

For Wool and Shoddy

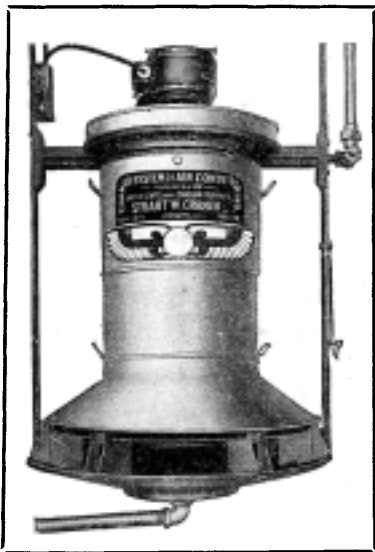


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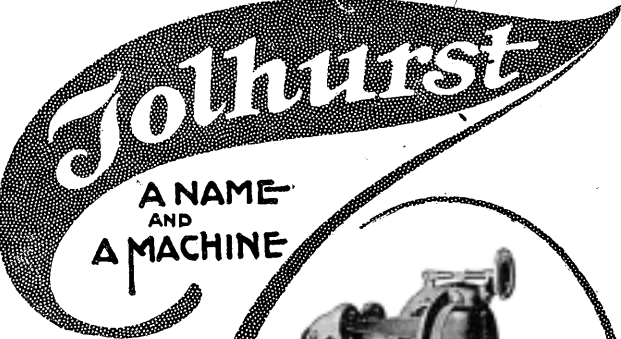
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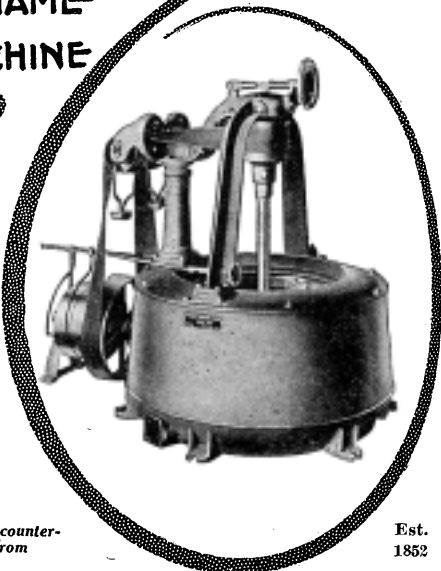
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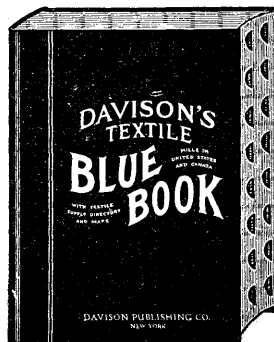
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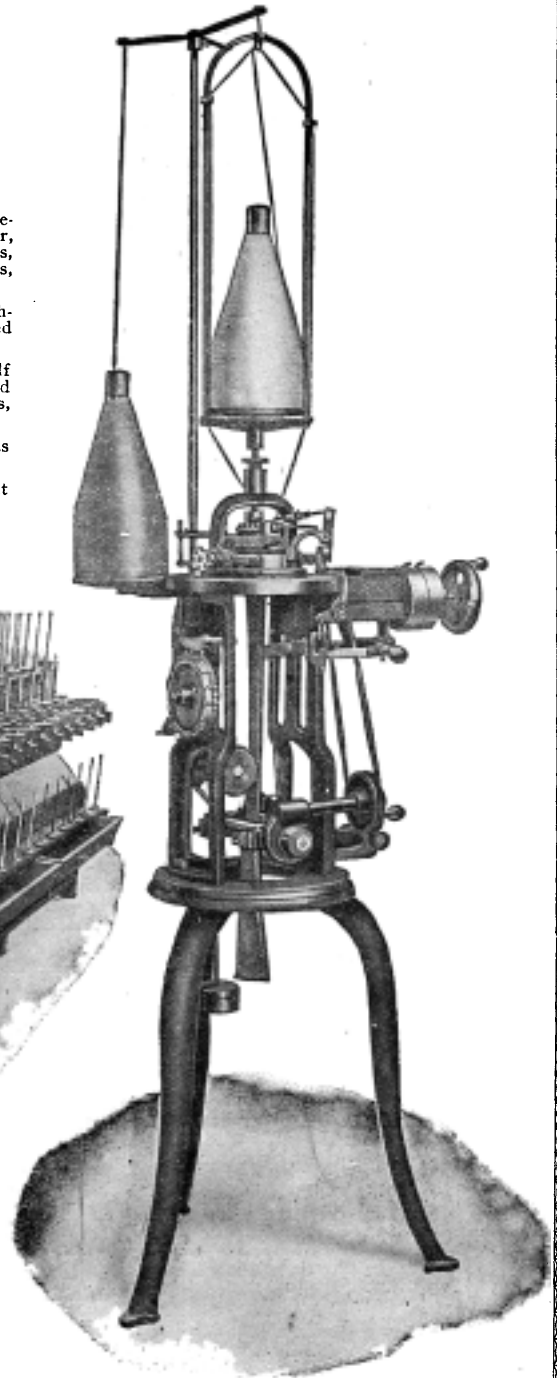
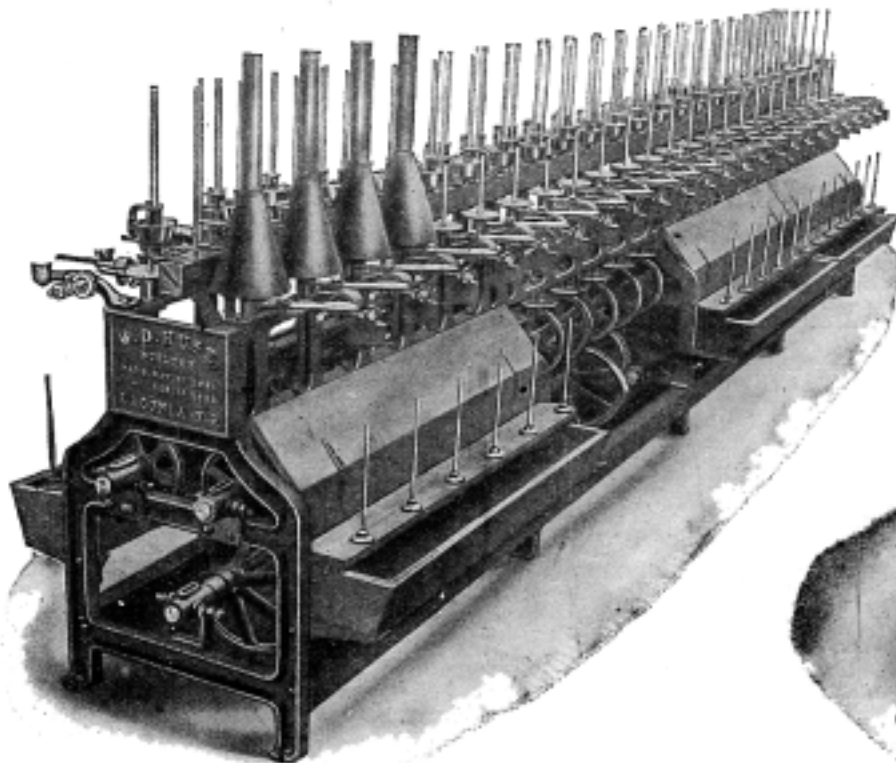
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Post Office Square Building : : 79 Milk Street, Boston, Mass.

Telephone Main 19

EDWIN B. PILLSBURY, Business Manager

SAMUEL S. DALE, Editor

Cable Address, "Textiles, Boston"

New York Office: 42 West 39th Street. Telephone Greeley 4295

J. CARLISLE LORD, Manager

SUBSCRIPTION

In the United States	\$1.00 per Year
To Canada and Foreign Countries	\$1.50 per Year
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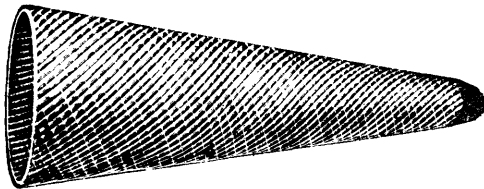
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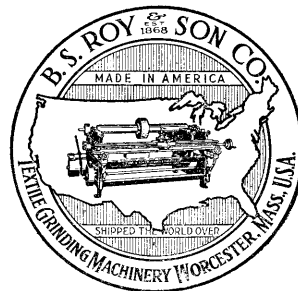
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TEXTILES

HOSIERY AND DYESTUFFS.

The principal remaining remnant of the opposition in the textile trade to adequate protection for the American dyestuff industry is to be found in the National Association of Hosiery and Underwear Manufacturers. In its September bulletin that organization published prominently a protest against the Longworth bill including resolutions opposing the licensing system and advocating protection by a tariff, to which was annexed a facsimile reproduction of an affidavit by Secretary C. B. Carter that there were on file in his office the authorization of three hundred firms and individuals for entering their names on the protest. Convinced that the supporters of this protest are at heart in favor of adequate protection to American industry and that they are making the mistake of opposing the licensing system and relying solely on a tariff by reason of their failure to take into consideration the present abnormal conditions of international trade which have nullified the protection afforded by the tariff on all kinds of goods regardless of value, and with no country more so than with Germany, we wrote Secretary Carter asking him to bring this feature to the attention of the three hundred signers of the protest. This led to an exchange of several letters, which are given below with the consent of Secretary Carter:

Depreciated Exchange and the Hosiery Tariff.

S. S. D. to C. B. C. (Oct. 7). In the September issue of "The Knit Goods Bulletin," published by your Association, there is a photographic reproduction of an affidavit signed by you and stating that "there is on file in the office of your Association, the authorization of approximately three hundred reputable corporations, firms and individuals, having many millions of dollars of capital invested, for entering their respective names on the protest of the National Association of Hosiery and Underwear Manufacturers against the establishment of a dye licensing commission, such as is proposed in H. R. 8078, known as the Longworth bill."

This affidavit and the protest which also appears in the same issue of your Bulletin lead me to ask if the three hundred signers of this protest realize the effect of depreciated exchange on the cost of imported German goods duty paid in the United States. Today German exchange is quoted around 4½ cents per mark, which at par is worth 24 cents, thus making it possible for American imports to pay for German goods at a discount of 81¾ per cent.

This depreciation of German exchange reduces the value in our money of goods of all kinds imported from Germany. To illustrate the effect of this depreciation let us assume that a lot of 1000 dozen pairs of hosiery valued in Chemnitz at M. 6 is imported into the United States.

In normal times with German exchange at par the cost of this lot of hosiery would work out as follows, excluding minor items such as freight for the sake of clearness:

Invoice and Duty Based on Par:		
1000 dozen M. 6	M 6000	\$1440
Duty, 50 per cent. of \$1440		720
Cost duty paid in U. S.		\$2160

Thus in normal times the Underwood tariff gives a protection of 50 per cent. to the hosiery industry which your association represents.

Now let us see what this lot of hosiery costs with the mark worth 4½ cents. If the invoice is settled at that rate (4½ cents per mark) and the duty is assessed on par (24 cents) we have:

Invoice Based on Depreciated Exchange

Duty Based at Par:		
1000 dozen M. 6	M 6000	\$270
Duty, 50 per cent. of \$1440		720

Cost duty paid in U. S. \$990

The depreciation of the German exchange has not only wiped out the normal protection of the Underwood duty, but has resulted in landing the lot of hosiery in the United States at a cost of \$990, or less than half of the normal cost of \$2160 based on par. But this is not the worst of it. The New York Custom House is now accepting, subject to review by Washington, duties paid on the depreciated value of foreign money, and the importers are counting confidently on the Treasury Department accepting that payment as full liquidation of the duty. If that is done, then the cost of this lot of hosiery would work out as follows:

Invoice and Duty Based on Depreciated Exchange:

1000 dozen M. 6	M. 6000	\$270
Duty, 50 per cent. of \$270		135

Cost duty paid in U. S. \$405

Here we find that with both invoice and ^{NOV 1919} based on the present value of the mark, not only is the tariff protection wiped out, but the cost of this lot of hosiery in the United States has been reduced to \$405, or 18% ^{REFERENCE LIBR} of the normal cost of \$2160 based on par.

The only thing that is saving the American textile industry, including not only hosiery but all other textile products, woolen, worsted, cotton and silk, from the ruinous competition of German goods valued at 4½ cents per mark, is the temporary paralysis of the German mills, which will be able to resume operations as soon as the peace treaty goes into effect and the Germans obtain a supply of raw material.

The depreciation of German exchange, however, is likely to continue indefinitely, as no one can predict when, if ever, German finances will be restored to a normal basis.

Serious as is the threat to the American hosiery industry under present conditions in Germany, the situation is far more serious for the American dyestuff industry.

The German chemical works are ready the moment the bars are let down to overwhelm the young, but promising, dyestuff industry with a competition not only as fierce and ruthless as of old but, possibly far more so, because the United States and China offer them practically their only chance of a foreign trade.

With the protection of the tariff wiped out and foreign goods landed in the United States at a fraction of the foreign cost, it is plain that extraordinary methods are needed to save the dyestuff industry from ruin.

That is the plain reason for the exclusion of German dyestuffs for a term of years except under license. I feel sure that if these conditions were made known to the three hundred hosiery manufacturers they would recognize the necessities of the situation and unite in support of a license system.

Will you not call their attention to the situation created by depreciated exchange on Europe?

Germany and Class Restriction.

C. B. C. to S. S. D. (Oct. 18). I have your interesting letter of Oct. 7, in which you undertake to show the very low prices at which German hosiery might be imported into the United States under the low rate of exchange.

Your deductions would be correct were it a fact that the hosiery selling in normal times at 6 marks per dozen could be obtained under present conditions at 6 marks. While Germany may enjoy some little advantage by reason of the difference in exchange, we believe it would be preposterous to assume that a given number of marks would purchase the same quantity of any German product as under normal conditions. Hosiery which in 1914 was sold at 6 marks per dozen

now would command at least 25 marks, on the basis of the value of the mark in United States money, to say nothing of a greater value due to increases in cost of labor and materials. To buy cotton in the United States or silk in Japan or wool in England, Germany could not use her mark at its face value, and would have to pay for the merchandise on the basis of the value of the mark in relation to the coin of the country in which the purchase was made. We believe any authority on international trading would support this view.

As your purpose was to show the possible effect on the dye industry of the United States if importations were allowed, as they should be, without class restriction, we beg to say that this Association will fight to the bitter end the proposal to undertake to protect any one industry at the risk of crushing any other. With the chemical foundation owning forty-five hundred German dye patents; with the reparations committee empowered to supervise importations of German dyes; with the Federal Trade Commission standing as a barrier against unfair trade practices; with the prospect of anti-dumping legislation being enacted; and a prohibitive duty a prospect, does it not strike you that to ask on top of all this for a commission which would hamper manufacturers consuming dyes, is a confession of weakness of those who are back of this movement for class legislation?

If You Discovered You Were Wrong.

S. S. D. to C. B. C. (Oct. 18). Replying to yours of the 18th inst., the fallacy underlying your contention regarding the effect of depreciated exchange on the protection afforded by a tariff consists in your assumption that costs in Germany are proportionately higher on the mark basis than in the United States on the dollar basis, but you offer no evidence to support that claim. You say "any authority on international trading would support this (your) view."

Perhaps you will accept the British Board of Trade (a Government Department) as such authority. If so, here is a recent statement by that authority, following Prime Minister Lloyd George's public announcement of British policy, which gives the reasons why the British Government has decided to prohibit except under license the importation of products competing with certain "key" or "pivotal" industries, these including coal-tar colors and latch-needles:

"(a) For the protection of goods manufactured in Great Britain and Ireland against dumping by taking power to prevent the sale in this country of similar goods beneath their price in the country of their origin:

"(b) To enable the Board of Trade to check any flood of imports (for instance, from Germany) that might arise from a collapse of exchange so disproportionate to costs of production in the country of origin as to enable sales to take place in this country at prices altogether below costs of production here."

If you insist on your claim of higher costs in Germany, it is up to you to prove it, for your Association has for years held up German competition as the reason for a high protective tariff on hosiery and knit goods.

Your contentions in the concluding paragraph of your letter are not conclusive to me. The control of patents by the Chemical Foundation or some other body representing the nation's interests is essential in order to meet like control of chemical patents by the German color trust. The reparations commission is not yet created, and if it comes into existence, it and the license system can together do no more than is necessary, exclude German dyes that can be made in sufficient quantity and at a reasonable price in the United States.

As for the Federal Trade Commission, either you have an exaggerated idea of the knowledge, detective ability and power of that already overworked body, or you have woefully failed to learn the lesson of Germany's war on civilization and the crooked methods by which Germany has carried on her war in time of peace. I commend to you Hauser, Germany's "Commercial Grip on the World," and the record Germany has made since August, 1914. You admit anti-dumping legislation is only "a prospect." You beg the question when you say the prospective tariff is "prohibitive."

Thus every one of your contentions in the last paragraph falls to the ground, and the question that closes your letter is answered to the effect that patriotism, national defense, the necessity for the development of coal-tar products for

medical and surgical purposes, the protection of American industry, including textile manufacturing, make it of vital importance to establish and protect by every possible means a self-contained dyestuff industry in the United States.

You say "your Association will fight to the bitter end the proposal to protect one industry at the risk of crushing any other," meaning, of course, an import license system for dyestuffs. But that is not the point at which I am aiming. I suppose you would abandon your fight to the bitter end if you discovered you were wrong and were really injuring your own industry. I suppose that not one of the manufacturers who called on Bernstorff in 1915 would contend now that he was justified in countenancing, even by his presence, the German scheme to crush England and France then. They were mistaken then and your three hundred may be mistaken now.

It was to show you that you are wrong that I called your attention to the effect of depreciated exchange on a tariff, in addition to the reasons already set forth in the enclosed article "American Dyestuffs or National Disaster." Think it over.

There May Be License Restrictions.

C. B. C. to S. S. D. (Oct. 24). I have your letter of October 18, and the trade bulletin of the First National Bank of Boston, for which I believe I am indebted to you.

The marked paragraph in the trade bulletin probably describes the exchange situation accurately. This, however, has no bearing on the issue between the proposed dyestuffs combine and those elements in American industry which are forced to operate in an open market and are opposed to class legislation for the protection of any particular industry. Referring to this paragraph, I would respectfully direct your attention to the Commerce Report of the Bureau of Foreign and Domestic Commerce of October 22—report No. 248—describing the German trading methods for maintaining the value of the mark. This reference to German trading methods shows that the mark does not figure very materially in foreign trade transactions, which are conducted on the barter basis.

In his address before the International Foreign Trade Conference in Atlantic City yesterday, Secretary of Commerce W. C. Redfield stated that we must sell less and buy more of European countries to assist them in a return to a more nearly normal commercial basis. It is a fact that six months ago Great Britain established a British Chamber of Commerce in Germany and is extensively trading in that country as also is France. There may be license restrictions, and probably are, but the fact remains commercial operations with Germany are on the barter basis. We would not be permitted to trade with Germany on such a basis—in dyes—under the proposed license system. We believe the fact that the license proponents had to agree to the substitution of the tariff commission for the proposed pre-selected commission is a confession that they were promoting a "lost cause."

I have referred to a "dyestuffs combine." Having done so, I would respectfully direct your attention to the enclosed clipping under the caption, "Suit Over Secret Trade Agreement."

It is significant that the real projectors of the license proposal are those who are reputed to be parties to an agreement for controlling the dyestuffs trade of the world, not, it is believed, from a spirit of patriotism. I accord to you credit for sincerity. That we also are sincere is indicated by the freedom and candor with which we have unnecessarily gone into a discussion of the dye license subject.

Plain Words Are Best.

S. S. D. to C. B. C. (Oct. 25). Let me point out briefly what I feel sure are errors in your letter of the 24th:

1. The dyestuff legislation, instead of being "class legislation," as you claim, is legislation for the nation and for posterity. The interests of the textile trade, important as they are, constitute the least important of the reasons for the proposed protection. The national security and the development of medical and surgical remedies are paramount.

2. Your hosiery industry does not operate in an open market. You claim and receive tariff protection and no one has been more insistent on such protection than I have been.

3. I not only have read the report on German barter to which you refer, but yesterday sent it to the printer for our November issue. It represents only minor and relatively unimportant transactions and is of interest only as showing

the straits to which the Germans are put as a result of their crime against humanity. Surely you do not think that Germany can do any considerable business for any great length of time by direct barter. A few days ago I received a very interesting letter from a yarn merchant who wrote from Rotterdam after a visit to Germany. It will appear in our November issue. He tells about traveling 180 miles for a dollar of American money and getting a haircut for 7½ cents. Everything else in proportion.

4. Great Britain has selected certain "key" or "pivotal" industries and all imports competing with them are excluded except on license. They include latch-needles and dyestuffs. That is exactly what the Longworth bill provides for dyestuffs.

5. Whether the substitution of the tariff commission means a "lost cause" is not relevant. What I am driving at is that you and your people should be on the side of a license system and that if this cause is lost the cause which promotes your highest interests is lost and you are losers whether you think so or not.

6. The clipping you enclose is largely gossip and guesswork. But suppose it were all true, it would also be true that the methods of the German color trust are indescribably worse and that this German trust is an adjunct of the infamous Prussian autocracy. Now the real question is this: Do Americans prefer to be dependent on an American color trust which our Government can control or on a German color trust over which neither our Government nor Americans individually can exercise any control whatever? (See "American Dyestuffs or National Disaster.")

7. This closing paragraph relates, not to any definite statement in your letter, but to the fundamental mistake your people are making in opposing necessary protection to the dyestuff industry. It is the old mistake that textile manufacturers have been making from time immemorial. The wool manufacturers want high protection on wool goods with a low duty or no duty on wool; the cotton weaver and knitter, high duties on cotton cloth and knit goods with a low duty or no duty on yarn; and all of them, a high duty on what they sell and a low duty or no duty on what they buy. That disposition, born as it is of short-sighted self-interest, is the chief peril to the American protective policy today. That policy is essential to the prosperity and welfare of the American people, who will defend it if it is made fair and honest and granted to every industry for which the resources of the country are adapted. If it is wrecked it will be wrecked not by the great mass of the American people, but by the shortsightedness of its immediate beneficiaries, the manufacturers who want protection for what they sell and free trade or a revenue tariff on what they buy.

Take your hosiery manufacturers, for example. They are now opposing necessary protection for the dyestuff industry whose products they buy. On the other hand, if industrial Europe gets under way in a year or so and under the pressure of hard necessity and with the advantage of a high premium on exchange with the United States, begins to flood our market with cheap hosiery, these same hosiery manufacturers who are now talking about "fighting the Longworth bill to the bitter end" will be rushing to Washington and bombarding Congress with oral and written appeals to save them from ruin by putting a high duty on hosiery.

Look at the record which one of them has already made in such matters. In 1908 he asks for no duty on fine yarn which he buys; in 1915 he encourages by his presence at the German Embassy the German scheme to bring the United States into conflict with the Entente over the embargo on cotton and shipments of German dyestuffs; and in 1919 he is ready to fight to the bitter end the plan to protect the American dyestuff industry because it may mean a higher price for the dyestuffs he buys, although it is necessary to prevent a recurrence of the conditions of 1915.

