ocean Pearl Buttons — Sources of Raw Material

The salt water pearl button is largely cut from oyster shells that are found in many parts of the ocean—among the South Sea Islands, in the Red Sea and Persian Gulf, in the waters around Australia and the Philippine Islands. Most of the white buttons come from Sidney and West Australia. The so-called smoke or shaded shells are found at and around the Island of Tahiti in the South Sea. A button known as Japanese by the trade is made from a snail shell which is known as Trocha; the buttons have the

appearance of a cat's eye. They are somewhat creamy in color and are not so hard and durable as those made of the mother-of-pearl from the oyster shells.

Method of Fishing

As to the method of gathering the pearl shells, the following are the most common:

The first and most primitive way which is still used in a great many parts of the world, such as the Red Sea, Persian Gulf, and many places in the South Seas, is by naked plunging. The native diver stuffs his ears and nose with cotton wadding, grasps a heavy stone, and plunges into the water. Upon reaching the bottom he drops the stone and picks up such shells as are in sight, perhaps three or four, and returns to the surface of the ocean. A good diver cannot stay under water longer than about a minute. This limits the depth of diving to about 40 or 50 feet.

Another method of procuring shells is by the use of the regulation diving apparatus, which enables the diver to go to the depth of about 180 feet. Naturally by this method a larger quantity of shells can be procured, and the diver has time to collect shells that would be absolutely inaccessible to the native diver. This method is very expensive. Each boat's crew consists of six men; a sailing master, two men at the pump (who supply air to the submerged diver), one man at the line, who pulls

the diver up on signal, a cook, and the diver—six men, but only one producer. This method has also the disadvantage of being very detrimental to the fishing banks. The diver, being able to remain down for so much longer time than the native diver, gathers a much larger portion of the shells. As a consequence the Australian fisheries, which have been worked by divers with regulation diving apparatus for the past 40 or 50 years, are rapidly being depleted, while the banks of the Red Sea, which have been worked only by native divers, are as productive today as they were in the time of King Solomon.

Beach-combing is done in some parts of the world. When the tide is low, shells can be collected by hand in large quantities. This method can be used only at certain seasons of the year and then for only a short time when the tide is low.

The dredging method, similar to that used in the fresh water industry, can be used in localities where the bottom of the ocean is sandy or muddy and is not deeper than 20 to 30 feet.

Method of Manufacture of Pearl Buttons

The method of manufacture of fresh water and salt water pearl buttons is much alike, although in certain details they differ. Before any of the shells come to the factories, they are sorted and made free of all meat.

Following are the most important of the processes that take place in the factory.

All shells are soaked for a number of days in tubs of water so as to put them in the best condition for cutting, drilling, and carving. If they are in a dry state there is far greater danger of their chipping and breaking.

From the tubs they are taken to machines where tubular saws cut from the shells round disks called "blanks." These are of the size desired for the button.

These blanks are of varying thicknesses with rough and uneven surfaces. The next processes are facing and backing, that is, making smooth the inside surface and removing the rough bark from the outside. Blanks are classified as to thickness as well as to size. Very thick blanks are used to make shank buttons and the thinner ones for the flat buttons.

If the button is to be carved, this is usually done at this stage by hand, so called because the machine is operated by hand and not automatically. Fresh water pearl buttons can be but slightly carved because the shells are so soft, but the salt water pearl can be very intricately and wonderfully carved.

If the button is not to be carved, the blanks are put into a wonderful machine that can be set to take the blank automatically, cut the shape of the button desired, pass it to another part of the machine, and there

drill in the holes. If the button is carved, the holes are drilled in by a machine especially designed for that purpose.

Next the button must be cleaned and polished. This is done by churning the buttons in a liquid mixture in what looks like an old-fashioned barrel churn. In the case of salt water pearl buttons, they are further polished by being rubbed on a rag wheel.

Sorting, carding, and packing are the finishing processes.

