

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured covers/
Couverture de couleur
- Covers damaged/
Couverture endommagée
- Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée
- Cover title missing/
Le titre de couverture manque
- Coloured maps/
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur
- Bound with other material/
Relié avec d'autres documents
- Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

- Coloured pages/
Pages de couleur
- Pages damaged/
Pages endommagées
- Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
- Pages detached/
Pages détachées
- Showthrough/
Transparence
- Quality of print varies/
Qualité inégale de l'impression
- Continuous pagination/
Pagination continue
- Includes index(es)/
Comprend un (des) index

Title on header taken from: /
Le titre de l'en-tête provient:

- Title page of issue/
Page de titre de la livraison
- Caption of issue/
Titre de départ de la livraison
- Masthead/
Générique (périodiques) de la livraison

Additional comments: /
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below /
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CANADIAN Journal of Fabrics

THE JOURNAL OF THE
Textile Trades of Canada.

Vol. XX.

TORONTO AND MONTREAL, AUGUST, 1903.

No. 8.

WILSON, PATERSON & Co.

30 St. John Street, Montreal,
REPRESENTING IN CANADA

The United Alkali Company of England,



OFFER TO THE TRADE—

Caustic Soda, 50° to 78°, Caustic Potash, Salt Cake, Salsoda,
Soda Ash (Ammonia and Leblanc processes),—Chlorate of Soda,
Chlorate of Potash, Hyposulphite of Soda (Curlew Brand),
Chloride of Calcium, Bichromate of Soda, Bichromate of Potash,
etc., etc.

McARTHUR, CORNEILLE & CO.

Importers and
Manufacturers of



OILS CHEMICALS

and DYE

310 to 316 St. Paul St.

MONTREAL STUFFS

ANILINES ALIZARINES

DOMINION DYEWOOD & CHEMICAL CO.

TORONTO

Direct Importers. Sole Agents in Canada for

Messrs. The FARBENFABRIKEN Vormals FRIEDR BAYER
& CO., Elberfeld, Germany.

WATSON JACK & COMPANY, MONTREAL.

ANILINES and DYESTUFFS.

Chrome Acid Colors. Excellent on Yarn or Pieces

Send for dyed Samples illustrating their
great utility.

New York and Boston Dyewood Co.

MANUFACTURERS OF

DYEWOOD Extracts

Importers of INDIGO AND ANILINE COLORS.

SELLING AGENT IN CANADA :

A. W. LEITCH, 16 Hughson St. South, Hamilton, Ont.

CASSELLA COLOR COMPANY.

(American Branch of
Leopold Cassella & Co.)

Artificial Dye Stuffs

NEW YORK, 182-184 Front Street.

BOSTON, 524 Atlantic Avenue.

PHILADELPHIA, 126-128 South Front Street.

PROVIDENCE, 64 Exchange Place.

ATLANTA, 47 North Pryor Street.

MONTREAL, 86-88 Youville Square.

W. T. BENSON & CO.

ANILINE COLOURS
DYEWOOD EXTRACTS
CHEMICALS, &c., &c.

Specialties:

Logwood for Cotton and Wool.
Fast Onedip Cotton Dyes.
Alizarines & Azo-Alizarines.

164 St. James St., Montreal

BELLHOUSE, DILLON & COMPANY

SOLE AGENTS IN CANADA FOR

KUTTROFF PICKHARDT & CO.,
NEW YORK.

Anilines, Alizarines, Indigo, etc.,

For Cotton, Silk and Wool.

Toronto Office—30 Wellington Street East.

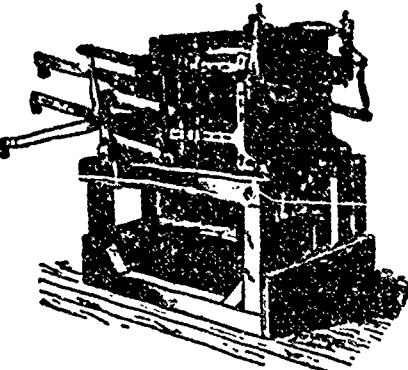
Coristine Building, - - - Montreal.

New York Office, 20 Cedar Street.

USE THE
"Halton"
Jacquard

BEST MACHINE ON THE MARKET

Single Lifts
 Double Lifts
 Rise and Falls
 Double Cylinders
 Cross Borders
 Brussels



The only
 Reliable
 Fine
 Index
 Machine.

"1304" Fine Index
 Double Lift.

Thomas Halton's Sons

Alleghany Avenue and C. Street, - PHILADELPHIA

New York Boston Philadelphia Providence Chicago Montreal

C. BISCHOFF & CO.

IMPORTERS OF

Aniline Colors and Alizarines

Dye-Stuffs and Chemicals

Main Office, 88 Park Place, - - New York.
 Canadian Branch, 416 St. Paul St., Montreal.

YARNS

W. M. CROWE,
 28-30 Wellington St. W.,
 TORONTO

Sole
 Agent
 FOR
 Canada

Specially representing:-

Messrs. John Smith & Sons, Ltd., Bradford, Eng., Worsted Yarns.
 Messrs. Wm. Hollins & Co., Ltd., Nottingham, Eng., Worsted and
 Merino Yarns.
 Mr. J. C. Horsfall, Cross Hills, Eng., Knitting Yarns.
 Mr. J. H. Willey, Bradford, Eng., Fancy Loops and other effect
 Yarns in Worsted and Mohair.
 Messrs. Aikroyd & Grandage, Ltd., of the Bradford Dyers' Associa-
 tion, Mercerized Cotton Yarns.

Knitting Manufacturers will find great satis-
 faction in using

HORSFALL'S RENOWNED HAYFIELD KNITTING YARNS
 FOR SWEATERS AND HOSIERY.

GARLAND MFG. CO.,

SACO, MAINE.

(Formerly Loom Picker Co., Biddeford, Maine).

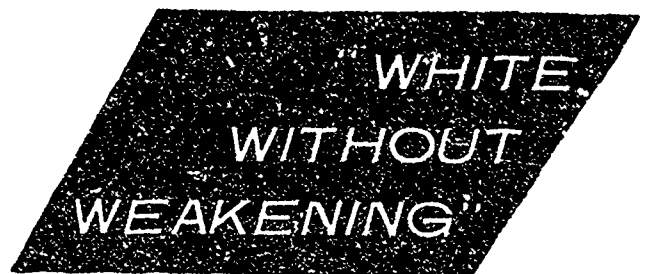
H. P. GARLAND, TREASURER.

MANUFACTURERS OF

Rawhide and Leather Loom Pickers,
 Loom Harnesses and Reeds,
 Duck and Ticking Lug Straps,
 Tape Picker Loops, Leather Strapping,
 Black Oak-Tanned English Picker Leather,
 North Carolina Hickory Picker Sticks.

Illustrated Catalogue sent on application.

Bleachers! Do you know that you
 can obtain



the fibre, by bleaching with Peroxide of Sodium

Request instructions from

THE ROESSLER & HASSLACHER CHEMICAL CO.

100 William Street, NEW YORK.

ROBERT S. FRASER

**Wools, Peruvian Cottons,
 Nells, Tops, Yarns, Etc.**

Tetlow's Card Clothing.
 (STOCK IN MONTREAL).

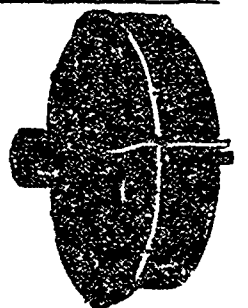
Manufacturers of Wastes and Shoddies.

18 Lemoine Street, - - - MONTREAL

Fans and Heaters

For drying of Wool, Cotton, Cloth, Blankets and other materials.
 Fans for ventilating and removing refuse, hot and foul air, etc.
 The Fan system of heating and ventilating large buildings. Write
 for particulars to

McEachren Heating & Ventilating Co., Galt, Ont.



CANADIAN JOURNAL OF Fabrics

THE JOURNAL OF THE Textile Trades of Canada.

Vol. XX.

TORONTO AND MONTREAL, AUGUST, 1903.

No. 8

Canadian Journal of Fabrics

A Monthly Journal devoted to Textile manufactures and the Dry Goods and kindred trades.

Subscription: Canada, United States and Great Britain, \$1.00 per year. Foreign, 5/-. Advertising rates on application. Offices: 18 Court St., cor. Church, Toronto, and the Fraser Building, Montreal

BIGGAR-SAMUEL, LIMITED, Publishers

TRAVELING REPRESENTATIVE, A. W. SMITH.

Toronto Telephone, Main 4310 | Montreal Telephone, Main 2389

Business correspondence should be addressed to Montreal, but cuts, news items and editorial correspondence to Toronto; cuts from abroad should be sent by post wherever possible, not by express. Changes of advertisements should be in our hands not later than the 10th of each month to ensure insertion.

THE CANADIAN TEXTILE DIRECTORY

A Handbook of all the Cotton, Woolen and other Textile manufactures of Canada, with lists of manufacturers' agents and the wholesale and retail dry goods and kindred trades of the Dominion, to which is appended a vast amount of valuable statistics relating to these trades. Fourth edition Price, \$3.00

BIGGAR-SAMUEL, LIMITED, Publishers.

CONTENTS OF THIS NUMBER.

PAGE	PAGE
Among the Mills..... 240	Indigo Printing on Wool and Silk... 236
Beaver, The Industrious..... 245	Literary Notes..... 242
Bleaching Loose Raw Wool..... 232	Loom that will Produce Two Webs of Cloth..... 239
Cotton Growing Within the Empire..... 227	Mercerizing, Imitations of..... 233
Celluloid, What is..... 230	Personal..... 243
Cotton Stiffening, New Process for..... 231	Pulleys, Paper Covered..... 230
China Wool..... 233	Steam Boilers, Selecting..... 228
Chemicals and Dye-stuffs..... 248	Sprinkled Effects on Wool..... 238
Dying Trade, Deceit, Hurt and Scandal in..... 230	Shrinking of Cotton Knit Fabrics..... 233
Dye-stuffs, Classification of..... 245	Textiles and the New British Tariff Policy..... 225
Dye-bath, Assistants in the..... 248	Textile Patents..... 243
Fabric Items..... 238	Uncertainty of the Law..... 232
Flax Fibre Preparation..... 235	Universal Provider on the British Tariff..... 245
Flour for Finishing—Testing it..... 229	West Indies and Cotton..... 234
Foreign Textile Centres..... 237	Wool Markets..... 240
Flax, New Zealand, Preparing..... 232	Washing, Process for..... 237
Forman Press and the Surtax..... 227	Woolen Materials, Quick Mordanting of..... 236
Getting a Belt out of the Way..... 245	
Gold Table Cloth..... 236	
Indigo Dyeing—A New Process..... 232	

TEXTILES AND THE NEW BRITISH TARIFF POLICY.

The cotton interests of England may be said to have been the cyclonic centre of the agitation that resulted in free trade as the settled policy of Great Britain; and it is likely that once more, though not to such a vital extent, the agitation of the new fiscal policy of the British Empire, so far as it affects the Motherland, will centre around the cotton trade. It is worth while to remember that, whereas, in the discussion and shaping of the trade policy of almost

every other nation, the question of protection has hinged on the manufacturing interests, in the case of Great Britain it hinged not upon manufactures—which were already well established and ahead of other nations in staple lines—but upon food and raw materials. Of these raw materials cotton was above all the main item. So far as the food question was concerned, the fight for free trade was a fight against a monopoly. The wheat farmers of England enjoyed a protected industry. Indeed, up to a certain extent, wheat-growing was a monopoly; because in the time of the free trade agitation the importation of wheat into Great Britain was absolutely prohibited until the average market price reached 70 shillings per quarter, and when it went beyond that price it was still dutiable at a high rate, decreasing to 5s. 2d. only when it had reached 85s. per quarter. Under such laws, in time of a deficient harvest, wheat sometimes ran up to a price equivalent to \$9 or \$10 a bushel, so that bread riots were not to be wondered at. It was by breaking down the monopoly in wheat and bread that the British nation was able to maintain for years a virtual monopoly in cotton manufacturing and the cotton export trade. The situation that grew out of free trade is well stated by Benjamin Kidd, in a recent lecture before the Colonial Institute in London:

"The staple manufacture of England throughout the nineteenth century has never varied. It has been cotton. In the year 1901, out of total exports £280,000,000 of British and Irish produce, the exports of the cotton industry, if we include its subordinate branches, were over one-fourth, or not far short of £80,000,000. The exports of no other single industry at all approached this in amount. It is necessary to reflect what stands behind these figures. No cotton is grown in the British Islands. It has to be brought from the ends of the earth. The greater proportion of it now comes from the Southern United States. This cotton is worked up in England and the products are once more sent abroad to nearly all the countries of the world. They bulk largely in the trade of the United Kingdom with most States. Picture to yourselves, therefore, the position of such an industry in England. It has had to maintain itself

at every point for a century past just as a live flame maintains itself. You may imagine how inevitably the leaders of the cotton industry became the leaders of the people of England against a monopoly which raised the price of food. Lancashire was the home of the cotton trade in England. It was the millions of Lancashire who led the people of England against the monopoly which taxed their food. Manchester was the centre of the cotton trade. It is Manchester which has stamped its name on the school of thought that produced the fiscal policy of the State which is still with us, and which grew out of the agitation for the repeal of the Corn Laws in England."

But now the commercial world has passed through another orbit and a new situation has developed. In the Western Hemisphere a great nation has sprung up, which from being the chief grower of the world's cotton has become a rival to Great Britain herself in the manufacture of cotton. In a sense this situation has also come about through free trade, for we have in the American Union a population of nearly 80,000,000 with neither duties nor customs' houses between any of the States—the most extensive application of free trade in the history of the world. With this market to themselves and a tariff against the outside world, the United States cotton manufacturers now rank next to Britain and are steadily gaining access to foreign markets, even in Canada, where we have a preferential tariff favoring Great Britain. And still the United States is the leading grower of raw cotton, to such a degree that the shortage of its crop this year has left millions of spindles and thousands of looms idle in Great Britain and America.

While, as in times past, the United States needed cotton goods, there was no state or trade reason against the free export of raw cotton, but now that that nation is one of the largest manufacturers of cotton goods, producing within itself all the fabrics it requires, and yet looking for markets for its fabrics abroad, the contingency of an export duty, or even a prohibition, is not an inconceivable one. In these circumstances, it is not merely the question of growing raw cotton within the bounds of the British Empire that is forcing itself upon the attention of British manufacturers and statesmen, but the greater question of the general trade relations of the Motherland with its daughter nations and dependencies. The time is not far distant when the British Empire will contain 100,000,000 white people and 400,000,000 or 500,000,000 people of various other colors and races. While other nations, by means of one-sided trade arrangements, are making inroads on these markets, is it not necessary to review the position and establish a free trade system, or an approach to it, within the Empire with a slight discrimination against those

nations who so heavily penalize British trade now? Such a policy may be a short cut to that universal free trade which free traders of the old Manchester school have looked for in vain.

These thoughts are suggested by a joint letter, signed by a dozen prominent Liberal members of the Imperial Parliament, among whom are some connected with the textile trades of Lancashire, Yorkshire and Scotland. The letter, from which we make the following extracts, is remarkable in that it shows a change in party lines on this fiscal question, for the Liberals are by tradition free traders, and from the standpoint of party politics, it would be to their advantage to remain so in this crisis. In supporting Mr. Chamberlain's policy, the writers argue: "Even supposing that a tax imposed on foreign corn would increase its cost in the same proportion, it is obvious that such an increase could be immediately compensated by a corresponding reduction in the taxation of other necessaries of life. For example, the duty on tea alone, almost entirely a product of the Empire, amounted last year to £5,800,000. But beyond this, and as a natural result of the working of the new proposals, we look forward to such an organization of the food supplies within the Empire as would effect a considerable reduction in the cost of living in this country. As an instance, it may be pointed out that at present New Zealand mutton brings the exporter in New Zealand only 2d. per lb. on the average, while it costs the consumer in Great Britain 7d. Many of the British colonies are beyond doubt great and undeveloped estates, the production of which might be multiplied many times over in the near future under the stimulus of an intelligently directed fiscal policy of the States comprising the British Empire. It must be remembered, on the other hand, that the growing demand upon the resources of foreign supply now existing—e.g., in the United States—will before long produce a tendency to considerably higher prices than those hitherto prevailing. The advocates of the new policy may fairly claim that they are providing for this contingency by endeavoring to place our food supplies for the future upon a cheaper and surer basis.