I am writing plainly to you because plain words are best. I am a protectionist and shall defend protection to American industry while my strength remains. But I have the right to protest against the narrow and selfish policy that the hosiery manufacturers have adopted on this dyestuff question in 1919.

Patriotism and Private Sale.

C. B. C. to S. S. D. (Oct. 28). I have your letter of October 25, which fails to establish any reason whatever why any

combination of dyestuff manufacturers should be protected by license to the exclusion of manufacturers in other industries. If any country other than the United States manufactures colors and shades of character and quality not made in this country and which might be demanded in countries to which we export our manufactures into which dyes enter, then by all means let us have them without being forced to go through a commission. If it is intended to vest the commission proposal with patriotism, then, we would say, let the forty-five hundred patents which were disposed of at private sale be sold at public sale, as is customary when Government property is disposed of. If a German combine exists, its unfair methods can be successfully combatted through the proposed anti-dumping law and the Federal Trade Commission, to say nothing of the exorbitant duties provided, and to which we do not object.

Just What the Germans Want.

S. S. D. to C. B. C. (Oct. 29). Your proposal to have the 4500 patents sold at public sale is exactly what the Germans want done, for it would in all probability scatter the patents among a large number of owners, many of them pro-German, and none of whom would be able to utilize those purchased because of not controlling other essential patents, with the result that the patents would remain unused or get into possession of the German color trust. On the other hand, the sale to the Chemical Foundation means that they will be used for America first, last and all the time. So it is that patriotism demands that the German patents shall not be scattered by a public sale.

The other points raised in your letter are fully covered by "American Dyestuffs or National Disaster," "When a Tariff Does Not Protect," and my previous letters, to all of which for the sake of brevity I refer you without repeating the refutation of your errors.

RECENTLY BROUGHT OUT.

Schreiner Calender. Sir James Farmer & Sons, Salford, Manchester, Eng. An improved model of a Schreiner calender, having special fine-grain steel bowl, gas-heated and engraved with the number of lines required, and under this is a second bowl of compressed Egyptian cotton, which can be set at an angle to the top bowl if desired, increasing the luster. A relief valve enables the bowls to be separated instantly when necessary.

Hand-Threaded Shuttle. Greenwood Clough, Dean Shed, Plumbe St., Burnley, Eng. An improved hand-threaded shuttle.

Multiple Shearing Machine. Wm. Whiteley & Sons, Lockwood, Huddersfield, Eng. An improved multiple cropping machine, the four-cutter machine having a capacity of 8¾ hours of 100 pieces cut four times.

Self-Adjusting Cropping Machine. Sellers & Co., Chapel Hill, Huddersfield, Eng. A cotton cloth shear having a device for automatically adjusting the cutting part to different weights and thicknesses of cloth.

Dobby for Cross-Bordered Cloths. Pendle Mfg. Co., Pendle St., Nelson, Eng. An improved dobbie for weaving cross-bordered goods such as handkerchiefs and shawls.

Cut Marker. John Tattersall and Holdsworth Globe Works, Enschede, Holland. An improved device for measuring and marking the cuts on a slasher or beaming machine.

Friction for Warp Beams. August Gerhardt, Vienna, Austria. An improved friction device for warp beams.

Textile and Paper Fabrics. Gebr. Chares and Kirbach, Hainichen, Saxony, Germany. A fabric made of paper yarn in the warp. The weave is so arranged as to bring the textile fiber on the face to facilitate napping.

Fulling Machine. L. Ph. Kemmer, Aachen, Germany. A fulling machine in which the cloth is passed through a tank and subjected to the action of hammers or fallers, similar to those of the old-fashioned falling stocks.

French Worsted Drawing

By Leon Faux

(A Series of Articles on French Worsted Spinning)

The doubling of the mixing gill-boxes described above is much greater than that of the ordinary gill-box. If for example a mixing gill with four heads doubles five slivers per head, the doubling by superimposition is 20 (4x5). On the other hand with an ordinary gill-box the doubling by bringing the slivers side by side is only 5 (1x5).

This type of mixing gill-box is used specially in the mixing group in preparation for spinning, which will be described later. It is a necessity in a mixing group of machines working on dyed top, in order to obtain a rapid and perfect mixture which it would be difficult to produce with the or-

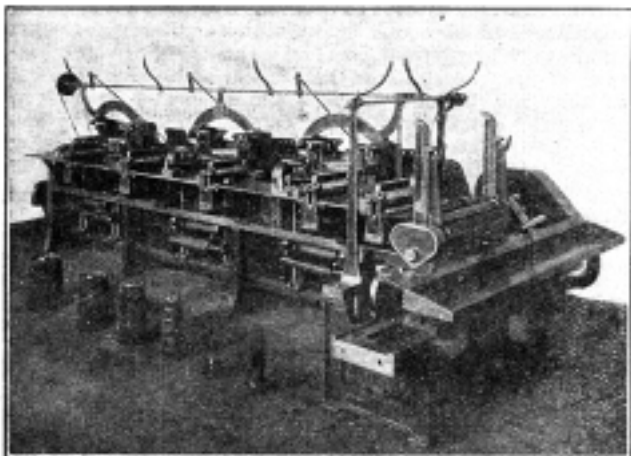


Fig. 141. S. A. C. M. 3-Head Intersecting Gill-Box.

inary gill-box. In laying out a set of mixing machines in preparation for spinning, the can gill-box in the last machine of the group gives a much better feed for the first passage of the coarse machines. The sliver delivered to the can by the gill-boxes, when delivered to the next box, is in the form of an open and relatively thin sheet of wool, which enters completely and regularly into the pins of the porcupine roll of each head. The result is greater regularity of the sliver and the prevention of the bunches which are caused by the sudden penetration of heavy slivers by the pins of the upper porcupine roll during the drawing operation.

Fig. 141 represents a mixing gill-box with three independent heads, all the three slivers driven by the heads being united in one sliver by the auxiliary head which does not draft the material.

Winding the Sliver on Bobbins.

The variable doubling of the slivers at each passage makes it necessary to arrange them by hand for feeding from the bobbins of the preceding operation. It is possible to feed the slivers from one operation to another by mechanical means in accordance with the principle of double drawing, Fig. 86, but the doubling under such conditions does not give the necessary uniformity in the resulting sliver. The fine places, bunches and other irregularities which may occur in the sliver from the preceding mechanism are not removed by their relative displacement and thus, instead of disappearing in the succeeding operation, are really made more pronounced. Mechanical feeding is incompatible without the principle of doubling, because with the object of increasing the doubling on which the intimate mixture of fibers depends, the rearrangement of the bobbins at each passage is neces-

sary for the mixture of the slivers delivered by the different machines.

As a rule, the doubling of the bobbins should be as great as possible at each preparatory machine in order to correct the slight variations in the sliver and obtain homogeneous and regular roving. The feeding of the slivers by hand neces-

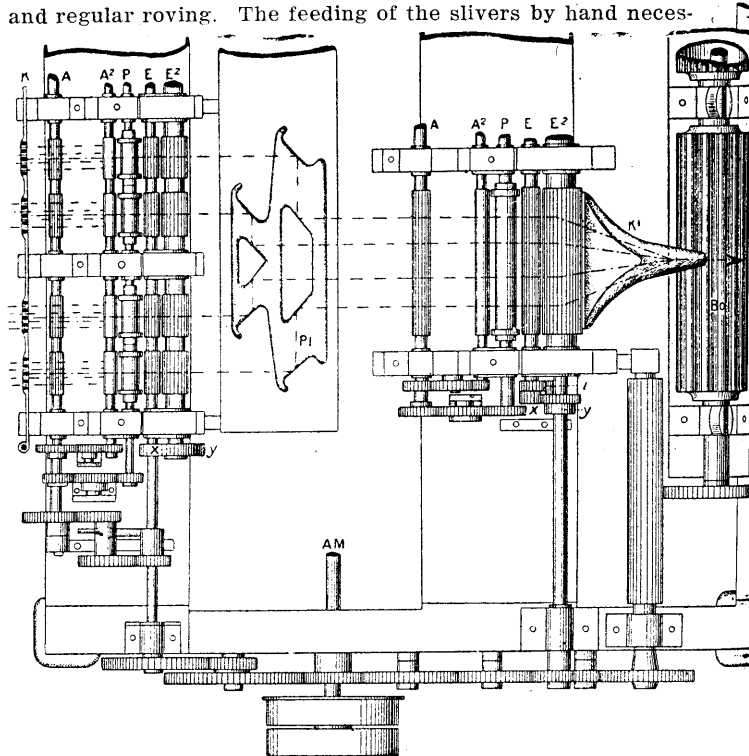


Fig. 86. Multiple Drawing Frame.

sitates winding the sliver on bobbins or spools, each carrying the greatest possible length of sliver in the smallest possible space, and wound so that the sliver will unwind without breakage and without a deformation of the bobbin. To meet these requirements the frames from the cards to the roving-

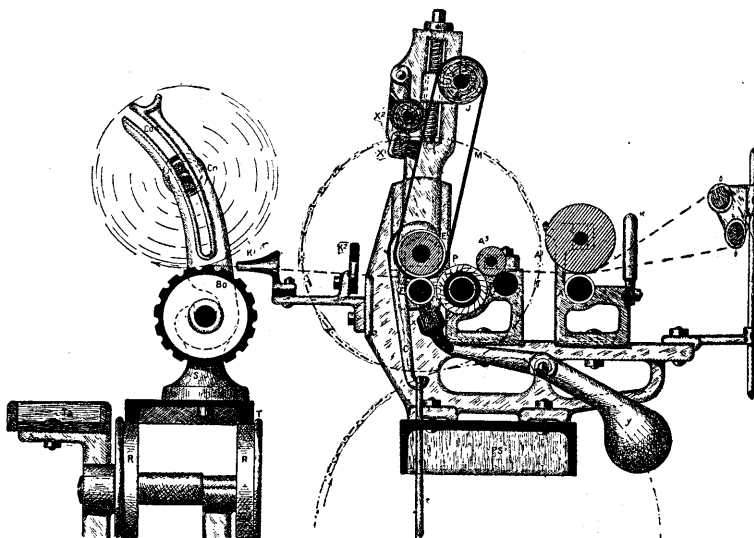


Fig. 88. Section of Drawing Frame.

frames are equipped to wind the sliver on bobbins or in certain cases deliver it into cans.

Bobbin-Winding Frame.

The bobbin winder consists of a carriage T, Figs. 88 and

(Continued on following page)

Purifying Water for Silk Processes

By J. L. Girard, Chemical Engineer, Villeurbanne, France

We have noted in previous articles that it is essential in rinsing silk to use water as pure as possible, particularly water that is free from earthy alkalies (C a, M g), because these salts in combination with soda soap used in boiling-off form insoluble soaps which become fixed on the fiber to the great injury of the luster and durability of the silk. We recall one dye house where the silk was rinsed in impure water, the silk pieces containing traces of lime soap, with the result that the finished goods had an odor of hot grease which made them unmerchantable. It was almost

impossible to remove this odor which increased with time, and the goods also turned yellow.

The action of calcareous water and the formation of lime soap is shown by the following method: Two small skeins of silk are boiled in a soap bath. One of them is then rinsed in distilled water, and the other in calcareous water. After drying the two skeins present a marked difference in luster, the first one being more brilliant, and the second duller. I have made this test with water standing at 24° hydrometric, which is not very calcareous. Nevertheless, the difference in luster was quite pronounced. I have examined the two samples under a microscope with an enlargement of about 560 diameters, and the appearance of the two is shown in Figs. 4 and 5. Fig. 4 shows the silk boiled in distilled water, the filaments being in good condition with only a few very small spots visible. Fig. 5 shows the other sample boiled in calcareous water, there being a large number of spots, some small and either isolated or in groups, while others are larger giving the appearance of a crust on the surface of the fiber. This test shows clearly the action of calcareous water in the rinsing process. When the water contains lime it is consequently necessary to subject it to a process of purification.

Up to a few years ago it was a custom in the industry to confuse the purification of water for dyeing with the purification of water for steam boilers, this confusion being due to the fact that the old methods of purification were nearly the same for both purposes. Since the new processes of purification have been introduced a sharp difference has been made between the methods which are suited only for purifying water for boiler use and other methods which are suited specially for purifying water for dyeing and scouring textile materials. As a matter of fact the object to be attained is very different in each case. For boiler use it is necessary to use water that does not attack the boiler plates and piping and which does not form a scale inside the boiler. It is necessary consequently to avoid alkaline waters which attack the boiler plates and piping. A number of specialists are of the opinion that water which is too pure does not give the best results in evaporation and attacks the plates more energetically than the calcareous waters.

As for the formation of scale which must be scraped off and which is liable to cause the plates to burn out, it has been found that this is due to the presence of sulphate of lime, which being soluble in water is slowly deposited on the plates in the form of crystals which imprison between them the pulverized deposit and form a solid mass of tartar. This is why certain processes of water purification are designed to precipitate immediately the sulphate of lime in the form of pulverized sulphite of baryum, preventing the deposit of the hard crystals. (William's process.)

For the boiling-off and dyeing processes, however, it is necessary to use perfectly clear water as free as possible from alkaline earthy salts (lime and magnesia). If these conditions cannot be obtained and there remains a very slight excess of alkaline substances in the water (carbonate or bi-carbonate of soda), this excess can be tolerated providing there is no trace of caustic alkali.

The purification of water for dyeing is accomplished at the present time by two principal methods which can be used in combination: (1) old method of precipitation; (2) permutation process. These two processes will be described in the succeeding articles.

FRENCH WORSTED DRAWING.

(Continued from previous page)

92, carried by the wheels R, and having a vibratory movement corresponding to the length of the bobbin.

One roller B o, Fig. 88, or two rollers, Fig. 92, in which are cut deep grooves, are set in fixed bearings and have a supplementary rotary motion.

These supports of the rollers B o have open slides C o² guiding the mandrel M a, the shaft of which carries at each end a knob or button which engages with each slide. The rotary funnel K¹ placed as near as possible to B o condenses

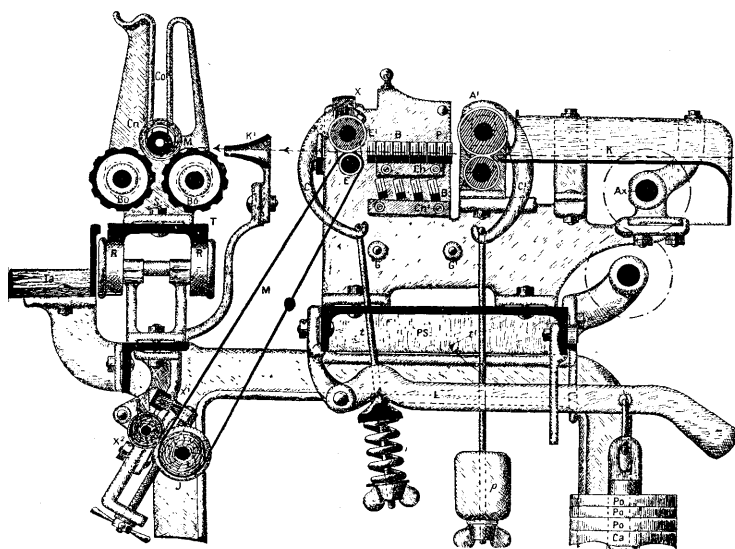


Fig. 92. Drawing Mechanism.

the drawn fibers into a sliver and presents them to the winding rolls. The sliver is wound on a hollow tube made of wood, pressed paper or tin. This tube on which the sliver is firmly wound enables the material to be easily handled and held in position on the spindle of the feed-rack when being unwound for delivery to the next machine.

The tube C n is slipped over the mandrel M a and the knobs of the latter are placed in the slides C o² of the side supports S. The spool is filled by the vibratory and rotary motions of the roller B o, which wind the sliver in superimposed spiral layers forming a solid mass. The weight of the mandrel M a compresses the sliver and increases the solidity of the mass of wool, which is necessary in order to prevent its becoming broken and also to facilitate handling of it.

Custom combers compress the sliver still more by placing movable weights in the open guides C o², these resting on the knobs of the mandrel M a. This extra pressure increases the solidity of the mass of wool and consequently increases the capacity of a spool and facilitates packing of material in bales.

The Identification of Textile Fibers

By Dr. Louis J. Matos

Animal Fibers.

Textile fibres belonging to this group are obtained chiefly from the sheep, goat, cow, and other hair-bearing animals. This broad grouping may also be extended to include those fibers that are not directly included in the particular division of "spinning fibers"—textile fibers proper, which comprise the various kinds of fur fibers, many of which are made use of in the manufacture of hats of various kinds.

The most common animal fiber is *wool*, a product of the

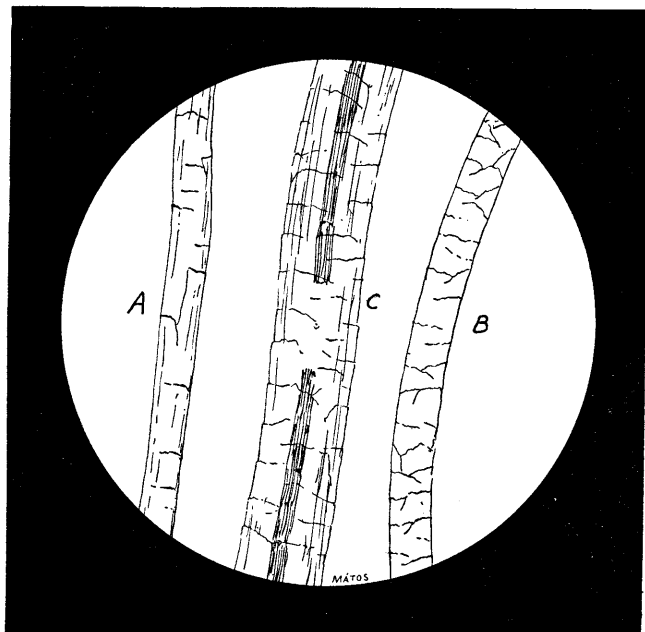


Fig. 21. Typical Wool Fibres. A, Immature or under developed wool fibre. B, Normal wool fibre of good quality. C, Coarse wool fibre, showing the central core.

sheep, and is microscopically distinguished from all other fibers described in the preceding articles, by certain characteristics illustrated at Fig. 21.

Viewed under a microscope of moderate power, normal fibers of sheep's wool are seen to be more or less round in cross-section, and when viewed longitudinally appear somewhat wavy. On the surface certain markings are noticed, which under a high magnification are seen to be scales overlapping each other like roof shingles. The ends of normal wool fibers are characteristic. The end nearest the back of the animal may be either cut sharp, as though by a knife, indicative of wool shorn from the animal, or it may be broken or have a sack hanging to it, indicative of being pulled wool, that is, wool pulled from the dead animal, Figs. 22 and 23.

The tips of wool fibers are either sharp pointed or nearly so. Wool of the higher and finer grades are very uniform and regular in appearance, but as the quality of the wool decreases, that is, as the breed of the sheep is lower, the coarseness of the wool fiber increases, with certain characteristics showing more and more distinctly.

Comparing high and low quality wools, the latter gradually shows distinct indications of longitudinal striae running for the full length of the fiber, while there are more and more distinct markings of a central core, not lumen or bore, as in vegetable fibers, which is often pigmented as in gray or darker colored wool. Frequently this central core is continuous; in other fibers it is found to be disconnected; the more distinct it appears, the lower is the grade of wool.

In examining wool microscopically, it should be clearly remembered that neither one nor even ten individual fibers taken from one lot of wool supply sufficient evidence to pass judgment upon the grade under test. Many fibers should be taken and tested with painstaking care.

As the grade of wool becomes lower as the coarseness increases, the distinct characteristics of the wool fibre diminish, the fiber gradually assumes the distinguishing marks of hair, which are more or less smoothness, with a less distinct appearance of the external scales, Fig. 24.

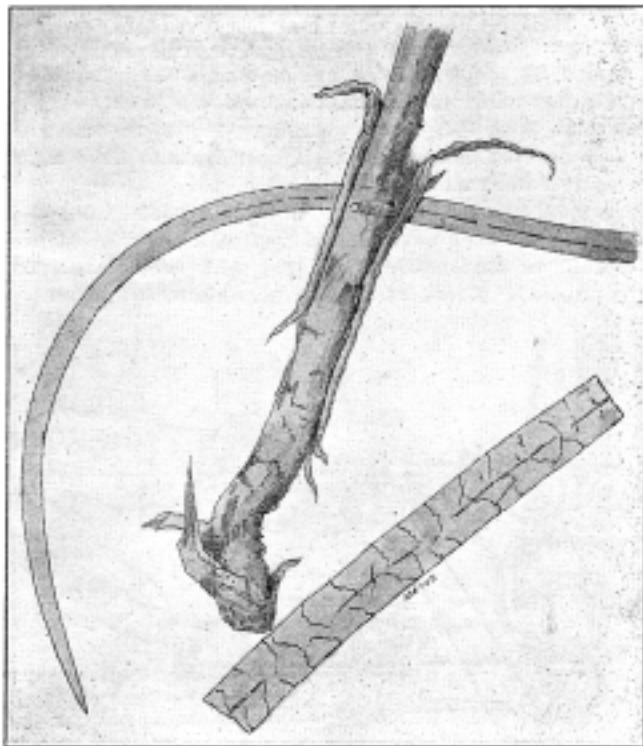


Fig. 22. Typical wool follicle, or root sac. Drawing also shows extremely sharp pointed tip of the wool fibre, and a portion of the middle part of the fibre.

The central core also has in most instances greatly increased in diameter, so that the outer wall of the fiber becomes correspondingly thinner.

These *wool* and *hair* characteristics should be constantly kept in mind as showing that there is no sharp line of demarcation separating wool from hair, and that it would be extremely unsafe to state that a given fiber of unknown origin, having all the microscopic characteristics of sheep wool actually came from a sheep, unless the chemist himself drew the sample from the animal. The writer was a witness in an important lawsuit involving duties on imported wools, in which the origin of a sample of wool figured. A number of wool experts testified that a certain sample in evidence was sheep's wool, when, as a matter of fact, the sample was taken from the carcass of a mountain goat.

Sheep's wool, as well as all other fibers of animal origin, including silk, has the property of dissolving in a solution of caustic potash or caustic soda, and this property seems to distinguish it from all vegetable fibers. This reaction is made use of to determine the amount of vegetable fiber and wool contained in a given sample of cloth.

Another characteristic of sheep's wool is the property it possesses of turning black or brown when boiled with a solution of plumbate of soda. The coloration is due to the forma-

tion of sulphide of lead, owing to the presence of sulphur in the wool.

To make the test, a small portion of the sample is thoroughly cleaned by repeated washing with distilled water in a test tube. After the final washing with distilled water, pour about one inch of water into the test tube, then add a few drops of the solution of plumbate of soda, and heat to boiling. Note the gradual discoloration of the fibers.