Distinguishing Salt Water and Fresh Water Pearl Buttons

Salt water buttons have a clear translucent hard appearance and can be delicately carved. Fresh water pearl buttons are of a chalky white and are seldom carved and then but little. The price of salt water pearl buttons varies from three to five times as high as fresh water buttons. In buying ready-to-wear garments it is often helpful to be able to distinguish one from the other, because a very poor garment will never have on it a high-grade carved salt water pearl button and the reverse is equally true.

Grading of Pearl Buttons

All pearl buttons are graded largely by two factors: thickness and color. The firsts are a uniformly medium

thick button. In the poorest grades the buttons will be very thin and varying in thickness.

Color is also very important. The natural white or ocean pearl button is pure white preferably, with iridescent coloring. The Japanese pearl button is creamy in color. It is considered far inferior to the real ocean pearl. The smoked pearl buttons are not standard as to shade as they vary in tone from gray to black. Many manufacturers of salt water pearl buttons mark the cards as following to indicate grade: superfine, fine, ¾ fine, ½ fine, etc. The color of the card may indicate the quality. The finest fresh water pearl buttons are like the salt water ones, white with iridescent colorings, then white. When there is a natural tint of pink, blue, red, or yellow in the buttons they are always dyed. Many of these buttons are very lovely in color, but the comparatively small number of each shade of a color makes the grading and sale impractical.

Chapter XXI

VEGETABLE IVORY BUTTONS

Source of Raw Material

One would be safe to wager that at least nine out of every ten people if shown a vegetable ivory button would call it horn or bone or composition, but not vegetable ivory. Along the west coast of South America, from southern Panama through Colombia and Ecuador grows a stunted palm tree some 10 to 30 feet high called by botanists *Phytelephas Macrocarpa,* but by the natives *tagua.* It is a beautiful tree with large gorgeous feather-like leaves. It bears nuts from which buttons are made. Eight to thirty of these nuts grow bound together in a head covered with a heavy burr suggestive of our common horse chestnut. In the immature state the insides of the nuts are similar to the milk in a cocoanut, but when the nuts ripen, the inside becomes harder, the burr breaks open, and the nuts fall to the ground. These are gathered by natives and carried on mule back or by rafts to some seaport town where they are shipped.

One authority gave this very interesting comparison of the value of the nuts. The natives receive from $1 to $1.50 per hundred weight, the manufacturers pay $6 upward. In the cost of producing a vegetable ivory button, the raw material cost only 15 to 25 per cent of total—75 to 85 per cent being expended for labor.

Method of Manufacture

Shelling. Each nut is composed of an outside shell enclosing a white meat. In the immature nuts the shell and the meat cling very closely together. Dry heat hardens the white meat and causes it to shrink away from the shell, which is very hard, in fact, so hard that steel will not cut it. However it can be broken by blows. In the factory, the first operation is to dry the nuts. Then they are put into great revolving drums with heavy iron projections on the inside. As they turn the nuts tumble against these projections and the shells are cracked and shelled off.

Cutting Slabs. The next step in the process of manufacture is to slice off pieces around the outside of the nut. This leaves a core or pithy part, for which no use has yet been found. The cutting of these slabs requires great skill. It is done with a saw running at 6,000 to 7,000 revolutions per minute. These pieces are cured or hardened preparatory to turning out the buttons.

Turning. The machine used is a turning lathe with

front and back revolving spindles. Great skill is also needed to operate this machine.

Making the Holes and Reaming and Other Forms of Attachment. In high-grade vegetable ivory buttons each hole is drilled in separately by an automatic drill, so that the hole is perpendicular to the surface of the button. On the upper part of the drill is a sloping part upon which very sharp drill teeth are cut, so when this part of the drill touches the button, it cuts a beveled edge around the hole; in other words the hole is reamed. All this great care in cutting the holes in a button is for just the one reason, that the edge of the hole does not cut the thread. When buying buttons observe these two things, if you wish your buttons to stay sewed onto your garment—first, that the holes are at right angles to the surface of the buttons, and second, that there is a uniformly wide beveled edge around each hole.

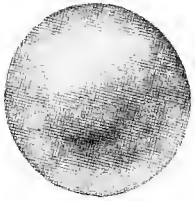
Figure 17 shows the steps in manufacturing these buttons.

