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A REVIEW OF THE MEN'S WEAR TRADE.

Throughout the market a general period of supposition has held sway the past month.

The heavy weight season was winding up, very little business being under way, the only startling feature being the demand for worsteds, which possibly enabled them to get by, but the prices at which they were moved were far from interesting.

Stylers have been hard at work arranging for the Spring 1911 season, which is giving every mill considerable anxiety. A number of blankets have been received, as the season gradually opens, buyers are making suggestions and it might be said that a number of fair-sized orders have already been booked on the cheaper grades. The majority of mills making the better grade prefer to withhold their styles until the trade shows a demand for such goods.

Among the cotton worsted lines the opening prices were slightly in advance of last year, some running as high as 5%. This it is thought will gradually drop as the season gets into full sway and the buyer begins toicker for the various lines.

Among the $\frac{6}{4}$ goods a revision was noted, but buyers were somewhat disappointed as they had figured that the prices would be more interesting.

The general situation among the manufacturers is to continue to produce for immediate delivery only, until buyers realize just what they really do want. While most mills anticipate an early improvement in the demand, yet they do not feel inclined to operate the machinery on supposition.

The fancy worsteds that have already been shown,

are below the standard price, some running as low as 10%. Upon this reduction is based the attraction of the worsted trade, but the stipulation that most mills are making is, that orders must be placed at once if the goods are to be made on the new basis, since there is a tendency for the yarn market to go above the prevailing quotations. Regarding the success of worsteds, there seems little doubt that they will come in for a larger portion of the business.

Lower prices will be the feature of all lines except those made from Australian stock, which will necessarily be somewhat higher. At this point it might be of interest to note that one of the drawbacks which has not been reckoned with by many a mill in making the season's price, is the change of the present demand from piece dyes to skein dyes.

Skein dyes require more careful treatment and a far more expensive finishing, yet they have a halfsher feel than the piece dyed fabric, properly made, but it is thought that the harsh feel may operate against them later on in the season.

Among the houses handling foreign made men's wear, there is quite a tone of dissatisfaction.

It has been the custom for these houses to book large orders in advance of the opening of domestic lines, but this year it appears that the trade did not follow its customary action.

Among the colors and effects that seem to be in demand, are the gray herring bone chevots, relieved by hair lines, and in some instances by pin-check effects, hard and full tone grays having a mixture of tan or brown; such effects producing a very distinctive effect. Browns are shown in profusion and every one seems to have a particular feature characteristic of its own. One feature of the colorings is the dead or washed out appearance which give the quiet graceful tones and add so much to the general appearance of the fabric. Black and white combinations are coming in for considerable attention.

The general trend of opinion is that the present light weight season will be of a very satisfactory character. This condition is due to the emptiness of the market on light weight clothing.

A REVIEW OF THE DRESS GOODS TRADE.

The improvement in the dress goods trade is best explained by the assertion of a dress goods factor who said:

"Wherever we go and sell goods we find that they are wanted at once and this situation appears to be a good indication of the improved demand. Personally, I am very optimistic on the fall business inasmuch as we are confronted by conditions that have not prevailed for some time."

One thing is apparent and that is that stocks are low and the consumer is getting to that stage of the game where he must have.

Coatings occupy the most prominent position at the present time, while the houses featuring rough face goods for suitings are having quite a demand. Worsteds of the class in vogue a year ago are dead. The general tendency of buyers has been to confine purchases towards plain fabrics or subdued fancies.

Woolen piece dyes in fancy basket weaves are in demand, interest being also manifested in cotton warp goods.

As to the opening of the Spring 1911 season, while some of the cheaper lines opened before, it appears

to have been to the best interest of all concerned to withhold the general opening. The buyers were not interested earlier and if the houses had shown their lines promiscuously the same discontent and price cutting tactics that were apparent in other branches of the industry would have taken hold and the trade been demoralized. As it was, the lines were not shown until buyers wanted them and they, therefore, did not have to be cajoled into buying, with the result of a healthier business and a more satisfactory condition all around.

It is thought that the mannish effects in grays, combinations of black and white, black and brown and similar combinations will be most in demand.

From the manufacturing centres a general complaint is being heard on account of the difficulties experienced in turning out light and dark hairline effects so much in demand. The trouble is primarily due to the natural unevenness of the average run of yarns. It all depends on the equipment of the mill, which must be entirely devoted to the production of this class of goods in order to make their manufacture a success.

A REVIEW OF THE SILK TRADE.

Throughout the silk trade there prevails a period of reorganization, and a general tendency to put the industry on a firm basis.

It has been very apparent that values in silks were sagging for some time past and that mills were willing to accept business at bare cost, but the last few weeks has witnessed a turn in the tide.

Values have been advanced on an average of 5 per cent., and the proposition is put to the buyer either that he pay the price or let the goods pass; such an attitude showing the marked independence that is manifesting itself. This action of the mills will do more to regain the confidence of the trade than anything else, provided the manufacturers stand by one another.

Taking the silk trade as a whole, an optimistic feeling prevails. This past few weeks has witnessed the return of a number of manufacturers from abroad, who report that silk will again regain its favor this autumn, due to its extensive use abroad.

Satins from all indications will have an enormous demand this fall, but from what can be learned it appears that the call for lightly constructed *messalines* will be wanting. The *satins* which will be most in evidence are those with the greatest body which possess good draping qualities.

Poplins, *crepés* of various kinds, *voiles* both plain and those with satin stripes, plain printed and fancy *marquissettes* as well as *grenadines* will also be in favor.

Among the mills more effort is being put forth on novelties than there has been for several years. Designers are doing the utmost to produce fabrics different from those which have been in use for some time. *Fancies* continue to hold the best position in the silk trade.

Among the Ribbon Trade, business seems to be on the uplift. A number of manufacturers report that they are offered more business than they can take care of for fall deliveries. A feature of the ribbon trade recently has been the dissatisfaction between the mill and the buyer; the latter claiming that in many instances the goods delivered were not up to samples shown, which naturally resulted in cancellations.

Plain goods, warp prints, moiré and other fancies are in good demand, mainly through the efforts of the retail trade in creating the demand.

Among the Tie-Silk trade the mills are preparing for a good autumn trade. Some novelties shown are the new high lustre silk ties which do not catch and hold the dust. As to colors, a manufacturer informs us that brown will be the popular color for the fall, which is shown by the fact that the orders for browns are sharing equal favor with lavender, which is always a popular seller.

A REVIEW OF THE HOSIERY TRADE.

The past month has witnessed the opening of the Spring 1911 lines of hosiery and the trade in general appears to have been willing to become interested in the staple lines, although purchasing is being done in a very limited way with the prices on a trading basis.

At the present time both the mill and the buyer seem to be undecided which way to turn. The mill remains somewhat inactive, due to their conclusion that they will get better prices for their line later on, while the buyer holds off in anticipation of a drop in the price of the raw fibre.

Another thing which tends to retard the activity of the market among the manufacturers of cheaper grades of hosiery is the inability to arrange with the spinners for yarn to be priced at a given advance on the ruling price of the cotton yarn at the time it is ordered shipped, which would naturally relieve them of all anxiety and at the same time allow them to price their lines accordingly, thus opening the situation to the buyer.

Buyers are asking for prices for next spring's delivery, but the mills are in no hurry to interest themselves in the matter. This condition is one of the many which tends to keep the market in a state of uncertainty.

Very little attention is being paid to fancies, as the general conclusion is that they will not go higher and the prices cannot drop to any material figure.

Throughout the full fashioned trade, buyers seemed to be better disposed than heretofore and a fairly good business has developed. Buyers returning from abroad claim to have placed very few orders, as the manufacturers on the other side were not in a position to offer any better inducement on lower priced goods than they could secure from domestic mills.

Silk hosiery, while not in as great demand, due to the stock on the market, continues active for immediate delivery, both in hose and half-hose. The 50c lines of men's half-hose are very active as are also the medium priced lines of ladies-hose, the supply of the latter being almost impossible to be kept satisfactory.

A REVIEW OF THE KNIT GOODS TRADE.

The underwear trade, like the majority of others is out for the Spring 1911 business. Most lines are operating at a slight advance of about 12½ to 25c per dozen in the better grades, which in view of the advance of cotton yarn seem remarkably low.

What business has been booked so far is far from the normal demand and as an extra inducement, to interest the trade, some houses handling the 25c cotton underwear are offering buyers an opportunity of placing their orders at the opening prices which prevailed last season. This method of trying to get the business is to be lamented upon as it is just such conditions which tend to retard, rather than encourage the con-

fidence of the buyers. There is some indication throughout the market that some of the higher priced lines were offered on a similar basis, but as a whole the 50c to \$1.00 grades seem to lay by and wait for the sound business dealings, at the same time protecting the buyer who orders at prevailing prices.

An idea of the erratic trading that is being done, that the mills may get orders on their books, is shown by the experience of a certain buyer who was not extremely desirous of entering the market at this time.

A month ago he was offered the combination line of shirts and drawers at \$3.25 a dozen. He declined and in another week received a letter from the agent quoting \$3.12½ with the provision that only ¾ths of the usual amount of goods bought last year would be booked at that price. He again declined and finally the price dropped to a figure close to \$3.00, and the business was closed at practically the same price which prevailed last season.

Another instance is noted of a mill who had an order for 150 cases which was held up because the buyer wanted last year's prices and the mill asked less than 5% advance.

These conditions will have to be overcome before the buyer again regains confidence in the line, and until that time it appears that nothing better can be looked for.

Among the mills producing novelties in ladies' goods, where prices permit the line to be sold at popular prices, business is fairly good, the orders being placed promptly and future business covered.

Throughout the entire trade the subject of price and substitution seem to be the topic of the day.