The changed conditions since the time free trade was adopted are noted, particularly the effect of trusts selling their commodities in the British market at prices below the cost of production, and the fact that the Cunard Line is said to be no longer able to exist "on commercial principles," that is, without State aid, against its rivals. The letter notices the advantages of special privileges in colonial markets, in view of the opinion that British exports to tariff-protected countries have about reached their limit, and in conclusion says: "It is our opinion that to arm ourselves with power of self-protection in our negotiations with foreign powers is no longer a matter of

possible expediency, but rather one of urgent national necessity. The most important instance which has been mentioned of a possible danger arising from the policy of preferential tariffs is that of the cotton trade, where most of the raw material comes from the United States. It is suggested that that country might retaliate by an export duty on raw cotton. Even if the difficulties in the way of such an action were to be overcome, it is evident that the argument tells rather for than against the proposed policy. The cotton industry of the United States is rapidly growing. It already compares in its consumption of raw cotton with the British industry, and is becoming an important competitor with Lancashire in the open markets of the world. It stands to reason, in such circumstances, that, if we are regarded as irrevocably bound to our existing fiscal policy, the cotton industry of the United States will tend to follow the example of other industries in that country, and that there will be in time a demand for such protection as the State can give for its development as against foreign rivals. The obvious form for that protection to take in the United States is an export duty upon the raw cotton supplied to our own competing factories—a contingency which we should have to meet at present without any instrument of defence or negotiation in our hands. For these amongst other reasons it appears to us that the proposals in question call for serious and mature consideration, and that there is a very real danger lest we should too hastily assume that the issues now involved are the same as those discussed in the old controversies sixty years ago between protection and free trade."

COTTON GROWING WITHIN THE EMPIRE.

The recent remarkable shortage in the supply of raw cotton, which has paralyzed not only the mills of Lancashire and other cotton manufacturing districts, but even disorganized the trade of the United States, has brought home to British merchants and manufacturers the necessity which this Journal has urged of growing cotton within the Empire to such an extent as to make the cotton manufacturing centres of Greater Britain practically independent of other nations, in case of war or of those whims of trade policy which may at times be almost as distressing in their effects on trade as war itself. The uplands of South Africa and South Central Africa, now under British sway, are capable of growing excellent cotton; the arable lands of Egypt and the Soudan are capable of a large extension of the area of fine staple cotton, which they already produce. India can also grow much more cotton than she does, and the experiments in growing cotton in the British West African settlement and British Borneo are very encouraging. The interior regions of the great Australian

continent, now practically a desert, only require irrigation to grow a serviceable grade of cotton; and each of these various regions would by its variations of soil and season, produce a staple differing in some respects from all the others, and by this difference would give versatility to the products of the British mills, and of course to those of Canada.

The sections of country above named do not by any means exhaust the list of lands under the British flag where cotton may be grown. Cotton was successfully raised in the British West Indies over a century ago. The changes that brought its extinction and the further changes that may bring in a new era of profitable cultivation in this part of the Empire are instructively set forth in an article in "Our Western Empire," a journal, published in London, devoted to the development of trade between Great Britain, Canada and the West Indies. The article will be found on page 234.

THE GERMAN PRESS AND THE SURTAX.

Some of the German papers profess to believe that the surtax imposed by Canada on their goods will not hurt Germany so much after all, especially in view of Mr. Chamberlain's proposals for inter-Empire trade. The Cologne Gazette consoles itself by the following argument: "If Mr. Chamberlain's influence ultimately enables him to establish a closer economic connection between the colonies and the Mother Country, the duties which will have to be imposed on food-stuffs imported into England will be an indirect advantage to continental countries. If food is dearer trade unions and labor associations will demand and will obtain higher wages. Production will, therefore, be more costly in England, and German industries will compete at an advantage. Protective duties levelled against German goods will, moreover, have no lasting effect, for in the long run it is the quality of goods which enables them to retain a market. It has been universally recognized in the last ten years that German goods are generally as good as, often better, and almost without exception cheaper than those produced in Great Britain. Germany can, therefore, afford to regard dispassionately plans which will affect in a much greater degree the United States, Russia, and other grain-exporting countries. The talk about the punishment of Canada is simply an attempt to create a feeling which may help on Mr Chamberlain's plans."

The London Times points out the insincerity of this argument by recalling the fact that the Cologne Gazette did not refuse to vote for the increase in the minimum duties on imported grain during the last session of the Reichstag. Possibly they hold with John Lyly that "perfume may refresh the dove, but kill the beetle." Again, the argument that quality in

the long run retains markets is not a safe one in German hands. No one, for instance, who has experience of the relative value of English and German wearing apparel will be inclined to subscribe to the confident assertions of the Cologne Gazette, and the same is true of a great variety of textile manufactures.

—A curious feature of the American speculation in cotton is mentioned in Fall River reports to various New York papers. It is said that 25,000 pieces of regular printing cloths were purchased some time ago with the intention of stimulating prices of cotton, and that these have now been sold at something under the market price. This is a curious way of stimulating trade.

—The Silk Association of America has issued a statement showing that the dutiable silk imports at New York for the five weeks ending July 31st, amounted to \$2,794,241, being an increase of \$573,268 over the same period in 1902. Raw silk, duty free, shows a falling off from \$642,939 to \$578,226. This would indicate a falling off in home manufactured goods, and an increase in the consumption of foreign goods of this class.

—The value of woollen goods imported into Italy is on the increase. The quantity imported in 1902 was £1,221,516, over a third of which went from Germany, nearly a third from Great Britain, less than a fourth from France, and the balance from other countries. The wealthier sections of the people are in the habit of asking their tailors for British woollen materials, but of late years Germany has largely supplied them with woollens. The patterns are, in many cases, a close imitation of the British ones, but the quality is not so good. The German goods are, however, cheaper.

—Some time ago, the Journal of Fabrics drew attention to the possibility of using the fibre of sweet clover, which is spreading so rapidly in some parts of Canada, as a raw material for binder twine. At our suggestion, the firm of M. R. Perine & Co., at Doon, entered upon a series of experiments to test the matter. We are now in receipt of a letter from them stating that they have found sweet clover yields such a small percentage of fibre that it cannot be used to advantage in the manufacture of binder twine. Our hope now lies in flax, the possibility of which has passed the experimental stage.

—The quantities of raw cotton and cotton yarns imported into Japan have undergone a reversal during recent years. In 1902 Japan imported £139,423 worth of yarn, as against £1,105,539 worth in 1889, while in 1889 the value of imported raw cotton was

£138,113, as against £827,685 in 1902. Cotton prints, and white and grey shirtings, all show a considerable increase in the value imported. The United Kingdom at present controls the greater part of the trade, but we see no reason why Canada, which has supplied a limited amount, should not enjoy a larger proportion of this growing trade.

—J. S. Turton, secretary-treasurer of the Australian branch of the Massey-Harris Company, who has just returned to Canada, says there is an excellent field for an increased Canadian trade with the new Commonwealth. Of the three staple industries of Australia, mining and farming are making great progress, while the sheep-raising industry, though injured by a seven years' drought, is now enjoying favorable rains. Canadians need not expect to secure Australian business merely by sending out samples. They should either send hustling representatives or place their interests in the hands of good men there. Goods should be packed properly and forwarded promptly.

—One cause to which the advance in the price of wool is partly attributed by some users, says the Textile Mercury, is the increase in the demand for Oriental rugs. These rugs are largely made in Turkey, and in their manufacture a considerable portion of the Turkish clip of wool has been consumed, so that exports of wool from that country for this year will, without doubt, be smaller than have been known for a very long time. The requirements of the Turkish army have also called for an increased consumption of Turkish wools. Turkey cannot spare as many wools as she could at one time, the result being that the price of this kind of wool has advanced materially. In Turkey three or four years ago the growers were not obtaining more than 2d. or 2½d. per lb. for their unwashed wool. Now they are getting about 1d. per pound more, which, of course, means a good deal to the Turkish wool-grower. It is not generally supposed that Turkish wool is an important factor in the markets.

SELECTING STEAM BOILERS.

An important matter, and one which should not be overlooked when selecting a type of boiler, is that of general economy; but, unfortunately, the subject is such an intricate one that there is no time to do more than give a general summary.

There are two important heat losses from a boiler—radiation and heat carried up the chimney. Radiation is undoubtedly greater from water-tube boilers than from marine or Lancashire boilers, partly because of the relatively larger radiating surface, partly because the bricks are at a white heat, on the fire side, as against coverings of boilers being subjected only to the steam temperature. Assume that there is a constant loss of 5 per cent. of the full power heat supply, and suppose that a boiler is only worked eight hours

out of twenty-four, then the loss by radiation is 15 per cent of eight hours' full power. At half power the radiation is 10 per cent., and the total loss 30 per cent. If, therefore, we make a continuous power test between two boilers we ought to deduct 10 per cent. from the mean efficiency in the one case, and 20 per cent. in the other. The fairest boiler trials would be those carried out under the normal working conditions, and extending from the time the fires are lit to the time the fires are drawn.

The loss of heat up the chimney is intimately bound up with the efficiency of firing and the ratio of heating surface to water evaporated. The efficiency of the heating surface of a boiler—no account being taken of radiation—is found, without weighing the coal, by subtracting the temperature of waste gases, as they leave the flues, from the initial flamic temperature, as calculated from the ratio of carbon and hydrogen burned and the amount of air contained in the gases, and dividing the difference by this initial temperature. Suppose we are burning coke with a minimum admission of air, say, 11.6 lbs. per lb. of carbon, then the initial flame temperature will be about 5,000 degrees F.; and suppose that the temperature of the escaping waste gases is 500 degrees F. above that of the ingoing air, then there is evidently a loss of 10 per cent. up the chimney. If, as frequently happens, the waste gases weigh 25 pounds per pound of carbon, instead of 12.6, then clearly the initial temperature of the flame is reduced to 2,500 degrees F., and if the waste gas temperature is again 500 degrees F., the loss up the chimney is 20 per cent. With smoky coal even more air is admitted, and we get losses of 30 and even 40 per cent., to which we have to add 5 to 10 per cent. for radiation, or 15 to 30 per cent. for twenty-four hours' trial, resulting in a total loss of 60 and perhaps 70 per cent. These chimney losses can be reduced by efficient stoking and by reducing the temperature of the waste gases. This is done by providing much heating surface or by economizers. When these latter are fitted, the question of excessive air admission is of relatively slight importance, for supposing that the economizer is of ample size, and reduces the temperature of the waste gases to, say 400 degrees F., or say, 340 degrees F. above the air temperature, then the chimney losses with 20 and 330 pounds of air per pound of fuel are 11 and 17 per cent., the difference being only 6 per cent. When the waste gases have a temperature of, say, 740 degrees F., the losses are doubled, and difference rises to 12 per cent. It is also found that the greater the excess of air supply the less efficient is the heating surface of a boiler, and it is safe to say that lightly-worked boilers having large heating surfaces—including economizers—may without serious loss, be fired with a large excess of air; but hard-worked boilers, if treated in a similar manner, will show a very serious economic loss, and whereas we may burn smoky coal in the one, supplying it, of course, with much air, the smaller boiler has to be fired with smokeless coal.

The above remarks would lead one to think that all we want at present is a furnace which, while giving a smokeless flame, requires no more air than the theoretical amount; but this is not so. There is one further condition, and it is a very important one, viz., the flame temperature should not be excessively high, as it leads to boiler troubles, such as bulged furnaces and burst water tubes, a subject with which I dealt last year at the Institution of Naval Architects. I have recently thrown out a suggestion to adopt double combustion, but seeing that this paper already exceeds the usual limits, I will conclude by remarking that as matters stand at present, Lancashire boilers with economizers are doubtless the most efficient as regards economy and up-keep, but they occupy much floor space. Marine boilers, of course, without

economizers, are nearly as efficient, and seem to require practically no repairs. "Economic" and water-tube boilers are practically on a level as regards economy and floor space. In both cases the heavy brickwork is a constant source of exposure not incidental to the two other types, and water-tube boilers have this additional disadvantage—that except when lightly worked with non-sedimentary and non-greasy water, troubles are experienced with the tubes which, without counting the time wasted in stoppages, are a considerable expense.—Textile Excelsior.

LOOM THAT WILL PRODUCE TWO WEBS OF CLOTH.

A machine builder in Providence is constructing a multiple shuttle loom for weaving woolen dress goods, suitings, plain and twilled, etc. The improvements are designed for simultaneously producing two distinct webs of cloth (one at each carrying the warp-yarns, which pass through two corresponding sets of independently actuated harnesses, heddles and reeds, and a series of continuously travelling shuttles arranged each side of the loom) from two independently mounted beams to successively and automatically select and charge itself with a length of weft yarn or thread (from large fixed spools or bobbins) to produce a single pick and deliver or feed it to the respective webs while the shuttle is being propelled through or between the corresponding warp yarns. The continuously travelling (but non-reciprocating) shuttles follow one another at comparatively short intervals, so that in the production of double-width goods there may be five or six of them simultaneously and continuously travelling across and delivering weft-threads into the web being produced, the construction and arrangement of the various mechanisms being such that the several heddle-carrying harnesses (each divided longitudinally into short independent sections) are automatically adjusted just in advance of the next succeeding shuttle and its weft-thread or pick. At substantially the same instant that the harnesses are being set, as stated, the corresponding part of the reed, also divided into short independent sections, is being actuated to beat up into the web the weft-thread or pick delivered by the immediately preceding shuttle. Thus there are six continuously travelling shuttles successively feeding the weft to each web, while at the same time a corresponding number of harness and reed sections are being actuated with respect to the shuttles, the result being that the product of the ordinary broad loom may be doubled, while at the same time the shuttle speed of the former per second may be less than one-half that of the latter.

FLOUR FOR FINISHING—TESTING IT.

Although not used to the same extent as formerly, flour is still pretty largely employed for certain classes of finish and a few remarks with regard to the testing and valuation of flour may be of use. Flour should be tested for color, moisture, mineral ash, acidity, crude gluten and thickening power. The flour is examined for color by comparison with a standard sample on a white porcelain slab. The moisture is determined on 5 grammes by drying in a water oven at 100° C. until a constant weight is obtained. The loss in weight represents the moisture. The mineral ash is determined by igniting 10 grammes of the sample in a platinum dish to a constant weight. The acidity is estimated on about 20 grammes. This is made into a thin cream with distilled water, and titrated with N-10 caustic soda solution, using phenol phthalein as an indicator. Crude gluten is estimated on 10 grammes. Mix the flour by kneading it into a stiff paste, in a porcelain dish, with just sufficient water to allow of the

paste leaving the dish without being sticky. The paste is then allowed to stand for about twenty minutes. The dough is then transferred to the centre of a six-inch square piece of cotton. Bring the corners together and tie them up about half-inch above the dough, and wash out the starch in a stream of cold running water, using gentle pressure by the fingers, with constant rotation, when the starch is entirely removed—which is ascertained by the washing water remaining clear. Transfer the gluten to a tared watch glass, and dry it at 100° C. until a constant weight is obtained. The boiling test is carried out by taking 1 ounce of the flour and making into a smooth cream with one gill of water in an enamelled pan. This is then brought to the boil over a ring burner with constant stirring during about ten minutes, and then boiling one minute. The paste is then poured into a beaker or other suitable vessel and allowed to stand all night. Next morning the paste should be transferred to a porcelain slab and compared with a standard flour, prepared in exactly the same way as the sample, noting the stiffest paste, and also the resistance to pressure. This may be done by means of weights, but after a little practice it will be found that the finger and sense of touch are as good a judge as any. The boiling test by itself does not always, by any means, give a result which is borne out in practice, but it enables one to throw out at once many flours that are entirely unsuited for the class of work for which they are required. A good guide in judging a flour for finishing purposes is the appearance of the gluten before drying. The gluten should be of a good color and be adhesive and in one mass, and not all over the cloth in patches. If these trials are satisfactory, a bulk trial should be carried out whenever possible in the ordinary way.

WHAT CELLULOID IS.