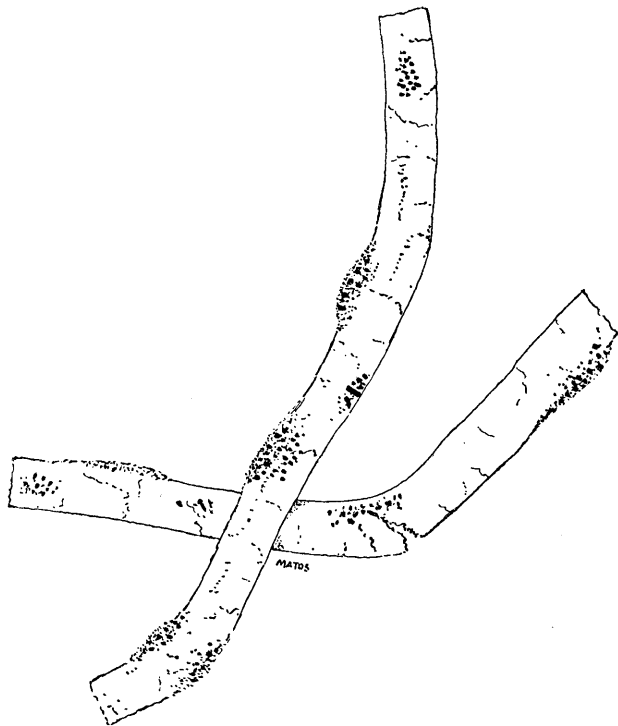


Fig. 23. Typical wool fibre in the grease.

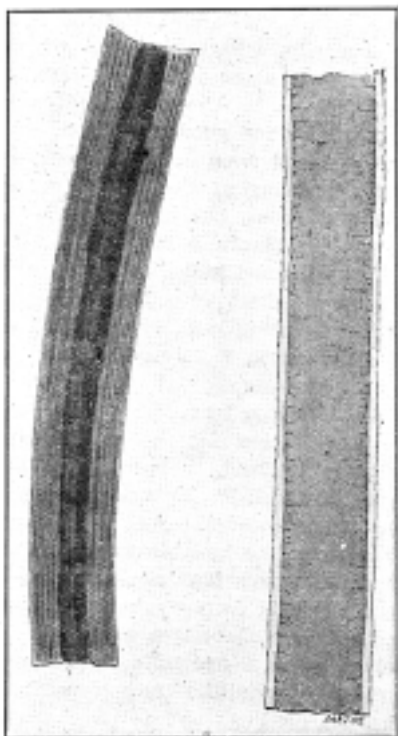


Fig. 24. Typical Cattle Hairs. Hairs showing the characteristics illustrated are common in many of the coarser wool fabrics, notably carpets and rugs.
A. Red Cow Hair.
B. White Hair.

ORDER BLANK.

The form showed this month is used by the superintendent of a cotton weaving mill for giving orders for goods to be woven. In addition to the number of pieces, this order gives particulars as to the construction of the cloth, take-up, loom efficiency required, speed of looms, tailings, length of woven cut, delivery of goods, number of looms to be put on this

Mill ORDER 1473

May 8 19

SAMPLE NO. 1473

Pcs. 500	Width 40
Tailings 5%	Count 88x80
Length 60 yds.	Weight 850
Delivery 10% weekly Begin July 6	Warp 60s Ends 35s2
Looms 40	" "
Looms per set 8	Filling 105s 80% 8% take-up Weaving 80% efficiency
	Price _____

Henry Jones, Supt.

REMARKS:

Start 8 looms soon as possible.

order, and number looms run by one weaver. Four copies of the order are made out, one for the slasher room, one for the weave room, one for the cloth room, and the fourth to be kept on file in the superintendent's office. In this way full particulars of the construction of the goods, number of pieces to be made, and dates of delivery are on file in the different departments having the work in charge.

THIRD INTERNATIONAL COTTON CONFERENCE.

The most important result at the Third International Cotton Conference, held at New Orleans, Oct. 13, 1916, was the forming of a permanent organization, which will enable all branches of the world's cotton trade to get together from time to time and confer on the trade questions that call for attention. The officers at the Conference are: President, Sir A. Herbert Dixon, England; general secretary, Rufus R. Wilson, United States; assistant secretary for Europe, Frank Nasmith, England; joint treasurers, Sir James Hope Simpson, England; W. Irving Bullard, United States; vice-presidents, United States, Fuller E. Callaway and Russell B. Lowe; England, Edward B. Orme and John Smethurst; France, G. Baden; Belgium, Jean deHemptine; Switzerland, John Syz; Italy Giorgio Mylius. The next conference will be held in England in 1921.

The resolutions adopted at New Orleans with the approval of the eleven classes of representatives endorsed the plan for cotton warehouses to issue negotiable receipts, uniform classification of cotton, research work in cotton growing and a scheme under which the War Finance Corporation would buy foreign promises to pay for the purpose of enabling foreigners to buy American products.

AN AMERICAN OBSERVER IN EUROPE.

[A good idea of conditions in Germany is given in the following extracts from a letter, dated Rotterdam, Oct. 1, from a prominent American dealer in wool and yarns.]

"I have already visited France, Belgium, Holland and Germany. I have seen the horrible, the beautiful, and the commonplace. I have been all along the battlefield in France, have seen towns with all the houses knocked to pieces by shell fire. I have seen the battlefields about Arras and Albert. I have seen the dugouts along the line where the soldiers lived, the lonely graves, the trenches, the barbed wire and the dreadful wreckage of the war. I have been through the Somme district. I have seen the fruit trees cut off about one foot from the roots. These trees were not cut down by shell fire, they were sawed off so they would not grow again. I have seen Rheims, a city of 110,000, where every house was knocked down—not one escaping destruction. I have seen the rivers of France, many of which we would call brooks in America. I have been in the part of France which the Germans occupied and some strange tales I have heard. France has suffered—and the French people are wonderful. I went to Versailles, where there is the most beautiful park I have ever seen. Paris is a wonderful city.

"I came here by way of St. Quentin and Mons. Belgium is now in good condition, one might say it is reconstructed. I stopped at Brussels and went to Tilburg, Holland. I visited The Hague, and then came here to Rotterdam.

"After a hard struggle I got permission to go into Germany, and went as far as Bremen. Germany is discouraged and does not realize what she has done. The great majority of the German people have never seen the terrible destruction of their own guns. The one topic in Germany is food. The people are not starving, but they are very uncomfortable. The Government has fixed prices at which farmers must sell to the homes and consequently they sell just as little as possible to the homes at a fixed price, and just as much as possible to the big hotels and restaurants. You can get anything you want in the hotels, except bread, butter and milk. Breakfast is the worst meal of the day. It is amusing to see people coming into the dining room of a hotel which ranks with Young's or the Parker House in Boston, with loaves of bread under their arms and carrying a pot of butter or a small bottle of milk. All the tables in the best hotels are covered with paper cloth. Strange to say, these high-priced meals are very cheap for the foreigners, and cheaper than in Boston at the present time. I entertained two friends, making three in our party, with as good a dinner as any one would wish, including wine, and it cost me 140 marks. The mark cost me 5 cents, making the dinner cost (5 × 140) \$7.00, or \$2.33 each. My room with bath and breakfast in the best hotel costs two dollars. I had a hair cut which cost me 7½ cents. I rode 180 miles on the railroad for a dollar. Everything else is in this proportion. Although everything is cheap for the foreigner, it is dear for the German, because he works for marks and exchange does not enter at all.

"Many of the German people want to get out of the country and go to America. They acknowledge that America won the war and say that if it had not been for America, Germany would have won on land, if not on the sea. They have no coal and they have no wheat or flour. They have substitutes for everything, even for cake. I went into a coffee house where they had fine music, and there was an elegant looking cake there, but it was made out of the worst tasting stuff called flour that you can imagine.

The prisoners of war were coming in on all the trains and the railway trains and stations were all decorated with evergreen. The Germans treated me very nicely. They have had all the war they want for the present. What they may want tomorrow I do not know.

"The talk of Germany sending merchandise to undersell the

markets of the world is silly. They have the factories, but no raw material. With the mark worth five cents against a normal 24 cents, you can easily figure out how much they can buy. The German Government will not allow textiles of any kind belonging to Germans to be exported."

PRICES FOR COTTON GOODS IN GERMANY.

The *Wochenherichte der Leipziger Monatschrift fuer Textil-Industrie* brings us reports of market conditions in the German textile trade. Following is the report of prices for cotton yarn and cloth at the Stuttgart exchange on Sept. 15:

		Yarn	
2/20s, beams, spools or bobbins	M 34-36 kilo	(\$3.71-3.93 lb.)	
2/30s	" " " "	M 37-39 kilo	(\$4.04-4.25 lb.)
2/36s	" " " "	M 39½-40½ kilo	(\$4.31-4.42 lb.)
42s cops		M 41½ kilo	(\$4.53 lb.)
44s cops		M 42½ kilo	(\$4.64 lb.)

		Cloth	
90 cm. (35½ in.) plain or twill	27½-27 per cm. (19-18 per ¼ French inch)	(70x68½ per English inch),	M 4.60-4.80 per meter (\$1.01-1.06 per yd.)
88 cm. Cretonne	24-24 pr. cm. (16-16 per ¼ French inch),	61x61 per English inch),	M 5.70-5.80 (\$1.26-1.28 per yd.)

The high prices are due to the depreciated currency and high cost of cotton.

This market report reveals not only the disordered state of the German cotton trade, but also the interesting fact that the continental chaos of weights and measures has survived the ravages of the greatest war in history, German textile standards being as chaotic in September, 1919, as in August, 1914. In the brief market report quoted above there are found in use the old French inch for the sett of cloth, the English cotton yarn count based on the English yard and pound, the centimeter for widths of fabrics, with yarn prices based on the kilogram and cloth prices on the meter. And still the metricites tell us that Germany changed to the metric system without difficulty in three weeks in 1871.

GERMAN BARTER.

One of the methods employed by Germany to maintain the value of the German mark and prevent its exportation to neighboring countries, where the rate of exchange would militate against the business interests of the present confederation, appears to be the continued "turning over" of manufactured articles for goods of higher value, but which barter is rarely placed upon a dollars-and-cents basis.

For example, Germany at the present time is greatly in need of boots and shoes, but has not the hides to employ for the purpose. It places a contract in the Netherlands for a number of untanned hides, takes them to German tanneries and converts them into leather, giving them back to Holland with a certain number deducted as payment for the tanning. The German interests then make a further contract with the owners of the now tanned leathers to return these to Germany, where they will be converted into boots and shoes. This done, the manufactured product is once more sent to Holland, the process of deducting a certain quantity as payment having been repeated.

The amount of boots and shoes thus received is practically of no importance, and to be able to return to Germany the whole of its manufactures it is necessary that an additional step be taken, which is done by bartering the stock in the hands of the Dutch merchants for some other German manufactured product, such as dyestuffs or medicines.

By this return to primitive trading methods Germany is enabled to sell its products and to purchase those of which it is in the most need without the exchange of a cent of money—a practice well calculated to sustain its credit in the money world, as it permits the price of these goods to be calculated upon their real value.—*U. S. Consul, Rotterdam.*

The Construction of Weaves

By E. Bittner

Fig. 549a is the motif, Fig. 549, enlarged 3 times; Fig. 549b shows the motif developed by combining a 3-leaf warp twill

1 light 1 dark in warp and filling; Fig. 550d, color effect by three colors in warp and filling.

Fig. 550e is the weave used for the color effect shown at

Fig. 549.



Fig. 549b.

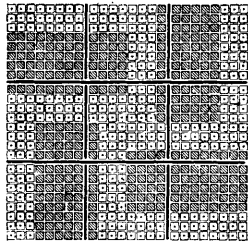
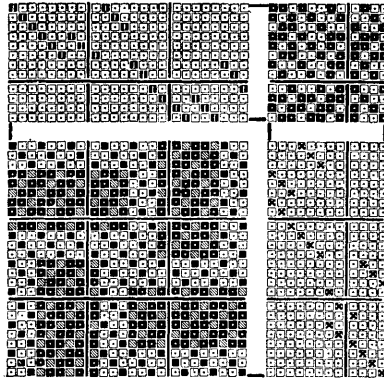
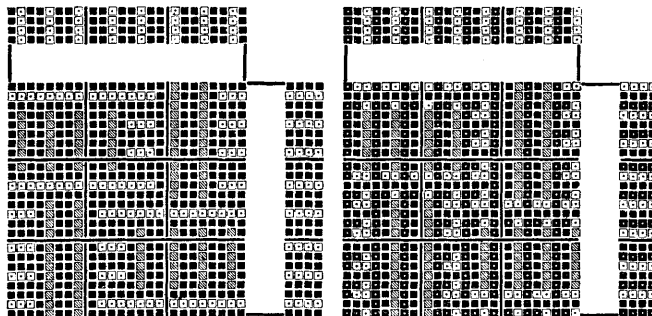


Fig. 549a.

with a 3-leaf filling twill; Fig. 549c shows the color effect produced by 1 dark 1 light 1 dark in warp and filling. Fig.



549d, the effect by using three colors in warp and in filling.

Fig. 550a is the motif, Fig. 550, enlarged 3 times; Fig. 550b,

Fig. 550.

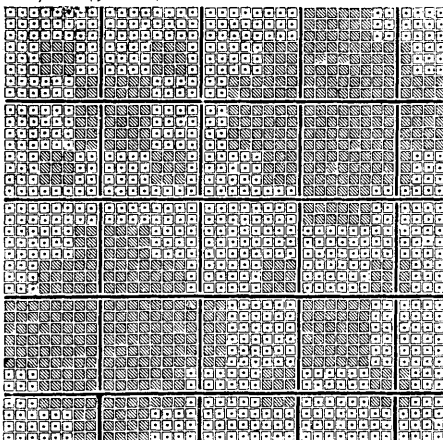
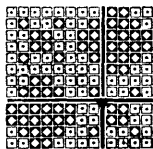


Fig. 550a.

the motif developed by combining a 3-leaf warp twill with a 3-leaf filling twill; Fig. 550c, color effect produced by 1 dark

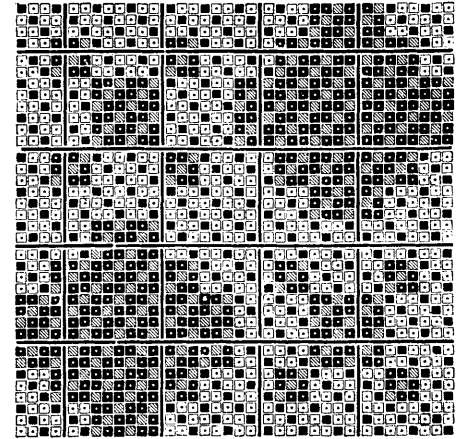


Fig. 550b.

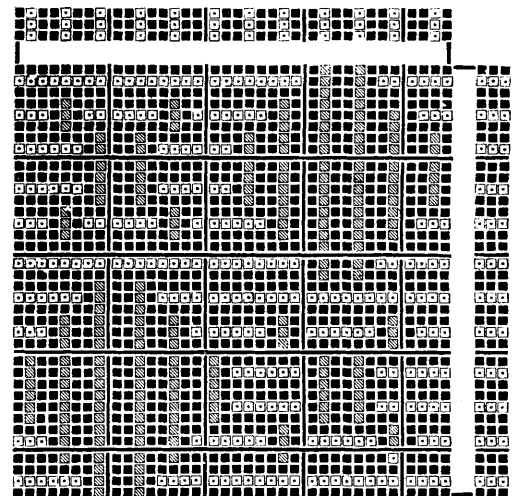


Fig. 550c.

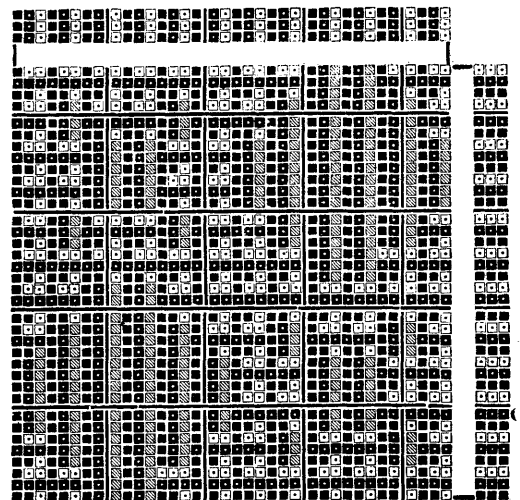


Fig. 550d.

(Continued on following page)

The Practical Fixing of Cotton Looms

By John Reynolds

Timing the Still Box-Motion.

When describing the multiplier motions the timing of the pattern-chain cylinder was omitted because this cylinder and the multiplier is operated by the cam J which also operates the still box motion. The movement of this cam must be timed to work in conjunction with the cam which operates the filling motion.

With double cam J, Fig. 107, in neutral position, set the stop plate so that the bottom edge of the slot will be level with the surface on which the push arm C slides. Have the cut out edge of this arm $\frac{1}{4}$ in. from the edge of the slot, with the shuttle on the hand side of the loom. Remove the filling from the filling-fork and move the lay forward until the filling-fork slide is being pushed outwards. With the lay in this position set the cam J so that it is just beginning to move the lever F upwards. This lever operates the push arm C. By the time the cut out part of the arm reaches the stop plate B, the slot in this plate will be raised and will present a blank surface with which the cut out on arm C will engage. Continue the movement of the lay and note the

opening of the levers D and F. This is the right method of timing the pattern chain cylinder, still box motion and filling stop motion so they will all work together.

The cam J, Fig. 107, is a double cam. The cam with the larger surface acts as a driver, and the smaller surface cam acts as a disconnecter. With a single surface cam it is obvious that every time the filling motion slide falls back after stopping the loom, the jaws of the levers D and F will come together, thus imparting motion to the driving rod. The double cam prevents this. As the bottom shaft continues to revolve, the depressed part of the large surface cam is brought under lever F. This permits the lever to come down, but the larger part of the smaller cam is pressing down on lever D at the same time, keeping this lever from

THE CONSTRUCTION OF WEAVES.

(Continued from previous page)

Fig. 550f, which also shows the 4-color warp pattern and the 3-color filling pattern.

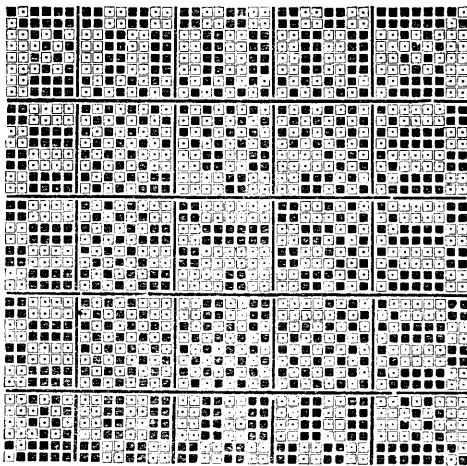


Fig. 550e.

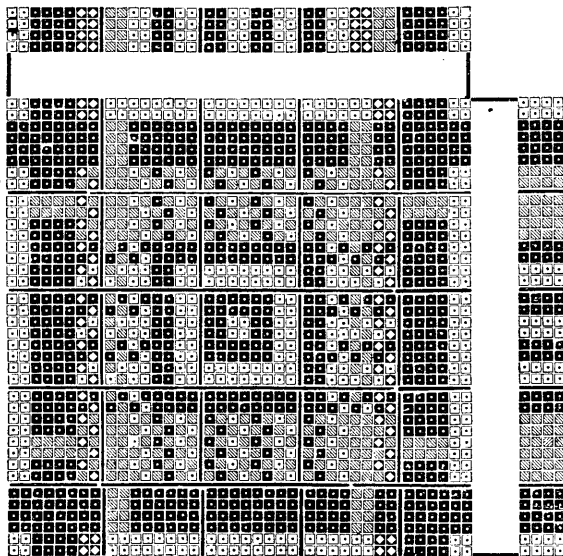


Fig. 550f.

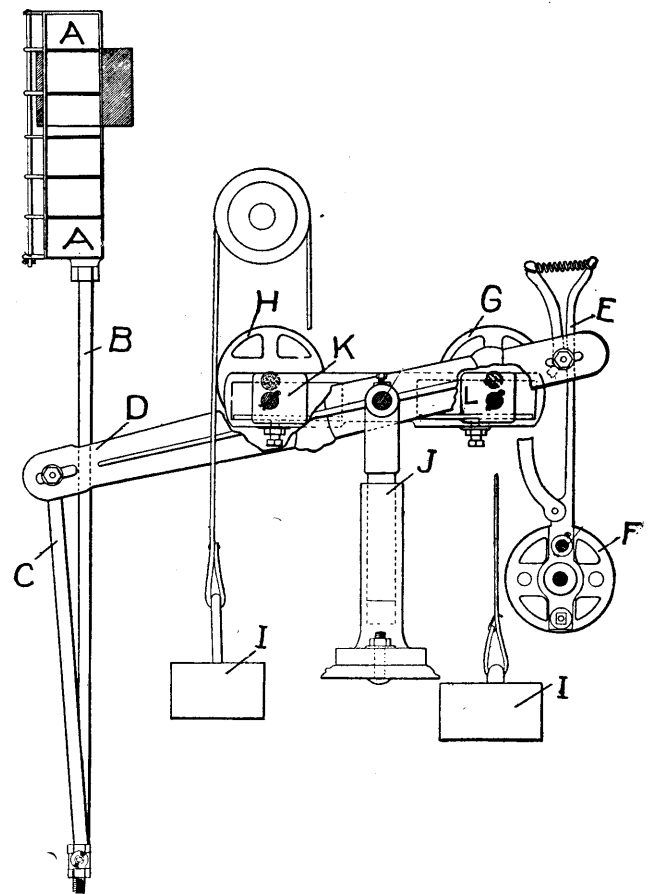


Fig. 109. 6 and 1 Box Motion. operating the driving rod. As the shuttle is again propelled to the other side of the loom the filling motion slide is pushed out again.

The 6 and 1 Box-Motion.

An explanation of this motion calls for little in addition to what has already been said regarding the 4 and 1 box motion. The same method is used to level the boxes as with the 2 and 1 and 4 and 1 box motions. The timing and adjusting are the same. The only difference is in the make-up of the box lever and the leveling of the boxes with the race plate of the loom. It will be noted that the release motion is located on the rear end of the box lever and that two box cranks are fitted to connect with the lever. Each crank is fitted with a large stud, which fits loosely into sliding blocks. These are fitted into a recess on each side of the lever stand.

“Straight Line” Textile Calculations

By Samuel S. Dale

Fixed Weight Counts.