For instance, mills handling goods made from Egyptian yarn, which are of the better class, are laying low, as the buyers will not consider the necessary advance, but in the meantime dyed yarn substitutes are being offered and buyers take them in preference to paying the higher prices for the genuine Egyptian cotton goods. The manner in which some buyers are purchasing these substitutes in order to meet the established price, is driving the better mills to desperation. A campaign of advertising might assist in acquainting the public that they are getting just what they pay for and nothing more.

REVIEW OF PUBLICATIONS.

The Editorial Offices are in receipt of the *Year-Book* issued by the well known dyestuff firm, *H. A. Metz & Co.*, New York, being compiled by Mr. Herman A. Metz.

This progressive concern has been issuing this *Year-Book* for a number of years, the volume to hand being the twelfth, and we must say it is extremely interesting and in our estimation about as complete as could be looked for.

The relative value of this book to manufacturers, dyers and chemists, may be readily seen from the fact that the volume contains in part: Reference Tables on almost every subject relating to Dyeing; A Description of the Historic Colors, and their chemical combinations; A Review of the Patented Dyestuffs for the year, together with, Notes on New Processes, New Colors, etc., the book certainly being a tribute to the author's ability.

The Editorial Offices are in receipt of Vol. V of the *Harvard Economic Studies*, entitled *Wool-Grow-*

ing and The Tariff, by Chester Whitney Wright, Ph. D. This volume is one which will appeal to those interested in our country's industrial history as well as those interested in the tariff question, covering the subject from the 18th century until the present day. The price of the book is \$2.— and can be had from the Publishers: Houghton Mifflin Co., 4 Park Street, Boston, Mass., or 85 Fifth Avenue, New York.

NATIONAL ASSOCIATION OF COTTON MANUFACTURERS.

The eighty-ninth meeting of The National Association of Cotton Manufacturers will be held on September 21 and 22, at the New Mathewson House, Narragansett Pier, R. I.

The scenery and surroundings of this hotel are attractive, and it is expected that the interest in the golf contests will continue, as the cups offered by Ex-President James R. MacColl have been held long enough to reach private ownership. The Board of Government, by subscription among the members, are to furnish two more cups for new contests.

The several papers, which were either offered too late to find a place on the program at the last meeting, or have been recently offered, are to be presented at this meeting and the Secretary desires additional papers from the members.

COTTON SPINNING.

The Ring Frame.

(Continued from June issue.)

Another type of banding machine is shown in Fig. 281. It changes from twisting to doubling, stopping when the band is done. Nine bands can be made on this machine at one operation, of any length or twist desired. In the illustration of this banding machine (a side view of it), its length is somewhat reduced to show the relative proportions of the parts more clearly within a limited space.

Detail illustrations *A* and *B* are given to show the formation of the loop band, viz.: *A* illustrates the operation of twisting the two strands of cord or yarn, and *B* the doubling of the banding.

The operation of the machine is thus: The machine having been adjusted to twist and double loop banding of the desired length, the operator secures the desired number of coarse threads to one of the twister hooks 1, then hooks the same threads over the corresponding loop hook 2 and secures the other ends of the threads to the other twister hook 1. Having thus formed one loop, the ends of which are fastened to the two twister hooks of the same frame 3, the operator proceeds to secure in the same manner the other (five in this instance) strands of thread to the twister hooks of the other (five in this instance) twister frames. The operator now starts the machine by moving the belt from the loose to the tight pulley, at the same time moving the arm 4 one notch on the bell crank lever 5. Power is transmitted through shaft 6 to a gear (not shown), which engages with a series of gears, each of which is secured to a short shaft, journaled in standard 7, and thus communicated to the (six pairs in the present machine) twister hooks 1, through suitable gears and pinions in each of

the twister frames, thereby twisting twelve strands in the machine simultaneously.

The twisting of these strands (see diagram *A*) acts to contract the same and draws the block 8 and the weight 9 toward the head stock. The block 8 is moved thereby on the rods 10, and this motion is transmitted through the rod 11 to the rod 12, until the end of the rod 12 engages with the bell crank lever 13, and knocks off the arm 14, when a spring (not shown) acts through the lever 15 to draw back the disk 16 and withdraw the pins as fast to the disk out of the way of the twister frames 3, thereby permitting the rotation of the twister frames 3 and the doubling of each of the pairs of strands into one band (see diagram *B*). The doubling of the bands continues to draw the block 8 forward until the end of the rod 17 engages with the bell crank lever 5, to knock off the shipper and stop the machine, when the operator re-

twisted separately, and the two strands are twisted together to form the band. The roving used, having been twisted previously, this makes three separate twistings in the completed band, which makes a very strong hard band. Other mills make their bands by using eight strands of 8-hank roving with a core of eight threads of number 30's yarn. The roving is twisted in a twisting machine before the band is made on the banding machine, and the core of yarn and the roving are then twisted together. Still another method practised is to use yarn only for making the bands. In this case about thirty-six ends of yarn are taken and twisted together to form a strand, two of these strands are then twisted together to form a loop band, or 40 to 60 strands of yarn are twisted into a two-ply cord about $\frac{3}{16}$ -inch diameter.

It is a matter of economy to make a large number of bands at one time from the same grade of stock,

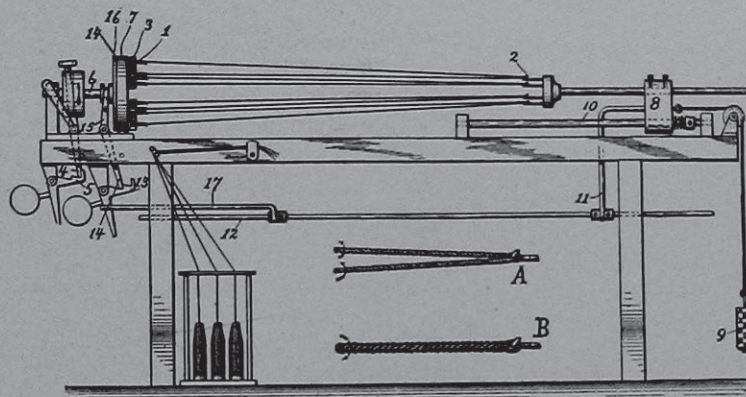


FIG. 28r.

moves the twisted and doubled loop banding from the machine and repeats the operation.

Bands are usually made so that they run from 100 to 130 to the pound; they should not be made heavier than 115 to the pound nor lighter than 125 for the average ring frame, an average of 120 to the pound being the most satisfactory. As before mentioned, bands have been used as light as 230 to the pound, but this is not recommended for usual practice. In modern banding machines, the bands are marked at fixed intervals to indicate the point to which they should be drawn up in the loop end for tying. (See Watter's Marker in connection with the Rhoades Banding Machine previously referred to). If care be taken to have all the bands marked and tied up, the same length for all, even tension and smooth running will be secured. There are different ways of constructing bands in practice. Some mills use four strands of a 2-hank roving, having about 4 turns of twist per inch imparted to it, for making their bands from it; four bobbins of this roving are then placed in the stand under the banding machine and a certain length of it twisted, when a loop band is formed by means of twisting two of these strands together with about four turns of twist per inch. The completed band therefore consists of two strands, each of which contains four ends of roving, each of the strands being

hank of roving, or number of yarn, so that regularity in the quality of bands will be insured for a considerable length of time. Banding can also be made in one continuous cord and is supplied in this form to mills who do not make their own bands. For convenience in handling by the supply houses, such banding is put up wound in the shape of a ball. Abroad, it is customary to use bands in this form, individual loop bands being a feature of American mills only.

Banding in larger mills is generally done by a special operative called a band boy, whereas in smaller mills, the oiler, or some other employee, generally has this additional duty to perform. The operative who puts on the band closes his knife on one end of the band and inserts it in the curve of a specially bent wire. The end of the band and the knife is then passed over the cylinder, the wire withdrawn and passed under the cylinder, after which the operative catches the hanging end of the band and draws it to him, preparatory to tying it. When loop bands are used, the loose end of the band should be divided into two strands and one strand passed through the loop, the two loose strands are then tied together and pulled sufficiently tight to bring the mark on the band even with the loop on the other end of the band, after which a square knot is tied. The machine has not to be stopped to replace broken, slack or poor bands, as

the spinner may come in contact during the running of the frame.

The first set of new bands put on a new frame is generally spoiled by the new cylinder, and ought to come off within a month; the second set can be put on looser.

(To be continued.)

Thread Guide for Spinning or Twisting Machines.

The same is the invention of Mr. I. E. Palmer, the prominent Textile Manufacturer and well-known Inventor of Textile Processes, Machinery and Appliances, Middletown, Conn.

The accompanying five diagrams are given to better illustrate descriptive matter.

Figure 1 is a side elevation of this Palmer thread guide, representing the same in position of adjustment with reference to the delivery rollers; Fig. 2 is

member 6, in the form of a disk having a grooved periphery, is placed, the same being held from rotation by means of screw 7, passing through the portions 5 of the frame and said disk.

8 indicates the delivery rollers of a spinning machine, 9 the thread issuing therefrom and passing over the disk 6 to the spinning spindle. A second disk 10 is provided, to vary the peripheral engagement of the thread 9 with the disk 6, in order to adjust the conditioning action of the disk 6 upon the thread. Said disk 10 is mounted upon the frame 1, by means of a supplemental frame, consisting of the arms 11 pivoted upon the screw 7 and provided at their outer ends with a screw 12 passing therefrom and axially through the disk 10. Slot 13 is provided in one of the arms 11, being positioned therein by a screw 14, by means of which the arms 10 when adjusted may be clamped in position.

Disks 6 and 10 are solid, but a divided disk 15, as indicated in Fig. 5, can be substituted, each part thereof having teeth 16 to provide thread cleaning projections.