Celluloid is a substance consisting chiefly of a dried solution of gun cotton (pyroxylin). A variety of it can be made with pyroxylin and camphor. The pyroxylin is prepared by treating cellulose from such substances as cotton, rags, paper maker's half stuff, or paper itself with a mixture of one part of strong nitric acid and four parts of strong sulphuric acid. The distillate obtained by distilling wood naphtha with chloride of lime is used as a solvent for the pyroxylin. When the excess of solvent is removed from the pyroxylin, it is mixed with a considerable quantity of castor oil or cotton seed oil and made into a paste between heated rollers. For a hard compound the quantity of oil should be less than the pyroxylin. In a plastic condition celluloid can be spread on textile fabrics, or may be made as hard as ivory, for which it is largely used as a substitute. Billiard balls, piano keys and combs are made of it. It can be colored to represent amber, tortoise shell or malachite. It is also used in jewelry.

PAPER-COVERED PULLEYS.

A recent patent describes a method for enabling paper or cardboard to be used for covering driving pulleys or drums, such covering being especially suitable for textile machinery. The drum or pulley is coated with a special cement, as is also one side of the strips of paper, using any ordinary brush for performing these operations. The strips are then laid or rolled upon the drum one after another, a layer of cement interposing between every two layers of paper. The strips are then smoothed tight with a smoothing iron or scraper, the whole of the work being done by hand. The cement is made somewhat as follows: About 8 litres of water

being heated lukewarm, 500 grms. of wheaten starch are added and mixed in; 15 grms. of powdered alum, 20 grms. of sal-ammoniac, 15 grms. of borax, and 40 grms. of carbonate of soda are then mixed together and added to the fluid. Lastly, 100 grms. of gelatine are added, and the cement is then ready to be smeared on the paper for use. By this method the paper is said to be so firmly secured to the drum as to adhere to it as if it were a part of the drum itself; paper is more economical than leather, lasts longer, and by giving a better grip to the driving band or belt enables it to be left slacker than has hitherto been practicable.

Stanley Mills & Co.'s new departmental store in Hamilton was opened on August 13th. It has two acres of floor space.

The Atwood flax mill will not run this year. Mr. Forrest has not succeeded in selling last year's dressed flax and consequently no seed was distributed to the farmers this spring.

The Shareholder commenting on the failure of the Thorpe, Maddock Co., Toronto, and the Imperial Cloak Co., Montreal characterises them as among the most disgraceful that have ever taken place in Canada. The lists of creditors in both cases are long, showing conclusively how absolutely cheap credit is. It suggests a Merchants' Protective Association.

Langdon Wilks, of Galt, sold sixty thoroughbred Shropshire sheep by auction recently. The sale attracted a good deal of attention. Prominent sheep breeders from all over Western Ontario were present. The sheep were all registered animals and were with two exceptions bred directly from imported stock and in excellent condition. The bidding, despite the high quality of the animals offered, was not spirited, and only medium prices were realized. The ewes sold averaged about \$16 per pair, the ram lambs went as high as \$20, and the ewe lambs while reaching \$16 a pair, went as low as \$12, \$13 and \$14.

DECEIT, HURT, AND SCANDAL IN THE "DYING" TRADE.

Exactly one hundred and seventy-six years ago, says the Textile Mercury, that is to say, on June 24th, 1727, there came into operation a curious Act of Parliament intitled (as the lawyers say), "An Act for Preventing Frauds and Abuses in the Dying [sic] Trade." The recital of the wrongs it was intended to remedy—deceit and hurt of His Majesty's subjects at home, discredit and slander of the woolen manufacturers, dyers, and merchants of this realm, in foreign parts—throws some light upon the customs of the industry half a dozen generations ago, which is sufficient excuse, if any be needed, for reprinting the enactment. We omit the concluding sections, which relate merely to the procedure under the Act:

Whereas divers persons within this realm, using the mystery or craft of dyers, have of late used and exercised false and deceitful ways in dyeing bays and other woolen goods, black, without using woad, indigo, or mather, and for passing off such goods as true mathered blacks (though falsely dyed as aforesaid), the corner only thereof hath been dyed red, and a red rose, or other mark, for a true dyed mather black, tied up at such corner, when the rest of the said bays, and woolen goods, or great part thereof, are falsely dyed without woad, indigo, or mather, as aforesaid, and such, or the like deceitful practices, have been and are used in dyeing of black cloths, bays, and other woolen goods, to imitate and resemble true woaded blacks, without using any woad or indigo in the dyeing thereof, and a blue

no e. or other mark, for a true woaded black hath been fixed to the corner thereof, to deceive the buyer; and whereas great deceit hath been practised in the dyeing of blues with logwood instead of woad and indigo, or mixed therewith, which frauds and abuses tend to the great deceit and hurt of His Majesty's subjects at home; and to the discredit and slander, as well of the merchants as of the dyers of this realm, and the woolen manufacturers of this kingdom are thereby greatly disparaged in foreign parts; for redress in the premisses, may it please your Most Excellent Majesty, that it may be enacted, and be it enacted by the King's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, that if after the twenty-fourth day of June, One Thousand Seven Hundred and Twenty-seven, any person or persons whatsoever, shall, within that part of Great Britain, called England, Wales, and Berwick-upon-Tweed, dye or cause to be dyed black, or as or for black, any bays, or other woolen goods, as or for mather blacks, the same not being dyed throughout with woad, indigo, and mather only, without any other ingredient or mixture, giving tincture or color, or shall dye or cause to be dyed black, or as or for black, any cloths, long ells, bays, or other woolen goods, as or for woaded blacks, the same not being woaded throughout, every person offending in the premisses shall forfeit and pay for such deceit and false mathered blacks, as followeth (that is to say)—

For every long bocking bays, containing seventy yards, or upwards, forty-four shillings.

For every Colchester bays or short bays, containing thirty-five yards or upwards, the sum of twenty-two shillings, and so in proportion for any greater or less quantity of any such bays, or of any other woolen goods falsely or deceitfully mathered, or pretending to be mathered, as aforesaid.

For every cloth falsely and deceitfully dyed black without being woaded throughout, containing forty-four yards or more, the sum of forty shillings.

For every piece of bays falsely and deceitfully dyed, as aforesaid, containing seventy yards or upwards, thirty shillings.

For every Colchester or short bays, containing thirty-five yards, or upwards, twelve shillings

For every perpetuana or stuff, falsely and deceitfully dyed, as aforesaid, the sum of four shillings, and so on in proportion for any other woolen goods falsely and deceitfully dyed, and for woaded blacks, as aforesaid.

And be it enacted by the authority aforesaid, that all woolen goods and manufactures, which shall be truly mathered black, according to the directions of this Act, shall be marked with a red rose and a blue rose, and all woolen goods and manufactures, which shall be truly woaded black throughout, according to the directions of this Act, shall be marked with a blue rose only; and if any person or persons whatsoever shall use, or cause to be used, any logwood in counterfeit or forge, or cause to be counterfeited or forged, any of the said marks which shall dye, stain, inprint, or affix any such mark or marks to any of the woolen goods or manufactures aforesaid, falsely and deceitfully dyed as or for mather or woaded blacks, as aforesaid, every such offender shall, for every such offence, forfeit and pay four pounds for every piece of goods to which the said mark or marks shall be affixed, as aforesaid.

And be it enacted by the authority aforesaid, that if after the said twenty-fourth day of June, any person or persons whatsoever shall use, or cause to be used, any logwood in

dyeing of blue; every such person shall, for every such offence, forfeit and pay the sum of forty shillings for every piece of cloth so dyed, containing in length forty-four yards or more, and twenty-two shillings for every long piece of bocking bays, containing in length seventy yards or more, and twelve shillings for every Colchester, or short bays, containing in length thirty-five yards or more, and four shillings for every perpetuana or stuff, containing in length twenty-four yards or more, and so in proportion for all other sorts of woolen goods dyed blue with logwood, contrary to this Act.

And for more effectual preventing the frauds and abuses aforesaid, and for a better discovery thereof, be it further enacted by the authority aforesaid, that all persons occupying the trade, art, or mystery of dyeing any manner of woolen cloth, stuffs, or woolea manufactures whatsoever, within the city of London, or the suburbs thereof, or within the limits of the Weekly Bills of Mortality, or within ten miles' compass of the same city, shall be subject to the examination and inspection of the Incorporate Company of Dyers of London; and that it shall and may be lawful to and for the masters, wardens, and court of assistants of the said company of dyers, by writing or writings, or under their common seal, to appoint honest and skillful persons to be searchers within the limits aforesaid; and out of the limits aforesaid it shall and may be lawful for justices of the peace, at their general or quarter sessions of the peace for any county, city, town, or place, to appoint such searchers; and it shall be or may be lawful for all or any such searchers so to be appointed by the said company of dyers, or by the justices of the peace, as aforesaid, taking to his or their assistance a constable, or other peace officer of the place (who is and are hereby required to be aiding and assisting in the premises), at all seasonable and convenient times in the day-time, to enter into the shop, warehouse, or workhouse, of any person or persons, or company, or corporation whatsoever, using or exercising the trade, art, or mystery of dyeing, or into the shop, warehouse, or workhouse of any other person concerned in the dyeing of any such woolen goods, as aforesaid, or in the making or fixing such marks to the same, as aforesaid, to search and examine all, or any cloths, bays, stuffs, and other woolen goods dyed or to be dyed black or blue, and if any person or persons shall oppose, hinder, or refuse such search, every offender shall, for every such offence, forfeit and pay ten pounds

A NEW PROCESS FOR STIFFENING COTTON.

A process for rendering cotton hard, stiff and strong, and imparting an appearance similar to linen, is given in the D. Faerber Verb. It consists in the application of a mercerizing process, after the treatment of the fibre with chloride of lime or other oxidizing bleaching agents, until a surface alteration of the fibres is obtained. Stretching after mercerizing moderately twisted yarn, the application of steam or hot liquids, especially of boiling soap solution, following treatment with bleaching agents, and an addition of lime to the cotton, are the chief conditions ensuring success. The process may be carried out by any of the following methods:—(1) The well-boiled off and cooled cotton, at 40 degrees C., is treated with chloride of lime or sodium hypochlorite, 20 degrees Be, until it has become perfectly clear, then loosely wrung and for one hour exposed to the action of the air, when the atmospheric oxygen in presence of the hypochlorite very energetically acts on the cellulose. After several times repeating the process, thoroughly rinse (2) The cot-

ton is treated at 30 degrees C. for one and a quarter hour with a solution of chloride of lime, 2 degrees Be.; well washed out, and boiled with steam, water, or a strong solution of soda soap. (3) Material is passed through a strong solution of potassium permanganate, until it looks tobacco-brown, then well wrung, when an acidulated bisulphate bath is applied, at 40 to 50 degrees C., and the whole treatment several times repeated. The bleached cotton is then boiled with strong soap solution. (4) The well-wetted cotton is subjected to the action of a strong bath of hydrogen peroxide and water-glass; then boiled with a concentrated soap solution. (5) The cotton is, for half an hour, treated at 95 degrees C., with soda lye, 50 degrees Be., and then boiled with strong soap solution. After being prepared by one of the processes stated, the material in the loose state is mercerized with soda lye, 37 to 30 degrees Be., then stretched to its original length, acidified and washed in the stretched condition. Any method of mercerizing cotton in this condition may be applied.

INDIGO DYEING—A NEW PROCESS.

As the result of many years of patient research and innumerable experiments, Alexander W. Playne, of Dunkirk Mills, Stroud, has evolved, says the *Textile Journal*, a new method of dyeing indigo upon wool and cloth, for which he has been granted letters patent. The invention relates to improvements in the preparation of indigo vats for dyeing, whereby the dyeing operation may be so thoroughly and efficiently performed as to admit of an indigo vat being run off without serious loss immediately after dyeing a full charge, or else of being wared up with additional indigo, and continued at work. Owing to the mode of preparation of the vat, there is no sediment, so that the trammel net can be lowered to within a few inches of the coil. The working space in the vat being thus greatly increased, the quantity of cloth may be doubled, and the vat almost completely exhausted of indigo. The dye vat may then be run off and started afresh, or may be replenished with a fresh charge of indigo. It is obviously a great advantage to be able to run the vat off without serious loss and to start afresh, either for each batch of goods or whenever the vat may happen to get out of order. Only piece dyeing has been referred to above, but the process is applicable to wool, yarn, and sliver dyeing, with the ordinary differences in handling the different goods. Judging by the test samples, the new process surpasses in effectiveness both the old indigo vat process and artificial indigotine, whilst the first cost is reduced to that of alizarine. Of course, there is a special preparation of indigo, which increases its effectiveness. Another important feature is its remarkable penetration and cleanliness, which show the color to be well fixed, besides being strong recommendations to the trade.

SPRINKLED EFFECTS ON WOOL.

A recent German patent for producing such effects by printing describes the following process. The fabric having been padded with caustic alkali lye containing a thickening or glycerine, or both, is mordanted in a bath of tin-salt, and then removed and dyed with alizarine or substantive dyes. The color then appears stronger on the parts treated with alkali than on the others. It is claimed that the tin-salt helps the removal in rinsing of the excess of caustic alkali. The following example of a lye mixture is given: Dextrine (1-in-1) 50 lb.; caustic soda-lye of 45 degrees Be.,

40 lb.; glycerine, 10 lb. The tin-salt bath may also precede the printing with lye and thickening.

BLEACHING LOOSE RAW WOOL.

To get a white wool, the raw fibre must be carefully sorted, and in particular all wool showing yellow ends must be rejected. The best results are got with two baths. The bleaching bath for 2 cwt. of raw wool is made with 9 gals. of sodium bisulphite of 38 to 40 degrees Be., two-thirds of a gallon of concentrated sulphuric acid, and 1,125 gallons of cold water free from iron. The wool, first thoroughly washed and rinsed, remains in this for three to four hours or overnight. It is then drained and put through a bath of $\frac{3}{4}$ oz. of Alkali Violet 6 B, and if necessary also $\frac{3}{4}$ oz. of Acid Violet 6 B N, in 1,125 gallons of water. It is finally dried at a low temperature. The dye must be added to the bath in solution through a cloth filter, and all water used must be free from iron.

UNCERTAINTY OF THE LAW.

Mr. Justice Tellier has given judgment maintaining the action of J. J. Quigley, a resident of Lewiston, Me., who claimed from Charles Desjardins, a well known furrier of Montreal, the sum of \$180, price of a sealskin coat, bought from defendant, and which was seized and destroyed by the United States customs authorities after it had reached its destination on the ground that the importation of such articles was absolutely prohibited. The court found that plaintiff had acted in good faith, and in ignorance of his real position, and that the defendant on the other hand knew the coat was subject to confiscation. It was decided, therefore, that defendant was unable to give plaintiff proper delivery, and that the sale should be set aside and plaintiff given back his \$180 with costs. In May last, Mr. Justice Pagnuelo, in rendering judgment in a similar case, dismissed the action on the ground that in carrying out his part of the contract by delivering the coat, Desjardins had done nothing contrary to the laws of this country. The two judgments, therefore, conflict.

The William A. Greene & Co. collar and cuff factory at Waterloo, Ont., has now 93 employees on the pay roll.

—The projected combination of Pacific Coast woolen mills has apparently been abandoned, says the *Wool and Cotton Reporter*. The owners of the various mills could not agree upon mutually satisfactory valuations of their plants. It is reported that the Oregon mills are making money and the California are not, and the Oregon people do not believe that they would get due consideration in such a combination.

—A good scourer is not usually a good fuller. An olive oil or good red oil soap remains in solution, unsplit-up at a much lower temperature than a tallow or palm oil soap, and consequently is much more easily carried away from the piece. In fulling, where lasting power is required, the tallow or palm oil soap is preferable, but after the fulling is over these soaps require the water used for washing off to be at a much higher temperature to secure their removal from the close-felted interior of the fabric. The lasting and fulling power of the soap is a most important subject for consideration.

CHINA WOOL.