Following are equivalent expressions for the principal fixed weight standards for numbering:

- Run System**
- 1600 yards per pound
- 100 yards per ounce
- 1 yard per 4% grains
- 8 8/35 inches per grain
- Cotton System**
- 840 yards per pound
- 52½ yards per ounce
- .12 yard per grain
- 4.32 inches per grain
- Worsted System**
- 560 yards per pound
- 35 yards per ounce
- .08 yard per grain
- 2.88 inches per grain
- Linen or Cut System**
- 300 yards per pound
- 18.75 yards per ounce
- West of England Woolen**
- 320 yards per pound
- 20 yards per ounce
- Yorkshire Woolen**
- 256 yards per pound
- 16 yards per ounce
- 1 yard per dram
- Metric**
- 496 yards per pound
- 31 yards per ounce
- 1000 meters per kilogram

Yards Per Ounce.

The number of yards per ounce is used in England to indicate the size of reeled silk. As this basis is 1/100th of the run standard (100 yards per ounce) it has not been considered necessary to include it in the tables of equivalents. The run equivalents of the yards per ounce count can be

the denier count equivalent to the number of grains per 638 yards.

Equivalents of the denier standard:

- Deniers per 400 aunes
- Pounds per 4,464,528 yards
- Ounces per 279,033 yards
- Drams per 17,440 yards
- Grains per 638 yards
- Demi-decigrams per 450 meters

Because of its uniformity the reeled silk thread is much better suited for indicating the size by the diameter than is yarn spun from other textile fibers. Calculations of the diameter of reeled silk from the specific gravity of the material have been made, the results being shown in the accompanying table:

Dram System for Silk.

The standard for number thrown silk in Great Britain and the United States.

- Pounds per 256,000 yards
- Ounces per 16,000 yards
- Drams per 1,000 yards
- Grains per 36 4/7 yards

Pound for Jute.

The world standard for number jute yarn.

- Pounds per 14,400 yards
- Ounces per 900 yards
- Grains per 2 2/35 yards

Reducing Yarn Numbers.

The number of yarn by one fixed weight standard can be readily reduced to its equivalent by any other standard by means of the ratio between them. For example, No. 1 cotton yarn measures 840 yards per pound; No. 1 worsted yarn, 560 yards per pound. No. 1 cotton is consequently equivalent to No. 1½ worsted. The cotton number is reduced to the worsted equivalent by multiplying by 1½, while the worsted number is reduced to the cotton equivalent by dividing by

Diameters			Diameters			Diameters		
Deniers	Microns	Per Inch	Deniers	Microns	Per Inch	Deniers	Microns	Per Inch
8	42	605	16	59	428	24	73	349
9	44	570	17	61	415	25	74	342
10	47	540	18	63	403	26	76	335
11	49	516	19	64	393	27	77	329
12	51	494	20	66	383	28	79	323
13	53	475	21	68	374	29	80	318
14	55	457	22	70	365	30	81	312
15	57	442	23	71	357	31	83	304

(25,400 microns=1 inch)

obtained from the run equivalents by moving the decimal point two places to the left. For example, 20,000 yards per ounce is equivalent to 200 runs. Likewise the run equivalents can, as is frequently done, be reduced to yards per ounce by the same method. Thus, 4¾ runs is equivalent to 475 yards per ounce.

Denier Count.

The world's standard for raw silk. Also used for thrown silk on the Continent of Europe. The denier and aune are old French units of weight and length.

The denier count of silk yarn is ordinarily indicated with an allowance of 2 deniers for the variations in the size of the silk. Thus 10-12 denier silk indicates that the average size is 11 deniers.

Variations in the weight of the denier in different parts of Europe have given rise to what are known as the French, Turin and Italian denier systems. The difference between these standards is so slight as to be negligible in practice.

The Italian standard is now generally accepted and has been adopted as a basis for these calculations. It makes

1½ or reducing the worsted No. by one-third.

$$60s \text{ (cotton)} \times 1\frac{1}{2} = 90s \text{ worsted}$$

$$90s \text{ (worsted)} \div 1\frac{1}{2} = 60s \text{ cotton}$$

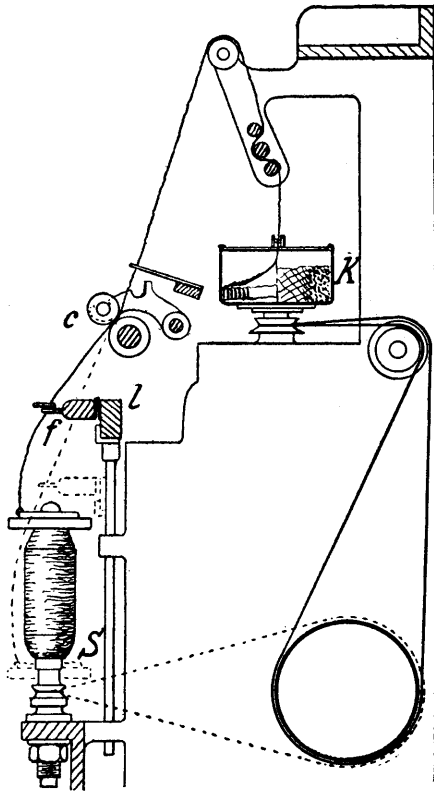
Reduction of a yarn number from one fixed length basis to another is accomplished by simple proportion. For example a yarn weighing 40 grains per 50 yards would weigh double that amount, or 80 grains, per 100 yards, the reduction from the 50-yard basis to the 100-yard being accomplished by multiplying by 2. Conversely the reduction from the 100-yard basis to the 50-yard is effected by dividing by 2.

The reduction of yarn numbers from a fixed weight basis to a fixed length basis or the reverse is effected by dividing a constant number by the given yarn number. Let us assume that No. 40 cotton is to be reduced to grains per 120 yards. The cotton number indicates the number of 840-yard lengths per pound (7000 grains). As 120 is one-seventh of 840, it follows that the cotton number also indicates the number of 120-yard lengths per 1000 grains (1/7 pound). From this it is plain that the weight in grains of 120 yards is found by dividing 1000 (grains) by the cotton number (120-yard lengths per 1000 grains).

$$1000 \text{ (grains)} \div 40 \text{ (cotton No.)} = 25 \text{ grains per 120 yards}$$

SUBSTITUTE FABRICS IN GERMANY.

Although the war is at an end, the interest in substitute fabrics in Germany has by no means subsided. A writer in the *Leipziger Monatschrift fur Textil Industrie* discusses the prospect of the substitute fabric industry in peace times and reaches the conclusion that there are great possibilities in this branch of manufacturing, which was extensively developed during the war. The scarcity of textile materials forced the Germans to manufacture paper yarn on the machines used for working cotton, wool, flax, etc. These machines, however,



Paper Yarn Spinning Machine.

are now being turned back on the regular work for which they were built, but there are still in Germany about 70,000 spindles that are built specially for the manufacture of paper yarn. These machines have a capacity of double the German consumption of twine, which amounts to 44,000,000 annually.

Among the uses to which yarn fabrics can be put are, covering for wire, cables and steam pipes. The paper fabrics have also been found to serve well as clothing for women, and for many other purposes where it is not necessary to subject the material to severe treatment in the laundry. The writer in the *Leipziger Monatschrift fur Textil-Industrie* lays stress on the importance of research work in connection with the paper yarn and cloth industry and gives a brief description of a double spinning machine for paper yarn, shown in the accompanying illustration, which has recently been developed in Germany and installed in a number of mills.

The strip of paper is drawn from the revolving spinning-box K by the rolls c, which deliver it to the spindle S. In order to control the ballooning of the thread between the guide f, and the spinning ring, the rail l, which supports the guide f is connected with the ring-rail so that the guide and ring move together as shown in the illustration by the dotted lines. The machine twists the paper thread twice, the first time by the revolving box, K, the second time by the spindle S. It thus forms the thread gradually, increasing the strength and producing a solid bobbin. The production is also much greater because of the double twist, which enables

twice the amount of yarn to be produced on each spindle in a given time.

An effort of the Germans to obtain a substitute for wool is reported by *l'Industrie Textile*, Paris. The process consists in grinding wool, rags, clippings, waste, and other wool by-products to a pulp in water and mixing it with a solution of cellulose with the addition of a small quantity of glue. This mixture is converted into a thin sheet which is cut into strips and twisted into yarn, as in making paper yarn. The Germans claim that the yarn thus obtained possesses the properties of wool itself. It is made insoluble by the addition of a compound of chrome and treating the mixture with solution of tannin, in which condition the product resists the action of hot water. An addition of glycerin imparts sufficient flexibility. The substance is formed into sheets by spreading the mixture over large glass plates covered with a coat of wax. The sheet of wool substitute is made of any thickness desired. The size of the yarn depends on the width of the strip into which the sheet is cut. A modification of the process consists in mixing the wool paste with paper pulp and giving it the character of parchment by treating it with sulphuric acid or chloride of zinc. Various materials are then added to impart the necessary flexibility and impermeability.

TRADE IN CHEMNITZ.

During the second half of August the German Government released the stocks of raw cotton, yarns, wool, etc., and a number of the spinning mills have therefore been able to start spinning cotton again. Most of the manufacturing concerns, more especially the glove fabrics, are still standing idle or running a few of their machines on silk or artificial silk. Some of the hosiery people are getting their machinery to work as fast as they possibly can, the main difficulty being to get hold of the necessary yarn. A good deal of silk and imitation silk has been used in this trade too, but they prefer to turn to cotton now if they can get the raw material.

Many of the manufacturers here and in the district have a very pessimistic opinion as regards the near future. They expect coal troubles, and in connection herewith very likely labor trouble and riots, and prefer to take up a waiting attitude. Money on the whole seems to be plentiful, the theatres, cinemas, etc., are crowded. Food prices are high in comparison with pre-war conditions, but almost everything is to be had without much difficulty. Footwear seems to me to be worst of all. The people one sees in the streets are mostly well dressed and appear to be well fed. I have not seen a really decent pair of boots since I have been here. Suits, of apparently good material, cost Mks. 650 to Mks. 800; boots, mostly paper or imitation leather, Mks. 65 to Mks. 125; hats, Mks. 45 to Mks. 85.

Railway traveling is very bad. Fewer and slower trains, higher fares, and crowded compartments. There is certainly no danger of any competition in the English markets so far as hosiery and gloves are concerned for a long time to come, although American buyers are here already. One buyer from a very large and well-known London store was here last week, but there are no stocks to be had.

Lancashire spinners and doublers, or dealers, only sell here on cash before delivery terms, but I am told that Dutch and Swiss firms are offering to deliver yarn, to hosiery manufacturers more especially, and also glove makers, under an arrangement that the maker shall deliver goods made from the yarn sent, charging, of course, for the making or manufacturing only. I suppose these goods will eventually find their way into the English market as Dutch or Swiss makes.

To give an idea of prices: 20/1 American twist cops were

selling at Mks. 35 p. Kilo., beginning of the month. Yesterday the price was Mks. 41. Of course, German spun. There is a very great demand for all kinds of German spun yarns, mostly because these are sold in marks p. Kr., and credit is given. It will be months from now, even if things remain quiet, before the Chemnitz hosiery and fabric glove trade gets going again, so that British manufacturers need not worry themselves at present, as no dumping can possibly take place.—*Chemnitz Correspondent of Textile Mercury.*

HOW TO IMPORT DYESTUFFS.

The War Trade Board Section of the Department of State has designated the Textile Alliance, Inc., as the sole agency for the importation and distribution of German dyestuffs, and there is no question but that the work will be done in the efficient and satisfactory manner in which the Alliance controlled the importation and distribution of wool and other products during the war. Following are the regulations issued by the Alliance for obtaining allotments of the available supply:

Organization. As the result of certain recent negotiations between the representatives of the allied and associated Governments and of the German Government a substantial portion of the amount of such dyes as may be needed to satisfy the six months' requirements of consumers has been made available to consumers in this country.

The Textile Alliance, Inc., will perform the following services in connection with the importation of vat dyes from the official sources referred to.

a. To accept from the consumer vat dye certificates issued by the War Trade Board for vat dyes in amounts not exceeding the amounts specified in such certificates.

b. To file all applications for licenses for vat dyes secured through this source and covered by such allocation certificates as have been endorsed to the Textile Alliance, Inc.

c. To attend to all the details connected with the acquisition of and terms of payment for the above mentioned vat dyes and their shipment to the Textile Alliance, Inc., and to arrange for distribution to the respective customers who have ordered them through this source.

Procedure (a) The consumer endorses and delivers allocation certificate to the Textile Alliance, Inc., at the same time executing and forwarding the order (Form No. D-1) stating the amount of dyes (not exceeding, however, the amount allocated to him), which he desires to purchase under this arrangement.

(b) On receipt of the above an application for an import license will be filed by the Textile Alliance, Inc., with the War Trade Board.

(c) At the same time a pro forma invoice will be rendered to the consumer, same to be based on figures available at that time, representing approximately the cost (including all charges incidental to complete delivery on c. i. f. New York basis) of the dyes so ordered. A check in favor of the Textile Alliance, Inc., for the amount of the pro forma invoice must be sent to this office immediately. On receipt of same, the order will be cabled to the representative of the Textile Alliance, Inc., in Paris, who will proceed with the purchase.

(d) In the event that it should prove impossible to secure the entire amount of the various dyes applied for, it is understood that the Textile Alliance, Inc., shall be entitled to procure for and deliver to each certificate holder his pro rata share of the total amount obtainable.

(e) On arrival of the merchandise, invoice will be rendered showing the charges so far as then ascertained and settlement must be made at that time, subject to correction.

Charges. The purchase, importation and distribution of all vat dyes acquired under the above mentioned plan will be effected at cost and without profit to the Textile Alliance, Inc. To meet the estimated expenses of this organization in conducting this work, a charge of 15 per cent. will be made upon the amount of each purchase, computed upon the delivered cost including duty. Any unexpended balance of the funds remitted for the expenses of the Textile Alliance, Inc., will be returned pro rata.

Liability. All purchasers ordering vat dyes under this plan must indemnify and agree to hold harmless the Textile Alliance, Inc., and its officers, agents and employes from any and all claims or liabilities arising in connection

with any importations, sales or deliveries of the vat dyes.

Importations after arrival will be at owners' risk and expense.

The contract and order form must bear the vat dye certificate number, date of issuance, designation of dye, Schuitz table number, quantity wanted, and name and address of producer abroad.

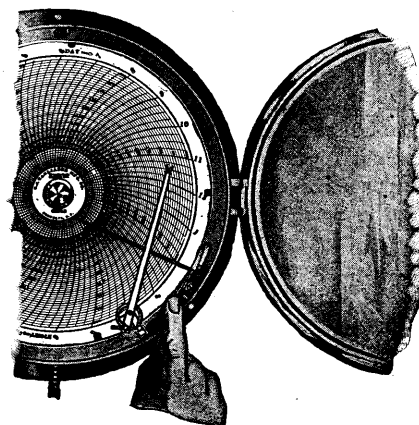
The terms of the contract provide that the order is subject to acceptance and confirmation by the Textile Alliance, Inc., that dyestuffs covered therein are sold on a c. i. f. New York basis; that the purchaser agrees to conform to all requirements, regulations and provisions for the importation of the dyes and that the purchaser will indemnify and hold harmless the Textile Alliance, Inc., or its agents from and against claims for liability arising in connection with the dyes.

THE RECORDING THERMOMETER IN TEXTILE MILLS.

BY W. P. GOODALE.

Few realize the value and varied uses of the recording thermometer in the textile industry. The recording thermometer takes into consideration two elements, temperature and time. The temperature for each minute is charted continuously through the working hours. Time is of course a very important factor with the constant reduction in the working hours, in fact vast sums are yearly expended in reducing operations with regard to time, without materially affecting the product. Temperature is of vital importance in as much as a careful regulation of same results in many dollars being saved at the coal pile and also many dollars being saved in damage to the materials at hand.

Every mill should be provided with a portable recording



A Recording Thermometer.

thermometer having a range suitable for the requirements, which means a chart that will record the extreme variations of temperature in the processes to which the instrument is applied. The tube of the recording thermometer should be long enough for any application, with bulb having union connection. Such an instrument can be applied to a dryer and then removed for tests on a dyeing or other machine.

The thermometer should be set in a wooden box having a door that can be locked. It can be securely fastened with the screws to the back of the box, the tubing passing through a circular opening at the back and conveniently wound around two hooks on the back of the box. A section of leather belting at the top of the box makes a good carrying handle for the instrument. This handle also allows the thermometer to be hung up when in use, or it may be placed on the base in any convenient position. The necessity of a good instrument is of course apparent. The C. J. Tagliabue Mfg. Co. of Brooklyn, N. Y. make a specialty of supplying instruments for this use.

The many uses to which an instrument of this description may be put are almost innumerable. A cotton manufacturer discovered by the use of a recording thermometer that

(Continued on page 30)

Knitting Department

THE MANUFACTURE OF KNIT GOODS. BY JOHN CHAMBERLAIN.

Seamless Hosiery Machines.

The outstanding feature of these machines is the selecting mechanism of the heel needles. Much difficulty was at first experienced in causing one needle to become passive at each oscillation during the making of the narrowed portion of the pouch, and in effecting the individual return of such needles during the knitting of the widened portion. The original idea was to lift or depress each needle as required by means of a studded chain, but the mechanism involved was slow and cumbersome. The next method necessitated the cutting of

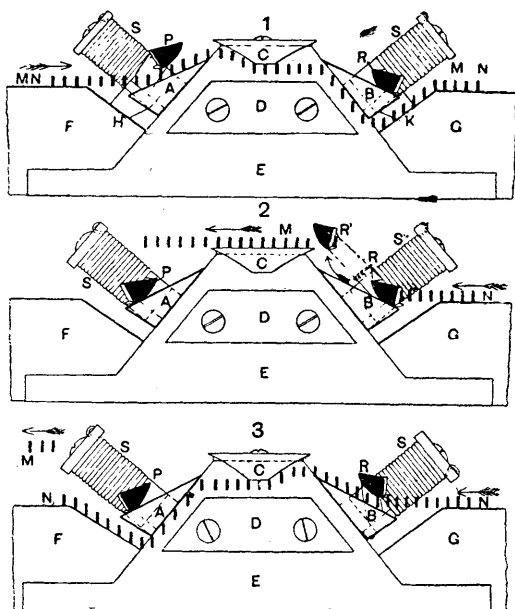


Fig. 18. Narrowing Mechanism.

deeper grooves at the heel of the needle cylinder, and the needles were actuated by jacks so that the butts of the needles could be retired into the tricks, and consequently become passive. This was called the depressing principle, and is still in use today.

Another method was to raise all needles to a passive position, and return only such needles as were required to an active position. To achieve this, two worm-driven fan-shaped plates were used, which were contracted or expanded one needle at each oscillation. This method proved to be very successful for a period, but the advent of the picker principle, which required no complicated racking device, rendered all other methods practically obsolete. This system is employed on all modern machines, yet no definite facts are known about the originator. Probably, like the free-wheel of a cycle, the device was not appreciated to any extent on its introduction, but later on it proved to be indispensable. Mechanically speaking, one cannot assert that it is an ideal method, but its wonderful success in practice has proved beyond doubt that it will be difficult to find a more mechanically correct system which will be equally as simple and effective.

Cam and Picker Mechanism.

A view of the mechanism used for the knitting and narrowing action is shown at 1, Fig. 18. The arrow denotes the direction of rotation during tubular knitting. The long-butt or instep needles M and the short-butt needles N travel up the slope of the reverse stitch cam A to such a height that

the finished loops are below the latches of the needles. The yarn is supplied to the hooks, and the needles are directed by means of the guide cam C to the tubular knitting or stitch cam B. At this point the new loop is drawn, and the finished loop, by the overturning of the latch, is cast off. The needles are raised to their rest position by means of the upthrow cam G. This system of cams is very simple, but, as will be seen from the drawing, is independent upon "friction" needles—i. e., needles which are capable of remaining in any position in their tricks without support other than frictional contact with the cylinder walls, and it is this friction which enables them to pass from the reverse upthrow cam F to the reverse stitch cam A.

If non-friction or free needles are employed as they are on certain machines, some form of gap-closing device, usually a sliding or swinging auxiliary cam, must be interposed between the upthrow and stitch cams. The cam D is a fixed guard cam put in for safety purposes. The cams A, B, C, and D are screwed to the cam-block E, and although the stitch cams A and B have a slight adjustment, the stitch length is altered by raising or lowering the cam-block as previously

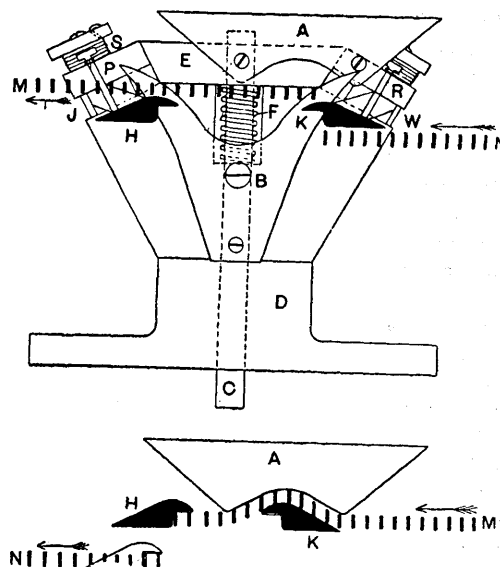


Fig. 19. Widening Pickers.

explained. The upthrow cams F and G are adjustable literally, but otherwise form part of the cam cylinder flange on which the needles ride when not knitting.

During tubular knitting the narrowing picker P rests lightly on the butts of the needles by reason of the spring S, while the picker R rests on the upper side of the stitch cam B, or the picker is kept clear of the cam by the wing K coming against a fixed stop so that its picking edge is in true alignment with the active needle race. The other picker P also possesses a wing H for a similar purpose.

The pickers are short and radial in their action, and the manner in which they work will be understood by referring to 2, Fig. 18. The motion being reversed as shown by the arrow, the long-butt needles M are raised by a projecting cam (not shown), and the picker R is in the direct path of the first of the short-butt needles N. The continued oscillation of the needle cylinder causes the picker to swing upwards and outwards in accordance with the angular disposition of its fulcrum, and as the needle is forcing the picker,

the needle itself is raised until the radial action of the picker brings the latter clear of the now-raised needle. The spring S then causes the picker to fall on the butts of the oncoming needles, so no further picking takes place until the motion is reversed and the picker P plays its part.

In Fig. 18 at 3 a view is shown of the remaining short-butt needles passing under the picker R, and, with the exception that the motion has been reversed and the instep needles raised, the knitting action is precisely the same as shown in the first diagram. It will be seen that during the whole of the knitting action either one or the other picker is pressing on the needle butts in accordance with the strength of the spring S. In practice this is not found detrimental, as the pressure exerted is very small. Alternate methods are available, however, and the most used alternative device has its pickers connected so that as one picker is raised by the oncoming needle the other picker falls, and when the picker is returned by the spring, it stands clear of the needles until the other picker in turn is raised.

The picking action as shown in Fig. 18 is self-controlled, and is automatically brought into action by the reversing of the direction of motion, and this action continues until the long-butt needles are returned and tubular knitting recommences. Consequently, when one-third of the heel needles have been "picked," or transferred to a passive position, other pickers are brought into play which return two needles to the knitting position at each oscillation. These are positioned on the widening picker bracket, which is placed diametrically opposite to the cam-block.