There are ways of fastening the button to a garment other than by holes. They may have a self-shank, that is, a small lump may be left on the back of the button through which one or more holes are drilled parallel to the surface of the button. They may have a wire shank or "patent" shank. In the former a wire eyelet is secured in the back of the button and in the latter a small metal post with one or more holes drilled through

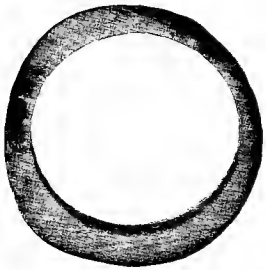
Ivory Nut—Partly Shelled

Ivory Nut—Shell Removed

Button Partly Turned in Slab



Button Blank



Turner's Ring—Waste

Figure 17. Steps in the Manufacture of Vegetable Ivory Buttons

is riveted to the back of the button. Some buttons are niche or channel drilled, that is a small channel connects each two holes across the face of the button. The thread lies in this and is kept below the surface of the button.

Dyeing and Finishing. Before dyeing, the buttons must be made very smooth by being tumbled in a large drum with some polishing material. The buttons may be dyed a solid plain color, or they may be mottled or dyed in two or more colors. The methods used vary but little from those used on cloth. The finishes are numerous. The following is a list given in a "Dictionary of Button Terms" by the "Art in Buttons" people of Rochester:

Polish finish: glossy or lustrous finish over the entire surface.

Sandblast finish: the button is first polished and then part of the surface dulled by a sandblasting process.

Satin finish: entire surface finished in the dull effect.

Pressed finish: grill, mottle, or various minute intricate line effects pressed with hard steel engraving dies over all or part of the surface of a previously polished, satin finished, or sandblasted button.

Glass edge: an especially high polish obtained by

a special process of burnishing. Name applied to any polish obtained by this method, even though polish may be in the center and not on the edge at all.

Embossed: heavy raised design pressed on surface.

Intaglio: deeply indented design pressed or cut onto surface.

Filled-name: process of filling with white, colored, or gold paste any intaglio impression.

Carved: design cut into the surface by hand or delicate machine process.

Sizes of Buttons

A ligne or line is the standard used in measuring the diameter of buttons. There are 40 lines to an inch. The larger the vegetable ivory button, proportionally the higher the price. Why? In cutting the nuts into slabs, the aim is to cut as large a piece as possible each time. The slabs large enough for a 50-line button are very few. It is safe to say that not more than one 50-line piece is obtained out of thirty nuts.

How to Distinguish a Vegetable Ivory Button

The surest proof that a button is vegetable ivory is to cut through the surface with a sharp instrument. If as you go deeper the dye becomes lighter until you come to the natural creamy white, you may be sure the

button is vegetable ivory. If on the other hand the color is uniform, the material is either composition, horn, or rubber. If the holes are clean cut, not pressed, you may be quite sure it is vegetable ivory.

History of the Vegetable Ivory Button

The story is that the vegetable ivory nuts were brought from South America as ballasts in the returning empty ships. They were dumped on the wharves at Bremen and Hamburg, where they were allowed to rot unless someone carried them away for fuel. Again we quote from "Art in Buttons":

"During the year 1859 or 1860 some of the nuts reached Hainspack, Austria, a mountain village famed for the hand carving of its inhabitants.

"Johann Hille received some and carved them into buttons, the surface of which he and other workman laboriously colored by hand. When the spring came, Hille took his new creations to Vienna, where he found a ready market for his product. The next fall he contracted for several bags of ivory nuts and began the manufacture of vegetable ivory buttons on a larger scale. During the year 1860 Herman Donath, who had experimented in the manufacture of umbrella handles from the vegetable ivory nut, began to manufacture ivory buttons in Schmolln, Germany. As he was able to obtain financial backing, his business grew

rapidly and Schmolln soon became the center of the vegetable ivory button industry.

"Factories were established in England in 1862. The first American vegetable ivory button factory, the Mill River Button Co., was established at Leeds, Mass., in 1864."