The principal sources of supply for carpet wools are China, East India, Russia and Turkey. Some wool is imported from Cordova in South America and some small lots come also from Germany and Austria, to say nothing of the Scotch clip, which has been taken very freely during the past year for American account. A large portion of the carpet wools used in this country come from China, and an interesting chapter could be written on China wools alone. Two-thirds of the China clip is filling wool. The best of these wools are used in Axminster carpets, and the others in ingrain carpets. The stock which makes up an ingrain carpet is filling wool in varying proportions, noils and goat hair. China wools are bought freely by Philadelphia mills, and spinners of yarns for ingrain weavers. China wool ranges in price in this market from 11 cents for the most common kind of filling up to 18 to 19c. for best combing or ball China. The latter shrinks 30 to 35 per cent.; it is used for the same purposes as East India wools—in Axminsters and that class of goods. The wools which come from China are no better than they ever were, and it is doubtful if they have changed in character for thousands of years. Once in a great while a driblet of wool will be received which shows a slight improvement in quality or grade, but it cuts no figure. The methods of transportation in China are very primitive. The wools only get to market when the rivers are high and navigation is possible. If there should be a very dry season and the beds of the rivers become comparatively bare, a considerable portion of one year's clip might be carried over into the next year, so that it has been very difficult to estimate exactly what the China clip amounts to. The country depends largely upon its rivers for its methods of transportation. A person who will look at the map of China will find that a chain of mountains extends from west to east nearly across the country. The wools grown north of this chain find their way largely to Tien-Tsin, which is some fifty miles from the Gulf of Pechili up the Yalu river. The wools which are grown south of the range are brought to Shanghai mostly. The wools come down with other merchandise, including bris'les and straw braid, for hats, large quantities of which are for this country. Indeed the great bulk of the straw braid used for hats comes from there, especially the best stock. Goat skins with the hair on, from which are made the large overcoats worn by motor men and lumber men and other laborers in this locality, are obtained from there, and they all come to the coast for shipment, together with the wool.—American Wool and Cotton Reporter.

SHRINKING OF COTTON KNIT FABRICS.

An American contemporary, in replying to a query re the irregular shrinkage of cotton knit fabrics, says: "I do not believe there is any way of shrinking cotton knit cloth so that you will not have to make any allowance for shrinkage, but the garments should all shrink about the same, so that when the goods are finished they will be very nearly uniform. If the cloth is not all knit the same and handled the same from the knitting machine to cutter, the lengths of the garments will vary. For instance, take two pieces of cloth knit on the same machine and with the same yarn, one knit with a loose stitch and the other with a tight stitch; cut these exactly the same, and you will find that the loose knit garment will be shorter than the tight one when finished. Cloth knit with a tight take-up and with a loose take-up will

also vary. The only way to have the goods come out evenly when finished, is to first see that your yarn is running even; then see to it that your machines are all knitting the same number of stitches to the inch, and that the take-ups are all working evenly; do not have one machine running with a tight take-up and the next one with a loose one; or one with a tight stitch and one with a loose one. For, if you do, you will have to make different allowances for each and every machine. Do not have the cloth rolled up on rolls either at the knitting machine or anywhere else throughout the mill, if you can possibly avoid it, as the uneven tension the cloth gets in being rolled will make an uneven shrinkage after leaving the cutter. As good a way as any I know of to shrink the cloth is to steam it and then run it through hot rollers to dry. This process has a tendency to put a gloss on the goods rather than take it off.

IMITATIONS OF MERCERIZING.

All good things have their imitations, and mercerized cottons are no exception to the general rule. Some of the cheap goods on the market are nothing more than highly finished satens, the lustre being produced by sizing under pressure of hot rolls. Such a finish is extremely fugitive, and not at all to be compared with the permanent lustre imparted by the mercerizing process. There has grown up in many quarters a prejudice against mercerized fabrics because of these fake finished goods parading as mercerized, and to the ordinary buyer these are frauds extremely difficult of detection. Buyers should be protected against such misrepresentation by the merchants, who presumably know what they are selling. It is found that the highest grades of goods, those showing the most silk-like lustre, are produced with yarns made of the long staple Sea Island, or Egyptian cottons mercerized in the yarn before being woven into fabric. While good effects may be produced in plain woven goods and a high gloss obtained when mercerized in the piece, still, in the very nature of the process, it is apparent that the silk-like effect produced from weaving mercerized yarn greatly surpasses that obtained through the piece mercerizing process.

The change in the microscopic appearance of cotton mercerized under tension is only noticeable in those fibres which are actually stretched, and not in those which are not stretched. Both in yarn and fabrics, cotton which has been mercerized under tension, or which has been stretched while in the mercerizing liquor, behaves differently according to the length of the fibre, the method of spinning and the twist. Yarn consisting of long fibres shows the change in the greater proportion of the fibres affected, while that consisting of short fibres a much smaller proportion affected by the mercerizing process. In this latter case, the shorter fibres slip upon each other and are consequently not stretched. This explains why short staple cotton may not be used to produce either in yarns or woven fabrics the silk-like lustre. The long staple cotton is held by the twist, and as it cannot slip, must be stretched in the process. The silky gloss obtained by mercerizing under tension is due partly to the rounding by stretch of the individual fibres and of laying them parallel to each other, enabling them to reflect the light uniformly. The action of the caustic soda upon the cuticle of the fibre destroys it and renders the fibre more transparent and more glossy in its appearance. It will, therefore, be seen that short staple cotton, cotton that is imperfectly combed, and carded cotton, are not adapted to show the best results in mercerizing. While these inferior

materials do show an improved gloss after going through the mercerizing process, they are not to be compared with the higher grades of goods made from the long staple cottons, which only are susceptible of being truly mercerized.

It was thought by the earlier experimenters that the tendency toward unevenness in dyeing was an inherent property of mercerized material, but it has since been found that, by the selection of the proper length of staple in the cotton, observing the proper precautions in the preparation of the material, the securing of an equal distribution of tension on every individual thread of yarn in the hank or fabric, the unevenness of dyeing could be overcome. It is unfortunate that the demand for cheaper goods, says the *Textile Manufacturers' Journal*, has impelled many manufacturers to cheapen their product by using these lower grades of so-called mercerized yarns and cloths, and foisting them upon the market under the mercerizing mark. The truly mercerized goods are a wonderful product. For beauty of finish, and their susceptibility of dyes, they have added greatly to the scope of the manufacturers' art. It is, therefore, particularly unfortunate that, at this comparatively early stage of its development, it should be cursed by imitators, and by the demand for cheapened products.—*Textile Journal*.

THE WEST INDIES AND COTTON.

The cultivation of cotton has practically died out in the West Indies. It is not even fair to speak of it as a minor industry, for, with the exception of a few experiments recently made, it has disappeared everywhere, except from the obscure island of Carriacou. The strange thing is not only that cotton is as much a natural product of these parts as sugar, but that there is no part of the world where such fine cotton can be produced, and that at one time it supplied the Old World with most of the cotton that it consumed. Great Britain, at any rate, bought 70 per cent. of its cotton in the West Indies, and just as nowadays, when we think of the West Indies we think of sugar, so in the old days our forefathers thought of cotton. The old geography books said a good deal about West Indian cotton. In 1774, Long, in his *History of Jamaica*, gives the following return for an estate in that colony. The plants were sown five feet apart. Two crops were obtained within a year; the first eight months after sowing, the second four months later. From twenty acres, Long sets the yield of cotton at 6,000 lbs. for the first crop, and 3,000 lbs. for the second; a total of 9,000 lbs. or 450 lbs. per acre. He adds that "in the parish of Vere, 240 lbs. per acre is reckoned a tolerably good yielding."

In the United States 250 to 300 lbs. per acre has been an average yield for the last fifteen years, so that Jamaica, in those early days, could do pretty nearly as well as the United States to-day. At the beginning of the last century the West Indies exported 25,000 bales. In 1836, however, these figures had fallen to 20,000 bales, as during this period sugar was gradually taking its place. And then, unfortunately, with high prices for the latter commodity, cotton gradually died out, except for a brief flutter during the American Civil War. The fact is that if sugar can be produced to sell at a fair profit, at that figure of £10 per ton to which our hopes are directed, cotton is not so attractive as sugar. But it has been the misfortune of the West Indies to keep all its eggs in one basket, and when one reflects on the scepticism that is still abroad as to sugar ever returning to the position it once occupied, it is surely of the utmost importance that the Islands should turn out on an extensive

scale as many staple products as possible. Even fruit seems of less importance than cotton, for the simple reason that so many other countries can produce it of equal quality, and that it requires such careful handling, as the recent fruit laws of Jamaica testify. Cocoa, again, is by no means a universal article of food, and does not seem likely to become so. Put a little extra cocoa on the world's markets from a new quarter, and the markets are frightened. Of cotton, on the other hand, the world apparently cannot have enough, owing to two causes. One is the gradual clothing of naked populations as civilization creeps on, and the other is the advance in the art of mixing cotton with other fibres and in coloring and designing cotton fabrics. Consequently, while during the last 100 years the consumption of flax has doubled and that of wool has increased five times, the consumption of cotton has been multiplied by thirty-nine. Where forty-one million pounds were consumed, 1,594 millions are now the average consumption. In the Year Book of the United States Department of Agriculture for 1907, occurs the following note:

It is estimated that of the world's population of 1,500,000,000, about 500,000,000 wear clothes, about 750,000,000 are partially clothed, and 250,000,000 go almost naked, and that to clothe the entire population of the world would require 42,000,000 bales of 500 lbs. each. It therefore seems more than likely that the cotton industry will go on expanding until the whole of the inhabitants of the world are clothed with the products of its looms. This is not an unreasonable conclusion when we consider the fact that cotton is the cheapest material for clothing known to man. In the meantime it may come to pass that the world's area suitable for cotton culture may have to be seriously reckoned with.

To this reflection must be added another, that the United States are now the largest manufacturers of cotton in the world, having been ahead of Great Britain since 1898, and that as their manufacturing industry develops, they will have less available for export. It is no wonder, therefore, that the British Cotton Growers' Association should be anxious to encourage the growth of cotton within the Empire, and especially to revive the cultivation of it in its old home, where the finest cotton in the world is indigenous, to wit—Sea Island. The Leeward Islands have a distinct advantage over the maritime districts of the United States, which are the only districts in which Sea Island has been grown successfully of late years, in the fact that the plant is a native of the Islands, while to the States it has only been introduced; and in the more northerly climate of the States the plant is killed in the winter, so that it is only an annual, while further south it is perennial.

We have said at starting, that the cotton industry has died out, but we must qualify this by adding that already, before the British Cotton Growers' Association began to move in the matter, Dr. Morris, on behalf of the Imperial Department, had been actively at work promoting the resurrection of the industry. The result, therefore, of the enquiries instituted by the association are given as follows:

1. Jamaica.—Experiments are being made—the association has promised to the Government £100 to be given in prizes for the best quality and largest quantity of cotton grown, and has also sent a large quantity of Egyptian seed.
2. Montserrat.—Samples of Sea Island cotton of very fair quality have been submitted by Mrs. Howes, of Trants, who has a few acres under cotton, and is willing to increase if assistance is given. This association has offered to advance £150, and now awaits Mrs. Howes' reply.
3. Antigua.—Cotton is being grown experimentally by

several land owners.

4. Bahamas.—Sea Island cotton can be grown here similar to that produced on the coast and islands of the Southern States of America.

5. Trinidad.—It is stated that many farmers are anxious to grow cotton—climate and soil suitable and labor plentiful.

6. St. Lucia.—Cotton is being grown and the quality is good.

7. British Honduras.—The Government are taking an interest in this question and have written to the association pointing out the suitability of this colony for cotton growing. The Society of Agriculture and Commerce and Mr. Rowland H. Ormsby, resident manager, Southern Estates Company, Limited, have also written asking for information, and expressing the opinion that there are very good prospects for cotton growing.

8. British Guiana.—The Government Secretary and the Deputy Chairman of the Board of Agriculture have written stating that cotton is indigenous to the country, and was formerly grown in large quantities, and the industry might be easily revived.

To these reports might be added a note on St. Kitts, where Dr. Morris saw 250 acres in excellent condition in November last.

In St. Lucia considerable attention is being given to the question, the Riviere Doree estate being the centre of the enterprise. Here experiments were started in January, 1901. In 1902, 105 acres were under cultivation, and a much larger area is likely to be this year. Much more might be done, for the whole southern seaboard, fifteen by three miles, is excellent soil for cotton, and it can be grown at one-quarter of the cost of sugar. Mr. George Barnard, of Parc Estate, Choiseul, visited England last year with samples of St. Lucia cotton, and was much encouraged by Oldham spinners, who promised, if quality could be uniformly maintained, to take all that could be produced at the highest market prices.

In Antigua the matter has hardly proceeded beyond the experimental stage; still they have sent home samples of Sea Island which were valued in Manchester at 8½d., and would have commanded a better price if better prepared.

British Guiana, where nothing has been done so far, affords, according to the account of a former Government chemist of the colony, numerous advantages over almost any other country in the cultivation of cotton.

The marine atmosphere and saline nature of the coast and estuary soils appear to fulfil exactly the conditions required by the most valuable variety, namely, the Sea Island or black seed cotton. The stray bushes that are left, although degenerated and perennial, are obviously referable to this variety. The land adapted to the Sea Island variety in the Southern States of America is fast wearing out, and the richer lands of the interior and west are suited only to the short staple variety; hence, at no distant period, the more valuable Sea Island variety will have dwindled down to an inconsiderable amount, and unless supplied plentifully from some other quarter, must bring an enhanced price.

The low lands of the coast side of British Guiana appear to me much richer and more enduring for cotton cultivation than any I have elsewhere seen. The exhaustion I have mentioned as taking place on the seaboard of the Southern States of America arises from the constant stirring and tillage of the thin layer of organic matter which was originally found on the surface over the siliceous sand. The coast lands of British Guiana, however, contain a large amount of organic matter intimately mixed and blended with the clay

and that to almost any depth, so that with anything approaching to judicious tillage, exhaustion is not at all to be apprehended. And if it were even to appear that smaller returns occurred from this cause, a speedy and effectual renovation is at all times possible by the method of warping, which would be attended with no expense worth mentioning.

Montserrat has been experimenting since 1901, and there are at present about 120 acres under cultivation, with very promising results. In St. Kitts there are altogether 324. In Barbados experiments are being made which prove that this Island could turn out plants of luxuriant growth, bearing cotton of a high character.

A most important feature of cotton growing is that it requires very little in the way of buildings or machinery, though there is likely to be a considerable demand for gins.

In the cultivation of cotton the West Indies may be said to have already made something of a start, about 500 acres in all being under cultivation, and if the industry is energetically pushed there is probably a grand future before it.

The fact must not be lost sight of that Sea Island cotton, which is indigenous in the West Indies, and can probably be grown there more successfully than in any part of the world, is a long staple cotton, like Egyptian, and for these long staple cottons there has been during the last few years a steadily increasing demand; indeed, the Lancashire spinners are often at their wits' ends to know how to fill their orders. On the other hand the growing tendency in America to build spinning mills close to the cotton-fields is causing American cotton even more and more to stop at home. There is no substitute for cotton, as beet is for the cane. It is an article of everyday use, and of necessity. The wealth of the Mother Country to a great extent depends on its supply. The West Indies have special qualifications for meeting the demand. Why not meet it?—Our Western Empire.

FLAX FIBRE PREPARATION.