Fig. 19 shows the movements of the widening pickers. The block D is screwed to the bedplate, and serves to keep the bevel-toothed ring which is attached to the needle cylinder in position. This block D carries a fixed guard cam A attached to the cover E, which keeps the pickers in position. The pickers are fulcrumed on spindles, and their vertical height is decided by the position of the movable gauge-plate B, which is screwed to the spindle C, lowered by the spring F, and operated as previously shown in Fig. 16.

During the narrowing of the heel the widening pickers H and K occupy a position between the raised needles M and the active needles N, as shown in the upper view in Fig. 19. The widening pickers H and K carry the pins P and R respectively, to which are attached the springs S and V, so that the pickers follow the movement of the gauge-plate B. When the first part of the heel has been made, the gauge-plate B is raised so that the picker H stands in the path of the raised needles, and by similar means to those described in connection with the narrowing pickers, lowers two needles to a knitting position as shown in the lower view in Fig. 19. The reason why two needles are "picked," or, more correctly, lowered, is because the picker is cut so that two needle butts are under its control before it is moved by the first of these needles. The drawings in Figs. 17, 18, and 19 have been taken from the "Maxim" seamless hose machine.

Adjustment of Seamless Machines.

These machines should be set up and leveled so that the machine shaft is parallel with a countershaft carried in bearings on the floor. Usually the countershaft serves two rows of machines, and the horizontal component of the distance between the machine shaft and the countershaft is about 2 feet. Machines should be placed about 3 feet apart.

Speed of the Revolving Head.

When making calculations with reference to the size of pulleys required to drive the machines at the correct speed, it must be remembered that the direct drive is usually on the slow speed. As a general rule the fast speed is 25 per cent. greater than the slow speed. Hence, to obtain a running speed of 270 revs. per min. the machine pulley may be

regarded as running at 80 per cent. of 270, or 216 revs. As the head is driven by equal gearing, knitting speeds of 270 and 216 revs. per min. are obtained.

Friction needles must be bent to exert enough friction on the cylinder walls to remain in a set position without further support. Excessive friction must be avoided, or needle butts will be broken. Another important adjustment is the timing of the web-holders or sinkers. If strong yarns are used, the sinkers should be timed to advance as soon as the needles begin to rise. If tender yarns are employed, the timing must be much later or cut fabric will result. The sinker-ring and thread-guide holes must be cleaned frequently to keep them free from lint.

Owing to the tubular stitch cam being in action for a much greater length of time than the reverse stitch cam, it will be found to wear more, and thus causing inequalities in the stitch length in the making of heels and toes, when both cams are alternately in action. To obviate this, either the tubular stitch cam must be lowered or the reverse stitch cam ground. When grinding cams it is necessary to keep the edge at right angles, or slightly under, to the cylinder, otherwise the long-butt needles will draw a longer loop, and unequal knitting will result.

If the revolving head is removed, care must be taken to replace exactly to a single tooth, or the timing of the sinkers will be altered. The sinkers and needles should be oiled away from the looping parts, so that the fabric is not stained. Usually when these machines are first introduced into mills the mechanics can readily understand the mechanical movements and make ordinary adjustments, but fail in the delicate adjustment of the immediate loop-forming parts consistent with the character of the yarn knitted. Experience in this art can only be gained by continued practice.—*Textile Manufacturer, Manchester, Eng.*

A NEW CONSTRUCTION FOR HOSIERY.

A stocking to be worn with the edges of the seams on the outside has recently been patented. In his description of the new construction the inventor states that the most desirable fabrics tend to curl inwardly and up to the present time the only practical method has been to sew the stocking inside out and then turn the stocking, bringing the seam on the inside. By the new method, the seams are sewed with the stocking outside out, means being provided for placing the curls face to face instead of back to back, so as to produce a stocking with the seam upon the outside.

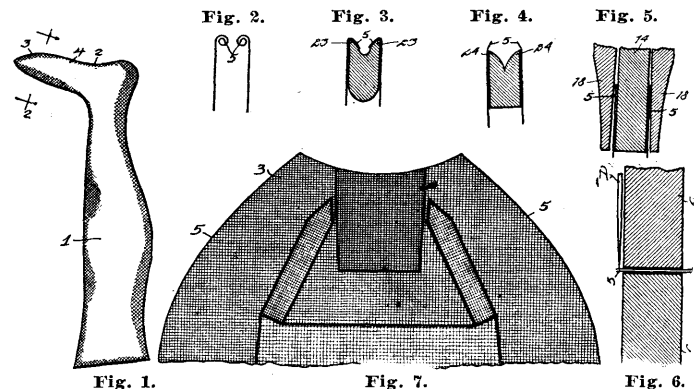


Fig. 1 shows the new construction; Fig. 2, a section along the line 2-2, Fig. 1; Figs. 3, 4, 5 and 6, the edges of the fabric in various stages of manufacture; Fig. 7, the toe portion of the fabric in flat form before the edges are sewed.

Fig. 2 shows how the margins of the piece of fabric, curling inwardly, are brought together for stitching. There are a central guide member 14, and outer guide members 18 of

the sewing machine. The guide members are spread apart, and one margin of the fabric is led between one of the outer guide members and the central guide member while the other margin of the fabric is led between the other external guide member and the central member, so that the two margins embrace the central guide as shown in Fig. 3. The marginal curls first encounter the primary spreaders 23, 23, on the upper edge of the central guide, Fig. 3. These spreaders wedge themselves into the curls to straighten out the fabric, as shown in Fig. 3. The secondary spreaders 24, 24 are higher than the primary spreaders and their action is to further the action of the primary spreaders, thus further straightening out the fabric, as illustrated in Fig. 4. The next step is illustrated in Fig. 5, where it will be seen that the two margins are in straightened condition between the guide members and after passing these guide members the two margins are brought face to face, as illustrated in Fig. 6, and led between the rolls C, C. The edges extend upward beyond the tops of the rolls and the slight remaining margin is that provided for stitching purposes, the reciprocating needle D lying immediately above the rolls. The stitching then takes place and the stocking is finally formed, right side out, with the seams on the outside.

IMPROVED NEEDLE-DIAL.

The illustrations show an improved dial for knitting machines, recently patented in this country. The inventor in his description of the dial says that in circular knitting machines it has long been a common practice to mount the knitting needles in grooves formed in a cylinder and to retain such needles in place by the use of an encircling elastic spring band, but such bands have been restricted to needle carriers of cylindrical form.

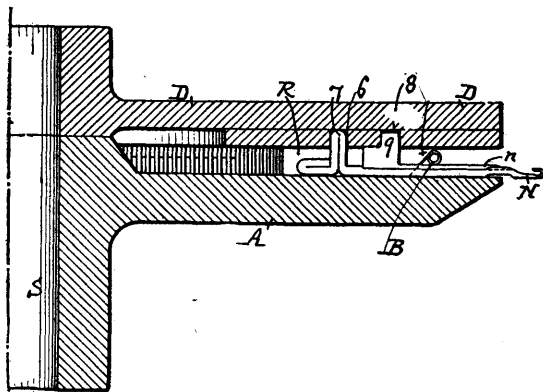


Fig. 1.

The value of such an elastic band, apart from its function of retaining the needles in place in the bottom of their grooves, resides in the fact that all needles or other implements so retained may be individually sprung outwardly for the purpose of ready removal or replacement, and if, for any reason, during the knitting operation, the implements are displaced accidentally from any cause, such as, for instance, a large lump or bunch in the yarn being fed to them, the elasticity imparted to them through the agency of the spring band tends to instantly return them to their normal working position.

In the production of ribbed fabric, two needle carriers are employed; one, cylindrical in form, the other in the shape of a radially slotted dial, which is usually in the form of a horizontal flat disk mounted within the limits of the circle of needles carried by the cylinder, but it sometimes is in the form of a flat ring around the outside of the ring of cylinder needles. In some instances, knitting machines are made

with needle dials without co-operating cylinder needles. The object of this invention is to provide means for elastically holding the needles in the slots of the dial.

Fig. 1 is a vertical section of the dial; Fig. 2, a needle for which the new construction is specially adapted; Fig. 3, a plan of a portion of the dial. A represents the flat needle dial carried by a central spindle or stud at S. This dial has an annular rib R radially slotted to receive and guide the bodies of the knitting needles in their inward and outward movements. The knitting needles N are without the commonly used pivoted latches, but have sliding latches or jacks

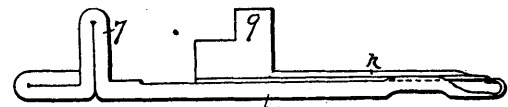


Fig. 2.

n. Each needle has a bit 7 working in a cam groove 6 of the cam dial D, while each jack n also has its bit 9 working in a separate cam groove 8 in the cam dial, so that the jack may have a sliding movement longitudinally of the needle to open and close the hook of the latter in the appropriate and known way. As shown in Fig. 2, the jack may be mounted to slide upon the top of the needle shank with a V-shaped bearing for a part of the length of the shank.

In order to hold these parts in their grooves, the dial is

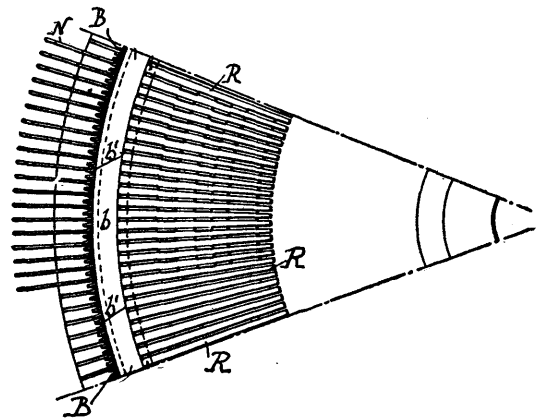


Fig. 3.

provided with a beveled shoulder F, at the outer circumference of the annular rib R, in which the guiding grooves are cut. Into this undercut there is sprung an elastic band B of coiled wire, such as is used to hold the needles in a knitting cylinder. Elastic pressure is thus exerted in a downward direction on the shanks of the knitting needles to keep them in the grooves. This pressure is exerted upon the jacks as well as the needles, and the elastic pressure is thus useful not only in keeping the needles in the bottoms of the grooves, but also in keeping each jack in proper relation to the needle.

DATE CHANGED FOR LONDON WOOL SALES.

Announcement is made that the dates of the two remaining series of London wool auctions have been changed, the next series taking place from October 27 to November 14, and the final series from December 1 to 19.

Shipments of wool from Australia for the season 1916-17 to 1918-19 totaled 3,431,018 bales, of which 2,721,166 were sent to the United Kingdom, 396,659 to the United States, 155,084 to Italy, 64,905 to France, 34,647 to Canada, 64,691 to India, 1,306 to Norway, and 25,963 to Russia, the latter in 1916-17 season only.

Dyeing, Bleaching and Finishing

THE PROCESS OF CARBONIZING.

While the process of carbonizing converts the vegetable material into brittle carbon, it does not remove it from the wool. It is, however, in such a condition that it can be easily removed, being so brittle as to be readily crushed into powder. This is accomplished with a dusting machine equipped with crush rolls, the latter consisting of one large corrugated roll on which three smaller rolls are pressed by springs. Two feed rolls deliver the wool to the duster. If the wool does not contain large burrs or large masses of vegetable material the crush rolls are not necessary, the ordinary apron feed answering every purpose. The R. and K. duster built in Germany consists of a shaft on which are mounted twenty steel arms and a set of wings. This shaft with the beater

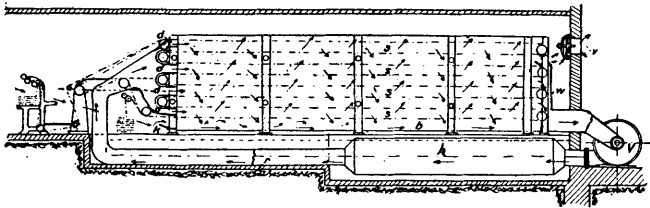


Fig. 22. Machine for Raw Stock and Piece Goods.

and wings is surrounded by a cylindrical frame covered with wire-screen cloth. This screen is in turn enclosed by a cover and the ends of the machine itself.

The wool is fed by an endless apron to the crush rolls and then delivered by feed rolls through an opening in the screen to the revolving beaters. The wings carry the wool from the feed end of the machine to the other end where it is delivered through an opening. A fan at the top of the machine draws the dust from the wool through the screen cloth, and delivers it either into the open air or into a chamber enclosed with permeable jute cloth, where the dust is collected.

Open Work Fabrics.

It is possible to produce open work effects in fabrics by the process of carbonizing. The cloth is made of wool and cotton and the carbonizing process removes the cotton. By a suitable arrangement of the cotton open work fabrics can be produced in this way. These open work effects can, however, be made to much better advantage in other ways than by carbonizing. The production of these patterns by carbonizing serves as an interesting illustration of the carbonizing process in the class room. In practice, however, it is little more than a plaything.

Carbonizing Waste Silk.

Occasionally it is necessary to carbonize waste silk in order to remove the vegetable material. The principle is the same for both wool and silk and the operation is identical, except that care must be taken to use a somewhat weaker solution owing to the tender nature of the silk. The waste is first sorted according to quality and color, and all hard knots and bunches are removed so far as possible. It is then washed and immersed in a 3° or 4° Be. solution sulphuric acid at the temperature of the surrounding air. The silk is then taken out, hydro-extracted and dried in the air. It is then exposed for an hour to a temperature of 70° to 90° C.; it is not advisable to use a temperature above 90°, as there is danger of tendering the silk.

The silk is then treated in a heavy solution of soap, after which it is immersed in a weak soda solution of soda in order to neutralize all of the sulphuric acid, then taken out and dried. To improve the spinning quality of the silk it should be sprinkled with a solution made up as follows:

1½ per cent. magnesia powder

½ per cent. alum

2½ per cent. oleine.

It is then taken to the opener and afterwards delivered to the cards. It can be worked alone or mixed with cotton, and produces yarns that are suited for many woolen and knit fabrics as well as for insulating purposes.

IMPROVED MERCERIZING PROCESS.

An improvement in the process of mercerizing, recently patented by a Massachusetts man, is described by the inventor as follows:

This invention particularly relates to a method of mercerizing cotton or linen when interwoven with filaments of artificial silk known as viscose, while at the same time protecting such viscose filaments from deleterious attack by the caustic alkali. Viscose is a well-known plastic material obtained by special chemical treatment of cellulose. It is valuable for the production of artificial silk, not only because of the luster of its filaments, but also because it is not readily inflammable.

Woven fabrics in which viscose silk threads have been interwoven with cotton yarns mercerized before such weaving are attractive textile products, but they are relatively expensive by reason of the additional manipulation of the cotton yarns required for their mercerization. It is not feasible to produce such goods by interweaving unmercerized cotton yarns with viscose threads and afterward subjecting the woven fabric thus constituted to any mercerizing process or treatment heretofore practised or known. The caustic alkali solution customarily used for the mercerization of cotton or linen would seriously damage the associated viscose filaments and spoil the attractiveness of the composite fabric.

The caustic alkali may be prevented from injuring the viscose filaments while still retaining its efficiency for mercerizing the fibers of cotton yarn intermixed with those viscose filaments, by introducing into the solution of caustic alkali certain other chemical compounds, among which are such of the primary or monohydric alcohols as will remain intimately diffused throughout the mercerizing solution of caustic alkali after being incorporated therewith, and will not tend to separate out therefrom on standing at the low temperatures desirable for mercerization. The most available of these are ethyl alcohol and methyl alcohol, either or both of which may be mixed with the mercerizing solution of caustic alkali in suitable quantity.

Some of the monohydric alcohols which have a more complex molecular constitution may be substituted, but they have no advantage over methyl or ethyl alcohol.

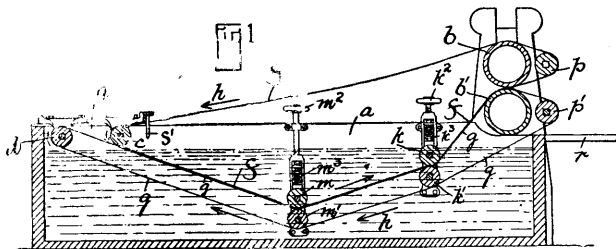
The condition of ethyl alcohol in the state known as denatured alcohol, which is relatively cheaper in the market than when not so adulterated, does not materially interfere with its effectiveness for this process. The improved method may be satisfactorily carried on with a mercerizing liquid made by the addition of such denatured alcohol in the proportion of 57 parts by weight to 943 parts of an aqueous solution of sodium hydrate at 60° Tw. This proportion is not

rigid; but if the ratio of the quantity of alcohol to that of the caustic alkali in solution at the hydrometric density stated is much less than the ratio just indicated the viscose silk will not be adequately protected; if such ratio is much greater the mercerizing efficiency of the caustic alkali thus modified will tend to become impaired.

Otherwise than such required modification of the mercerizing solution the treatment of the fabric into which both cotton and viscose have been interwoven is substantially the same as that customarily employed in the mercerization of woven fabrics composed entirely of cotton, including the usual means and mode of applying tension thereto for the prevention of shrinkage. It is desirable immediately after these mixed goods have been subjected to the mercerizing process under tension, to pass them through a weak acid bath before washing.

YARN SCOURING MACHINE.

The machine shown in the illustration has recently been patented in the United States by a resident of Bradford, Eng., and is designed for scouring yarn in hank form. The two series of guiding tapes *f* and *g* are conducted by guide rollers, so that the lower portion of the series *f* comes into contact with the upper portion of the series *g*, throughout their paths between the roller *b* and the roller *c*. The upper portion of the tapes *g* between the roller *c* and *d* is acces-



YARN SCOURING MACHINE.

sible to the operator, who is enabled to place his hanks of yarn as at *q* upon the upper parts of the tapes *g*. As these travel forward the hanks of yarn pass beneath the roller *c* and are carried between the tapes *f* and *g* down to the rollers *m*, *m'* forward between the rollers *k*, *k'* from which they travel forward to the rollers *b*, *b'*. They pass beyond these rollers and are delivered over the edge of the roller *p'* to fall on to the board *r*. The hanks of yarn are thus carried through the liquor in the bowl *a* in a sufficiently free state to permit the liquor to pass through the material, while the hanks are held from moving, preventing the yarn from becoming tangled.

The hanks travel between the series of tapes *f* and *g* through the tank *a*, and on reaching the pressing rollers *m*, *m'*, the liquor is partially squeezed out of them. After this squeezing operation fresh liquor is absorbed by the yarn when leaving the rollers *m*, *m'*, and the rollers *k*, *k'*. When finally leaving the bowl *a* and passing between the rollers *b*, *b'* where the final pressing or squeezing operation is carried out, the hanks are delivered beyond the roller *p'* comparatively free from moisture.

Another series of traveling tapes may be arranged to receive the hanks as they are passed over the roller *p'* so as to carry the hanks through an inclosed drying chamber.

ATLANTIC DYESTUFF CO.

Recent additions to the sales force of the Atlantic Dyestuff Company include Alexander Walker, son of R. J. Walker, district manager of the Atlantic Company's office in Charlotte; and Lloyd R. Leaver, son of B. T. Leaver, district manager of the Atlantic Company's Philadelphia office. Mr. Walker will spend several months studying the colors of the Atlantic Company in its New York laboratory, while Mr. Leaver becomes active immediately in the Philadelphia territory.

WORSTED COMBERS' PRICE LIST.

Owing to the increase in wages the prices for combing worsted top which went into effect in England on Sept. 1 are from 5/8d. to 3/4d. above the list published in our August issue, the new prices being as follows (1d. = 2 cents):

Merinoes:—

Tearing 5 to 1 and over	7 1/4 d. per lb.	
Tearing 4 and under 5 to 1	7 3/4 d.	"
Tearing 3 and under 4 to 1	8 1/4 d.	"
Tearing 2 and under 3 to 1	8 7/8 d.	"
Tearing under 2 to 1	9 1/2 d.	"
Burring	3/4 d.	" extra
Gilling-in	3/8 d.	" "
Dry Combing	1/2 d.	" "
Cape Wools	1/2 d.	" "

58's:—

Tearing 12 to 1 and over	6 3/4 d. per lb.	
Tearing 8 and under 12 to 1	7 d.	"
Tearing under 8 to 1, same as Merinoes		
Burring	3/4 d.	" extra
Gilling-in	3/8 d.	" "
Dry Combing	1/2 d.	" "

56's:—

Tearing 7 to 1 and over	5 1/2 d. per lb.	
Tearing 5 and under 7 to 1	5 3/4 d.	"
Tearing under 5 to 1	6 d.	"
Slips and Skin Wools	3/8 d.	" extra
Burring	1/2 d.	" "
Gilling-in	3/8 d.	" "
Dry Combing	1/4 d.	" "

48's and 50's:—

Tearing 7 to 1 and over	5 1/4 d. per lb.	
Tearing 5 and under 7 to 1	5 1/2 d.	"
Tearing under 5 to 1	5 3/4 d.	"
Slips and Skin Wools	3/8 d.	" extra
Burring	1/2 d.	" "
Gilling-in	3/8 d.	" "
Dry Combing	1/4 d.	" "

30's to 46's:—

Tearing 8 to 1 and over	4 3/4 d. per lb.	
Tearing 6 and under 8 to 1	5 d.	"
Tearing under 6 to 1	5 1/4 d.	"
Slips and Skin Wools	3/8 d.	" extra
Burring	1/2 d.	" "
Gilling-in	3/8 d.	" "
Dry Combing	1/4 d.	" "

Carding, Backwashing, and Gilling only .. 4 7/8 d. per lb.
Slips and Skin Wools .. 3/8 d. " extra

Preparing:—

32's, 36's, 40's	4 d. per lb.	
44's and 46's	4 1/8 d.	"
48's and 50's	4 1/4 d.	"
Slips and Skin Wools	3/8 d.	" extra
Burry and Seedy Wools	3/4 d.	" "
Gilling-in	3/8 d.	" "
Dry Combing	1/4 d.	" "

Scotch Wools .. 4 3/8 d. per lb.

The charges for carbonizing have also been advanced, the new price list, which went into effect on Sept. 1, being as follows:

Producing up to 15%	12 5/8 d.
" over 15% to 20% ..	11 1/8 d.
" " 20% to 25% ..	9 7/8 d.
" " 25% to 30% ..	8 7/8 d.
" " 30% to 35% ..	8 1/8 d.
" " 35% to 40% ..	7 7/8 d.
" " 40% to 45% ..	7 1/8 d.
" " 45% to 50% ..	6 7/8 d.
" " 50% to 55% ..	6 5/8 d.
" " 55% to 60% ..	6 3/8 d.
" " 60% to 65% ..	6 1/8 d.
" " 65% to 70% ..	5 7/8 d.
" " 70% to 75% ..	5 5/8 d.
" " 75% to 80% ..	5 1/2 d.
" " 80% to 85% ..	5 1/4 d.
" " 85% to 100% ..	5 1/4 d.

Atlantic Blue B Extra Conc.