By adjusting the position of the parts from that shown in Fig. 1 to that shown in Fig. 2, the extent of peripheral contact of the thread with the disk 6 as well as with the disk 10 is increased. Disks 6 and 10 condition the thread during the spinning or twisting operation. If the said disks have smooth peripheries, they smooth the thread, but if they are provided with clearing surfaces, such as indicated in Fig. 5, they remove more or less of the protruding fluffy portions of the thread, lumps and foreign matter.

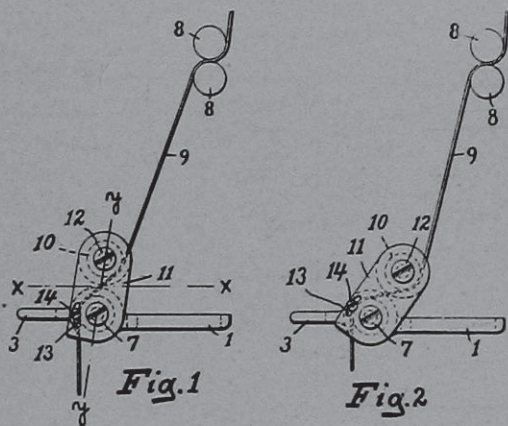


Fig. 1

Fig. 2

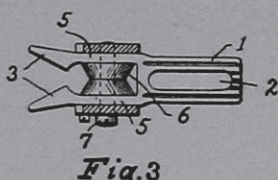


Fig. 3

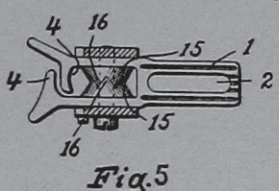


Fig. 5

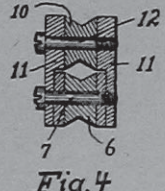


Fig. 4

a similar view of this Palmer guide in a somewhat different adjusted position. Fig. 3 is a cross section upon the line x-x of Fig. 1; Fig. 4 is a vertical section upon the line y-y of Fig. 1, and Fig. 5 a view similar to Fig. 3 of a modified form.

Numerals of reference accompanying illustrations indicate thus: 1 the frame of the thread guide, the same being provided with slot 2 at the rear end, permitting it to be mounted upon the clapper of a spinning machine, with a capacity for a longitudinal and lateral adjustment by a bolt. The frame 1 is open at its front end and provided with spaced ears 3, for the admission of the thread. Said ears may be provided with means such as indicated at 4 in Fig. 5 to prevent the escape of the thread from the guide.

Between the forward parts 5, a thread guiding

DYEING COTTON CHAINS.

(Continued from page 167.)

The Short Chain System.

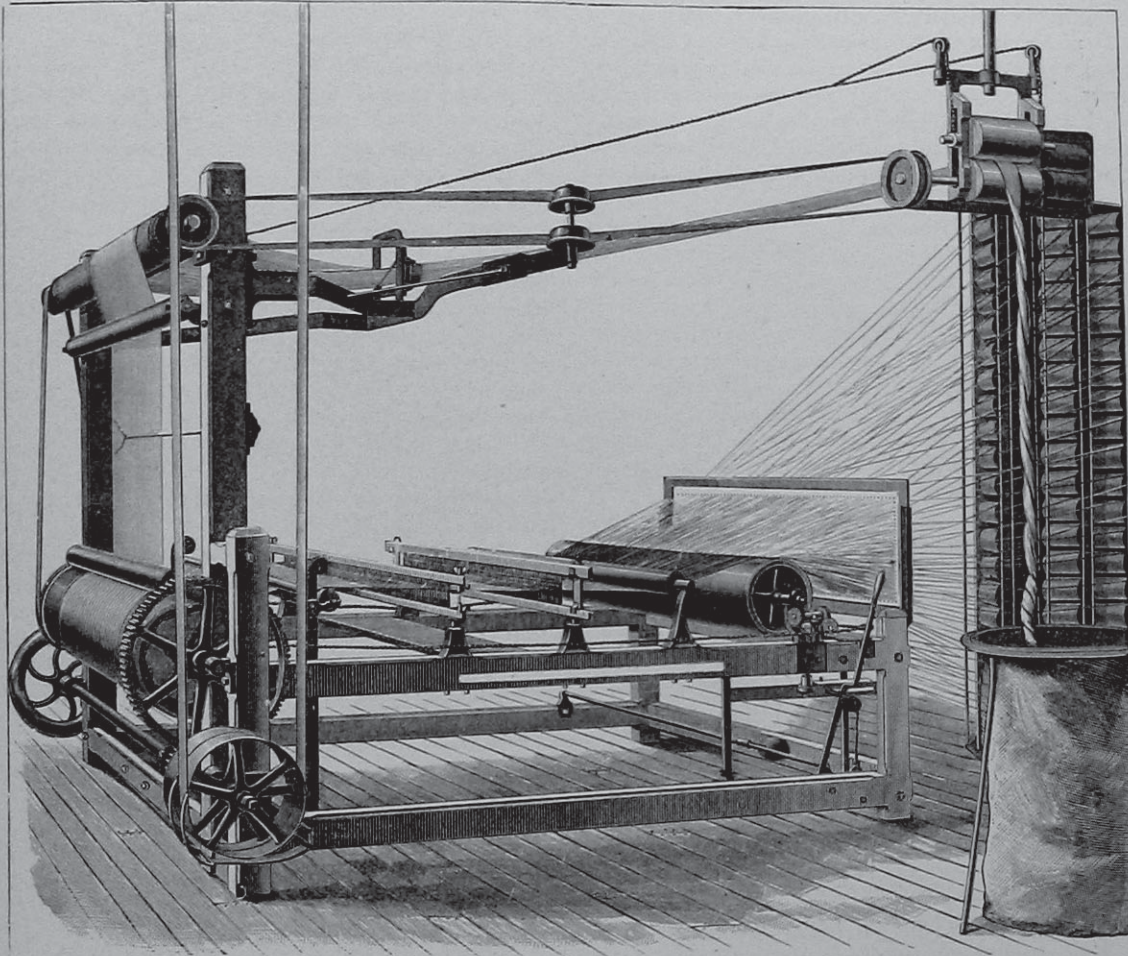
The same refers to chains for warp purposes only, and not for quilling, the length of the chains varying from 400 to 800 yards. In this instance, the chains are usually warped the full number of ends required in the loom, provided within compass of the creel, otherwise two or three sections have to be made. Some mills on certain yarns, warp up to 2000 ends, whereas others do not go over 1,200 ends. For this reason, if the warp in the loom calls, for example, for 3,600 ends, we can either make the same in two chains @ 1,800 ends each, or in three chains @ 1,200 ends each. The chains are either warped into a bag or into a ball.

Fig. 26 shows us the *Walcott Chain Warper*, as built by the Draper Co. The latter, advise not to use over 1,200 ends in the creel, believing that there is no economy in running more than that number from one creel, in view of the extra time required for banking and trying in spools, and the necessary stops for piecing up, which reduce the amount of production, and increase cost very materially.

The illustration shows one of their latest machines, with recent improvements, showing the application of their Walmsley stop motion, which is very successful with this style of warper.

The complete warper and creel for 1200 spools and receiving bag and position for the operator, occupies

Where the single compartment machine is used, the yarn is run through the same machine a number



WALCOTT CHAIN WARPERS.

FIG. 26.

a space of about sixteen feet by thirty four feet, with stop motion; two feet less without. It stands eight and one half feet high. One of these machines will do more and better work than three circular or upright warpers. This claim is made without distinction of coarse or fine numbers, short or long chains.

Chains weigh usually from 100 to 150 pounds each, and are dyed in sets of four, thus handling from 400 to 600 pounds at the dyeing. After warping, the chains are sent to the dyehouse, where they are boiled out in the same manner as was explained in connection with the Long Chain System, after which they are ready for dyeing.

THE DYEING MACHINES used are usually single compartment machines as shown in the accompanying illustration Fig. 27, which is an elevation of the warp dyeing machine as built by the Textile Finishing Machinery Co., Providence, R. I. In mills where large quantities of certain shades of yarn have to be dyed, two, three, four or even more compartment machines will be found advisable to be used.

of times, depending upon the depth of shade required, or it may be taken from one machine to another.

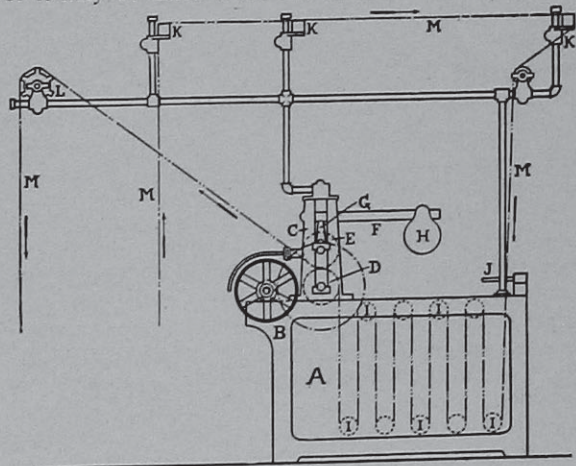


FIG. 27.

The machine shown consists of a wooden tub A,

supported in iron frames *B*, to which are bolted the nip stands *C*, supporting two iron squeeze rollers *D* and *E*, which are covered with rubber and have levers *F*, *G* and weight *H* for applying pressure. *I*, are immersion rollers for leading the chains through the dye-liquor. These chain dyeing machines are usually provided with a light but strong pipe overhead rigging, supporting the necessary pin rails *J*, bars *K*, and ree's *L*, for receiving, running through and delivering side by side, four, six or eight warps, at a time, depending upon the width of the machine. The arrows in connection with line *M* indicate the run of the warp through the machine.

When dealing with two or more compartment machines, it will be readily understood that each compartment, *i. e.*, tub, is correspondingly provided with its own set of nip stands, squeeze rollers, immersion rollers, etc.