If the object of the farmer be to obtain good fibre, and not seed for resowing, the plant is gathered before it is fully matured, when the lower portion of the stem has become yellow and the seed capsules are just changing from green to brown. At this stage the plants are carefully pulled up. If the plants are left in the ground till the whole stem is yellow, that is, until the plant is fully ripe, the fibre afterwards obtained will be more stiff and coarse. The freshly pulled flax is at once submitted to the process of rippling, which has for its object the removal of the seed capsules. This operation is performed by hand, by drawing successive bundles of flax straw through the upright prongs of large fixed iron combs or ripples. If the pulled flax has been dried and stored, the removal of the seeds is usually effected by the seed machine, which consists essentially of a pair of iron rollers between which the flax straw is passed. The most important operation in separating the fibre is that of retting, the object of which is to decompose and render soluble by means of fermentation, as well as to remove certain adhesive substances which bind the bast fibres not only to each other but also to the central woody portion of the stem, technically termed the shive, shore, or boon. The various modes of retting may be classified as follows: (1) Cold water retting. This may be carried out either with running or with stagnant water. (2) Dew retting. (3) Warm water retting. Cold water retting: The best system of retting in running water is said to be practised in the neighborhood of Courtrai,

in Belgium, where the water of the sluggish river Lys is available. The bundles of flax straw are packed vertically in large wooden crates lined with straw. Straw and boards are afterwards placed on the top, and the crate thus charged is anchored in the stream and weighted with stones, so that it is submerged a few inches below the surface. In a few days fermentation begins, and as it proceeds additional weight must be added from time to time in order to prevent the rising of the crates through the evolution of gas. As a rule, after steeping for a short period the flax is removed from the crates, and set up in hollow sheaves to dry; it is then repacked in the crates, and again steeped until the retting is complete. According to the temperature, quality of flax, etc., the duration of the steeping may be from 10 to 20 days. The end of the process must be accurately determined by occasionally examining the appearance of the stems and applying certain tests. The flax bundles should feel soft and the stems should be covered with a greenish slime, easily removed by passing them between the finger and thumb; when bent over the forefinger the central woody portion should spring up readily from the fibrous sheath. If a portion of the fibre is separated from the stem and suddenly stretched, it should draw asunder with a soft, not a sharp, sound. When the retting is complete, the flax is carefully removed from the crates and set up in sheaves to dry. Retting in stagnant water is the method usually adopted in Ireland and Russia. The flax in this case is steeped in ponds, situated near a river if possible, and provided with suitable arrangements for admitting and running off the water. This mode of retting is more expeditious than when running water is employed, because the organic matters retained in the water very materially assist the fermentation; there is, however, always a danger of over-retting, that is, the fermentation may become too energetic, in which case the fibre itself is attacked and more or less weakened. This danger is minimized by occasionally changing the water during the steeping process. The quality of the water employed in retting is of considerable importance; pure, soft water is the best, calcareous water being altogether unsuitable. The waste flax water, being strongly impregnated with decomposing organic matter, poisons the streams into which it may run, and destroys the fish; but it possesses considerable value as a liquid manure. After retting in stagnant water the flax is drained, then thinly spread on a field; it is left there for a week or more, and occasionally turned over. This process is termed spreading, or grassing. Its object is not merely to dry the flax, but to allow the joint action of dew, rain, air and sunlight to complete finally the destruction and removal of the adhesive substances already alluded to. After a few days' exposure the stems begin to bow, the fibrous sheath separates more or less from the woody centre, and the latter becomes friable. Dew retting simply consists in spreading the flax on the field and exposing it to the action of the weather for six or eight weeks, without any previous steeping. Damp weather is the most suitable for this method, since all fermentation ceases if the flax becomes dry. Dew retting is practised largely in Russia and in some parts of Germany. Warm water retting was a system recommended in 1847 by R. B. Schenck. It consists in steeping the closely packed flax bundles in covered wooden vats, filled with water heated to 25 degrees, 35 degrees C. By this means the fermentation is much accelerated, and the operation is completed in two or three days. The process, however, seems to have met with only limited success, as it is apt to weaken the fibre and requires a costly plant with technical skill to handle it. After retting by any of these methods the flax straw has to be scutched either by hand or by machinery.

It is then ready for the hackler.—Ian McDougall in Andover Townsmen.

PRINTING INDIGO ON WOOL AND SILK.

Hitherto it has not been possible, says the Textile Mercury, to print indigo on wool and on silk except rather defectively, because of the necessity of using strong alkalies, which are required to dissolve the indigo and which act on and destroy the animal fibre. However, so many improvements have of late been made in the production of hydrosulphites that now it is quite possible to use them along with weak alkaline bodies, like borax, in the printing of wool and silk, and also of cotton and other vegetable fibres. The printing paste is made with the indigo—either natural or artificial—the hydrosulphite, and an alkali. On subsequently steaming, the indigo becomes reduced and fixes itself on the fibre, and on ageing, the blue develops on the printed places. All shades of indigo, from a pale sky to a deep blue, can be printed. The details of the process for printing wool are as follows: (1) The woollen cloth is padded in a 5 per cent. solution of borax, dried, and printed with a paste made, from 5 to 50 oz. indigo, 25 to 150 oz. hydrosulphite, and 170 to 200 oz. water and thickening, the quantities being used according to the depth of shade that is to be produced. The printed cloths are steamed for three minutes or so, then hung to allow the blue to develop. (2) A direct printing paste is made from 5 to 50 oz. indigo, 25 to 150 oz. hydrosulphite, 50 to 200 oz. magnesia, 220 to 100 oz. of water, and 700 to 500 oz. of gum thickening. This is printed on, the cloth is then steamed as before, and aged. Silk can be printed in the same manner.

GOULD TABLE CLOTH.

In no place in the world, perhaps, have the royal purple, beaten silver and fine linen of the Old Testament been more lavishly duplicated than in the homes of New York's money kings. Surely money was never more wisely invested than in fine linen for table service. Within the past five weeks, there was delivered to George Gould one set of linen table service that cost \$7,000. It was a special order made to fit a round mahogany banqueting table that can seat eighty guests. The linen was first used at the opening of the remodeled Fifth Ave. mansion on the night of the ball. Spun of the finest Irish linen, the tablecloth is six yards long. It has a deep, round border of Florentine point lace all hand-made in one piece. The centre is solid lace. The lace was designed specially for the Goulds and will never be duplicated. It represents months of labor by scores of men lacemakers. With the cloth went six dozen plate and finger-howl doilies, embellished with Florentine point lace, carrying out the same design of the wide borders in the cloth. The whole is a work of art worthy a place in a museum, where in all probability it will some day land to be shown to future generations as an example not only of the art, but the opulence of the 20th century living.

QUICK MORDANTING OF WOOLEN MATERIALS.

For this process, instead of mordanting at the boil for about two hours with a dichromate of soda solution, it is proposed to use other chrome compounds which have the same mordanting properties as chromic acid. These compounds work very quickly, and at a low temperature, on to the fibre, among which may be mentioned: (1) The sulphocyanide of

chromium, either normal or slightly basic, mordants wool at a temperature of 65 degrees C. It gradually loses its mordanting properties as it becomes more strongly basic. (2) The double sulphocyanide compounds, such as ammonium-chromium sulphocyanide, have the same property. To get the chromate of chrome in all cases precipitated on to the fibre, it is advisable to work in presence of a soluble chromate, or, still better, to add a small quantity of a nitrate, a soluble copper salt, and free acid. The following is one of the examples given:

- 2.3 per cent. ammonium chrome-sulphocyanide or chrome ammonium sulphocyanide,
- .5 per cent. bichromate of soda,
- .3 per cent. nitrate of soda,
- .3 per cent. sulphate of copper,
- 1.5 per cent. sulphuric acid.

The percentages are on the weight of wool. The material is entered into the bath cold, and heated slowly up to 60 to 65 degrees C., the whole process being continued for thirty minutes.—Textile Mercury.

PROCESS FOR WOOL WASHING.

Charles Shepherd, Providence, R.I., has patented a process for treating wool washings. It is employed in extracting from the water or suds in which the wool has been washed in worsted or woolen mills. The grease obtained is known as *degras*, and is used extensively as a filling for shoe leather. One method of heating wool suds is to let the water containing the grease stand in a reservoir four or six days, to permit decomposition. The stuff then is pumped into a tank where acid is added for the purpose of separating its constituent parts, releasing the lighter grease from the heavier parts, the lighter grease rising to the surface, while the heavier substances are precipitated and accumulate at the bottom of the tank. The intermediate water is removed from the tank as an affluent, and is discharged into a sewer. The grease and precipitated matter left in the tank are mixed by stirring, and then allowed to pass from the tank in a semi-fluid condition to a filter bed, commonly composed of sand and gravel or cinders.

PREPARING NEW ZEALAND FLAX.

The leaves of the New Zealand flax (*Phormium tenax*), have been worked up hitherto only to a material suitable for cordage and coarse sailcloth, but no fibre capable of being spun for the manufacture of fine fabrics has been obtained from these leaves. Recently, however, a German chemist has discovered and patented a method of working the fibre and spinning from the New Zealand flax. For threads for fine fabrics, only the fibres from the leaves of the young New Zealand flax plants are specially suitable, while when the plants are older the tips of the leaves may be used. The manufacture is conducted as follows: The brown edges are removed from the fresh green leaves and the latter are boiled in a solution of an alkaline salt, for which purpose they may be conveniently tied together in bundles. Suitable salts are borax, soda, or sodium bicarbonate. In particular it has been found advantageous to boil the leaves for one hour in a solution containing 0.5 per cent. of sodium bicarbonate, about 8 litres of such solution being used per kilogramme of leaves. The moist and warm leaves are then beaten with wooden hammers until the parenchyma has been loosened and opened up. To separate the parenchyma from the fibres the mass is next washed in warm soap and water and the

fibres afterwards heckled. The product is now suitable for spinning, which is best performed while the fibre is moist. The fibre thus obtained is white and applicable for fine fabrics, being characterized by great strength. The separate operations in the process described above are well known in the treatment of textile fibres, but the manufacture as a whole for the first time renders possible the production of a fibre from New Zealand flax which is applicable for making the finer kinds of fabric. Moreover, the yield of fibre is said to be considerably higher than that obtained by other methods.

Foreign Textile Centres

Belfast.—Trade has been quiet on account of the King's visit, but the mills are getting to work again. There is no change in the position of the market as a whole, fresh business continuing limited in extent and by no means equal to production. The spinning end is quiet and unchanged, but values are firm.

Bradford.—Trade in woolens is depressed, and there is nothing fresh to record.

Dundee.—The local jute trade is not particularly busy at present, and the result is that in several of the works the employees have taken their holidays earlier than usual. Production is therefore curtailed.

Kidderminster.—Although a good deal of pattern-making for next season is going on, repeat orders for last season's patterns come in fairly well. Here and there short time prevails, and the holidays are almost upon us. Raw materials continue to harden in value; and in wools the upward tendency is more marked for the medium and strong qualities. There have been several Canadian buyers in Kidderminster recently representing Montreal and Toronto houses. This is the season when they pay their accustomed welcome visits to our carpet warehouses. They report prospects in the Dominion bright, much activity in all departments, and regard the future as being full of promise.

Leeds.—Trade shows no improvement, and manufacturers find new business scarce. The prevailing slackness in plain fabrics has not been so great for several years. Business in fancy worsteds is more satisfactory, but here also fresh business comes slowly. The higher prices of fine cloths have something to do with the restricted demand, but the consumption of goods made from crossbreeds is also below the average. For all kinds of raw material there is a slow sale at firm rates, but wool is only bought from hand to mouth.

Leicester.—Although there is only a moderate demand for yarns with a restricted delivery, quotations show a firmer tendency. Hosiery deliveries are confined to special fabrics which are required to sort up stocks. The winter trade opens up very slowly, although the firmer tendency has brought more enquiries. New contracts come slowly.

Manchester.—The cotton situation is one of embarrassment. The hull element has been uppermost of late. There will be another month of anxiety. The situation is becoming more and more critical, and spinners have in many instances decided to curtail production still further, and would be glad to see all mills stop for a time. Spinners will sell at ruinous prices rather than stock at present rates, and as cotton is being worked up spindles will be put out of motion. On all hands it is firmly believed that we are going to wit-

ness a big fall in prices, based upon the assumption that after the cornering is over in New York and New Orleans the hoarded cotton there will be let loose and the old and new crop come upon the market together. Meantime, short time in the mills will be the rule. Yarn is quiet with scarcely any demand. Cloth shows rather a better enquiry for late deliveries, more especially in low grades of shirtings. Light bleaching goods are doing rather better, also printing and dyeing fabrics. Manufacturers hold for their prices.

Nottingham.—There is nothing special to remark as to the present condition of the lace trade, but referring to it in general the Draper's Record remarks that although few novelties in cotton millinery laces are being introduced, there is a fair demand for Valenciennes, which are sold extensively for home use and for exportation to all parts. Common Valenciennes, embroidered and maille ronde Valenciennes, from low prices to high values, are a steady sale. Coarse Torchons in cotton, and finer qualities in linen, are now more or less in favor, in all widths. There is a continued demand for insertions of embroidered Valenciennes, and also of Torchons. Galloons still find favor. Cheap edgings, crochet laces, and warp goods are in average request for shipping assortments.

Rochdale.—In the flannel market there is no actual increase of business, but there is more request for the delivery of orders placed earlier in the year, a portion of which are always required for August. Owing to the advance of the London sales manufacturers are now getting rather better prices, but there is still some curtailment of production pending relief in wool values.

South of Scotland.—Linoleum goods are in fair request with prospects satisfactory. There is a fair demand for linen goods, considerable business being done with the United States.

FABRIC ITEMS.

There is a general feeling that the coming fall is to be a good one for the kid glove.

Indications point to an increased demand for both wide and narrow ribbons in taffeta and satin.

Carpet men report more and more of a demand for room-size rugs, especially from the country.

The rag-pickers of New York have organized a union, and they propose to demand \$12 to \$15 a week, instead of \$7 and \$8.

The Hat Review pays Canadian manufacturers a compliment when it says: Many hats are now marked "made in Canada"—and they are good hats.

The threads of silk made from wood in Germany have eighteen strands, a single one of which is hardly visible to the naked eye. Real silk is two-thirds stronger.

The Legislature of the State of Michigan has killed a bill to appropriate \$400,000 to establish and operate a binder twine factory in the State prison, at Jackson.

The determination of the Southern Cotton Spinners' Association to continue their policy of curtailment shows there will be fully 30,000,000 spindles idle after September 1st, and something like 500,000 persons idle. Curtailment is also going on in the North.

The first bale of this year's cotton crop that reached New Orleans brought 20½ cents a pound. The first bale of the new cotton crop of Georgia was sold at Albany, Ga., at 15 cents a pound.

Khaki, which formerly was very much in vogue in the Philippine Islands, has now a rather restricted sale, but the demand for white drills has increased.

The English Privy Council has heard Connolly et al versus the Consumers' Cordage Company, and the cross appeal, which is against the decision of the Quebec Supreme Court of March 28th, 1901. Judgment has not yet been given.

The Cassella Color Co., whose branch office is at 86 and 88 Youville Square, Montreal, have sent us samples of black and white effects on half silk, dyed in the piece with immedial black, according to their patents, and polished yarn dyed with oxydiamine and immedial black.

There was some excitement at Hamilton a few days ago among the employees of Copley, Noyes & Randall, clothing manufactures, about the importation of a number of men from England. The firm states that only six were brought out, and this was done because it was impossible to get help.

The French steamship, La Bretagne, which took 559 bales of cotton to Havre, brought it back and landed it at New York. The shippers found that they could make more money by re-shipping it to New York than by selling it in France. The steamer La Touraine is also bringing 1,200 bales to New York.

Berlin, Ont., is to have another new industry, a company having been formed to manufacture a class of goods known as imitation Buffalo robes, coats and other articles suitable for the rigorous climate of the northern parts of the Dominion. John Fennell, of the firm of J. Fennell & Son, has been one of the prime movers. McBrine's trunk factory building has been secured.

The St. John firemen do not want any leather hose. They will refuse to handle it if bought. They say it went out twenty-five years ago, and is not now found in any modern fire station. They do not deny that it lasts much longer than cotton or rubber hose, but it is so heavy that the work of handling it is too great. Leather must be kept greased to remain in proper condition, and when in this state it cannot be led into the interior of a house without practically destroying the carpets.

It is estimated that about one-twentieth of the Southern portion of the Philippine Islands is utilized for hemp growing, and that five-eighths of the remainder now covered with forests is suitable for hemp cultivation. With improved methods the production might be largely increased and a profit of \$50 per acre be realized each year, but the laborers are careless in extracting the fibre, and no machine has yet been found successful in separating the fibre from the stalk. A device that would accomplish the process successfully would make a revolution in the hemp industry.

N. B. Converse, of the Consumers' Cordage Company, speaking of the binder twine bounty, expressed the opinion that the industry in Canada would be greatly benefited by it, but not sufficiently to enable Canadian manufacturers to successfully compete with the United States. He maintained that none of the binder twine establishments of which there are eleven in the country had made money during the last five years. They had machinery sufficient to manufacture more than twice the amount of binder twine consumed in this country, but at the present time about 75 per cent. of it was imported from the United States. He further said, if Canadian manufacturers received a protective duty of 12½ per cent. they would guarantee to sell their product as cheap as United States makers, under a protective tariff of 45 per cent.

A number more cotton mills in the New England States have closed for August on account of the cotton situation.

The Governor of Texas, Mr. Austin, has offered \$50,000 reward for the discovery of a method of exterminating the boll weevil, which is destroying the cotton crop in Texas.