A Standard Sulphur Color producing a deep rich shade of Navy, especially adapted for dyeing loose cotton, yarn, and warps, for gingham, chambrays, shirtings, denims, mixtures and specialties.

ATLANTIC BLUE B EXTRA CONC. is commercially fast, being destroyed only by chlorine or such agents as destroy the fibre.

ATLANTIC BLUE B EXTRA CONC. is regularly available in commercial quantity.

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THE RECORDING THERMOMETER IN TEXTILE MILLS.

(Continued from page 23)

there was a great variation of temperature in one of their storehouses where yarn was stored. This variation in temperature materially affected the yarn for subsequent manufacture. This was immediately rectified by heating uniformly that particular location. The record showed them that the temperature variation was a certain number of degrees and it also showed the time of the greatest variation and made plain the need for regulation. Without a recording device, a thermometer tells the operative what the temperature is only when it is examined, but with the recording device, it leaves a permanent record of the temperature from start to finish of the working time.

The recording thermometer is of great value in the dye house where it shows the temperature and the time consumed in the process of dyeing. These conditions can then be duplicated or modified as may be necessary. The dyer of a large concern dyeing woolen and worsted piece goods found by the use of a recording thermometer that temperature of the liquor on one side of a large dyeing machine was several degrees higher than on the other side of the machine, producing uneven shades. This was immediately rectified by the relocating the steam inlet pipes so that the distribution of steam was equalized. This in turn led to the adoption of temperature controllers to maintain uniform temperature in the process.

Another important use for recording thermometers is on dryers of all kinds. They can also be used to advantage on wool carbonizing and neutralizing dryers as well as on piece goods and yarn dryers for either cotton or wool fibers. Fibers should be dried at a moderate temperature and not baked. The recording thermometer tells whether the machine is drying or baking the goods.

In the wool scouring operation many mills are equipping each bowl with a recording thermometer, which gives a record of the time and temperature at which each lot of wool was run through the machine. An interesting feature of this record is that the time required to clean out the bowl is shown by the drop of the recording pen and its subsequent rise when the bowl is refilled and heated for use. The chart thus shows the manufacturer knows how long the machine is idle during working hours. The operative in some mills is required to note on the chart the cause of each stoppage.

Frequent tests with a recording thermometer on back washers will show whether attention is being paid to regulation of temperature on this important process. Excessively high or low temperature in wool scouring means imperfectly scoured wool and defective work in the subsequent processes.

In mills where each machine is equipped with a recording thermometer the attention that is being given to same by the operative may be tested by covering the face of the recording thermometer with paper and locking it on the machine. The record then shows whether the operative is on or off the job in regulating the temperature. A test of this sort usually leads to the introduction of thermostatic temperature controllers, giving absolutely uniformly controlled temperature. I have referred to only a few of the many uses of the recording thermometer in textile mills. Many other applications will occur to the reader, including both the power plant and the textile operations. In addition to the improvement in the quality of the work and in the production of the mill, there is the additional advantage of an important saving of steam that is wasted when temperature regulation is left to the hit or miss control by hand.

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The brightest Sulphur Blue on the market.

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For silk and cotton hosiery, dyeing both fibres the same.

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The textile industry is a great industry. Its annual output is valued at more than one billion dollars. But it is singularly dependent upon the dyestuff producer. Fabric without color is unthinkable.

The National Aniline and Chemical Company, Inc., recognizes this relation to the textile consumer. It is here to serve the textile industry. It is dependent upon that industry for encouragement and for existence. If it does not serve that industry adequately it will have no reason for existence.

The production of dyestuffs is a share in the work of a giant industry.

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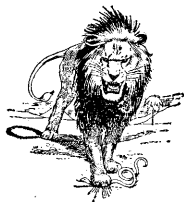
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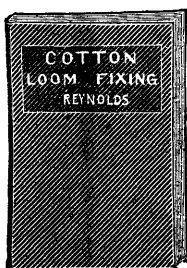
In hoc signo vincimus

DYE EXCHANGE CORPORATION

Clearing House for Colors

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Attention of Overseers of Weaving



WE have recently published a book on loom fixing, which we are quite confident will interest you. It is Cotton Loom Fixing, by John Reynolds, who is in charge of designing and weaving in one of the leading cotton mills of New Bedford, and instructor at the New Bedford Textile School.

Published by "TEXTILES"

79 Milk Street, Boston, Mass.

WRITE FOR PARTICULARS

NEW PUBLICATIONS:

Commercial Policy in War Time and After; by William S. Culbertson, member of the U. S. Tariff Commission; 461 pages 5x8; D. Appleton & Co.; price \$2.50.

The purpose of this work is to deal, not with the many problems which, though of great importance, are of a temporary character, but to confine his attention to the changes brought about by the war that are likely to prove permanent in industry and trade. Mr. Culbertson, who was connected with the Tariff Board during the Taft administration, and is now a member of the Tariff Commission, has had excellent facilities for acquiring the information needed for dealing with such a subject as commercial policy. The position he takes on many points, however, will meet with sharp disagreement. His appeal for a league of nations is one of these points and indicates that, in confining his attention to remote problems of commercial policy, the author has allowed himself to wander into fields foreign to his subject. Doubtless Mr. Culbertson sincerely believes in a league of nations, but his appeal would have more force if it were not made by an appointee of the chief exponent of the league scheme and in a work on commercial policy in war time and after. There is a dogmatic chapter on foreign trade in which Mr. Culbertson disposes of the objections to foreign trade by referring to them as coming from men who mean well, but have a slight knowledge of world affairs. He then proceeds to beg the question by extolling foreign trade when "properly conducted," whereas the point at issue is the trade that is improperly conducted. Apparently Mr. Culbertson, when writing this book, was either wholly oblivious to the effect of unrestricted foreign trade in raising the cost of living or looked upon it as a temporary problem.

The Silk Industry and Trade; by Ratan C. Rawley, M.A., M.Sc.; 165 pages 5¼x8¼; P. S. King & Son, London, England. Price \$3.75.

This book gives the result of an extended investigation by the author to determine the possibility of utilizing Kashmir and Indian raw silk in the British and French silk industry. He has gone into the subject in great detail, covering not only the organization of the British and French trade and the character of the Kaschmir and Indian raw silk, but also dealing with the silk trade of all countries in order to show the conditions of world competition. The contents of the volume are arranged under the following heads: Present position of the British silk industry; raw material for silk manufacturers; raw silk; uses of raw silk in different trades; waste silk; suggestions of degumming of waste in India; tasar waste; the eri and muga silks; the French silk industry; utility of Indian raws in France; utilization of silk wastes in France; wild silks: possibility of their consumption in France; sale of cocoons in France; organization in a filature at Marseilles; Lyons conditioning house; prices; consumption; commercial organization; and historical sketch.

Foot-Power Loom Weaving; by Edward F. Worst; 208 pages 7½x10; The Bruce Publishing Co., Milwaukee, Wis.; price \$3.50.

While power weaving and the factory system, which has supplanted the hand-loom weaving in the household, marked a great advance in the economy of labor, it also had the disadvantage of depriving the people of that familiarity with the construction of cloth, which prevailed under the old system. Much is being accomplished in overcoming this loss by instruction in the public schools. The author of this work, who is supervisor of elementary manual training and construction work, has produced a very useful handbook for foot-power weavers. It is freely illustrated and written in a very clear style, the subject being treated under the following heads: Warping and threading; pattern weaving; colonial patterns; Danish and Norwegian weaving; Swedish weaving; damask weave; textiles and wood; design and construction of looms; dyes and dyeing.

Stubbs Buyers Directory; 388 pages 6x9; Alfred Stubbs, 100 William St., New York; price \$5.00.

This is a classified list of dealers of drugs, chemicals, essential oils, gums, pharmaceutical and proprietary specialties and laboratory machinery. The products are arranged alphabetically, and under each are listed the names and addresses of the respective manufacturers or dealers, making it easy to refer to any firm or product.

FACTS ABOUT *—INDIGO—*

American Textile Mills are free from dependence upon foreign made indigo. We are permanently established as large factors in this industry.

After the outbreak of the War The Dow Chemical Company was the first American manufacturer to produce Synthetic Indigo on a Commercial scale.

Three years have elapsed since that time in which we have gradually and economically increased our daily output. Dow Synthetic Indigo and Midland Vat Blues have proven themselves entirely satisfactory with many of the largest mills in the United States.

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MIDLAND, MICHIGAN



FAST VAT DYES

MADE BY
THE SOCIETY OF CHEMICAL INDUSTRY IN BASLE, SWITZERLAND

Sold in America during the whole period of the war by

A. KLIPSTEIN & COMPANY, New York

and obtainable now in rapidly increasing quantities

THESE DYES ARE FASTER THAN INDIGO

They are sold under the trade name of

"CIBA" and "CIBANON" DYES

and include every necessary shade of color — for example — "CIBA" Blue, Violet, Yellow, Red, Scarlet and Bordeaux
"CIBANON" Green, Yellow, Orange

The Textile Trade of America need not suffer for the lack of

FAST VAT DYES

Quotations and samples on application

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Special Product for Bleacheries.

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FAST GREEN PASTE

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MONOPOLE OIL

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PROVIDENCE DYE WORKS

PROVIDENCE, RHODE ISLAND

*Dyers of Cotton Yarn
in skeins*

Yarns Wound
on Cones and
Tubes

Our Customers
Recommend Us to
Their Friends



SILK.

John R. Brown & Sons, of Hawley, Pa., have leased a new building, where they will operate a 40-loom broad silk plant.

The Hess-Goldsmith Company of Wilkes-Barre, Pa., will in the near future erect a large silk mill.

Kahn & Feldman, silk yarn spinners, Brooklyn, N. Y., have had plans prepared for the erection of a five-story building.

A seven-story building is to be erected for the Lehigh Silk Hosiery Co., of Long Island City, N. Y.

The Oscar Keinsman Co., of Kincaid, Ill., have awarded a contract for the erection of a one-story silk mill.

The Ruth Knitting Mills, Brooklyn, N. Y., a newly organized concern, will manufacture silk sweaters and knit novelties.

The Penn Silk Throwing Company, recently organized at So. Wilkes-Barre, Pa., will have a plant equipped with 8,000 spindles.

Leonard S. Orcurto, of Allentown, Pa., has completed plans for the erection of a four-story and basement silk mill to be located at South Allentown, Pa.

The American Viscose Co., manufacturers of artificial silk, have awarded a contract for the erection of a three-story dining-hall building.

The Beltramo Piece Dyeing & Finishing Co., of Paterson, N. J., have begun the erection of an addition to their silk mill.

The Kolts Throwing Co., of New York, has awarded a contract for the erection of a new building at Keyser, W. Va., their mill there recently being burned.

The Al Shabe Silk Co., Inc., of Paterson, N. J., manufacturers of georgette crepes, have begun production with forty spindles and thirty looms.

The Majestic Silk Mill Corporation, of Allentown, Pa., have completed arrangements for the erection of a one-story building.

John R. Brown & Sons, of Hawley, Pa., have leased a building where they will operate a 40-loom broad silk plant. Work will begin early in October.

The Oscar Keinsman Co., Chicago, Ill., has awarded a contract for the erection of a new one-story silk mill at Kincaid.

The Beltramo Piece Dyeing & Finishing Co., of Paterson, N. J., are erecting an addition.

The Richmond Hosiery Mills, of Rossville, Ga., are erecting a mill 50 x 100 feet at Graysville, Tenn., for making hosiery.

BLEACHERS!

Better bleaching is wanted by the Public, by the Selling Agent and therefore, by the Mill.

It costs nothing to get the dope from us about Peroxide bleaching.

Inform yourself. See how simple and safe it is and that it does not cost any more.

After that: Show it to the boss.

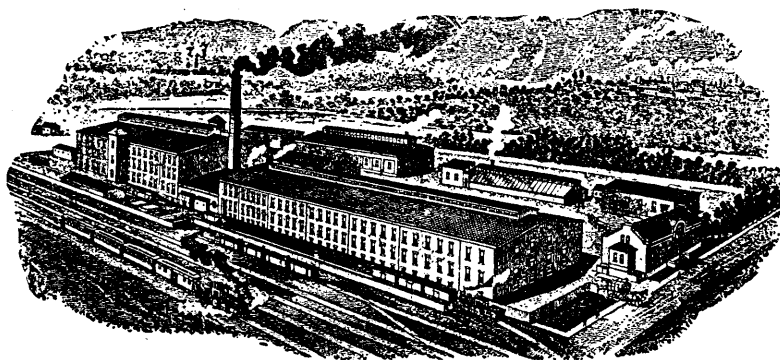
He'll be glad and he'll prove it.

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WHITE NATURAL AND FANCY MIXES IN SINGLE AND PLY FOR KNITTING AND WEAVING
Mill and Office
WEST CONSHOHOCKEN, PA.

SPUN SILK YARNS

MADE ESPECIALLY FOR KNITTING AND HOSIERY

In the Grey or Dyed on Cones as Wanted.

American Silk Spinning Co., Providence, R. I.

WE ARE OFFERING AN

ARTIFICIAL SILK YARN

ADAPTED TO THE KNIT GOODS TRADE

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SAMPLES AND QUOTATIONS ON APPLICATION

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PURE WATER Takes Less Time and Cleanser

In dyeing, bleaching and finishing pure water is an absolute necessity to secure a clear white or any of the delicate shades so popular today.

Less time and less cleanser are required in washing with water filtered with

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These claims are proved by the many installations we have made in textile mills. The largest ever installed in a textile mill—that at the Pacific Mills, Lawrence, Mass., is a NORWOOD.

Tell us your requirements and we will give you the cost of a NORWOOD FILTER exactly suited to your needs. Do it TODAY.

NORWOOD ENGINEERING CO.
FLORENCE, MASS.

COTTON GOODS TRADE IN CHINA.

A higher tariff went into effect in China on Aug. 1, in anticipation of which imports of cotton goods showed a marked increase. In reporting this to the State Department Consul-General Geo. E. Anderson, at Hong Kong, makes the following interesting observation on the effect of food prices on the Chinese demand for cotton goods:

"Incidentally the high price of rice and threatened famine in that line profoundly affects the piece goods and yarn trade, the additional cost of food taking money which normally would be spent for clothing. A continuance of the high cost of food is inevitable,—at least until new crop of rice on next year's account can come into the markets in material quantities,—and this food shortage will be reflected in the piece goods trade, in the cotton yarn trade, and in the trade in all other lines of staples."

MR. PARDEE'S CHANGE.

A. L. Pardee, purchasing agent of the B. F. Goodrich Co., at Akron, O., has resigned to engage in business as a manufacturers' representative. He is to be western representative of the Brighton Mills, Passaic, N. J., tire fabric manufacturers and probably of other textile mills catering to the rubber industry. His headquarters will be at 512-13 Ohio Bldg., Akron.

WITH S. R. DAVID & CO.

S. R. David & Co., Inc., of 100 Purchase St., Boston, have opened a branch office at 944 Chapel St., New Haven, Conn., with Mr. George H. Ashton as manager. Mr. Ashton was for many years superintendent of dyeing at the Hockanum Mills. He assumed charge of S. R. David & Co.'s New Haven office Nov. 1.

AMERICAN ANILINE PRODUCTS.

American Aniline Products, Inc., New York, has purchased the business of the Federal Dyestuffs Co., of Kingsport, Tenn., also that of G. Siegle Co., Staten Island, N. Y.

COREY LATCH NEEDLES

Best workmanship, perfect design, great strength and durability, high grade steel, and permanent smoothness characterize the COREY LATCH NEEDLE.

Made in a model factory, by employees of long experience and great skill, under the best factory conditions, it is no empty boast that the COREY is the best needle made. Our factory is the largest individually owned needle factory in America, and our line is unrivalled.

COREY and quality are synonymous when applied to needles.

Send for Samples and Prices

William Corey Company

Chauncey A. Williams, Proprietor

Manchester, N. H.

A GERMAN PROCESS FOR BOILING-OFF SILK.

An improved process of boiling-off silk in a weak alkali solution under pressure has been patented by Friedr. Bayer & Company, Leverkusen, Germany. The patent specification states that silk is usually boiled off in weak alkaline baths, the process requiring a large amount of soap about 30 to 35 per cent. of the weight of the silk. The patentees claim that raw silk can be degummed successfully without using this quantity of soap by treating it under pressure with water that contains a trace of alkali, such as ammonia, soda, phosphate of soda, borax, etc. It is claimed that the process enables silk to be degummed more thoroughly and with less disarrangement of the silk in the skeins, the lustre being equal to that obtained by the usual process. The raw silk is treated for one-half hour with distilled water, containing ¼ per cent. of soda under a pressure of 15 pounds.

BADISCHE DIVIDENDS.

The annual report of the Badische Anilin und Sodafabrik at Ludwigshafen, according to the Algemeen Handelsblad, shows a gross profit of 67,600,000 marks for 1918, in comparison with 58,200,000 marks for the preceding year. General expenses rose from 7,900,000 marks to 15,300,000 marks. The amounts written off for depreciation and reserves were increased from 21,200,000 marks to 40,600,000 marks—*Commerce Reports.*

TEXTILE GOODS

Hamburg firm of commission agents having a large selling organization throughout the whole of Germany wishes to represent first-class manufacturers.

H. SIEWERTSEN, Hamburg, 36, Gr. Bleichen, 23

Starches=Gums=Dextrines

Specialties for the Textile Trade

QUALITY—SERVICE—UNIFORMITY



This mark will assure you of the same high quality of materials, the same Service and the same Uniformity in deliveries with which we have supplied our customers during the past sixty-nine years.

Our Service Department

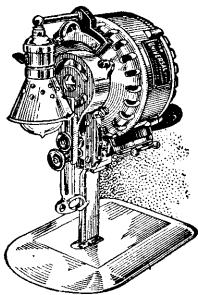
As a means of rendering a still greater service to our customers we have established a service department for the purpose of furnishing definite and accurate advice in connection with use and application of any of our products. This department is unusual and distinctive in that it is in charge of a well-known textile chemical expert, who has had a wide experience in the textile finishing field. This service is at your disposal.

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HEDDLES

SHUTTLES FOR ALL KINDS OF LOOMS

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Carder and Spinner. Twenty-four years' experience. Age 50. Married. Address Box 279, TEXTILES, 79 Milk St., Boston, Mass.

Overseer of Mule Spinning. 10 years' experience. Wool or cotton waste. Age 33. Married. Address Box 253, TEXTILES, 79 Milk St., Boston, Mass.

Cotton Spinning Overseer. Eight years' experience. Hosiery and warp yarn. Age 30. Married. Address Box 208, TEXTILES, 79 Milk St., Boston, Mass.

Foreman of Knitting Mill. 10 years' experience. 220 needle work. Married. Address Box 260, TEXTILES, 79 Milk St., Boston, Mass.

Overseer of Woolen Carding. 8 years' experience. Cotton or wool. Age 20. Single. Address Box 266, TEXTILES, 79 Milk St., Boston, Mass.

Cotton Carding or Spinning Overseer. Nine years' experience. Combed and carded yarns. Age 30. Married. Address Box 207, TEXTILES, 79 Milk St., Boston, Mass.

Carder. 35 years' experience in carding and spinning. Age 50. Married. Address Box 268, TEXTILES, 79 Milk St., Boston, Mass.

Superintendent of Cotton Mill. Twenty-four years' experience. Ducks, drills, sheeting. Age 36. Married. Address 281, TEXTILES, 79 Milk St., Boston, Mass.

Overseer of Carding. Twelve years' experience. Sheeting, duck and drills. Age 36. Married. Address Box 283, TEXTILES, 79 Milk St., Boston, Mass.

Superintendent of Cotton Mill. 30 years' experience in mill work. Ducking, colored, dobble or Jacquard. Age 50. Married. Address Box 265, TEXTILES, 79 Milk St., Boston, Mass.

Cotton Mill Superintendent. 20 years' experience. Sheeting, drills and duck. Married. Age 45. Address Box 286, TEXTILES, 79 Milk St., Boston, Mass.

Carder and Spinner. 30 years' experience. Age 42. Married. Address Box 287, TEXTILES, 79 Milk St., Boston, Mass.

Carder. 10 years' experience. Plain cotton goods. Age 32. Married. Address Box 288, TEXTILES, 78 Milk St., Boston, Mass.

Overseer of Carding and Spinning or Superintendent of Yarn Mill. 14 years' experience as overseer of carding and spinning, warping and winding, twisting and spooling. Warping and filling soft and hard yarns, long and short staple. Age 39. Married. Address Box 272, TEXTILES, 79 Milk St., Boston, Mass.

Superintendent or Dyer on All Kinds of Cotton Dyes. 35 years' experience. Age 45. Married. Address Box 270, TEXTILES, 79 Milk St., Boston, Mass.

Cotton Mill Superintendent. 30 years' experience. Cotton, Drills, Sheeting and Sateen. Age 42. Married. Address Box 230, TEXTILES, 79 Milk St., Boston, Mass.

Cotton Spinning Overseer. Eight years' experience as grinder and second hand, 4 years as overseer. White and colored from 8s to 60s. Age 37. Married. Address Box 205, TEXTILES, 79 Milk St., Boston, Mass.

Cotton Carder. Fourteen years' experience. White and colored yarns up to 40s. Age 39. Married. Address Box 212, TEXTILES, 79 Milk St., Boston, Mass.

Overseer of Carding. Four years' experience. Gingham. Age 35. Married. Address Box 210, TEXTILES, 79 Milk St., Boston, Mass.

OVERSEER OF DYEING

WANTED, in the near future, overseer of dyeing for large concern. Must have good executive ability and a thorough knowledge of dyeing and bleaching cotton skeins. Liberal salary to the right man. Address W. G., care of TEXTILES, 79 Milk St., Boston, Mass.

PRACTICAL MAN

Exceptional opportunity for one with practical experience in the manufacture of Sulphonated Oils for Textile and Tanners use, Textile Soaps, Finishing Materials, etc. Write, giving full particulars. Correspondence strictly confidential.—Address Box 529, care of TEXTILES, Boston, Mass.

SITUATIONS WANTED

Cotton Yarn Mill Overseer. Thirty years' experience. Two, three and four-ply yarns (30s to 90s). Age 50. Married. Address Box 214, TEXTILES, 79 Milk St., Boston, Mass.

Cotton Mill Superintendent. 20 years' experience. White and colored gingham and denims. Age 42. Married. Address Box 203, TEXTILES, 79 Milk St., Boston, Mass.

Woolen Mill Superintendent. 35 years' experience on all grades of woollens, 3 quarter and 6 quarter. Cassimere melton uniform goods. Age 50. Married. Address Box 227, TEXTILES, 79 Milk St., Boston, Mass.

CLIFT & GOODRICH

Established 1891

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Sales Agent

KNIT UNDERWEAR—SWEATER COATS

WE are exclusive selling agents for FIFTY-TWO MILLS producing all grades of underwear in all weights and in all fabrics for all climates in every part of the world.

Our lines consist of—

Flat and ribbed wool and flat and ribbed cotton underwear in shirts, drawers, vests, pants and union suits for men, women and children.