The growth of this great industry has been unusual. Today there are over 25 large well-equipped factories in the United States alone. The use of the vegetable ivory button is universal. It is especially adapted for tailored garments. It has almost replaced the bone button for underwear. It has been colored and finished in such artistic ways that it is a great favorite for women's and children's clothes.

Chapter XXII

MISCELLANEOUS KINDS OF BUTTONS

Composition Buttons

Composition buttons are the most common substitutes for vegetable ivory ones. They were first successfully made in 1862. The variety of materials used is even greater than the many firms that have manufactured them. Most of the buttons contain some foundation material, like asbestos or lime, a natural gum to hold the other ingredients together, and coloring matter. At one time a very satisfactory composition button was made of Irish potatoes and certain chemicals. The high prices of potatoes in late years has relegated this composition to the annals of history.

The various ingredients are worked together in the same manner as bread dough, then run through rollers set to roll the mixture into sheets of the desired thickness These sheets are cut into a size suitable for handling and taken to a hydraulic press that stamps out a large number of buttons at one time. They are finished buttons, except for a little roughness at the holes and around the edges which must be removed.

Throughout all the processes up to this point the mixture is kept warm.

Upon cooling the composition becomes hard, but around each little hole is a tiny little rim of surplus material. When this ridge is removed it is sure to leave a little indentation surrounding the hole, an infallible mark by which the composition button may be detected.

Composition buttons are either packed in boxes or sewed on cards, a dozen to a card. Great quantities go to the ready-to-wear trade.

To distinguish the composition button from the vegetable ivory button:

1. Cut into the button. If it remains the same color all through, it is undoubtedly composition, if it grows whiter the farther in you cut it is vegetable ivory, because the color is mixed into the composition out of which the composition button is made, while the vegetable ivory is dyed and the color only penetrates a short distance below the surface.

2. Observe the holes. If there is an indentation surrounding the holes on either the right or wrong side, you may be quite certain it is composition. If the holes are clear cut and smooth, it is probably vegetable ivory, certainly not a composition.

3. It is much easier to break the composition button than the vegetable ivory button. Under abnormal

conditions of heat and moisture, like dry cleaning, a composition button may warp.

Hard Rubber Buttons

In making hard rubber buttons the first step is cutting the blanks out of sheet rubber of the desired thickness. These blanks are then put into molds. One half of the mold has a cavity to make the shape of the under half of the button, while the other half has a cavity with two or four pins to shape the upper half of the button and form the holes. Under steam heat and hydraulic pressure, these blanks are pressed into the form of the desired buttons.

All rubber is sticky and soft until it is vulcanized. (See page 103.) In the case of buttons, vulcanization takes place at the time that they are pressed out. Three things are necessary for vulcanization: sulphur, heat, and moisture. An excess of sulphur over a given amount makes hard rubber. This excess is present in the sheet of rubber from which the blanks are cut, and when the rubber and sulphur are subjected to heat and moisture in the form of steam, the buttons are vulcanized and hardened.

A hard rubber button usually bears the words on the back. Two simple tests can also be used in distinguishing them: Rub the button quickly over a piece of wool and you can easily distinguish the peculiar rubber odor.

Burn it and the odor is sufficiently characteristic to defy any question. Also the line where the mold joins on the edge of the button is noticeable.

Horn Buttons

There were horn button makers in England in the year 1777, so the old Birmingham (England) directory shows. But it is to M. Emile Bassot, in the middle of the nineteenth century, that credit is due for inventing the present method of manufacture of horn buttons. In principle it is the same as the method used today. The hoofs or horn were soaked in boiling water to soften, then cut in segments of the desired thickness. The button was cut, dyed, and formed into the required shape by hydraulic pressure.

Horn buttons are of a great many different qualities. Some of the highest grade buttons are made from the tips of the buffalo and deer horns and are sold as high as $12 per gross wholesale.

Bone Buttons

Bone as a button material is almost obsolete. Only the cheapest possible buttons for trousers and underwear are now made from bone. Most of the so-called bone is vegetable ivory.