Laces are to play a very important part in the fall dry goods trade. There are reports that the demand will revert to the real old-fashioned laces of the days gone by.

The following are the prices of binder twine made at Kingston penitentiary: Pure manilla, 600-foot, 10 $\frac{3}{4}$ cents; Kingston special, 500-foot, 9 $\frac{1}{2}$ cents; one-quarter off when ordered in ton lots.

An immense woolen mill is projected at Tacoma, New Zealand. A steamship line between Tacoma and Australia is part of the scheme, so as to manufacture Australian wool. London capitalists are interested.

On July 31st, the embargo which was placed on wool, five months ago, because of the foot and mouth disease which at that time was prevalent among sheep and cattle in Massachusetts, was removed, and with it went considerable annoyance to the wool dealers of Boston and other New England centres.

The harvest is well under way, and notwithstanding the famme cry early in the season, there is plenty of binder twine and to spare. Good authorities estimate that there will be 15,000 tons of twine carried over. This is having a depressing effect on the hemp market, and sisal hemp has been selling lately below 7 cents, which means cheap twine for 1904.

Replying recently to a question in the British House of Commons, Gerald Balfour, president of the Board of Trade, said he had no official figures as to the number of cotton factories that were working on short time because of the high price of the raw material. He believed, however, that some 700 factories were running on reduced work hours, and that some 360,000 operatives were affected.

Owing to a strike of weavers, in West Wales, thirty-six mills, employing six hundred hands, are idle. The demand for goods has fallen off, and the masters require a reduction of 2s. 1d. in the pound on piece work, and 1s. in the pound on day rates. The men offered to work short time, but declined to accept a wage reduction. Matters are at a deadlock, and it is proposed to import men from North Wales if the strike continues.

The International Harvester Company have put out several carloads of flax twine for use in the Northwest harvest from stock they have been manufacturing at the rate of a ton per day at their special plant. As far as its working qualities are concerned, flax binder twine has passed the experimental stage. The company has demonstrated that this twine has the required tensile strength and that it will work as well as other twines. In length it equals sisal and standard, and is expected to command about the same price. The problem now is to procure the fibre.

The National Association of Wool Manufacturers of the United States has appointed a special committee to promote and facilitate an exhibit of domestic manufactures of wool at the Louisiana Purchase Exhibition in St. Louis next year. The functions of the committee are: (1) To assist the officials of the Exhibition in obtaining a complete and comprehensive exhibit of every description of wool manufacture; (2) to secure for the exhibit the requisite amount of space, and in the most eligible quarters; (3) to guard against any incompleteness or inadequacy of the exhibit, so that domestic manufactures, when compared with those of foreign countries, may not suffer.

An industry at whose head is R. M. Ballantyne, of Montreal, has been organized at Stratford to manufacture knitted gloves. Some fifty hands will be employed to commence operations.

The exports of carpets from the United States during the eleven fiscal months ending May, amounted to 59,624 yards, the valuation being \$50,857. In 1902 there was exported 108,944 yards, valued at \$81,739, and in 1901 the export shipments for the corresponding period were 117,299 yards, of the value of \$98,118.

Interesting evidence of the stage of perfection in cotton-growing which has been achieved in the British West Indies as a result of the efforts of the British Cotton-Growing Association, was afforded in Liverpool recently by the sale of nearly 200 bags of perfect West Indian cotton at 13 $\frac{1}{2}$ d. per lb. The cotton, which was grown from Sea Island seed, had a long and silky staple.

The linen markets are holding firm. Makers are refusing to make concessions in the price owing to the situation in flax. Orders are being received by Old Country firms subject to confirmation on their receipt by the manufacturers. An eastern firm sent over an order for 10,000 dozen handkerchiefs recently at the former price at which the goods were bought. They succeeded in getting an order for 1,500 dozen accepted at an advance of 20 per cent.

A report of the New York market says that the markets will be short of cotton goods before many months, or as soon as the goods now on the looms are exhausted. Not only are mills that have no contracts refusing to accept further business, but many of those that have orders to fill are stopping their machinery, having run out of cotton. It is estimated that there are 850,000 spindles idle in Fall River alone.

A Liverpool firm, which does a large trade with East and Southwest Africa, recently received a species of plant, hitherto unknown, that produces rubber. The plant grows under ground, and probably will be found in English East Africa. If the bark of the plant is broken the rubber keeps the pieces together, and is of extraordinary elasticity. The rubber is directly beneath the bark, and is of unsurpassed quality. Ordinarily the roots, when about one month old, contain from 6 to 6 $\frac{1}{2}$ per cent. of rubber; if the bark is removed the percentage is from 12 to 15.

F. Berg & Company's new hat factory, at Orange, New Jersey, will be run entirely by electricity, a plant now being installed for this purpose. A recent contract with the Westinghouse Electric and Manufacturing Company calls for twenty-seven alternating-current, two-phase motors, twenty of which will be belted to shafting to run the machinery used in the process of making hats. The remaining seven are each to be provided with an extended shaft eight inches long, and will be direct-connected to blowers used for collecting the fine felt used in the process of manufacture.

Twenty-seven processes of manufacture will be shown in operation at the coming Toronto Industrial Exhibition, among others, umbrella making, manufacture of cotton and canvas bags, cotton spinning, elastic stocking making, button making, binder twine making, flax spinning, carpet weaving, and cloth making. The Canadian Manufacturers' Association has arranged for a joint display of Canadian woolsens. The matter has been taken up enthusiastically, and the leading manufacturers have expressed their intention of taking the opportunity of showing the Canadian people the variety and excellence of home manufactures in this line, many of which are regularly sold as imported goods.

The Georgian Legislature has passed a law to reduce the amount of child labor in cotton mills.

The shrinkage of woolen goods is caused by the felting quality of the woolen fibres, each of which is possessed of beard or slanting saw teeth, which favor forward movement, but forbid retreat.

Wm. Morton, Belfast, Ireland, secretary of the Flax Manufacturers' Association, has again written the Ontario Department of Agriculture asking as to the possibility of securing a supply of fine fibre for the Belfast factories. In Canada the flax is grown for seed only.

A new process for increasing the fastness of indigo on cotton consists in treating the dyed fibre with Turkey-red oil, or better still, with Turkey-red oil and red liquor (aluminum acetate), and steaming for a short time. This process is said to make the dyeing fast to chlorine and washing, and may be used as well on artificial as with natural indigo.

A patent has been taken out by H. Grimshaw, of Manchester, for the use of inorganic salts of ammonia for fire-proofing textiles. The patentee does not appear to have any favorite ammonia compound for the purpose, and he states that, in most cases, it is immaterial whether the ammonia salt is added during the process of manufacture, or applied to the finished fabric. The process is said to be useful for all textiles, but especially for such as are made from vegetable fibre. When we remember that all the ammonia salts mentioned in the specification are readily and completely volatilized by heat, the process seems somewhat remarkable.

A new industry has sprung up in Argentine, in the province of Entre Rios. A factory is being started in the town called Rosario del Tala, for weaving and rope making from a plant called carandy, which is growing wild in abundance in the district, and this plant is supposed to be superior and cheaper than jute, linen, ramie, etc., besides saving the heavy duty on imported foreign material. The owners, Messrs. Alterini & Chapi, expect to move their factory on to the shores of the river Parana to reduce the cost of freight, and they are at present inspecting suitable sites for their undertaking.

The Shareholder approves of the action of the Canadian Government in providing for a bounty on binder twine made in the country, rather than imposing a duty on the imported article, and says: The objection that it is a tax upon the whole of the Canadian people, rather than upon the manufacturers of binder twine, if it is worth anything at all, goes to show that higher duties for the protection of manufacturers are a tax upon the consuming community of the Dominion, and that they favor a smaller class at the expense of the larger. The action of the Government in this matter will meet with the approval of the consuming class.

Newfoundland sealskins are now being developed into a great leather trade, as the result of a tanning experiment made by an American five years ago. The success of his efforts is measured to-day by the fact that there are orders in for shipments of this year's skins which aggregate 500,000, while the total number available will not exceed 350,000. Commercial Intelligence states that whilst Arctic whaling has been abandoned, and the Alaskan sealing is all but extinct, Newfoundland's seal fishery, though it has been pursued for 300 years with constantly increasing rapidity, continues as flourishing as ever, and the seals show no signs of diminution. The average catch for the last ten years has been 260,000 annually.

Among the Mills

Co-operation is one of the guiding principles of industry to-day. It applies to newspapers as to everything else. Take a short run in "The Canadian Journal of Fabrics" by contributing occasionally such items as may come to your knowledge, and receive as dividend an improved paper.

The Crompton Corset Co. has taken out a building permit for a \$3,000 addition to its corset factory, on Clarence St., Toronto.

James Warbrick, second hand in the card room in the Gillies' woolen mill, at Carleton Place, recently had the misfortune to have a leg caught in the belting, and before he could be released the limb was broken in three places. He was putting on a belt or throwing it off, and thoughtlessly used his foot for the purpose.

The stone building, in Guelph, formerly owned by the McCrae Woolen Company, and now by the Guelph Waterproof Clothing Company, recently took fire. The roof was almost burned off, and considerable damage was done to stock on the lower floors. The loss amounted to \$8,000 or \$10,000, but was covered by insurance.

Another factory for the manufacture of underwear is about to be started at Toronto Junction. Work on the building, which is to be three stories, 40 by 60, has commenced. The company will begin operations with twenty-five hands. W. A. Ferson is one of the chief promoters. Considerable opposition has been raised to the location of the building, which is in a residential section.

Safe crackers made an attempt on the vault of the Imperial Cotton Co., Hamilton, recently. Nitro-glycerine was used on the doors of the vault, which were badly damaged, but the burglars got nothing. John T. Anderson, the night watchman, heard the noise, and the cracksmen shot at him, he says, as they were leaving the place. He returned the fire. No trace of the burglars has been found.

An Englishman, of experience in the Old Country, who worked in the United States, and subsequently as superintendent and designer in a large mill in Canada, where he placed the machinery and got the mill started, is desirous of obtaining a situation. He holds high recommendations, and has a knowledge of weaving and the manufacture of woolen and worsted goods. His address may be obtained through the Journal of Fabrics.

The St. John, N.B., Sun says that the Cornwall and York cotton mills in that city are not making much money, as there has been a big reduction in the price of finished goods. The mills will not follow the lead of many of the United States mills and close down, but will continue running in the hope that the markets will soon improve. The stock of raw cotton on hand is ample, so there is no danger of closing on that account. Recent new machinery from the Old Country has been installed; also four large blanket looms from Worcester, Mass., which have been put up in the York mill. These machines are larger than the ordinary looms and will introduce a new feature in the cotton manufacture of St. John, for the company will now be able to manufacture full-sized cotton blankets, which hitherto they have been unable to do, as the ordinary loom will not permit of a sufficient width for a blanket. These four machines are of the most approved type, and all four will soon be in operation. The ordinary loom at present in use will weave but thirty-six inches wide. Some of the machinery in the mills has also been remodelled.

J. Walshaw, of the Bolton Woolen Mills, recently burned, is offering his water-power for sale, as will be seen by advertisement elsewhere.

Three hundred employees of the Berlin felt factory, in charge of George Rumpel, proprietor, and William Silver, superintendent, with the Berlin Band in attendance, recently had a day's outing at Penetanguishene.

About 300 employees of the Maple Leaf Rubber Company's works, at Port Dalhousie, went out on strike on August 10th, owing to the company refusing to meet a committee from the Shoemakers' Union, or in any way to recognize the same. The strikers express their determination to hold out until their demands are granted.

Great care should be taken, says an exchange, in selecting shuttles to get the best wool and the correct length and width for the work we expect from them. This subject has not been given the attention it might, and we wear out our shuttles and break up our looms in trying to make them run when they do not want anything but the right kind of a shuttle to make them work smooth and nice.

There was a small strike recently among the employees of the Excelsior Woolen Mills, Montreal, when the men at work on the machines refused to work overtime in order to finish some special work that the management were obliged to turn out. The request was made to the men some days before, and the only sign that the wishes of the management were not going to be carried out was when the men left the machines at six o'clock and refused to continue. The difficulty was soon got over.

Orillia hopes soon to have a linen mill, an agreement having been arrived at between the town council and the board of trade and some English capitalists, which only requires the sanction of the ratepayers. The town offers a free site of five acres, a guarantee of \$150,000 worth of first mortgage bonds, 300 electric horse-power at \$16 a horse-power, and a favorable tax arrangement. The concern will be a big one. The representative who visited Orillia told the council they would spend about \$250,000 on their plant, and would employ to begin with a hundred hands, increasing the number to five hundred, if the business should come up to expectations. The proposal is to manufacture linen from the raw flax. It will be the only mill of the kind in Canada. The town recently bought twenty-three acres of land situated on the railway and near the station, for factory sites.

On Sunday morning, August 2nd, burglars entered the office of the Preston woolen mills and blew up the safe, while the night watchman was going his rounds through the mill, and got away with between \$50 and \$200. According to the night watchman there were two explosions. He thought the first was the boiler blowing up, but on investigation, and finding no trouble there, he continued his rounds. The second explosion was more distinctly heard by him, as he was in the upper story of the main building, directly opposite the office. He at once made for the office, which is not inspected by the night watchman. A man was seen near the building, who fired a shot in front of the watchman, which caused him to stop. The man's accomplices inside stopped when the shot was fired, and escaped through the window. The office was badly wrecked. Investigation leads to the belief that two men were at work inside while one kept watch outside. The lanterns used, and which were made of pasteboard, were left behind. The men were not through with their work when the alarm was given, as a small steel fireproof safe, in which only valuable papers are kept, had been tapped, and nitro-glycerine and fuse attached. The men are believed to be experts.

The Toronto Carpet Co. has received a letter from the Horticultural Society, complimenting them on the care and taste shown in the beautifying of their front with vines and flowers.

The Canadian Cotton Mills, so far as we can learn, are well supplied with raw cotton, having stocked up well last year. They are therefore not likely to be affected by the present shortage.

The members of the press gallery at Ottawa paid a visit to the cotton mills at Cornwall a few days ago, and were shown the whole process of manufacture, from the raw cotton to the finished product.

Cantin's Kid Leather Works, and Paquet's Fur & Glove Factory at Quebec, were visited a few days ago by thirty-seven officers and midshipmen of the Argentine Republic frigate *Presidente Sarmiento*, now in that port.

The Knit-to-Fit Mfg. Co. makers of underwear, Montreal, have recently added 4,000 feet extra floor space to accommodate their increasing business. They have added the manufacture of ladies' circular goods.

The Stilenfit Clothing Mfg. Co. is the name of a new manufactory at Montreal. It is manufacturing a line of ready-to-wear clothing. J. W. Long, the head of the enterprise, was formerly employed with the Semi-Ready Co., in Montreal.

The St. John's News regrets to hear that the Sherbrooke carpet factory is to shut down, and although the management claim that the closing will be only temporary, the time of resuming operations is veiled in obscurity. An English director of the concern, recently residing in Sherbrooke, has returned to his home across the sea.

The Ontario Felt Works at Dundas, which lost its upper story recently by fire, has been re-roofed. While repairs were in progress the mill was closed. The building was insured, but the fire did enough damage to the machinery to cripple the mill for this season. When it starts it will be run on bed blankets, but later it is intended to make harness felts and shoe felts. J. F. Morley, the proprietor, is gradually recovering from a serious illness, but is not yet able to attend to the business, which is being managed by his son.

A new industry for Winnipeg is that of Ryan & Goodlands, woolen manufacturers, who are making the "Rapid City" brand of yarns. They are also taking up the manufacture of light, heavy and medium tweeds and homespuns, and have already made a decided success in what is known as the Winnipeg tweeds. The firm are confining themselves exclusively to Western wools. The work has been quietly pushed for months, but public attention was not called to it until the Winnipeg Industrial Exhibition, when the firm erected one of their looms in the main building, and gave a practical demonstration of how the homespuns were made. The exhibit was one of the most popular in the building, and, whenever the machinery was in motion, it was witnessed by crowds. Standard weight all-wool blankets are also being made.

Though this is the slack season in hat works, the Recorder reports the Union Hat Works in Brockville as very busy. On August 8th, the factory had orders enough to keep them busy for three months, and on the 9th, they received a further order for \$15,000 worth of goods. As a consequence, the proprietors, Saulnie, Decelles & Altmann, are arranging for increased capacity to meet the demand. Additional machinery is being put in and 28 new hands have been added to the staff of employees. Others will be taken on as soon as arrangements can be made for their accommodation, and by the 1st of December they expect to have 200 at work.