There is no requirement in popular priced underwear that we cannot supply to the wholesale and export trade.

Our line of popular priced Sweater Coats is also complete for all demands.

KNIT UNDERWEAR—SWEATER COATS

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Incorporated 1890

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Of every description for all branches of
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Special shades matched

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Over 2,500 in Successful Operation in Pro-
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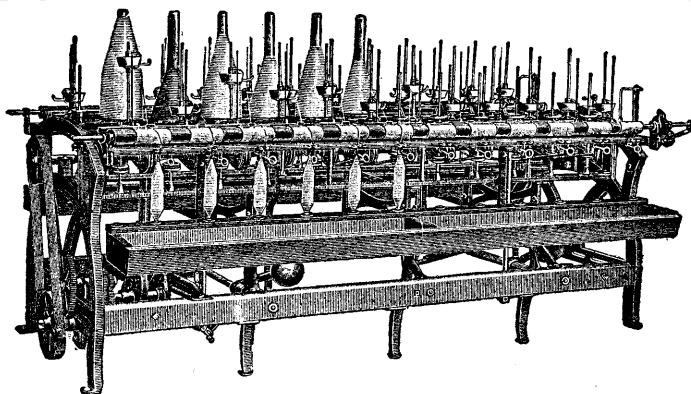
IMPROVED UPRIGHT SPOOLERS

To Spool from Cop, Skein or Bobbin. Doubling
Spoolers for doubling 2, 3 or more ends into one.
Upright Quillers, Quill from Cop, Skein or Bob-
bin.

Ring Dresser, Spooler and Reel Spindles. Cop
Skewers, Warp, Spool, Spooler Guides, Bolster, and
Stops Made and Repaired at Short Notice.

GEO. W. PAYNE CO. 102 BROAD STREET
PAWTUCKET, R. I.

Established 1805—Incorporated 1903.



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ESTABLISHED 1880

Manufacturers of Textile and Mining Machinery

Revolving Cylinder Raw Stock Dyeing and Bleaching Machines
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 Cotton Warp on Beams, 1 to 12 Beams in One Operation

SPECIAL MACHINES FOR ANILINE, SULPHUR, INDIGO, AND OTHER VAT COLORS**OFFICE AND WORKS, PITTSBURGH, PA., U. S. A.****WILDT & CO., Limited,****The Boulevard, Leicester, England****KNITTING MACHINE BUILDERS AND EXPORTERS***Please write for catalogues*

We are also open to negotiate for the import of American
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The New Bedford Textile School is now a cotton textile institute of the Commonwealth of Massachusetts. It is located in New Bedford, Mass., an attractive residential city situated on Buzzards Bay, and the largest producer of fine yarns and fancy woven fabrics in this country.

Diplomas are granted for completion of three years' study and practice in any one of the following courses: Cotton Manufacturing, Textile Designing, Carding and Spinning, Textile Chemistry (Dyeing and Finishing), Seamless Hosiery Knitting, and Latch Needle Underwear Knitting. Mechanical drawing, machine shop practice, steam, electrical and textile engineering given in connection with the above courses. Special shorter courses may be arranged for.

Tuition free to residents of Massachusetts

Illustrated catalogue supplied free on application.

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Four-year degree courses in

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Degrees of B. T. C. (Bachelor of Textile Chemistry) and B. T. E. (Bachelor of Textile Engineering) offered for completion of prescribed four-year courses.

Three-year diploma courses in

COTTON MANUFACTURING**WOOL MANUFACTURING****TEXTILE DESIGNING**

Scientific and practical training in all processes of textile manufacture, including all commercial fibres.

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 HARRIS CORLISS ENGINE PLANT " " 1857

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MILL NOTES.

The Holmes Manufacturing Co., of New Bedford, Mass., are planning for the erection of a large one-story structure to be used as a transformer house.

The Rhode Island Textile Company, of Pawtucket, R. I., are planning to enlarge their plant. A brick structure two stories high will be erected.

The J. W. Wood Co., Brockton, Mass., are adding another story to the elastic webbing plant at the corner of Rose and School Streets.

The Woonsocket (R. I.) Fall Mills Co., have awarded a contract for a one-story dyehouse addition.

The Belle Vue Manufacturing Co., manufacturers of sheeting, yarns, etc., Hillsboro, N. C., have just completed arrangements for the construction of a one-story mill.

The Pomona Mills, Inc., of Greensboro, N. C., will in the near future erect an addition to their plant for dye house and finishing rooms.

Odonisia Mills, of Germantown, Pa., have awarded a contract for the erection of an additional dyehouse to their plant.

The Bridgeport (Conn.) Coach Lace Co., have awarded a contract for the erection of an addition to their plant on Wood avenue.

The Ernardson Manufacturing Co., St. Paul's, N. C., will erect a mill, in which they will install 5,000 spindles for making 18s to 24s in high grade carded frame-spun yarn.

The Thorndike (Mass.) Co., manufacturers of sheetings, have awarded a contract for the erection of a six-story addition to their plant.

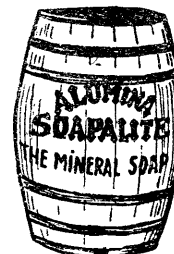
The Rabell Manufacturing Co., of Selma, Ala., will install two thousand additional spindles with other machinery.

"Crest" Flaked Soap

88% or more real soap
 12% or less moisture

WOODLEY SOAP MFG. CO.

29-49 Norfolk Ave., Boston, Mass.

SAVES SOAP

SAMPLE FREE

**The Electric Smelting
 & Aluminum Co.
 LOCKPORT, N. Y.**

KNITTING.

The Moorehead Knitting Co., of Harrisburg, Pa., are erecting additions to their plant.

Work has been started on a factory building for the Jantzen Knitting Mills, Portland, Oregon.

The Durham (N. C.) Hosiery Mills will erect an additional factory, which will be equipped with machinery for knitting silk hosiery.

William N. Cronnan, formerly of Woonsocket, R. I., has accepted the position of overseer of knitting for the Suffolk Knitting Mills, East Boston, Mass.

Operations have been resumed at the Calton Manufacturing Co., Spartanburg, S. C., after an idleness of several months. A high-grade, 220-needle mercerized stocking for women is being manufactured. The company will have a daily production of 250 dozen pairs.

The Zwicker Knitting Mills of Appleton, Wis., have moved to larger quarters. In the new plant fifteen additional knitting machines have been installed. This company manufactures men's, women's and children's knit gloves and mittens.

The Portage Underwear Co., of Portage, Wis., have purchased the Hyland Building and after remodeling same will install knitting machinery.

The Howard Mills, of Hagerstown, Md., have recently been organized. They will establish a mill with daily capacity of 125 pairs of high-grade half-hose.

W. F. Hetrick, of Gainesville, Ga., and associates have organized the Marietta (Ga.) Manufacturing Co., to establish a plant with daily capacity of 300 to 400 dozen women's hose.

The Broadalbin (N. C.) Knitting Co., have completed improvements to their plant which has been in progress for several weeks. Several new machines have been installed.

The Swansdown Knitting Co., of Hudson, N. Y., has completed plans for the erection of a dyehouse addition to their plant.

The Des Moines (Ia.) Hosiery Mills, have begun the erection of a two-story addition to their mill.

The Rockland Hosiery Mills, of Philadelphia, Pa., have awarded contract for the erection of a one-story structure.

The Wayne Knitting Mills, of Fort Wayne, Ind., are establishing a branch plant for the convenience of their operatives who live in that section and to take care of increasing demands.

PERSONALS.

J. F. Briggs, formerly superintendent of the Hermitage Mills, of Camden, S. C., has accepted the position of overseer of carding with Mill No. 2, Lancaster, S. C.

J. F. Alexander, formerly of McColl, S. C., has been appointed superintendent of the Dresden Mills, Lumberton, N. C.

SCREW MACHINE PRODUCTS

for Textile Mills and allied industries. We make special shaped turnings in steel or brass. Send samples or blue prints for quotations. Please state quantities ordered.

SHAMBOW SHUTTLE COMPANY, Woonsocket, R. I.

N. V. Sanders, formerly of Gaffney, S. C., has taken the position of superintendent of the Hermitage Mills, Camden, S. C.

C. H. Hammond, formerly of Fort Mills, S. C., has accepted the position of overseer of carding at Mill No. 3, Lancaster, S. C.

S. A. Lovelace, formerly overseer of weaving at the Pomona Mills, Greensboro, N. C., has been appointed superintendent of the Tyre Cord & Fabric Company, Columbus, Ohio.

R. G. Adams, formerly of Crawford, Ga., has accepted the position of overseer of weaving with the Couch Mfg. Co., East Point, Ga.

L. E. Anderson, formerly of Highland Park Mills, No. 1, Charlotte, N. C., has been appointed superintendent of Mill No. 3, Highland Park.

B. L. Still has been promoted from overseer of carding to superintendent of mills No. 1 and 3 of the Lancaster (S. C.) Cotton Mills.

J. H. Knight has returned to his former position as overseer of weaving at the Hermitage Mills, Camden, S. C.

B. D. Gaddy, formerly of Hickory, N. C., has been appointed superintendent of the Golden Belt Mfg. Co., Durham, N. C.

WOOLEN AND WORSTED.

The Selden Worsted Mill, of Lawrence, Mass., has purchased three acres of land in Methuen, where a three-story building will be erected.

The United Woolen Mills Co., of Baltimore, Md., will make extensive alterations and improvements in their plant.

It is announced that the old Anchor forge plant, of Kingston, Mass., has been sold and will be used as a woolen mill.

The name of the C. & C. Rubber Company has been changed to the C. & C. Woolen Mills at Stoughton, Mass.

The Folwell Bro. & Co., Inc., manufacturers of worsted goods, Philadelphia, Pa., are planning to erect a five-story addition to their plant.

The Garfield (N. J.) Worsted Mills are planning to establish Americanization classes for the benefit of their employees. It is said that this company is ready to spend \$20,000 for instructors, books, supplies and maintenance.

The Mayo Woolen Co., of Millbury, Mass., will in the near future erect an addition to their plant. The equipment will be increased considerably.

Oscar P. Brouin has prepared plans for a frame storehouse, to be erected by the Woonsocket (R. I.) Worsted Mills on River street.

A Client Should Know

"Your cost system should prove of great value to any textile mill officer who is engaged in selling the product of his mill."
—A Client.

A copy of "Where Profits Go in Textile Plants" will be mailed free upon request. Write for it today.

RALPH E. LOPER
FALL RIVER, MASS.

Textile Production Engineer
Specialist in Textile Cost Methods

Enterprising, energetic, young and progressive firm is open to accept Agency for England for American-built Hosiery Machinery. Advertisers possess practical knowledge of machinery, with capabilities of demonstration, and are in direct contact with all the leading hosiery manufacturers in Great Britain. Undeniable references. Address

HARRY COLLINS (Leicester), Ltd.,
Hosiery Knitting Machinists,
16 Millstone Lane, LEICESTER, ENG.

FOR SALE

- 5 D. & F. 240 spindle mules 1 7/8" gauge, 9 1/2" above collar board, first-class condition.
- 2 J. & B. 300 spdle mules 1 7/8" gauge, 9" above collar board, good condition.
- 10 looms 92 to 117".
- 1 D. & F. 36" mixing picker, 4 feed rolls.
- 4—48" Bramwell feeds.
- 4—48" S. & F. metallic breasts.
- 1—5 bowl wool scouring machine.

JOHN J. HEALY, Newtonville, Mass.

WANTED

Odd lots of bleached Yarn on cones from 18s to 28 single.

LOUIS DEUTSCH
177 E. 87th Street, N. Y.

WANTED

HALF HOSE IN THE GRAY OR DYED AND BOXED, CASH TERMS. ADDRESS BOX 528, TEXTILES, 79 MILK ST., BOSTON, MASS.

J. K. LAMB TEXTILE MACHINERY CO.

SECOND-HAND TEXTILE MACHINERY

For cotton, woolen and worsted
246 Chestnut St. Philadelphia, Pa.

WANTED

Weavers and Spinners on
Fancy Woolens
CROWN MILLS
Marcellus, New York

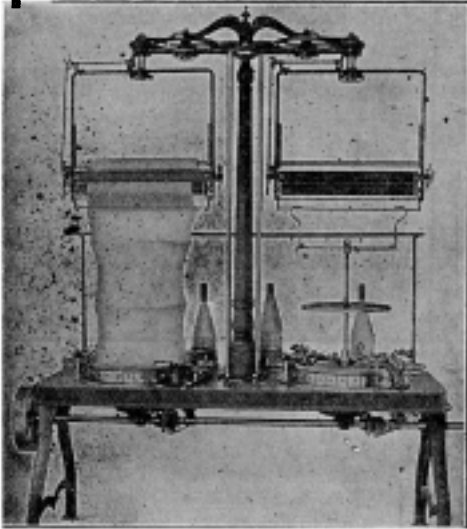
ESTABLISHED 1870
INCORPORATED 1890

CODE ABC
5TH EDITION

CRANE

SPRING AND LATCH NEEDLE KNITTING MACHINES

Will Enable Any User To Improve His Business



Improved Spring Needle Underwear Machine

Spring Needle Underwear Machine

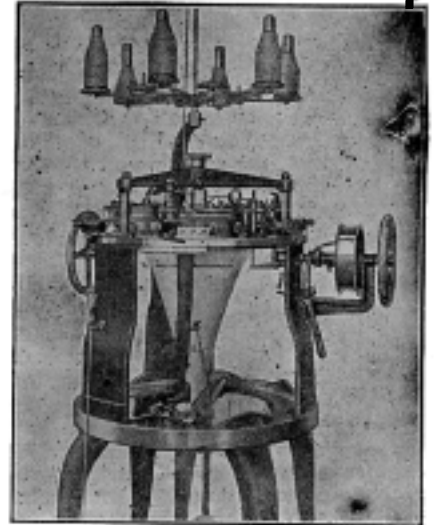
A splendid machine for balbriggan underwear, stockingettes, eiderdowns and all kinds of fleeced fabrics.

Made in large variety of sizes with automatic take-up, etc.

New Spring Needle Rib Machine

Has new style feed, stop motion and take-up features.

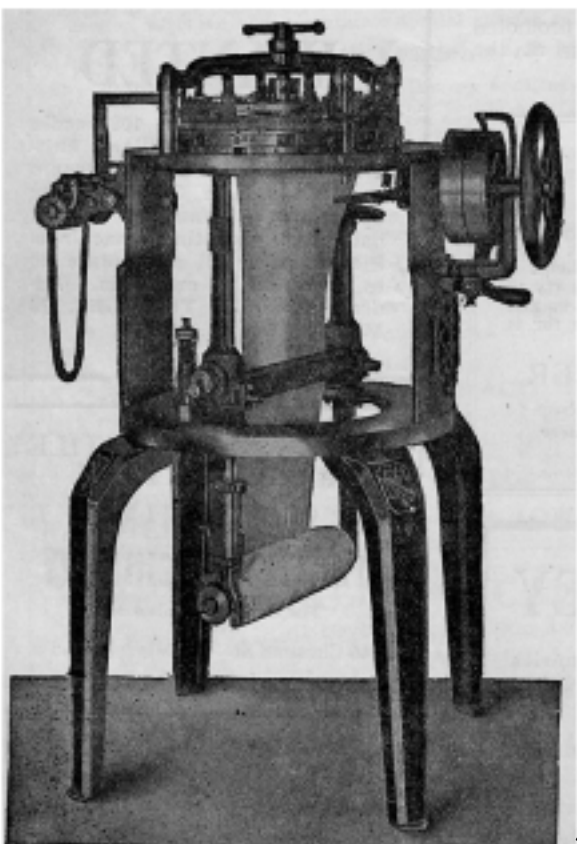
Especially made to produce high grade ribbed underwear. Will make finest fabric on the market. An ideal machine with all parts handy to get at.



New Spring Needle Rib Machine

Our late models challenge comparison. Write for further information.

CRANE MANUFACTURING CO. : LAKEPORT, N. H.



Circular Rib Knitting Machinery

For making Ribbed Underwear, Combination Suits, Cuffs, Shirt Borders, Ribbed Hosiery, Fancy Knit Goods, Etc.

CORRECT Construction, Excellence and Durability—Quality of Fabric and Production Unexcelled—Latest Improvements.

NYE & TREDICK COMPANY

718-720 Cherry Street

PHILADELPHIA - - - PA.

RECENT TEXTILE PATENTS.

Fabric-forming apparatus. 1,309,424. F. A. Seiberling, Akron, Ohio.
 Humidification, Effecting. 1,307,875. L. H. Parker, Boston, Mass.
 Knitting machine, French-welt. 1,307,907. W. Larkin, Philadelphia, Pa.
 Knitting machines, Take-up for circular. 1,307,358. H. E. Houseman, Philadelphia, Pa.
 Knitting device. 1,309,318. J. Cuomo, New York, N. Y.
 Knitting machine. 1,309,124. W. Fisher, New Richmond, Ohio.
 Knitting machine. 1,309,288. W. A. Ingalls, Troy, N. Y.
 Knitting machines, Facilitating mechanical transfer of stitches from the needles of. 1,308,828. L. N. D. Williams, Ogontz, Pa.
 Knitting machines, Dial-holding device for. 1,311,099. H. Swinglehurst, Laconia, N. H.
 Knitting-machines. Needle-cam structure for. 1,311,093. R. W. Scott, Boston, Mass.
 Loom, Automatic filling-replenishing. 1,310,793. W. A. Dempsey, Scranton, Pa.

Looms, Picker-stick check for. 1,311,053. A. E. Darlington, Columbia, S. C.
 Loom-seat. 1,310,671. A. E. Rhoades, Hopedale, Mass.
 Loom, Automatic. 1,309,570. J. Grandmaison, Brunswick, Me.
 Looms, Feeler mechanism for. 1,309,226. E. S. Stimpson, Hopedale, Mass.

NORTH CAROLINA TEXTILE SCHOOL.

The United States Government is making use of this school by sending men who have been discharged from the Army, and there is a larger attendance than in any previous year. There are at present ten of the rehabilitation men taking special work in textiles; 11 seniors, 24 juniors, 31 sophomores, 74 freshmen, 8 short course and 10 rehabilitation.

The total number at present registered is 158, these being divided in classes as above.

Of this number, 140 students are taking the full four-year course.

WOOLEN AND WORSTED.

The Grant S. Kelley Woolen Mills, of Monson, Mass., have leased a building and will install additional machinery.

George E. Kunhardt, manufacturers of men's wear, woolen and worsted fabrics, of Lawrence, Mass., is planning to erect an addition to their mill. It will be a one-story building to be used as a dye house.

The Barnai Worsted Co., of Woonsocket, R. I. will in the near future erect an addition to their plant, having increased their capital stock from \$200,000 to \$300,000.

The Merrimac Mills, of Methuen, Mass., have purchased a building in Lawrence and will equip it with machinery for the production of worsted goods.

The Hosey Worsted Co., of Norristown, Pa., have placed an order for 4,000 additional spindles.

The Troy (N. H.) Blanket Mills are planning to erect an addition to their plant. This new addition will include a four-story main mill, a two-story picker house and a one-story boiler house.

W. F. Read & Sons Co., manufacturers of worsted goods, Philadelphia, Pa., have awarded a contract for additions to their plant.

The Monohassett Woolen Mills, of Providence, R. I., are equipping three additional floors with machinery.

The Norwich (Conn.) Woolen Co. have just completed an addition to their plant, which will be used as a finishing mill.

COTTON.

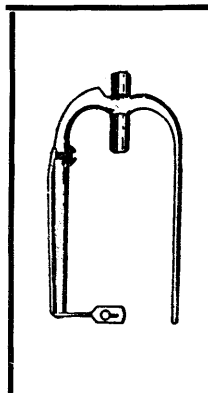
The Red Springs (N. C.) Cotton Mills are planning the installation of 1920 spindles to their equipment.

Three mill additions will be erected by the Belle Vue Manufacturing Co., Hillsboro, N. C.

An additional building will be erected by the Wahoo Manufacturing Co., Sargent, Ga.

The Anchor Duck Mills, of Rome, Ga., are adding 10,000 spindles and some looms to their equipment.

The Globe Mills, of Gaffney, S. C., will erect an addition to their plant and increase their capacity one-third, adding 1727 spindles with accompanying looms.



FOR SALE—All Size Flyers, Practically as Good as New, Polished Inside and Out at Bargain Prices.

Southern Spindle and Flyer Co., Inc.
CHARLOTTE, N. C.

Manufacturers, Overhauled and Repairers of Cotton Mill Machinery

W. H. Monty, Pres. & Treas. W. H. Hutchins, V.-Pres. & Sec'y

The Wearwell Sheeting Mill of the Carolina Cotton and Woolen Mill Company, of Draper, N. C., are adding 36 Draper pillow tubing looms and 14 jack spinning frames to their equipment.

C. E. Neisler, of Kings Mountain, N. C., will erect a cotton cloth mill of 5000 spindles and 100 looms for dobby weaves.

The Sowan Cotton Mills Company, of Salisbury, N. C., are making arrangements for the erection of their mill. They will install 5000 spindles.

Plans are being prepared for an addition to the picker room building at the No. 1 Achushnet Mills, of New Bedford, Mass.

The Prince Cotton Mills Co., of Laurinburg, N. C., will erect a building and equip it with 12,000 spindles for manufacturing cotton yarns. All contracts have been awarded.

The Alexander City (Ala.) Cotton Mills will add 6,500 spindles and 140 looms. This machinery has been purchased.

The Lafayette (Ala.) Cotton Mills will erect a building and equip it with 8,000 spindles.

The Bay State Cotton Corporation, of Lowell, Mass., will erect a seven-story storehouse.

An addition is being built to the plant of the Edwin Barlett Co., cotton yarns, North Oxford, Mass., which will be used for enlarging the spooling and warping department.

The Bamber (S. C.) Cotton Mills will in the near future erect a two-story addition to their plant and equip it with 4,000 spindles.

TURBINE WATER WHEELS OF GUARANTEED EFFICIENCY



CYLINDER GATE, WICKET GATE, REGISTER GATE TURBINES, VERTICAL AND HORIZONTAL; SINGLE OR IN PAIRS.

ALSO, IMPULSE WATER WHEELS. FOR PRICES AND CATALOGUES,

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DAVIS FOUNDRY & MACHINE WORKS
ROME, GEORGIA

LOMBARD Foundry, Machine, Boiler Works and Mill Supply House
AUGUSTA, : : GEORGIA

Capacity, 300 Hands
 Hundred Thousand Feet Floor Space
 Cotton, Oil, Gin, Saw, Grist, Fertilizer, Cane, Shingle Mill Machinery Supplies and Repairs and Castings, Shafting, Pulleys, Hangers, Wood, Coal and Sawdust Grate Bars, Pumps, Pipe, Valves and Fittings, Injectors, Belting, Packing Hose, etc. Cast every day. One hundred machines and good men ready to do your work quick.

TEXTILES

COTTON CLOTHS.