Galilith

Galilith is a product of creative chemistry. It is

made from the casein of milk, and largely manufactured in Germany. It is imported into the United States in the form of sheets. Blanks for buttons are cut out as in the vegetable ivory, and the blanks are put on a lathe that forms the buttons and the holes are drilled later. Galilith comes in a variety of colors and some very attractive effects are produced. The buttons resemble vegetable ivory but they have a more translucent quality. The brighter colors are especially good.

Glass and Agate Buttons

Glass, agate, and jet buttons are practically all imported. Here and there in button factories in America an isolated machine may be found. Agate or porcelain, before the war, were largely manufactured in France and Austria. Glass buttons have been extensively made in Austria, France, and in Birmingham, England, but Bohemia is the seat of the industry. The buttons are usually made by taking a rod of glass of any color desired, softening the end of the rod by heat, and pressing it into a mold. (See Figure 18.) The shank of wire, bent to make a hole, is inserted into the mold through an opening. After the glass is hardened the mold is removed. Little additional work is required to finish, as the hardening of the glass furnishes much of the desired luster.

Vulcanized Fiber

Vulcanized fiber, more often called "paper," buttons have not been as yet of large commercial value, although we occasionally find them on the cheap ready-to-wear garments. It is very possible that in the near future they will be so perfected that they will be a formidable rival of the composition and other cheaper buttons.

Vulcanized fiber is made from paper. The desired number of sheets or piles of paper are run over guiding cylinders down into a bath of zinc oxide, then between heated rollers. This is called "laminating," by which a chemical change is started that joins the many piles of paper into a tough, strong, unified whole. Next the zinc oxide is washed and soaked out. The fiber may go through as many as twenty-five baths before it is dried and pressed or calendered. Often it takes two or three weeks to complete the processes of vulcanizing. This fiber is used in a multitude of different ways, as water buckets, laundry hampers, suit-cases, etc. Buttons are stamped out under hydraulic pressure from stock of the desired thickness.

Metal Buttons

The variety of buttons made from sheet metal is very great, ranging in price from the cheap trouser buttons, which are made from a thin sheet of iron

Figure 18. Making Jet and Pressed Glass Buttons

filled with paper and then japanned, to the high-grade navy uniform buttons that sell in the neighborhood of $25 per gross.

Thin sheets of soft iron, zinc, or tin are used for the cheaper buttons and those which are covered with a fabric. The more expensive types are made of nickel, silver, gold, and brass. The face or top part of the button may be decorated and finished in many ways; stamped, chased, enameled, plated, and burnished, so the results may vary from the plain to the very elaborate.

All metal buttons are made up of three parts: the face, the stuffing, and the back. The method of manufacturing of the simple forms is indicative of all types.

The metal blanks or shells for the face and back of the buttons are cut out of the sheet metal. Then the blanks are annealed, that is, heated in certain chemicals and drawn up over dies into the spherical shape desired for the buttons. The face usually is somewhat spherical in shape and the back flatter, but the edges of each are curved in in such a way that when put into the button-making machine they lock together. After the blanks are annealed, they are thoroughly cleaned by being churned together with soap and shot in what looks like the old-fashioned barrel churns that were used by our grandparents. It is necessary to have the blanks perfectly clean before they are

japanned or plated or otherwise finished. The backs are usually japanned.

The shank is made in a number of different ways. It may be soldered on to the back or it may be a loop of wire or of cloth inserted through the back. The latter has the advantage of putting little strain on the cloth to which it is sewed, but naturally it gives out more quickly itself.

After the tops are plated and polished or otherwise finished and the backs made, these and the stuffing, pieces of cardboard cut into circular pieces that fit into the top of the button, are assembled and taken to the button-making machine. The top is first put into the machine, then one, two, or more pieces of cardboard, depending upon the thickness of the button, are placed into the top and the back laid in position. The two parts of the machine come together so that the curved-in edges of the top and back of the button are locked together. The button is finished. Cheap, flat trouser-buttons are made of a thin metal face and back and one thin layer of cardboard as stuffing. The holes are punched in.