Fig. 28 shows us another style of a Chain Dyeing Machine in its perspective view. In its general

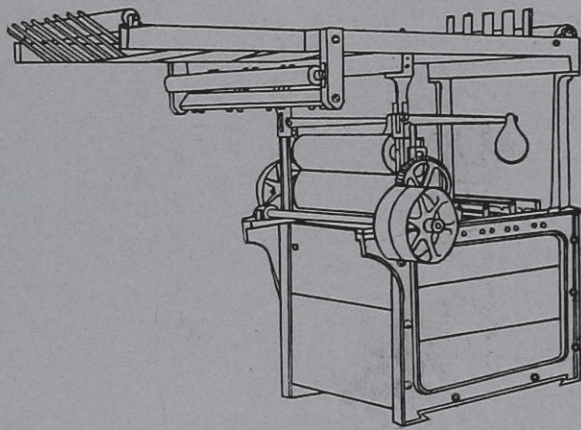


FIG. 28.

mechanism this machine is similar to the one before described, but differs with reference to the feeding and delivery arrangement. From 4 to 12 chains can be handled side by side at one time, depending upon the size of the machine. The bottom rollers in the dye box are so arranged that they can be raised independently while the machine is in operation, this being of special advantage to the operator in locating a snarl or any other trouble that might happen to one or the other chain while in the dye box.

(To be continued.)

NOVELTIES IN FABRIC STRUCTURES.

WATERPROOF FABRICS.

Waterproof fabrics, such as are ordinarily employed in the manufacture of mackintoshes and similar fabrics, are made up of three structures, *viz*:

- (a) an outer or face fabric,
- (b) an inner lining fabric, and
- (c) an interposed sheet of rubber or rubber compound.

It has been always deemed desirable to have quite closely woven fabric structures, both for the face fabric and the lining fabric; the impervious sheet of rubber, or rubber compound, being applied so as to ad-

here closely to both fabrics but not to penetrate either. This construction is considered necessary to provide a sheet of rubber compound of substantial thickness and also to provide proper protection for the sheet of rubber compound.

Lately it has been found that by employing fabrics of comparatively open texture, both for the face and for the lining, and permitting the rubber compound to enter the interstices between the yarns of the fabric, not only can a thoroughly waterproof fabric be produced, with a rubber compound sheet of sufficient thickness or body, but a fabric can be produced which is of much less weight and greater flexibility than the ordinary waterproof fabric previously referred to. Furthermore, although the rubber compound is made or permitted to enter the interstices of the fabrics, it does not extend beyond or embed the yarns, where they lie upon the outer surface of the fabric, so that the fabric has the *feel* of the woven fabric rather than the *feel* of a rubber sheet. If so desired, the rubber compound may be suitably colored to harmonize with the tone of the fabric.

To illustrate the new fabric structure to the reader, the accompanying three illustrations Figs. 1, 2 and 3 are given, and of which Fig. 1 is a view in cross section, (somewhat exaggerated) of an ordinary waterproof fabric. Fig. 2 is a similar view of the new fabric structure, and Fig. 3 a (still more exaggerated) face view of the latter.

With reference to Fig. 1, *a* indicates the face and *b* the lining fabric, both being of a close texture, *i. e.*, warp and filling threads join closely in the fabric so that there is practically no open or free space between them. The sheet of interposed rubber compound *c* is so applied to the fabrics that it does not enter the interstices of the fabrics, but lies substantially between the fabrics although adhering closely to both.

Examining Fig. 2, it is seen that warp and filling threads in face and lining fabric *a* and *b* respectively are more separated from each other, *i. e.*, a more open texture is represented, the openings between the yarns being relatively much greater, in proportion to the diameters of the yarns, than in the closely woven fabric shown in Fig. 1. Therefore, when the sheet of rubber compound *c* is applied, being of proper consistency, it enters the interstices or openings between the yarns much more than in the case of the closely woven fabric.

Care must be taken in the manufacture of the fabric to have the rubber compound of suitable consistency so that it shall enter the interstices but shall not cover or embed the yarns where they come to the surface. It is of course necessary, in order that the rubber compounds may enter the interstices and extend beyond or embed the yarns where they pass under transverse yarns, that the fabric be made up of comparatively smooth, well twisted yarns.

Fig. 3 shows the face view of the fabric. In the same *d* indicates the warp threads, *e* the filling threads and *f* the rubber composition. This new fabric structure has just been patented by George Streat, New York.

DESIGN FOR WOVEN EDGING.

Fig. 4 shows the face view of a new, original, and ornamental design for woven edging, just patented by the Oehrle Bros. Co., Philadelphia.

DESIGN FOR GIMP.

Fig. 5 shows us the face view of a new, original, and ornamental design for gimp, of which the following is a specification: *a* designates floats which are V-shaped in lateral direction, and *b* designates loops on the converging ends of said floats. *c* designates

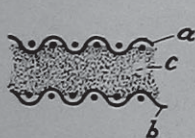


Fig. 1

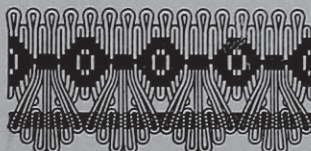


Fig. 4



Fig. 2

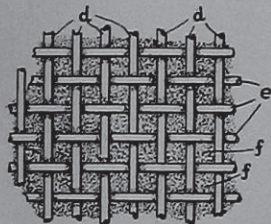


Fig. 3

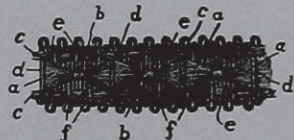


Fig. 5

longitudinally extending puffs which border the floats above and below the same, and *d* designates stripes on the diverging ends of the floats joining said puffs *c*.

e and *f* designate stripes, superimposed on the face proper of the gimp, they being broken and zig-zagging alternately with the puffs *c*, the V-shaped floats *a* and the loops *b*. This new fabric structure has just been patented by Spencer D. Wright, Philadelphia.

PRODUCING METALLIC LUSTERED THREADS.

In producing lustered threads, the absolute adhesion of the metal to the thread has been found to be a very difficult proposition.

This class of thread enters extensively into the manufacture of fine tapestries, scarfs, embroidered articles, etc. and with the use of the improved process the scope of its use will be greatly increased.

The new process consists in passing the thread, slowly through a solution of chloroform containing about five per cent of acetylated cellulose in solution and about fifteen per cent. of gold bronze in suspension.

After passing through this solution the thread is finished by polishing, pressing, etc.

A variety of colors are obtained by the use of different colored bronze or by the addition of a dye to the acetylated cellulose solution.

BOILING-OFF AND SCROOPING OF SILK.

By Dr. Louis J. Mátos.

The most important process through which raw-silk passes is that known as boiling-off, and has for its object the more or less complete removal of the natural gum or *sericin* which the silk contains, and which averages about twenty-five percent of the weight of the silk.

The operation is not difficult, but to carry it out successfully calls for a certain degree of care, in order to guard against possible defects that may become pronounced when the silk is dyed, or before weaving, or after the woven goods are finished.

In the boiling or degumming of raw-silk, one of three conditions is arrived at, *vis: boiled-off, souple, or écreu*. In the first named the object is to effect the removal of all the silk-gum which the silk contains. For *souple* silk, only a portion of the silk-gum is removed, the amount varying from about six to twelve percent of the total weight of the raw-silk, while for *écreu* only about three to five percent of the gum is removed.

In olden times, and chiefly in France, it was the general custom to effect the boiling-off in large copper vessels heated over a direct fire. Each *copper* capable of holding a hundredweight of silk, and for such a quantity of silk there would be required about thirty pounds of soap, or nearly twenty-seven percent. After the soap, which had been previously cut into chips, was dissolved, the copper was filled with water, and the furnace door closed so as to have only sufficient fire to keep the contents of the kettle hot but not boiling, for the reason that actual boiling would tend to *fuzz* the silk. To-day the operations are carried out in essentially the same manner, but with the added facilities of the modern dyehouse.

The Stripping Bath.

It is essential that the water used should be as soft as possible, for the reason that any lime or magnesia salts present will not only prevent the proper solvent action of the soap used in the bath, but will also cause a deposit of disagreeable lime or magnesia soap, to form and become attached to the silk fibres.

Next in importance is the proper selection of the soap, which should be made from pure olive oil in preference to any other substance. Soaps made from tallow or other solid fats (even when compounded with a large proportion of olive oil) are absolutely not suited for work with silk and it is a mistake to use them, for the reason that the silk is never as *dry* as when a pure olive oil soap is used, and further, silks boiled-off with such a *fat* soap is very liable to assume—in original white goods—a pink to reddish cast.

The process for *boiling-off* is carried out by passing the raw-silk through a succession of two baths, the first prepared with about 3 pounds of silk soap dissolved in 4 gallons of water for each 10 pounds of raw-silk to be treated. The temperature of the bath should be just under the boil, and the time of immersion varying from $\frac{3}{4}$ to 1 hour. The second bath

is charged with $1\frac{1}{2}$ pounds of soap for each 10 pounds of silk, and the temperature and time of immersion being the same as for the first bath.

It is the custom in some establishments to use the second bath after increasing the amount of soap to bring it up to the strength of the first bath and using it as the first bath for the second batch of silk, preparing in the meantime a fresh second bath to continue the stripping and so on for successive lots.

The silk is suspended in these baths from bamboo sticks, the same as is used for dyeing, although some strippers still adhere to the older custom of boiling-off in bags.

For *souple silk* custom varies, but as a rule only one soap bath is used, containing 1 pound of soap for each 10 pounds of silk, and keeping the temperature below 100° F.

In stripping for *écru*, no soap is employed.