BUSINESS NOTES,

The capital of the Anchor Knitting Company, of Almonte, has been increased from \$50,000 to \$150,000.

W. H. Scroggie will soon have one of the largest departmental stores in Montreal, having taken in the old Queen's Theatre, the site of which will be occupied by a new building.

E. T. Fournier & Co., dry goods merchants, Ottawa, have assigned. Mr. Fournier was in business previously as the Victoria Manufacturing Co., engaged in the making of wrappers, etc.

O. Letourneau, for a number of years connected with A. McDougall, of A. McDougall & Co., wholesale woollens and tailors' trimmings, Montreal, has recently been admitted as a partner in the firm.

Danford. Roche & Co., of Newmarket, Ont., who carried on a departmental store, are offering their creditors 15 cents on the dollar. Danford Roche, the head of the firm, has been engaged in business in Toronto, Barrie, Brantford, and other places.

The Cornwall Manufacturing Co., manufacturers of woollens, has found it impossible to run its mills at Cornwall, Ont., satisfactorily with the present equipment, and the management have decided that it would be better to wind up the business and sell the mill. The consent of the shareholders has to be obtained.

John Fisher & Son, incorporated under the laws of the Dominion of Canada, to acquire, construct, build and operate pulp, paper, cordage, twine and yarn-mills and machinery, has received a license to do business in Ontario. George C. Campbell, barrister, Toronto, is attorney for the company.

A winding-up order has been granted in the matter of the Strathcona Rubber Co., of Montreal, and J. McD. Hains has been appointed liquidator. The company was incorporated in Sept., 1901, to take over the business of E. L. Rosenthal, manufacturer of waterproof clothing, who remained the principal stockholder. The authorized capital was \$50,000, of which about half was subscribed.

James Rodger and H. B. Picken, of Gault Bros. & Co., and Mr. McDonell, who was for a number of years his private secretary, have been appointed executors of the estate of the late A. F. Gault. James Rodger will be president of the Montreal Cotton Company, and Hon. L. J. Forget of the Dominion Cotton Company, in succession to the late Mr. Gault.

The town of Galt has another lawsuit on its hands in connection with the Burrows' carpet factory. This time it is the plaintiff. A cheque for \$100, marked good by the Bank of Montreal, and signed by the Royal Carpet Co., was accepted in payment of money due the town by Mr. Burrows. The Bank of Montreal, at Guelph, has refused to honor the cheque, which was part of the \$998.21, that the town paid into the court as a result of Chancellor Boyd's decision. Accordingly the town is \$100 out, which it is seeking to recover from the Bank of Montreal.

LITERARY NOTES.

As an indication of the degree to which the agitation of the new trade policy of the British Empire is stirring up people in the Old Country, we may mention that there is now a journal that has come into existence for the special purpose of discussing this absorbing topic, besides the several publications already existing, devoted to colonial topics.

We refer to "Imperial Union," published weekly at \$2.50 a year, by the Imperial Union Co., 4 and 5 Gough Square, Fleet St., London. It is "a journal of Empire politics and trade," and an organ of British reciprocity. The first number contains a mass of facts and opinions in favor of preferential trade arrangements throughout the Mother Country and colonies. One of the first truths grasped by our new contemporary is the need of cultivating cotton within the Empire to such an extent as to make British mills independent of other cotton-growing countries—a need which has been repeatedly urged by this journal. Imperial Union quotes no less an authority than Sir Robert Giffen in favor of "a good understanding with our self-governing colonies, as to internal trade arrangements of the Empire, even if it shall include a tincture of those preferential tariffs to which the colonies appear so much attached."

The publication by the Macmillan Company of the series of Little Novels by Favorite Authors, in which five or six tales have already appeared, has started some discussion in the papers about the need for the diminutive novel. The conclusion of the discussion so far seems to be, as one paper puts it, that "the world is probably losing a good deal from the simple fact that at the present day there is no inducement to the use of a literary form peculiarly suited to the genius of the age." One paper urges writers to "squeeze out the water in contemporary fiction," which is putting it rather strongly, and no doubt many tales cannot be told in 20,000 words in their completeness and beauty; but it is not difficult to echo the wishes of a good many people that our authors may be encouraged to write some great little books.

The 16th annual issue of the Blue Book Textile Directory of the United States and Canada for 1903-1904 has just been published by the Davison Publishing Company, New York. In the work are lists of cotton, woollen, silk, jute, flax and linen manufacturers, dyers, bleachers, and print works, commission merchants, yarn dealers, waste dealers, rag dealers, cotton goods converters and brokers, raw, thrown and spun silk dealers, etc. Eight pages of closely printed names are required to enumerate the new mills and firms added since the edition a year ago. It is stated that there are 400 new plants listed this year, three producing hemp, flax and jute goods in the United States, and four in Canada. Maps, revised to the date of the publication, show the location of all places having textile mills. This year a new feature is a classified list of the cotton and woollen mills. Dennison's patent index is used to indicate the divisions in the book. Owing to the increased size of the publication and the increased cost of producing printed matter, an increase in the price of the directory is made, the office edition now being sold at \$4, and the traveller's edition at \$3.

The Southern Railway Textile Directory for 1903, published by the Land and Industrial Department of the Southern Railway, Washington, D.C., has been received. It shows that on January 1st, 1903, the number of cotton mills equipped for operation on the lines of the Southern Railway in the States of Alabama, Georgia, Indiana, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Virginia was 458, as compared with 412 on the corresponding date of 1902, an increase of 46. On the same date there were in operation on these lines 71 knitting mills and 50 woollen mills; and these with 13 mills on the Mobile and Ohio Railroad, made a total of 592 textile plants tributary to the Southern Railroad and allied lines on the date referred to. The equipment of these mills comprised 151,579 looms, 5,749,132 spindles, 5,424 knitting machines, 1,136 sewing machines,

and 265 sets of cards. Since January 1st, 1903, there have been added 27 new plants, including 19 cotton mills and eight knitting mills, which have added to the total equipment 20,134 looms and 727,358 spindles; and there are now under construction 23 mills with an equipment of 14,025 looms and 500,312 spindles, making final totals existing and in sight, of 642 mills, 185,738 looms and 6,976,800 spindles. The corresponding exhibit for 1902 comprised 556 mills, 130,045 looms and 4,975,311 spindles. This shows a net increase of 86 mills, 55,693 looms, and 2,001,489 spindles.

The Delineator for September is to hand. This excellent publication is one of our most welcomed exchanges. The Butterick Co., New York.

Personal

Orrin Morrison is the new boss weaver at the St. Croix mill, Milltown, N.B.

Ed. Syer, who has been at Wyoming for some time, has returned to Milton, to manage the factory of the Canadian Carpet Co., of which his brother, S. Syer, is business manager.

Hugh McCulloch, of the Hawkesville Woolen Mills, was one of a deputation to obtain information and urge upon the C.P.R. authorities to carry the proposed extension from Guelph to Goderich through Hawkesville.

Alex. C. McCallum, head book-keeper in Boyd Caldwell & Co.'s Clyde woolen mills, at Lanark, is dead. He had occupied the position since 1895, and had previously been with the same firm when they were in the lumber business at Carleton Place.

A sad accident took place near Guelph on July 31st, by which Mrs. Harris, wife of the late John R. Harris, of the Rockwood Woolen Mills, lost her life. She was driving to the city with her son, when the front axle of the buggy broke, and both were thrown out. Mrs. Harris fell on her head and sustained injuries from which she died at the General Hospital two hours afterwards. Deceased was well known as a W.C.T.U. and Lord's Day Alliance worker.

TEXTILE PATENTS.

The following patents relating to the textile trades have been granted in Canada since the publication of our last list:—

Leather sewing machine. Joseph Lapointe, St. Sauveur de Quebec.

Fabric for mats. The Glen Manufacturing Co., Ellwood City, Penn.

Loom. Oscar S. Greenleaf, Springfield, Mass.

Shoulder brace and suspender. Abraham N. Johnson, Seattle, Wash. Ter., U.S.

Hydraulic or fire hose. B. L. Stowe, Jersey City, N.J.

Sewing machine. Alex. Sallé and Chas. Urgel, Bordeaux, France.

Shuttle changing motion for looms. Ridley Starkie, 59 Springfield Road, Burnley, Lancaster, England.

Stop motion for looms. Napoleon Fortier and George Fortier, Warren, R. I.

Bag. Sophia L. McMillan, Winnipeg.

Loom. Gustav Von Zorawski, Czorkon, Russian Poland.

Loom for making matting. Wm. Wattie, Worcester, Mass.

Garment clasp. Benj. F. Orewiter, Chicago.

Underskirt. Andrew E. Rea, Toronto.

Weft replenishing mechanism for looms. Felix O'Donnell and Susan A. Brown, Pawtucket, R. I.

Winding machine. Universal Winding Co., Portland, Maine.

Display rack. A. S. Strickler and W. H. Strickler, Keokuk, Iowa.

Exhibit rack for mattresses. Chas. A. Hart, Montreal.

Garment holder. E. J. Schuneman, Newton, Iowa.

Apparatus for treating fibrous material. R. Illingworth, J. T. Mazey, and Geo. Naylor, Coventry, England.

Hook and eye. Frances H. Gorrell, Newton, Iowa.

Process of waterproofing fabrics. Jas. Menzies, London, England.

Leather working machine. Turner Tanning Machine Co., Boston, Mass. (4 patents).

Hide working machine. N. Leiden and E. H. Munkivitz, Milwaukee, Wis.

Umbrella. H. P. Ferronssat, London, England.

Trousers. Arthur G. Larkin, New York.

Stocking. R. O. Shaw-Wood, London, Ont.

Garment clasp. M. Coffey, Chicago.

Convertible suspenders and belts. Nathan Hirsh, New York.

Shuttle lock for looms. F. A. Mills, Methuen, Mass.

Sewing machine. Z. T. Fruech and Wm. C. Meyer, Boston, Mass.

Diaper. F. L. Reid, Scranton, Penn.

Sad irons. Alfred L. Eccles, Trenton, N. J.

Sad irons. F. C. Lowthorp, Trenton, N. J.

Coat. Chas. Lachance, Montreal.

Sad iron. Joel Bennett and Jas. O. Weldon, London, Ont.

Now cleaning machine. Alex. Morrison, Saginaw, Mich.

Loom for weaving pile fabrics. Alf. F. McCallum, Espy and Jas. Magee, Bloomsburg, Penn.

Loom. W. T. P. Hollingsworth, Paterson, N. J. (2 patents).

Manufacture of rubber shoes. H. J. Doughty, Providence, R. I.

Placket fastener for ladies' skirts. J. P. Famous, Norristown, Penn.

Garment supporter. Fred. Hirsch, New Haven, Conn.

Safety pin. Mary Berube, Wilson, Mich.

Washing machine. Mary E. Kelly, Jackson, Ohio.

Washing machine. F. D. Harding, West Baldwin, Maine.

Cord and rope making machine. Thos. W. Norman, Boston, Mass.

Leather splitting machine. W. D. Quigley and J. H. Gay, Newark, N. J.

Button sewing machine. R. R. Wanless, New York.

Shoe sewing machine. United Shoe Machinery Co., of Canada, Montreal.

Method of treating smooth wavy haired skins. Max Stern, Berlin, Germany.

Hose support. F. W. Bauer, Chicago.

Umbrella. W. W. Climenon, Honeybrook, Penn., and W. D. Winger, Lancaster, Penn. (3 patents).

Embroidery seams. Chas. E. Bentley, Manhattan, N. Y.

Garment fastener. Geo. H. Dillin, Watertown, N. Y.

Larrigan. Alex. Blackie, Annapolis, N. S.

Button. G. W. McGill, Riversdale, N. Y.

Apparatus for beating up the weft of looms. Heinrich

Panitschek and Carl Herold, Zeile, Brunn, Austria, (2 patents).

Scissors. T. J. Aurand, Watscka, and W. L. Aurand, Milford, Ill.

Suspender. Alfred M. Zeigler, Boston, Mass.

Trousers. F. E. Schenker and E. F. Aubry, Vincennes, Ind.

Tent. John P. Nelson, Waltham, Mass.

Sewing machine. Ruce Buttonhole Machine Co., Boston.

Carding machine. Jas. Hall, Jr., Montreal.

Mattress. Maggie Dambrun, Des Moines, Iowa.

Horse blanket. Mamie Cleaver, Lebanon, Ky.

Whalebone stiffening strip. Aaron M. Weber, New York.

Larrigan. Alex. Blackie, Annapolis, N. S.

Hat rim protector. V. A. Wallace, Guelph.

Garment supporter. David Basch, New York.

Garment supporter. W. S. Radnege, Paducah, Ky.

Corset. John D. Belcher, Toronto.

Garment clasp. Adolph H. Cohn, New York.

Thread dressing machine. G. A. Fredenburgh, Pawtucket.

R.I.

Work holder for sewing machines. May B. Woodruff, Milwaukee, Wis.

Needle for sewing machines. G. A. Manwarning, Bayonne, N.J., and J. E. Lytle, New York.

Tent. E. B. Cough, Middletown, Penn.

Thread cutter. Catherine P. McKim, Newton, Penn.

Garment supporter. Wheeler & Baldwin, Chicago.

Button for hose supporters. The I. B. Kleinert Rubber Co., New York.

Sewing machine. Chas. F. Filon, Trenton, N. J.

Means of changing shuttles on looms. Alfred Smith and Simeon Jackson, Keighley, York, England.

Hemming gauge. Marie A. Cotton, Kansas City, Missouri.

Feather fabric. Warren Featherbone Co., Three Oaks, Mich.

Support for trousers. Geo. E. Hill, Scranton, Penn.

Towel. Ella D. L. Ford, Hamilton.

Leather manufacture. Mendel Pianko, Woodhaven, N.Y., and H. F. Bindseil, New York.

Leather substitute manufacture. G. S. and Chas. Falkenstein, Philadelphia, Penn.

Loom shuttle operating mechanism. Azel C. Hough, Worcester, Mass.

Loom take up mechanism. Same patentee.

Button hole cutter. Leopold F. Monck, New York.

Woven wire mattress. Gold Medal Furniture Mfg. Co., Toronto.

concentrated in the fall, when the other crops are out of the way. The fibre is shipped to the United States, there being no mill on this side, though D. F. Minnigan, manager of the Wallaceburg mill, with true manufacturer's instinct, believes there would be if the tariff were raised. The seed is easily disposed of to several mills in Ontario.

The French textile manufacturers of cotton goods have had a meeting to discuss the high price of Egyptian cotton, and it was found that they already had, as much as possible, discontinued using this class of yarn, and were now using American cotton wherever they could.

There is a chemical factory at Kinashina, a town situated on the Volga, where aniline dyes are taken very extensively from petroleum, and have been for some years. The Montangetung says the business of that factory has been so successful that it now uses 180,000 cwt. of petroleum per annum for this purpose alone.

The Imperial Cloak Company, of Montreal, upon whom a demand of assignment was recently made by the Montreal Cotton Co., has filed a statement of its assets and liabilities, from which it appears that the sums owed by the insolvent company aggregate \$120,000. The stock, plant, and book debts are believed to be worth about \$20,000, so that it is not expected that very much will be realized for the creditors, who number 150, and include some of the most prominent wholesale dry goods houses in Canada and in England. Among the creditors are W. R. Brock Co., Bell Telephone Co., Canada Woolen Co., Corticelli Silk Co., Canada Paper Co., Gault Bros., McLean Publishing Co., J. C. Wilson & Co. and the Dominion Bank. The firm consisted of two members, I. Haltman and A. Cohen, who came from New York about five years ago, and started the business of manufacturing ladies' cloaks, skirts, and costumes. At the time of the failure they employed over one hundred operatives. A. L. Kent and A. F. G. Robertson have been placed in charge of the business in the meantime. Haltman has left the city.