Cloth-Covered Buttons

Cloth-covered buttons are made over a metal foundation. The difference in expense between the lower and higher priced cloth-covered buttons lies in the

cost of the fabric used and the shape, some requiring more work to make. The cost of small machines for making cloth-covered buttons is within the means of any domestic art school or store. The metal forms for the backs and tops and stuffing can be purchased from factories that make buttons. By having such a machine in a community it is possible with little expense to have buttons to match any dress made from scraps of the material.

History

Birmingham was the early seat of the metal button industry. Although metal buttons were made earlier than 1807, they then became a very important branch of the button-making industry. At that time R. Sander, a Dane, invented the method now used, namely the two disks of metal locked together by having the edges turned back on each other and enclosing a filling of cardboard or cloth. In this country Waterbury, Conn., is the center of the metal button manufacture.

Celluloid

The humble celluloid button and pin that until the day of the Great War was cherished by boys as decorative badges or as specimens for a collection, arose suddenly to a high place in our national life. It officiated at every big drive for Liberty bonds or war

savings stamps and was present in great evidence on every tag day. It has come to signify our American spirit of publicity.

This type of button is made like the metal except that the celluloid is substituted for the upper disk of metal and the under piece of metal may be either a metal rim over which the celluloid is drawn and into which a wire with a pin as a part of it is slipped, or else the under piece may be a cuff button attachment that will button into the lapel of a coat.

The fact that celluloid can be dyed and colored so perfectly has been one of the reasons that it has been used for this type of button. This characteristic also lends celluloid admirably in the making of fancy buttons to match the color of suits and coats. Celluloid buttons made after the same fashion as metal buttons were quite in demand a few years ago. They furnish an excellent example of the additional items in the cost of production of fancy or novelty buttons. The celluloid comes to the button factory in sheets. It must be colored. Only one color can be put on at a time and that by hand with the use of a stencil. Each stencil must be designed and made, another expense. Next the celluloid is cut into blank and drawn up over a die into the desired shape. Then the various parts—the celluloid face, the stuffing, and the back of metal with the wire shank—are assembled and the button

put together. Here the labor includes the handling of at least two or three more pieces than a metal button. First a piece of paper, silvered or gilt, must be put under the celluloid to add to the attractive appearance. More pieces of stuffing must be put in than in a metal button, thus more labor. Taken all in all the cost of producing a fancy celluloid button is very expensive, due to the comparatively small number produced, the added cost of hand processes that are not usually involved or else would be taken care of by machinery if a large number were made, and the great cost of distribution.

Bachelor Buttons

Bachelor buttons are especially designed to meet the needs of that large class of men who do not enjoy sewing on buttons. They are usually found on ready-to-wear garments. The button is of metal and made in two parts. The base is either riveted or otherwise securely fastened to the garment. The ball or button part is separate, and by one of a number of ingenious mechanical devices can be fastened firmly to the base and easily removed.

Part V

CLASSIFICATION OF STOCK OF NOTION DEPARTMENT

DIVISIONS

A. Sewing Tools and Supplies
B. Dress Accessories and Findings
C. Hair Goods
D. Shoe Supplies
E. Buttons

A — SEWING TOOLS AND SUPPLIES

1. Articles
   - (a) Shears and Scissors
   - (b) Needles (Hand and Machine)
   - (c) Common Pins
   - (d) Thread
     - Cotton (Sewing, Basting, Darning, Millinery)
     - Silk (Sewing, Darning, Buttonhole Twist)
     - Linen
     - Worsted (Darning)
   - (e) Thimbles
   - (f) Miscellaneous Small Articles
     - Tape Lines
     - Bodkins
     - Thread Winders
     - Tatting Shuttles
     - Darners

Stilettos
Hem Gauges
Tracing Wheels
Emeries
Wax
Sewing Machine Belts
Machine Oil

2. Materials
Steel
Iron
Brass
Aluminum
Silver
Nickel
Tin
Cotton
Linen
Silk
Wool
Wood
Celluloid
Emery
Whale Oil
Petroleum
Beeswax
Rubber
Leather
Bone

B — Dress Accessories and Findings
1. Tapes, Braids, and Beltings
(a) Articles
Feather-Stitch Braid
Beading
Bobbin Tape