Some plants employ rectangular wooden vats for the boiling-off processes, others make use of iron or copper vessels. No doubt the copper tanks of the usual dyehouse construction is best suited, especially when heated by a closed steam coil of ample heating surface.

After the raw silk has been immersed in the soap bath the fibres apparently swell up and become somewhat sticky, which is due to an hydrolysis of the gum or *sericin*; but in a short time, say, in about 10 minutes, the action of the soap in the bath is quite noticeable by the gum on the silk beginning to dissolve quite rapidly. This action continuing until nearly all has been removed and which is noticed when the silk becomes lustrous.

During the entire period that the silk is immersed in the hot soap bath, the skeins should be turned slowly and regularly, that every portion should be subjected to the same treatment. Neglect to handle the silk during the stripping is more often responsible for ultimate defective goods than any other cause.

After the stripping, the skeins are lifted, squeezed carefully, and given a good rinse in water containing about $\frac{1}{4}$ pound of soap and 2 ounces of sal soda per gallon. In stripping of yellow silks, it is necessary that the operator should lift the silk from the second soap bath at the proper time, and not keep it immersed in the now discolored soap solution, for the reason that the natural yellow coloring matter contained in the dissolved silk-gum is liable to be taken up from the bath by the fibre, thereby discoloring it; this discoloration is extremely difficult to remove from the silk.

Some raw-silks boil-off quicker than others, it has even been noticed that silks of different years but from the same district require different treatment to secure the same result.

Referring to the turning of the silk in the soap bath when the silk finally reaches the dyehouse, uneven shades are sometimes observed, some parts dyeing darker than others; this is due to the presence of undissolved silk-gum which has little or no affinity for coloring matters—acting as a resist, so to speak—the result being that irregular patches and streaks are likely to appear upon the threads, which become

quite pronounced in the piece, more especially, if the shade dyed is a medium or dark one.

Scroop.

A peculiar property possessed by silk and believed by many to be dependent upon the preliminary treatment of silk, is known as *scroop*, and is the peculiar crackling sound which clean silk emits when compressed. This property is believed to be possessed by silk alone, although some processes have been devised for the purpose of imparting a *scroop* to mercerized cotton and with some measure of success. As a matter of fact, however, *scroop* is not a natural property of silk, but is the result of passing the silk, after having been deprived of its natural gum, through a bath containing a small percentage of some acid, preferably tartaric acid, although many silk dyers and finishers prefer to use commercial lime juice, claiming that the results obtained from the use of the latter substance are more lasting. No satisfactory explanation has as yet been given as to the cause of this peculiar rustling sound emitted from silk so treated, but the assumption is that the surface of the silk fibres are somewhat roughened by the acid and that the noise is due to the increased friction upon the application of pressure. It is certain, however, that the acid present is responsible for the peculiar sound. One ounce of tartaric acid dissolved in one gallon of water is found to be a good strength to work with. The silk is simply immersed in the bath for a short time in the cold, then lift, drain, wrap in cotton cloths and whizz or squeeze on the peg. The silk is not subjected to any further treatment. The scrooping of weighted silks is always the last operation.

DICTIONARY OF TECHNICAL TERMS RELATING TO THE TEXTILE INDUSTRY.

(Continued from June issue.)

LEVANTINE:—A stout, closely woven, reversible silk fabric.

LEVEL DYEING:—The process of securing an even shade in dyeing, where, from the great affinity between the goods under treatment, and the dye, the portion first dyed would absorb too much coloring matter. The object is usually accomplished by adding to the dye liquor a quantity of Glauber's salts.

LIBERTY:—A name given to their products by Messrs. Liberty & Co., silk merchants of London and Paris, who made a specialty of certain effects in silk fabrics, produced by dyeing, printing and finishing. The term is now applied generally to figured silks resembling the original products.

LICKER-IN:—The roller of a carding machine, which delivers the fibres to the main cylinder or swift. The licker-in runs with less surface speed than the swift, hence the teeth of the latter continuously draw away, *i. e.*, strip the fibres from the teeth of the licker-in as fast as it is received from the feed rollers.

LIME BOIL:—The first process which goods in bleaching are subjected to. The same follows the gray wash, and consists in running the string of cloth through a solution of milk of lime, *i. e.*, calcium hydroxide, $\text{Ca}(\text{OH})_2$, a portion of which the

cloth absorbs, after which it is passed by overhead winches into a specially constructed boiler, known as a kier. The essential action of boiling with lime, is to decompose the fatty, resinous, and waxy impurities present in the fabric. They are not removed, but remain attached to the fibre as insoluble lime soaps, which are, however, readily removed by the subsequent processes. The coloring matter of the fibre is modified, and any alumina present is also attacked.

LIME SOUR:—Also called Brown Sour, Gray Sour, or Acid Treatment. The latter name explains the procedure; *i. e.*, the goods are washed with dilute hydrochloric acid. During this process, insoluble lime soap, resulting from the lime boil, is decomposed and the lime removed; any other metallic oxides present are also dissolved out, and the brown coloring matter of the fibre is loosened. Hydrochloric acid (muriatic acid) is preferred to sulphuric acid (oil of vitriol), since the former results in a more soluble compound with the lime. Both acids combined will also work well.

LINACEÆ:—The generic name for the class of plant from which linen is derived.

LINCOLN SHEEP:—An English breed of sheep, origi-



LINCOLN SHEEP.

nating in Lincolnshire, from crossing the native breed with Leicester breed. It stands at the head of the long woolled sheep, both on account of the



FIBRES FROM THE LINCOLN SHEEP.

a from the shoulder of a well bred specimen; *b* from the breech of a well bred specimen; *c* from the shoulder of a poorly bred specimen; *d* from the breech of a poorly bred specimen.

length of staple as well as weight of fleece. It is a very large, white, coarse, long woolled, hornless sheep.

LINE:—The long fibre of flax, or hemp, separated from the tow by hackling.

LINEN:—A fabric made of linen yarn or thread; cloth woven from the fibres of flax; also given to articles formerly made of linen though now chiefly of cotton, as bed linen, table linen, etc.

LINEN DRAPER:—A dealer in linen goods.

LINEN EMBROIDERY:—A kind of fancy work, made by drawing the threads from a piece of linen, except from the space comprised within the lines of a pattern, so that the latter remains in solid surface relieved upon the open work ground, from which the threads have been withdrawn.

LINEN YARN:—Linen yarn is reckoned by the lea. The linen reel is 90 inches in circumference, 120 revolutions of which make one lea, which, consequently contains 300 yards. The number of leas in one pound is what is spoken of as the counts; for example, 50 lea, which means that 50 leas weigh one pound. Linen, like other yarn, is also made up into hanks, 10 leas making one hank and 20 hanks one bundle.

LINGERIE:—A French term of wide meaning; used to denote collectively all the linen, cotton, silk and lace articles of underwear which compose a woman's robe, such as the nightgown, corset undervest, drawers, shirts, collars, garters, hose, chemise, etc.

LINGOE:—A metal weight, attached to each cord of a Jacquard harness, to keep the individual harness cords taut.

LINING FELT:—A fabric of hair, or hair and asbestos, which may be saturated with lime cement and used as non-conducting covering for steam boilers and pipes.

LINO:—A silk gossamer material.

LINOLEUM:—A preparation of linseed oil, which is hardened by exposure to heated air, or by treatment with a sulphur chloride, and used as a substitute for india rubber. When mixed with ground cork and pressed upon canvas, it is used as a floor cloth, known as oil cloth or linoleum.

LINON:—The name given by the trade to fine lawn.

LINSEY-WOOLSEY:—A coarse, stout material, made with a linen or cotton warp and a wool, or wool and cotton mixed filling.

LINT:—The name given to the cotton which remains when separated from the seeds.

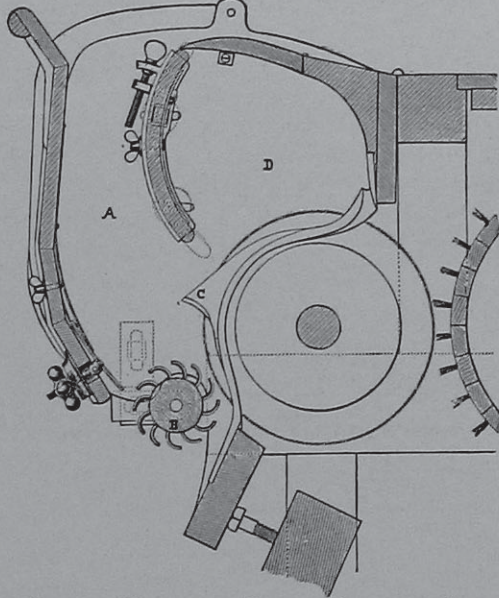
The soft down of ravelled or scraped linen, used in dressing wounds.

LINT DOCTOR:—A scraper for removing projecting fluff from fabrics to be printed.

LINTER, HULLER OR DOUBLE BREASTED GIN:—A type of a saw gin, specially built for handling the cotton grown in the lowlands of the Mississippi Delta, and to some extent in the Red River, Brazos, and other Bottom Lands, where, on account of the rank growth of the plant and the damp weather, the cotton is gathered with a large amount of the hulls clinging to it, which if fed into the top of the roller, as is done in the regular gin, would be so cut to pieces and ground up by the saws that the staple of cotton would be very much deteriorated.

A closer acting cotton gin, for removing short

staple cotton fibres still adhering to the seeds, after ginning seed cotton.



LINTER, HULLER OR DOUBLE BREASTED GIN.

A the feed box; B a spiked roller revolving, quite rapidly, in the direction of the saws, catching the locks of cotton and drawing them upward through the projection C on the rib; these projections being so close together that hulls and other similar substances are separated from the cotton and thrown back upon the roller B and allowed to be fed or dropped through or between the spikes, thus falling beneath the gin with the seed. The cotton drawn through the hulling ribs C, at the bottom of the roll box D, starts the roll of cotton in motion, which is ginned in the same manner as it is by the regular gin.