(Reported by Louis Lowinson, cotton goods broker, 72 Leonard Street, New York.)

80/80 39" 4.00 plain cloths.....	29
72/76 39 4.25 "	24
68/72 39 4.75 "	22 1/2
64/64 38 1/2 5.15 "	18 3/4
64/60 38 1/2 5.35 "	18 1/4
64/56 38 1/2 5.50 "	17 3/4
60/52 38 1/2 6.00 "	16 1/2
60/48 38 1/2 6.25 "	15 3/4
64/60 27 7.60 "	12 1/2
48/48 37" 4.00 Sheetings	18 1/2
56/60 36 4.00 "	20 1/4
48/40 36 5.50 "	14 1/2
48/48 40 2.85 "	27
30" 3.25 Drills	23
30 3.00 "	25
37 3.50 "	23
37 3.95 "	19 1/2
88/80 40" 8.50 plain comb.....	33
76/82 40 9.00 "	26
96/92 40 7.50 "	36
64/112 39 4.00 sateens	36
64/104 39 4.20 "	34

RAW COTTON

Middling, Oct. 30 38.25

COTTON YARNS

EASTERN

COMBED PEELER

10s	82 1/2
16s	86
20s	89
30s	1.07-1.08
40s	1.18-1.20

CARDED PEELER

10s	65-66
16s	68
20s	69
26s	71
30s	74-76
40s	95-1.00

MERCERIZED

2/40s	1.05-1.08
2/50s	1.20-1.40
2/60s	1.28-1.30
2/70s	1.50-1.52

**SOUTHERN
HOSIERY FRAME**

10s	60-61
14s	62

20s	67
24s	70-71
30s	78
2/20s	41-43
2/10s	45-46

WARPS

2/10s	63
2/20s	77-78
2/24s	80-82
2/30s	90-91

DOMESTIC WOOL

Ohio and Pennsylvania Fleeces

Delaine washed	95-98
XX	71-72
Fine unmerchantable delaine	88-89
Delaine unwashed	85-87
Fine unwashed	68-70
1/2 blood combing	80-81
3/8 blood combing	67-68
1/4 blood combing	65-66
1/2, 3/8, 1/4 blood combing	59-60
Common and braid	41-42

Southern Fleeces

Lake mediums	58-59
Georgia mediums	59-60

Virginia, Kentucky and Similar

1/2 blood unwashed	81-82
3/8 blood unwashed	69-70
1/4 blood unwashed	66-67
Common and braid	41-42

SCOURED BASIS

Texas

Fine 12 months	1.60-1.70
Fine 8 months	1.38-1.40
Fine fall	1.15-1.20

California

Northern	1.55-1.60
Middle County	1.35-1.40
Southern	1.30
Fall free	1.10-1.15
Fall defective	1.00-1.05

Oregon

Eastern No. 1 staple	1.80-1.85
Eastern clothing	1.50-1.55
Valley No. 1	1.65-1.70
Valley No. 2	1.25-1.30
Valley No. 3	1.05-1.15

Territory

Fine staple	1.85-1.90
1/2 blood combing	1.75-1.80
3/8 blood combing	1.22-1.32
1/4 blood combing	1.10-1.15
Common and braid	70-75
Fine clothing	1.50-1.60
Fine medium clothing	1.40-1.50

Pulled

AA	1.70-1.75
----------	-----------

Extra	1.75-1.78
A supers	1.60-1.68
B. supers	1.15-1.30
C supers	85-95
Fine Combing	1.40-1.45
Medium combing	1.30-1.35
Coarse combing	1.00-1.05
California, finest	1.35-1.40
California, second	1.10-1.15

FOREIGN WOOL

SCOURED BASIS

Australian

Classes I and II	
Sydney 80s clothing	2.30-2.40
Sydney 70s average	2.25-2.30
Sydney 64s average	2.00-2.10
Geelong 74s	2.30-2.40
Geelong 64s	2.10-2.20
Geelong 60s	1.95-2.00

SCOURED BASIS

Cape

12 months	1.60-1.70
Short combing	1.40-1.50
Clothing	1.25-1.30

SCOURED BASIS

***New Zealand**

Crossbreds	
36s to 40s	73-75
40s to 44s	82-83
46s	95
46s to 48s	95-98
50s	1.10-1.15
56s	1.30-1.35
58s	1.70-1.75

WORSTED YARNS

BRADFORD SPUN

2/20s 1/4 blood	2.10-2.20
2/30s 1/4 blood	2.25-2.50
2/32s 3/8 blood	2.25-2.45
2/36s 3/8 blood	3.05-3.25
2/40s 1/2 blood	3.75-3.90

FRENCH SPUN

1/20s 1/4 blood	2.05-2.15
1/20s 3/8 blood	2.25-2.30
1/30s 3/8 blood	3.30-3.50
1/30s 1/2 blood	3.30-3.50
1/50s-64s	Nominal
2/40s 1/2 blood	3.85-4.00

J. R. Tolar J. R. Tolar, Jr.
J. H. Hart P. G. Hart
TOLAR & HART
Cotton Yarn and Cotton
Members of New York Cotton Exchange
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YARNS
A wide and complete range suitable
for all requirements
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of all descriptions
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Cotton, Wool and Silk Conditioning,
Fabric Testing and Chemical Analysis

A Tape Belt for Universal Winders
We have perfected a cotton tape belt for driving Universal Winders. Also one for Camless Winders. We urge all users of these machines to write us for samples. We offer this with our full indorsement because exhaustive tests have satisfied us of its real merit.
BARBER MFG. CO
Spinning Tape Specialists,
LOWELL, MASS.

DANA WARP MILLS
Westbrook, Me.
Cotton Yarns and Warps
WHITE and COLORED

HOSIERY BOARDS
QUALITY AND SERVICE
JOS. T. PEARSON
1825 E. Boston Ave., Philadelphia, Pa.

RIVERS & LEWIS
Contractors and Dealers in
Cotton Waste, Cotton Cloth, Cotton Yarns
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New Mill Ends
118 Borden St., FALL RIVER, MASS.

Fred Sternberg & Co.
530 BROADWAY, NEW YORK
MERCERIZED / GASSED / **COTTON YARNS**
HARNES TWINES

HUGHES FAWCETT
115 and 117 Franklin St., New York
Linen Weaving and Knitting Yarns
Linen Jacquard Harness Twines
And Linen Yarns and Threads for
Every Purpose
Turkey Red Yarns
Large Stock Prompt Deliveries

2/50s 1/2 blood	4.25-4.50
2/70s Australian	Nominal
FRENCH SPUN MERINO	
2/40s 1/2 blood	3.10-3.15
1/40-50-50	1.90-2.00
1/40-70-30	2.20-2.40
1/40-80-20	2.35-2.45

**OLD WOOLEN RAGS
GOVERNMENT MAXIMUM**

Merinos	
Fine	32-34
Coarse light	18-20
Fine dark	19 1/2-20 1/2
Coarse dark	13-14
Fine black	18-19
Serges	
Light	28-30
Brown	27-28
Blue	21 1/2-22 1/2
Black	21-22
Red	25-26
Green	31-33
Flannels	
White (Fine)	55-60
Red	37-38
Blue	38-40
Knit	
White	48-49
Blue	21-23
Black trimmed	35-37
Red	22-24
Brown	30-32
Light gray	17-18
Light hoods	33-35
Mixed hoods	18-19
Silver gray	31-32
Skirted worsteds	
Light	18-19
Black	23-24
Blue	21 1/2-23
Dark	15 1/2-16 1/2
Brown	19-20
Skirted cloth	
Fine light	13 1/2-14 1/2
Light	9 1/4-9 3/4
Blue	8-8 1/2
Dark	6 1/2-7
Plain black	7 1/2-8
Skirted, tan cloth	23-24

The Connerton Silk Co., of Scranton, Pa., are erecting a plant for commission throwing.

The Macungie (Pa.) Silk Co. will in the near future erect a silk mill.

Work has been started on an addition to the plant of the Watertown (N. Y.) Silk Manufacturing Co. It will be equipped with 150 looms.

Herman Schneider, Joseph Miller and Harry Kauffman have purchased a brewery building here and will convert it into a silk manufacturing plant.

J. D. Davenport of Wilkes-Barre, Pa., will erect a one-story silk mill.

The Connerton Silk Co., of Scranton, Pa., are erecting a plant for commission throwing.

The Cumberland Silk Co., of Allentown, Pa., have awarded a contract for the erection of a new silk mill.

B. COHEN & SONS

LARGEST GRADERS OF

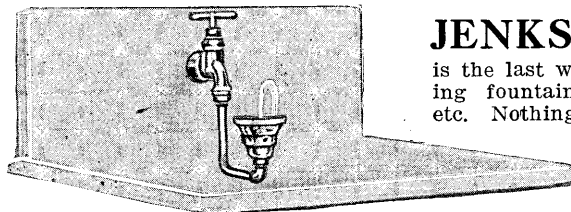
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AND ALL KINDS OF REMNANTS

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Old Rag Department, 1511 So. Sangamon St. } **CHICAGO, ILL.**
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Flow of water regulated as you wish. Reasonable in price. Will give absolute satisfaction and last

Showing How Bubbler is Used

many years. If your plumber hasn't it in stock write us.

H. F. JENKS COMPANY, Pawtucket, R. I.
Established 1870 Incorporated 1911

ALL STEEL BALING PRESSES
ECONOMY ALL SIZES FOR ALL PURPOSES
FIRE PROOF LARGEST LINE BUILT IN USA
ECONOMY BALER CO., DEPT. ANN ARBOR, MICH., U.S.A.

JENNISON CO. PIPERS FITCHBURG, MASS.

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The Daily Newspaper of the Textile Trade
8 East 13th Street, New York

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Name

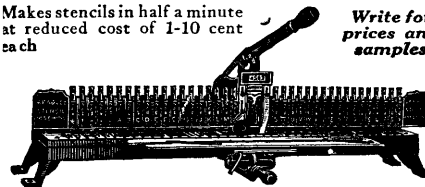
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Write for prices and samples



In Universal use by thousands of manufacturers and shippers
Manufacturers of Oil Stencil Board

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FOR BOILER FEED AND ALL INDUSTRIAL USES
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Co., Philadelphia, Pa.
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Philadelphia, Pa.

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Franklin Machinery Co., Prov-
idence, R. I.

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Worcester Steam Boiler Works,
Worcester, Mass.
Philadelphia Drying Machinery
Co., Philadelphia, Pa.

Bleaching Machinery

Delahunty Dyeing Machine Co.,
Pittston, Pa.

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H. F. Jenks Co., Pawtucket,
R. I.

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Dusters

Smith & Furbush Machine Co.,
Philadelphia.

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Home Bleach and Dye Works,
Pawtucket, R. I.
National Silk Dyeing Co., Pat-
terson, N. J.
Providence Dye Works, Prov-
idence, R. I.

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Pittston, Pa.
Philadelphia Drying Machinery
Co., Philadelphia.

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S. R. David & Co., Inc., Bos-
ton, Mass.
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Mich.

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Wilmington, Del.

Dye Exchange Corp., New
York.

Hellenic Chemical & Color Co.,
New York City.

Klipstein & Co., A., New York.
Metz & Co., H. A., New York.
Hemingway, Inc., Frank, New
York.

Kohnstamm & Co., K., New
York.

Levinstein, I., & Co., Inc.,
Boston.

National Aniline & Chemical
Co., New York.

Newport Chemical Works, Pas-
saic, N. J.

White Tar Aniline Corpora-
tion, New York.

Jacques Wolf & Co., Passaic,
N. J.

Dyeing Temperature Regulators

Tagliabue Mfg. Co., C. J.,
Brooklyn, N. Y.

Electrical Constructors

General Electric Co., Schenec-
tady, N. Y.

Electric Lamps

General Electric Co., Schenec-
tady, N. Y.
Trop Specialties Co., New
York.

Electric Motors

General Electric Co., Schenec-
tady, New York.

Engines

Franklin Machine Co., Prov-
idence, R. I.

Export Publicity

Salades Export Publishing Co.,
New York City.

Extractors, Logwood

Tolhurst Machine Works,
Troy, N. Y.
Worcester Steam Boiler
Works, Worcester, Mass.

Feed Water Purifiers

Scaife & Sons Co., Wm. B.,
Pittsburgh, Pa.

Flooring

Philadelphia Mineral Flooring
Co., Philadelphia, Pa.

Flyers

Southern Spindle & Flyer Co.,
Inc., Charlotte, N. C.

Fly Frames

Sheridan, E. L. & Fred, Win-
der, Ga.

Flyer Pressers

Southern Spindle & Flyer Co.,
Inc., Charlotte, N. C.

Felt Machinery

Smith & Furbush Machine Co.,
Philadelphia.

Filters (Water)

Norwood Engineering Co.
Scaife & Sons Co., Wm. B.,
Pittsburgh, Pa.

Grinding Machinery

Roy & Son Co., B. S.

Gums

Klipstein, A. & Co., New York.
Chas. Morningstar & Co., New
York.
Jacques Wolf & Co., Passaic,
N. J.

Heddles

Litchfield Shuttle Co., South-
bridge, Mass.

Hosiery Boards

Pearson, J. T., Philadelphia.
Philadelphia Drying Machinery
Co., Philadelphia.

Hosiery Machines

Brinton, H., Co., Philadelphia.
Crane Manufacturing Co.,
Lakeport, N. H.
Nye & Treddick, Philadelphia.
Textile Machine Works, Read-
ing, Pa.
Wildman Manufacturing Co.,
Norristown, Pa.

Humidifying Apparatus

Carrier Engineering Corp., New
York.
Parks-Cramer Co., Fitchburg,
Mass.

Hydro-Extractors

Tolhurst Machine Works, Troy,
N. Y.

Hydrometers

Tagliabue Mfg. Co., C. J.,
Brooklyn, N. Y.

Iron Castings

Franklin Machine Co., Prov-
idence, R. I.

Knitting Machinery

Brinton, H., Co., Philadelphia.
Crane Manufacturing Co.,
Lakeport, N. H.
Huse & Sons, W. D., Laconia,
N. H.
Hemphill Co., Pawtucket, R. I.
Nye & Treddick, Philadelphia.
Stafford & Holt, Little Falls,
N. Y.

Textile Machine Works, Read- ing, Pa.

Tompkins Bros. Co., Syracuse,
N. Y.

Wildman Manufacturing Co.,
Norristown, Pa.
Wildt & Co., Leicester, Eng.

Knitting Machinery, Full Fash- ioned

Textile Machine Works, Read-
ing, Pa.

Knitting Needles, Etc.

Brinton, H., Co., Philadelphia.
Corey, William, Co., Manches-
ter, N. H.
Laconia Needle Co., Laconia,
N. H.
M. M. McCormick & Co., Phil-
adelphia.

Mercerizing

Home Bleach & Dye Works,
Pawtucket, R. I.

Mill Supplies

Lombard Foundry & Mill Sup-
ply House, Augusta, Ga.

Mordants

Jacques Wolf & Co., Passaic,
N. J.

Oiling Machinery

Park Co., G. M., The, Fitch-
burg, Mass.

Oils

Borne, Scrymser Co., New York
Bradford Oil Co., Lynn, Mass.
Swan & Finch Co., New York.

Overhaulers

Southern Spindle & Flyer Co.,
Inc., Charlotte, N. Y.

Paints

Cooledge & Sons, Inc., F. J.,
Augusta, Ga.

Paper Cones and Tubes

Pairpont Corporation, New
Bedford, Mass.

Peroxides

Roessler & Hasslacher Chem-
ical Co., New York.

Pickers, Rag or Shoddy

Smith & Furbush Machine Co.,
Philadelphia.

Pipers

Jennison Co., Fitchburg, Mass.

Pulleys

Franklin Machine Co., Prov-
idence, R. I.

Recording Gauges

Tagliabue Mfg. Co., C. J.,
Brooklyn, N. Y.

Recording Thermometers

Tagliabue Mfg. Co., C. J.,
Brooklyn, N. Y.

Regulators for Temperature

Tagliabue Mfg. Co., C. J.,
Brooklyn, N. Y.

Woolen Rags

Cohen & Sons, B., Chicago, Ill.

Rings, Spinning and Twister

Southern Spindle & Flyer Co.,
Inc., Charlotte, N. C.

Rolls

Southern Spindle & Flyer Co.,
Inc., Charlotte, N. C.

Schools

Lowell Textile School, Lowell,
Mass.
New Bedford Textile School,
New Bedford, Mass.

Second Hand Textile Machinery

John J. Healy, Newtonville
Mass.
Lamb, J. K., Textile Machinery
Co., Philadelphia.
Edward Jefferson, Philadelphia.

Shuttle Irons

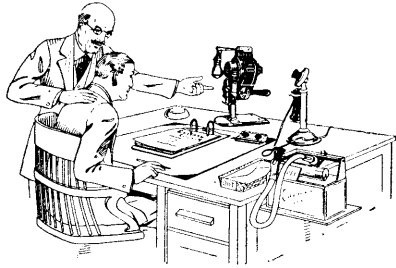
Litchfield Shuttle Co., South-
bridge, Mass.

Shuttles

Litchfield Shuttle Co., South-
bridge, Mass.
Shambow Shuttle Co., Woon-
socket, R. I.

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EASTMAN GOLD MEDAL CUTTERS



No charge for demonstration

are recommended by men of experience. They will tell you that the work is satisfactory and that the cost of operation is low. If still in doubt, let us prove to you that

"It's Best to Buy the Best First"

EASTMAN MACHINE CO., OF BUFFALO, U. S. A.

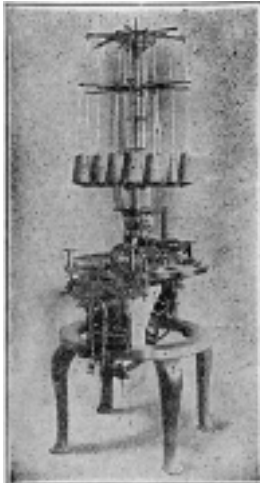
NEW YORK 816 Broadway	PHILADELPHIA Heed Building, 1213 Filbert Street	ST. LOUIS 1420 Olive Street
BOSTON 87 Summer Street	DETROIT 119 E. Jefferson Avenue	SAN FRANCISCO 444 Market Street
CLEVELAND 1284 Superior Avenue, N. E.	CHICAGO 815 W. Van Buren Street	BALTIMORE 417 W. Baltimore Street
NEW ORLEANS, Godchaux Bldg.	HAMILTON, ONTARIO, Main & McNab Sts.	

CIRCULAR SPRING and LATCH NEEDLE KNITTING MACHINERY

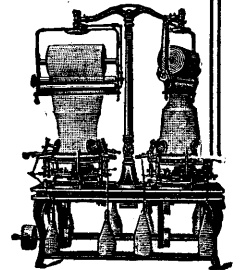
For the Manufacture of

Flat Wool and Cotton Under-wear	Astrakhans
Balbriggan	Fur Cloths
Silk Skirts	Skirts and Toques with three color stripes
Fleece-Lined Fabrics	Sweaters with rack stitch, stripes and selvage edge
Jersey Cloth	

TOMPKINS BROS. CO., 583 South Clinton St.
ESTABLISHED 1846 SYRACUSE, N. Y.



Sweater Machine



Spring Needle Machine

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Fawcett, Hughes, New York.

Silks (Raw)
General Silk Importing Co., New York.

Selling Agents for Mills
Clift & Goodrich, New York.

Singeing Machines
Philadelphia Drying Machinery Co., Philadelphia.

Soaps
Electric Smelting and Aluminum Co., Lockport, N. Y.
Warren Soap Mfg. Co., The, Boston, Mass.
Woodley Soap Mfg. Co., Boston, Mass.

Special Textile Machinery
Franklin Machinery Co., Providence, R. I.

Spindles
Southern Spindle & Flyer Co., Inc., Charlotte, N. C.

Spun Silk Machinery
Franklin Machine Co., Providence, R. I.

Starch
Chas. Morningstar & Co., New York.

Stencil Machines
Bradley, A. J., New York.

Steels (for mill use)
Jenks Co., H. F., Pawtucket, R. I.

Tape Drives
Barber Mfg. Co., Lowell, Mass.

Temperature Regulators
Carrier Engineering Corporation, New York.

Tagliabue Mfg. Co., C. J., Brooklyn, N. Y.

Testing Establishments
U. S. Conditioning & Testing Co., New York.

Thermometers
Tagliabue Mfg. Co., C. J., Brooklyn, N. Y.

Transmission Machinery
Franklin Machine Co., Providence, R. I.
Hunter, James, Machine Co., North Adams, Mass.

Tubes, Paper
Pairpoint Corp., New Bedford, Mass.

Ventilating Apparatus
General Electric Co., Schenectady, N. Y.
Philadelphia Drying Machinery Co., Philadelphia.

Waste Preparing Machinery
Smith & Furbush Machine Co., Philadelphia.

Water Softeners
Scaife & Sons Co., Wm. B., Pittsburg, Pa.

Water Wheels
Davis Foundry and Machine Works, Rome, Ga.

Winders
Payne, Geo. W., Co., Pawtucket, R. I.

Wool Oil
Borne, Scrymser Co.
Bradford Oil Co., Lyman, Mass.

Woolen and Worsted Machinery
Hunter, James, Machine Co., No. Adams, Mass.
Jefferson, Edward, Philadelphia.
Philadelphia Drying Machinery Co., Philadelphia.
Smith & Furbush Machine Co., Philadelphia.

Yarn Dressers
Franklin Machine Co., Providence, R. I.

Yarn Testers
Scott, H. L. & Co., Providence, R. I.

YARNS, THREADS, ETC.
(Artificial silk)
Mindlin & Rosenman, New York.

Cotton Yarn
Dana Warp Mills, Westbrook, Me.
Jamieson, James B., Boston.
Mindlin & Rosenman, New York.
Rivers & Lewis, Fall River, Mass.
Sternberg, Fred. & Co., New York.
Textile Yarn Agency, New York.
Tolar & Hart, New York.
Whitman, William, Co., New York.

Glazed Yarns
Jamieson, James B., Boston.
Mindlin & Rosenman, New York.

Sternberg, Fred., & Co., New York.

Whitman, William, Co., New York.

Linen, Hemp, Jute, Flax, Etc.
Fawcett, Hughes, New York.
Mindlin & Rosenman, New York.

Mercerized Yarns
Jamieson, J. B., Boston
Sternberg, Fred. & Co., New York.
Whitman, William, Co., New York.

Merino Yarns
J. B. Jamieson, Boston.
Mindlin & Rosenman, New York.

Silk Yarns
American Silk Spinning Co., Providence, R. I.
Cheney Bros., New York.
Textile Yarn Agency, New York.

Woolen Yarns
Fred S. Gilley, Boston.
Jamieson, James B., Boston.
Mindlin & Rosenman, New York.
Textile Yarn Agency, New York.

Worsted Yarns
Fred S. Gilley, Boston.
Mindlin & Rosenman, New York.
Textile Yarn Agency, New York.
Whitman, William, Co., New York.

In Writing Advertisers Kindly Mention "Textiles"

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