Cotton Tape
Stickerei Tape
Cotton Seam Binding
Cotton Bias Folds
Taffeta Seam Binding
Corset Tape
Initial Tape
Buttonhole Tape
Hook and Eye Tape
Eyelet Tape
Lingerie Tape
Prussian Binding
Lingerie Braid
Artificial Silk Binding Braid
Horsehair or Pyroxylin Braid
Worsted Skirt Braid
Soutache Braid
Rickrack Braid
Artificial Silk Middy Lace
Shoe Lace
Stickerei Braid
Corset Lace
Serge Belting
Heavy Woven Belting
Girdle Foundations

(b) Materials
Cotton
Linen
Silk
Wool
Horsehair or Pyroxylin
Steel
Featherbone

2. Bonings and Stays
(a) Articles

Whalebone
Featherbone
Celluloid Bones
Corset Steels (Side, Back, Front, Bonings)
Collar Bones and Supports
Collar Frames
Net Guimpes

(b) Materials
Featherbone
Whalebone
Steel
Celluloid
Textile Coverings

3. Elastic and Rubber Goods

(a) Articles
(1) Woven Elastic
Garter and Hose Supporter
Hat and Fancy
Corset
Girdle
(2) Braided Elastic (Round, Flat, Oval)
(3) Dress Shields
Rubber
Balata
Rubber Water-Proof Cloth
Pyroxylin Water-Proof Cloth
(4) Sanitary Goods
Belts
Aprons
Napkins

(b) Materials

Rubber
Balata
Pyroxylin
Cotton
Silk

4. Pins, Hooks and Eyes, and Snap Fasteners
   (a) Articles
      Safety Pins
      Shield Pins
      Fancy Headed Pins
      Hat Pins
      Baby Pins
      Lingerie Slides
      Hooks and Eyes
      Snap Fasteners
   (b) Materials
      Brass
      Steel
      Iron
      Tin
      Silver
      Gold
      Nickel
      Jet
      Glass

C — Hair Goods
   1. Articles
      (a) Imitation Shell Goods
         Side-Combs
         Back-Combs
         Barrettes
         Hairpins
      (b) Wire Hairpins

(c) Nets
(d) Curlers and Curling Irons

2. Materials
Celluloid
Horn
Iron
Steel
Nickel
Brass
Lead
Human Hair
Silk
Leather
Wood
Rubber

D — Shoe Supplies

1. Articles
Brushes (Hair, Dauber, Felt)
Buttons
Horns
Buttonhooks
Slipper Trees
Dressings
Polishes (Paste, Liquid, Powder)

2. Materials
Wood
Wool-Felt
Cotton
Bristles and Hair
Sheepskin
Iron
Steel
Silver
Nickel

Celluloid
Oil
Wax
Vegetable Ivory
Composition Paper
Turpentine
Alcohol
Shellac
Dyes
Soap
Chalk

E — BUTTONS

1. Kinds
   - Underwear
   - Dress
   - Coat
   - Shoe
   - Pants
   - Collar
2. Style
   - Holes (2-4)
   - Self-Shank
   - Wire Shank
3. Sizes: 3 to 50 Line
4. Material
   - Pearl
     - Fresh Water
     - Salt Water
     - White
     - Pink
     - Smoked
     - Roman
   - Bone
   - Silver

Brass
Wood
French Gilt
Gunmetal
Steel
Rubber
Glass
Enamel
Tortoise Shell
Anchor
Composition
Porcelain
China
Bronze
Horn
Vegetable Ivory
Jet
Rhinestone
Mother-of-Pearl
Imitation Jewels
Amber
Onyx
Jade
Ivory
Cameo
Scotch Pebbles
Galilith
Fabric
  Crochet
  Linen
  Lace
  Velvet
  Grosgrain
  Satin

5. Decoration
   - Dresden
   - Printed
   - Hand-Painted
   - Rimmed
   - Inlaid
   - Molded Raised Figures
   - Cut

6. Colors
   - Black
   - White
   - Staple—Decided by Popular Colors
   - Combinations

F — Slides
- Jet
- Rhinestone
- Pearl
  - White
  - Smoked
- Silver

G — Molds
- Bone
- Wood

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