LINTERS:—The fibres separated by linting (a closer process of ginning) from the seed refuse of the gin. *Cotton shoddy*. They are used in the manufacture of gun cotton, lustre cellulose, cotton batting, etc.

LISLE LACE:—A light, fine, transparent white thread, hand made lace. It has a diamond shaped mesh, formed by two threads, plaited to a perpendicular line. Also known as *Clear-foundation*.

LISLE THREAD:—A combed yarn, made of superior long staple cotton, used for the knitting of superior qualities of gloves, hosiery, and underwear. The spinning is done under moisture. The yarn is spun in high counts, and hard twisted, after which it is run quickly through a flame (gassing) to remove, *i. e.*, burn off the loose, adhering fibres (fuzz) characteristic to any yarn. This process permits the yarn to exhibit the colors applied to it, with a brilliancy unequalled by a yarn not thus manufactured. It bears the same relation to regular cotton yarn, that worsted yarn does to woolen.

(To be continued.)

DIRECTORY OF TRADE MARKS RELATING TO THE TEXTILE INDUSTRY.

Registered June, 1910. (Complete.)

1. Hosiery.—Neustadter Bros., San Francisco.
2. Hosiery.—S. Shapinsky & Co., Louisville, Ky.
3. Men's and Boys' Overalls.—Spokane Dry Goods Co., Spokane, Wash.
4. Shoe Cloth.—The C. Stohn's Son's, Inc., Jersey City Heights, N. J.
5. Hosiery.—Issachar Cozzens, Glen Cove, N. Y.

6. Stockings.—Maxwell-McClure-Fitts Dry Goods Co., Kansas City, Mo.
- 7, 16. Silk, Cotton, Mercerized and Machine Sewing Threads.—Gudebrod Bros., New York.
8. Knitted Wearing Apparel.—L. Herzog & Bro. Dry Goods Co., St. Louis.
9. Mercerized Cotton, Silk and Artificial-Silk Yarns.—Bernhard Ulmann & Co., New York.
10. Overalls, Trousers and Jumpers.—The Paterson Overall Co., Paterson, N. J.
11. Axminster Carpet.—Bigelow Carpet Co., Clinton, Lowell and Boston.
12. Work Shirts.—Harris Lipsitz Co., Dallas, Tex.
13. Starches, Gums, Softeners, Chemicals and Dyestuffs.—Danker & Marston, Boston.
14. Knit Underwear, Undershirts, Drawers, Union Suits and Hosiery.—Lester Sinsheimer, New York.
15. Cotton Thread and Yarn.—The Clark Mile-End Spool Cotton Co., East Newark, N. J.
17. Bed-Comforts.—Louisville Pillow Co., Louisville, Ky.
18. Ladies' Outer Wearing Apparel.—Up to Date Cloak Manufacturing Co., Kingston, N. Y.
19. Women's Dress-Skirts.—Nussbaum-Goldsmith Co., New York.
- 20, 21. Carpets and Rugs.—The Firth Carpet Co., New York.



- 22, 25. Broad Silk in the Piece, Cotton Piece Goods and Silk and Cotton Piece Goods.—Rogers & Thompson, West New York, N. J.
23. Hammocks.—Herman L. Hohlfeld, Philadelphia.
24. Starches and Dextrins for Sizing Purposes.—Corn Products Refining Co., New York.

TWO COLOR RIB EFFECTS.

There are a number of ways known to the trade by which a knitted fabric may be produced which has one color on one side, and another on the reverse; such as a flat piece of goods, being, for example, white on the inside and gray and steel colored on the outside, oftentimes called a double faced fabric.

In conjunction with this, there are fabrics produced along the same principle, but having different colored stripe effects, produced by having one wale of one color and the next, or one following, of a different color, and so on throughout the course of the fabric, in turn producing different effects on each side of the fabric.

As mentioned before, there are many ways of producing such effects, but one of the simplest, yet most practical, has lately come to the attention of the trade.

The first object is to produce a double web, one and one fabric, knit with two sets of yarn and having the face of the fabric consisting of alternate ribs of the different colored yarn. The ribs of the inner side, or face, are knit alternately of first one yarn and then the other, presenting a mottled stripe appearance, variegated with the colors of the successive alternate yarns, with a single loop appearing in each rib of the inner face, for one loop of each rib of the outer face, each being formed of a single needle wale.

In order to make the construction of the fabric more simple, reference is made to illustration Fig. 1, which shows the outer face of such a fabric produced on the principle mentioned; Fig. 2 shows another idea along the same lines. In either case, the back of the fabric is just the reverse of the front.

This principle of fabric structure may be applied to any ribbed fabric, such as shirts, stockings, toques, sweaters, etc.

To accomplish the object, two different colored yarns are fed to the machine.

In the dial, the alternate needles are divided into two sets, the active and inactive. The inactive needles of the dial remain so entirely.

In the cylinder, the needles are divided into two sets, every alternate needle being in one set and the corresponding needles in the other, each set acting alternately with respect to each other.

In other words, the first set in the cylinder, after taking a loop, is held in its lowered position, retaining its loop, while the second set does likewise and is also lowered, and becomes inactive while the first set again goes into action.

The set of dial needles which have been called the active, operate continuously, using alternately the different yarns throughout the operation, while the first set of the cylinder needles acts on one yarn, and the second on the other yarn; naturally, the fabric produced consists of two webs, one being produced by one set of the cylinder needles and the active set of the dial needles, and the other knit by the other set of cylinder needles and the same dial needles, each web being interknit as shown in the illustrations. At the same time, it will be readily seen that all the dial needle wales are produced by loops taken alternately

from both yarns, while the cylinder needle wales are formed from a single yarn, each independent of the other, the wales of one yarn successively alternating throughout the fabric with the wales of the other yarn.

Each dial needle wale on the inner face forms a rib, while on the outer or face side are two cylinder needle wales, which are interlinked with the inner face rib, thus forming one rib, double the width of each inner rib.

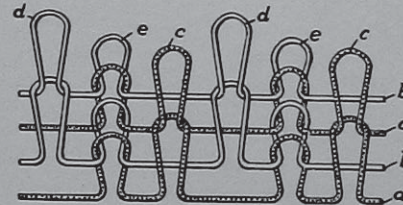


Fig. 1

By this it will be seen, that, if different colored yarns are used, for instance red and white, white being fed to the first set and red to the second set of cylinder needles, the outer face will show ribs formed of a needle wale of red and one of white, alternating throughout the fabric, while the inner face is formed of single wales or ribs, each composed of a loop of red and then a loop of white, throughout the wale. This inter-knitting of the two webs naturally gives more body to the fabric between the wales, caused by the sinker wales crossing in their respective courses, in turn producing a much finer mesh than can ordinarily be had on a machine of the same gauge.

In connection with fabric structure shown in Fig. 1, the mode of producing the fabric is more clearly explained by referring to the illustration. *a* will be called the red yarn, fed to one set of cylinder needles,

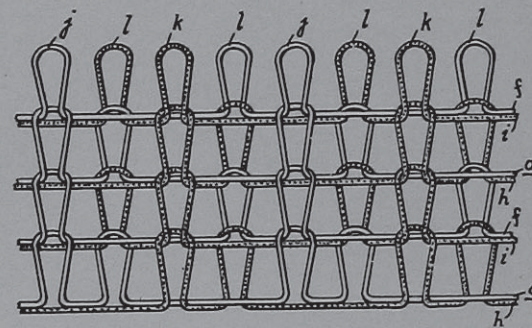


Fig. 2

and *b* the white yarn as fed to the second set of cylinder needles. *a* produces the wale *c* and *b* the wale *d*, while the wale *e* is produced by the dial needles which operate between the two sets of cylinder needles, using both yarns, *a* and *b*.

By this it can be readily seen that there are twice as many loops drawn in by each dial needle, as is drawn in by each cylinder needle, consequently the wales *e* will be composed of twice as many loops as either wale *c* or *d*; or in other words, wale *e* has the

same number of loops as both wales *c* and *d* together, thus producing a two and one wale fabric.

Fig. 2 shows a more compact fabric structure. In producing the same, the method is a trifle different from the one before explained.

In this case, all of the dial needles are active, being divided into two sets, each set operating alternately with the other, with respect to the two sets of cylinder needles.

Differing from the first explained method, two yarns, preferably of the same kind, are fed successively to each set of cylinder needles, alternately. The first set of dial needles operates first in conjunction with the yarn being fed to the first set of cylinder needles, and then in conjunction with that, being fed to the second set, throughout the fabric; the second set of dial needles remain inactive, holding down their loops, while the first set becomes again active, and vice versa.

So much for the mechanical end, but to make it even clearer to the reader, reference is again made to the illustration.

In the first place, four yarn feeds are preferably provided; for instance, yarn *f* and yarn *g* constitute a set of yarns fed to the first set of cylinder needles, while *h* and *i* are the second set of yarns, fed to the second set of cylinder needles.

From the illustration, it will be seen that the yarns *f* and *g* are knit by the first set of cylinder needles into wales *j*, and the second set of yarns, in conjunction with the second set of needles, produce the wales *k*, these two wales showing on the outer face, while between them on the inner side, is the wale *l*, produced alternately by each set of dial needles.

During the operation, the first set of dial needles engages with yarn *f* and then *h* and the dial needles of the second set draw in yarn *g* and then *i*, this procedure alternating throughout the formation of the fabric.

The yarn, of course, may be of any color, but when the outer face requires a uniformity of color, the yarns *f* and *g* are of the same color, whereas *h* and *i* may be of a different color, but with respect to each set, the same color.

Thus the fabric produced is a one-and-one rib fabric, the wales *j* all of one color, the wales *k* all of another color, while the inside wale *l* is made up of the loops of the two colors (*j* and *k*), forming a mottled effect.

The same principle may be used in producing fabrics of a like character by using the needles in sets of two, three or more, alternating in sets, the width of the ribs increasing with the number of wales forming each rib; again by adjusting the cams the operation can be reversed.

Automatic Cleaner for Latch Knitting Machines.

One of the common difficulties met with in the successful operation of knitting machines, is the accumulation of lint and ravelings which gather during the operation of the machine.

Numerous devices have been perfected for over-

coming this; one which has recently been brought to the attention of the trade, from all appearances, seems to serve the purpose.

In order to more clearly show the idea, reference is made to illustrations Figs. 1 and 2.

Fig. 1 shows a side elevation of the device attached to one of the standards; and Fig. 2 shows the

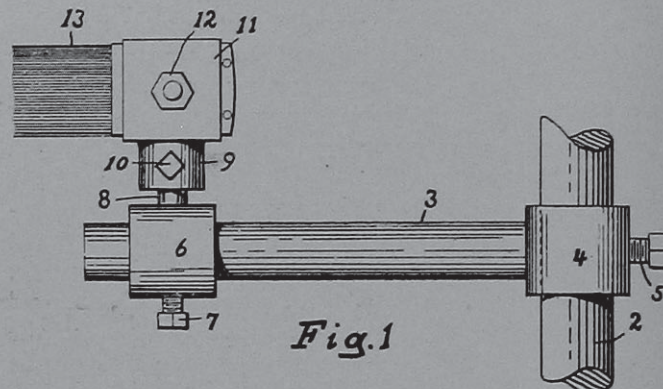


Fig. 1

head of the machine, with the cleaning attachment in position.

The method of construction and operation is more clearly shown by referring to the illustrations.

In these illustrations, 1 indicates the machine head, 2 the upright standards, to one of which the arm carrying the cleaning brush is attached. This consists, as can be readily seen, of a movable arm 3 which is attached to the standard 2 by means of collar 4. The adjusting of the brush as to position, is controlled by the set screw 5. To the far end of the arm 3 is adjustably attached the sleeve 6, which carries the swivel joint brush holder. The position of collar 4, for adjusting the distance of contact of the brush with the needles, is regulated by the use of the set screw 7.

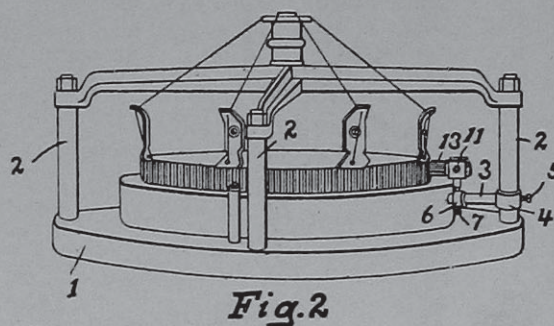


Fig. 2

The brush holder is supported by the upright 8, which fits into the collar 9, thus forming a swivel joint for adjusting the point of contact of the brush with the needle to any desired angle. This brush is held in this position by means of the set screw 10.

The brush holder 11 consists of two hollow plates into which the brush 13 is fitted, and is held securely in position by the tension screw 12, thus making it possible to change the brush at will.

While in this instance, the idea is centered on the flat rigid brush, it is also possible to use a rotary one, if desired, the latter having a tendency to reduce the amount of friction.

The Testing of Yarns.

Throughout the carpet and upholstery trade, more time is now being given to the subject of testing the

As can readily be seen, the machine is very substantially constructed and by means of the two fold multiplying gear, the operation of the machine is

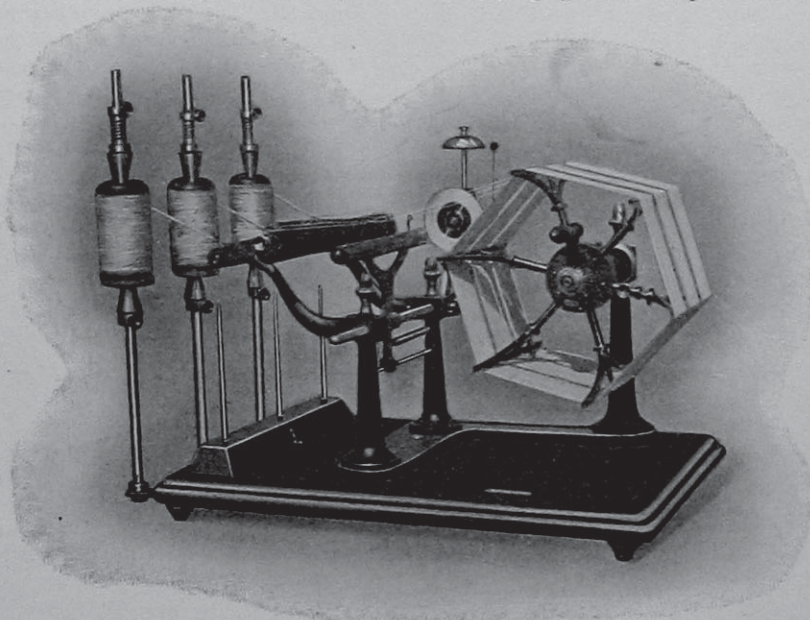


FIG. 1.

yarns that enter into the make up of the fabrics. One of the essential features is that the reliability of the

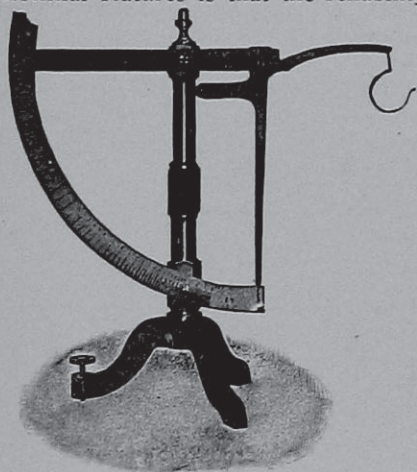


FIG. 2.

machines used must be of a recognized standard.

In this direction, we present in Fig. 1 an illustra-

very easy and steady, this arrangement taking up any sudden jerk or pull, the handle making one turn to two of the reel. For measuring off the hanks of yarn, a graduated dial with a signal bell is provided.

In reeling the yarn, it is customary to place the spools on the rack provided for that purpose, which is constructed in such a way that it is impossible for the spools to run away when the reel is stopped. Before passing onto the reel, the yarn is passed onto a tension device to lay it evenly to the arms of the reel.

Another testing apparatus, of material advantage to the trade, is the scale shown in Fig. 2.

It is provided with a very sensitive suspension balance, and its graduation is made directly in numbers of the yarn to be sized, which does away with the tedious drawing and converting into numbers afterwards. It is provided with an equalizing set screw for obtaining a perfectly plumb suspension of the balance, and from all standpoints is one of the most accurate and easiest to use in the market.

For determining the number of twists per inch, an improved twist tester is shown in Fig. 3. This machine is very carefully constructed and is double

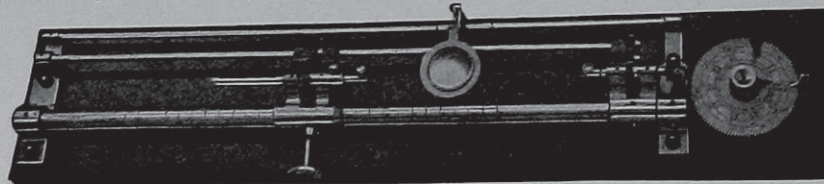


FIG. 3.

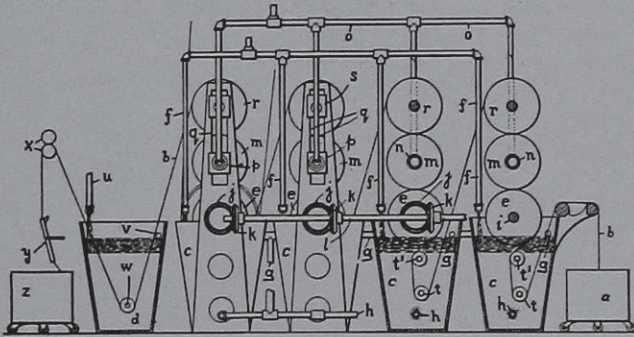
tion of a reel used in sizing jute and similar yarn. This reel is built by Henry Baer & Co., of Zurich, the largest manufacturers of such instruments in Europe.

acting, the thread being untwisted from both ends, thus reducing the amount of time ordinarily taken. It is also supplied with a magnifying glass for closer inspection of the fibres.

These machines together with the strength and elasticity measure, as shown in the January issue of the Journal, are being introduced in this country by A. Suter, Textile Engineer, 487 Broadway, New York, who will be glad to furnish further information.

Preparing Woolens and Worsteds for Dyeing.

The same refers to a new procedure which has for its object to straighten out the weave, even up the design, smooth out the cockles and wrinkles, to set it, and especially to prepare it for dyeing, in turn imparting to the goods a lustre and permanent face finish which makes them smooth and kind to the feel. The process prevents the formation of water marks and laying marks.



A description of the new process is best given by quoting letters of reference in the accompanying illustration, showing specimens of a set of machines for this process; driving mechanism, pipes and other parts are shown broken away and certain parts shown in section, to better show their construction and operation.

a indicates the box or truck containing the cloth *b* to be treated. *c* are four hot water tanks, *d* a cold water tank.

Each tank *c* has a smooth roller *e*, partly immersed below its water line. *f* hot water feed pipe, *g* drain pipe to keep water line at a stated level. *h* steam pipes to keep water in tanks *c* constantly at the boiling point. Rollers *e* are driven through their fixed shafts *i* by means of bevel gears *j* which in turn mesh with other bevel gears *k*, as carried by driving shaft *l*, which is driven in usual manner.

Above each roller *e* is placed a hollow steam roller *m*, carried on a hollow shaft *n* which at its end is connected to steam supply pipes *o* which deliver steam at a pressure of 30 to 40 pounds.

Steam roller *m* has steam tight heads and is perforated about its curved surface with holes, whereby the live steam is forcibly driven out into contact with the cloth. They are covered with burlap or other loosely woven textile material whereby the steam will be thoroughly distributed. To allow for any slight shrinking of the cloth as it passes from the feed end to the delivery end, each successive roller is covered with one less round of burlap than the preceding roller. These rollers rest in bearings *p* slidable vertically on ways *q* and are driven frictionally by contact with the cloth and with the lower driven rollers *e*.

Above each roller *m* and driven by contact from it, is placed a rather heavy pressure roller *r* resting in

slidable bearings *s* moving in ways *q*.

t is a guide and *t'* a guide and tension roller situated in tanks *c*.

From the last pressure roller *r* of the hot tank system, the cloth then passes down into a cold water tank *d* which is fed continually with cold water through pipe *u*, excess being carried away by drain pipe *v*. A loose guide roller *w* is placed at the bottom of this tank to guide the cloth therein and to keep it under tension.

From this cold water tank, the cloth is conducted by delivery rollers *x* to folder *y* and is folded into the delivery truck *z*, shrunk and set, ready for dyeing.

New Dyes.

THE AMERICAN DYEWOOD COMPANY have issued a new shade card covering the dyeing of woolens and worsteds by the use of Logwood Blacks.

This is to our knowledge the first complete shade card ever issued dealing with Logwood Blacks. It discusses concisely and yet with satisfactory fulness, illustrating with dyeings, essential facts and principles connected with the dyeing of all wool materials and goods with Logwood. Dyeings are shown on a variety of goods, woolens and worsteds; ladies' and men's wear. Errors in the use of Logwood on wool are exposed, and the proper methods of obtaining satisfactory standard results are clearly stated. This card fills a long felt want in the trade. We have frequently been in receipt of questions relating to the use of Logwood. Doubtless many manufacturers and colorists will find this card of material assistance in solving some of their problems. A copy can be secured by writing to the American Dyewood Company, New York, or their branch houses.

Two points in particular attract our attention. First, the discussion and illustration of the use of different Mordants in the development of Hematine. Very astonishing differences in depth are shown by dyeing the same percentages of Hematine on different Mordants. It is claimed that the other properties considered in dyeing—penetration, levelness, fastness and the feel of the dyed goods likewise are effected. Secondly, there is a discussion of the proper method of obtaining true Logwood Blacks of standard tone, depth and fastness. Dyeings of Hematine Paste from 10% to 40% are shown side by side with Logwood Blacks toned with Fustic and Alizarine Red. This toning with Fustic and Alizarine Red, except slightly or for particular shades, it is stated, should be avoided.

The true Logwood Black is made by using increased amounts of Hematine until the depth of shade desired is obtained. The properly dyed true Logwood Black, it is claimed, is not only low cost, but also of excellent fastness to light, fulling, boiling in water, and to the principal requirements considered in the choice of a fast dyestuff.

THE CASSELLA COLOR CO. have issued Supplement 50 to their Cotton Dyeing Book, descriptive of Diamine Nitrazol Brown G F Patented, coupled with Nitrazol C. Pat. Diamine Nitrazol Brown G F Pat. can well be regarded as a valuable addition to the group of Diamine Nitrazol colors; when coupled according to the process described in this supplement,

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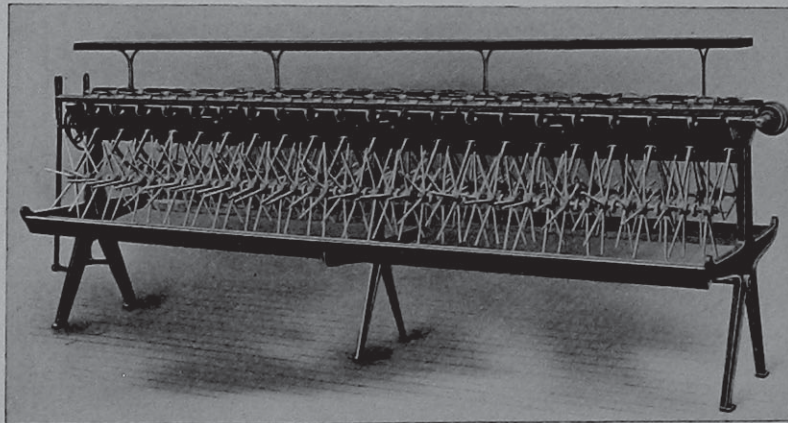
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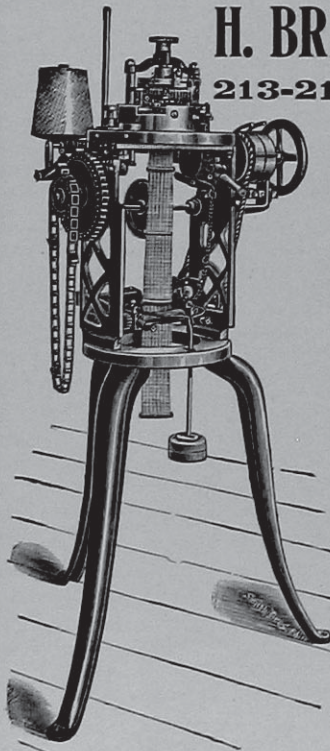
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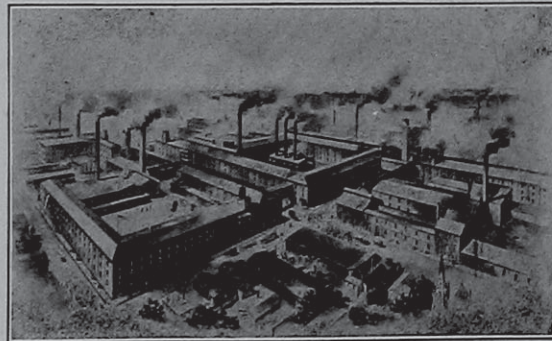
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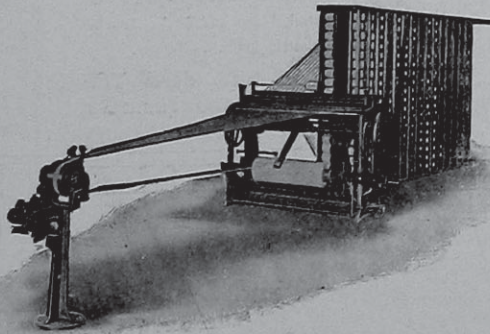
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Principles of Woolen Spinning, by H. Priestman. Price \$2.50.
TABLE OF CONTENTS: The History of the Woolen Trade, Wool and Wool Washing, Carbonizing, Shoddy, Oils and Soaps, Opening Processes, Mixing, Carding, Card Feeds and Condensers, The Mule.

Principles of Worsted Spinning, by H. Priestman. Price \$2.50.

TABLE OF CONTENTS: History, Material and Qualities, Spindle Theories, Drafting and Ratch, Drawing, Cone Drawing, Spinning, Dry Spun Yarns, Twisting, Winding, Reeling, Warping, Defects and Remedies, Etc.

Textile Publishing Co. Philadelphia, Pa

NEW DYES (continued from page 28.)

its dyeings are distinguished by their bright yellowish brown shades, which possess very good fastness to washing and acids and which are easily discharged a pure white, a feature that will commend this product to the attention of print works.

This dyestuff also lends itself admirably as a shading product and may be used in combination with any other coupling product, particularly for the production of brown and bronze shades.

Owing to its ready solubility, it is regarded with great favor for machine dyeing. Full technical details of the application of this dyestuff are contained in the supplement and are extremely simple.

That the process of coupling is of wide extent is evidenced by the fact that the Cassella Color Company is enabled to bring to the attention of dyers two valuable products designated respectively Diamine Nitrazol Scarlet A, Pat. and Diamine Nitrazol Bordeaux G B, Pat., two products which are distinguished by their bright shades, generally good fastness to washing and easy dischargeability. These dyestuffs may be used for producing reds and clarets and also as shading products in the production of brighter shades with any other members of the Nitrazol group.

Supplement No. 60 to the volume on Cotton Dyeing is illustrated with four dyeings of each of the two products named, showing various uses to which the colors may be put. The discharge dyeings with Hyraldite will prove of particular interest to print works, on account of the clear brilliant white obtained, a property which is of great value. Copies of either supplement may, no doubt, be obtained upon request to the Cassella Color Company.

THE ELEMENT OF TIME IN THE FINISHING PROCESS.*

By E. H. Marble.

"While each of the different steps in the process of finishing has its important bearing on the result, the waits between the various steps are fully as important; a neglect there is liable to make the entire process a failure.

"Not long ago I saw a piece of fair quality black overcoating. It was waiting on the floor for someone to do something. It was wet, warm and soapy, from the process of fulling. Its bottom folds were badly wrinkled by the pressure of the greater body of the wet fabric; and the doubled ends of the other folds, as well as the top layers of cloth, were resting quietly under the magnified and intensified rays of the sun, shining through prismatic glass in the transom. Would any of you expect to find a perfect piece of fabric, devoid of mill wrinkles and brown or burnt color spots?

Steaming.

"In the matter of steaming, the element of time may not be considered of much importance. That it is of great importance is readily seen from a fact: A piece of olive drab uniform cloth of foreign make was considered by the U. S. Quartermaster's Department far superior to any of domestic manufacture at a corresponding price. An employee of the foreign

*Abstract from an address by Mr. E. H. Marble of Curtis & Marble, Worcester, Mass., before the Lowell Textile School Alumni Association.