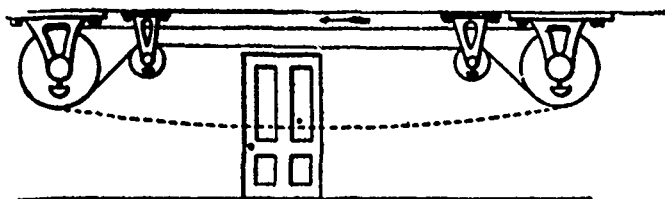
The liabilities of the Thorpe & Maddock Manufacturing Co., wholesale clothiers, Toronto, whose assignment was noted in our last issue, will amount to considerably more than was at first expected. According to the statement submitted to the creditors by E. R. C. Clarkson, assignee, they will amount to about \$58,000, of which \$49,000 is due to Canadian creditors, \$6,500 to United States and British firms, and \$1,825 represents preferred claims. The nominal assets consist of stock in warehouse, \$31,000, and book debts, \$2,200. As most of the resources of the firm had previously been hypothecated, the actual assets are only about \$9,000, leaving a deficit of nearly \$50,000. The bad state of affairs is attributed to the company's attempt to operate on insufficient capital, and to the extreme disproportion between the output and the operating expenses. By direction of the creditors, the stock was offered at auction on August 5th, and was divided into four lots, three of which were disposed of. Lot one, valued at \$19,800, was bought by Nicholas Garland, at 65 cents. Lot three, worth \$3,100, was sold to N. B. Gould, Port Hope, at 68 cents. A Bradshaw & Son bought lot four, worth \$485, at 57½ cents. Lot two, valued at \$3,300, was withdrawn. The Canada Woolen Mills Co. recently brought an action against the company for \$4,300 on promissory notes. Owing to the existence of some claims, which it will be difficult to arrange, the estate will not be wound up for some weeks.

THE FLAX CROP.

A correspondent of the Globe, writing from the County of Kent, says: A new crop with a possible important future is flax, the growth of which is encouraged by a number of mills in the county. One company has three mills, located respectively at Wallaceburg, Dresden and Tilbury, and for which there are 1,000 acres under crop, with indications of a good yield. The farmer gets \$10 a ton for the flax seed and straw together, the buyer doing the separating. The availability of flax for fibre depends upon its being pulled by hand, and this laborious process, reminding one of the Middle Ages of implement development, costs from \$5 to \$6 an acre. The yield is from two to two and one-half tons to the acre, which, after paying for the seed and the pulling, leaves \$12 to \$15 profit, with what labor there is con-

GETTING A BELT OUT OF THE WAY.

When in the basement of a large store some time ago, I noticed a good scheme for getting a long belt up out of the way, says a writer in Power. It formerly occupied the position shown in the dotted line, but when the new engineer



came he put in the two idlers and fixed it up as in the sketch, making it so a person could come through the door without bending almost double, and leaving more room for storing goods.

CLASSIFICATION OF DYESTUFFS.

The multiplicity of names for the same dyestuff is confusing enough, says the Textile Mercury, when one finds them under their legitimate variants in a dictionary of dyestuffs, but when every conceivable means is resorted to by dealers to obscure the character and to give fictitious names to the most common dyes it is time that the manufacturer insisted on knowing what he was purchasing. It would be a great benefit to the art of dyeing and increase the knowledge of the dyer if there were a few compelling manufacturers of dyestuff to put a uniform name on products of the same constitution. The lack of some such statute leaves the condition of the dyestuff trade discreditable to a country such as ours. It will be generally admitted that it is harder for the manufacturer to get competent dyers than it is to hire men with equal intelligence to take charge in other positions of similar responsibility in the mill, and this is largely due to the neglect or inability of the practical man to make himself familiar with the proper names of the dyes. In justice to him, however, it must be said that he can scarcely do so without the co-operation of his employer, who should insist on knowing the proper name of the dye he is buying. By shortening the babel of titles under which dyes are sold, he can materially increase the ability of his dyer, in making a judicious selection of the dyestuffs adapted to give the best results with the material to be dyed, since by lessening the number and confusion of his dyes he increases the facility of their use and the familiarity of his dyer with their properties.

THE "UNIVERSAL PROVIDER" ON THE BRITISH TARIFF.

Wm. Whiteley, head of one of the best known departmental stores of London, Eng., was recently interviewed by a representative of The Imperial Union. Mr. Whiteley intimated that he was no politician, and regarded the question of tariffs purely from the point of view of their influence on the trade developments of the nation.

"I welcome most heartily the proposal to reconsider our economic position," said he. "You cannot go on indefinitely with a constant contraction of markets against you."

"As, for example?"

"Well, the two staple trades of Coventry have been destroyed—watch-making and ribbon-making. But, more than that, capital is actually going out of this country to employ foreign labor instead of employing British labor at home.

Take the furniture trade. It is within my knowledge that one of the largest manufacturers of furniture some time ago opened a branch in Paris. He found it impossible to supply British furniture except at prohibitive prices."

"With what result?"

"That he decided to start a factory in France; and is now spending large sums of money in labor which might have been spent here. Again, if a lady in Paris wants an English-made dress from me, the cost of £4 here will have been raised to something like £7 before the dress gets to Paris. The duty imposed on silk in the United States is 75 per cent. In the case of Paris it is also heavy, but varies according to the material used. On the other hand they all send here free."

THE INDUSTRIOUS BEAVER.

The Glover's Journal says beavers are becoming so numerous in Maine that lumbermen are forming a combine to compass their extermination. The increase in the number of beavers is remarkable, considering the activity of poachers, and the destruction of the forests. Of late years the industrious animals have been remarkably busy in the construction of dams and snug winter quarters, the work in some places being of such magnitude and so cleverly done that people have travelled miles to see and admire it. The beavers not only kill the growing timber, but their dams obstruct the streams and brooks down which logs are driven. "I have helped to cut away the dams and clear away the houses that obstructed some streams, and returning three weeks later found the dams and houses rebuilt and the streams again full of brush." On the other hand, the people of Northern Alberta are agitating for preventive measures against the destruction of beavers and other fur-bearing animals. The beaver is as helpless as he is industrious, and soon disappears when the fur-hunters invade his haunts. His proverbial cunning may save him for a time, but that is chiefly manifested in his early departure for more secluded regions. The absolute prohibition of the trapping of beaver in Ontario for five years, and the forest reservation in Algonquin Park, have saved this animal from destruction in this province. It would be a pity should he be exterminated.

ASSISTANTS IN THE DYEBATH.

It is often found preferable, especially in dyeing pale shades, to use assistants in the dyebath that have a rather slower action than "oil and crystals." One assistant that is coming still more largely into use is bisulphate of soda, and as this consists of sodium sulphate, in which one atom of sodium in the molecule has been replaced by hydrogen, it may be regarded (from the dyer's point of view, at any rate), as an acidulated sodium sulphate. On the other hand, we may look upon it as sulphuric acid in which one atom of hydrogen has been displaced by one atom of sodium in the molecule. It will be seen that the bisulphate partakes of the properties of both an acid and a salt, and, since the acid is in a state of chemical combination, it has a slower action than when in the free state in the dyebath. Although it is highly probable that in an ordinary Glauber's salt and sulphuric acid bath there is a formation of sodium bisulphate, it is a rather curious fact that better results are obtained in dyeing if the bisulphate is prepared beforehand, and an addition of 10 per cent. made to the dyebath instead of the usual 4 per cent. D.O.V. and 10 per cent. Glauber's salt.

There are many other assistants that may be used to

ensure levelness of shade, but, on account of the cheapness of those already mentioned, they are probably not used to a very great extent. One that can be recommended for even the most delicate shades is ammonium acetate, and it is prepared in the dyebath itself as required. Ten per cent. acetic acid is placed in the cold bath, and this is very nearly neutralized with ammonia. During the time the liquor is being raised to the boil the ammonium acetate decomposes into ammonia and acetic acid, and a gradual acidulation of the dyebath ensues. Since the rate of the liberation of the ammonia is in proportion to that of the heating of the bath, it follows that when the liquor is raised gradually to the boil there is no danger whatever of flecky dyeing.—Textile Mercury.

WOOL MARKETS.

When the last issue of the Journal of Fabrics went to press, the July London wool sales were in progress. Reports at the closing of the sales on the 22nd state that during the sales prices for all except the better classes of grease weakened until they stood 5 per cent. below May final quotations, and towards the end the market became rather more animated, without, however, establishing any material recovery in values. The finest qualities of greasy cross-breds were eagerly competed for and occasionally realized 5 per cent. advance. South Africa wools met with unsatisfactory competition throughout and a larger proportion than usual of the quantities catalogued were withdrawn. Merinos were weak, consumption has been much curtailed since the commencement of the year owing to fashion having been deflected towards materials made from coarse wools. The prospects for the latter appear favorable. The next sale opens on September 15th.

Canadian Colored Cotton Mills Company.

Cottonades,	Zephyrs,
Tickings,	Skirtings,
Denims,	Dress Goods,
Awnings,	Lawns,
Shirtings,	Crinkles,
Flannelettes,	Cotton Blankets,
Ginghams,	Angolas,
Yarns, etc.	

WHOLESALE TRADE ONLY SUPPLIED.

D. Morrice, Sons & Co.
Agents,
Montreal and Toronto.

Reports from Sydney, New South Wales, are that the market is a waiting one. While there has been decreased production, prices have moved up slowly. The shortage in the Australasian clip for the year ending 30th June, reached something like 270,000 bales. As visible stocks of merino wool in Britain are undoubtedly small, and it is considered quite out of the question that the normal production of this wool in Australia can be regained for some years to come, there is every indication of merino wool prices remaining at a much higher level, except so far as they may be affected by the change of fashions indicated above.

In Boston the market is quiet, but there is a fair business doing, with the demand pretty well distributed over the various grades of wool, although the chief enquiry is still for medium and lower stock. The demand for pulled wools is one of the noticeable features of the market, B supers are also in demand.

The market for this season's clip of wool in the North-western States has been good and prices quite satisfactory to producers. The buying movement is about over, and most of the wool has passed to eastern handlers.

Situations Wanted.

EXPERIENCED technical and commercial manager wants situation, thoroughly understands flax, hemp and jute culture, spinning, twisting, weaving, sack-making, etc. Good judge of fibres and yarns; practical Engineer; fluent French, efficient correspondent; successful salesman; first-class English, French and Russian testimonials—copies at this office; highest references, European and American. Apply "Lin," CANADIAN JOURNAL OF FABRICS OFFICE, TORONTO.

WANTED POSITION AS TRAVELLER—Calling on the retail trade for a mill. Long experience on the Ottawa Valley, East Ontario and North West. At present representing several Dry Goods Specialty Houses. Address, X Y Z, CANADIAN JOURNAL OF FABRICS, Montreal.

BOSS DYER—Boss dyer wants position. Large experience on raw wool, cotton, rags, wools, silks, union and shoddy piece dyes, felts and wool piece dyes. Am 34 years old, strictly temperate, will go anywhere on trial. Am at present dyer and chemist in a 25-act mill—can furnish the best of references. Address, "W. B.," care Canadian Journal of Fabrics, 18 Court Street, Toronto, Ont.

EMPLOYMENT WANTED IN CANADA—Overseer of Carding.—Experienced on wool, cotton, shoddy mixes, and all cotton, tweeds, flannels, blankets, wrappers and knitting yarns. English, American and Canadian machines. Married. Good references. Address, "S. E. C.," 321 Court St., Auburn, Maine, U. S. A.

Canada Bobbin Company, WALKERTON, Ont.

Successors to
KER & HARCOURT.



Established
1887.

Largest Makers of Bobbins in Canada.

MANUFACTURERS OF ALL KINDS OF

Spools and Bobbins

Used in Woolen, Cotton, Silk, Rope and
Wire Mills, and Small Wood Turnery.

Having lately enlarged and improved our plant, and having a large quantity of well-seasoned stock in the rough always on hand, we are prepared to fill any order carefully and promptly.

C. E. RILEY & CO'Y.

281-285 Congress Street, Boston, Mass.

Builders and Importers of

COTTON, WOOLEN, WORSTED

MACHINERY

CARD CLOTHING, EMERY FILLET, EGYPTIAN COTTON,

SPINDLES, FLYERS, FLUTED AND SHELL ROLLS, GRINDING ROLLS, &c.

Sole Agents for the
Hamilton Cotton Co.'s
WARPS

Samuel Law & Sons
English
CARD CLOTHING

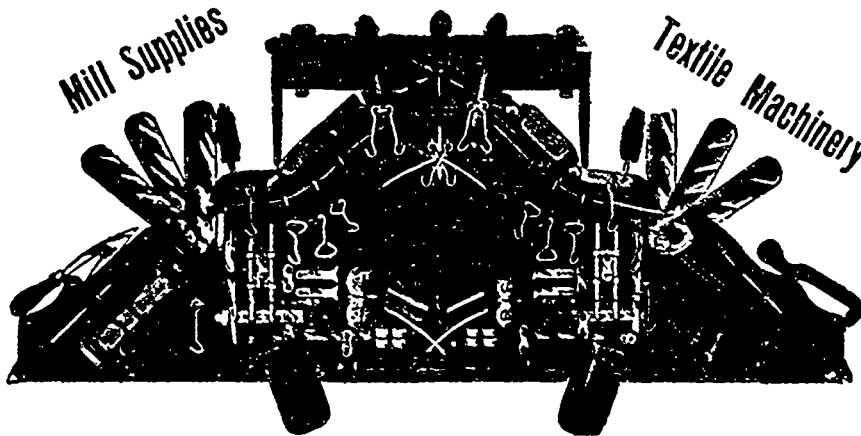
Henry F. Cockill & Sons
Cleckheaton, Eng.
"Stretchless" and
"Special Alpha"
Leather Bolting,
Link Bolting for
Dynamo, Condenser
Leather Aprons.

Large Quantities Carried in
Stock.

Office- 11 & 13 Front E.

Warerooms- 138 Esplanade E.
(Foot of Jarvis St.)

GEORGE REID & COMPANY, WOOL



Francis Willey & Co.
Bradford, Eng.
WOOLS

James Smith
Woolen Machinery Co.

Carding
Spinning
Woolwashing
Garnotting
Pickering
Drying
Burling
Cleaning
and . . .
Finishing
Machinery

Valuations made on
Application.

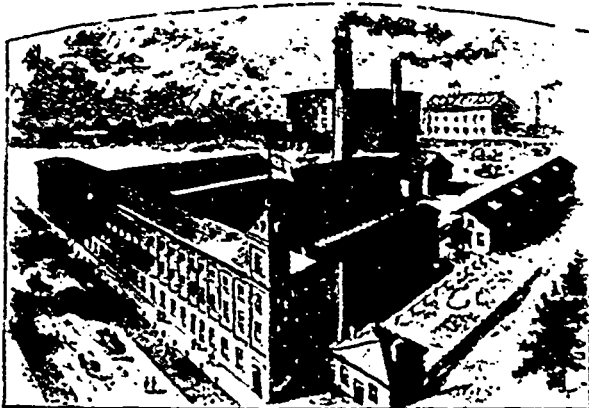
TORONTO

Telephone, Main 3591

Hamilton Cotton Co., Hamilton

MANUFACTURERS OF

White and Colored Yarns, Single or Double, Hosiery Yarns
of all descriptions, Warps, Twines, white or colored.
Webbings & Bindings in great variety, Lampwicks, etc.



SELLING AGENTS

WM. B. STEWART, 18 Front St. East, Toronto.

Agent for Warps: GEO. REID, 11 & 13 Front St. E. TORONTO.

THE NEW

French Shoddy Picker Machine

SUPERIOR TO ALL OTHERS.

High Test Awarded at Paris Exposition, 1900.

Of SILK, WOOL, COTTON, WASTE, JUTE, etc, it will
produce fifty per cent. more production than the Garnett
Machine on one-half the power.—Has no rival on the market.

Toronto Woollen Machinery Company

118 DUKE STREET, TORONTO.

L. BREDANNAZ, Manager.

Sole Agents for Canada and the United States.

Prices on Application.

Prices on Application.

The Manitoba clip is about all in. Dealers offer 7½c. for further lots of unwashed fleece laid down at Winnipeg. The price last year was 6½c.

Montreal.—Since the closing of the Colonial wool sales the market here has been very quiet. Prices are firm for anything fine, but low wasty lots are sold in buyer's favor. The stocks in first hands are very low, and there is little encouragement to increase, as sales are from hand to mouth business.

Toronto wool market quiet and unchanged. Holders of stocks of wool are holding on for an advance. Quotations are as follows: Combing fleece, 16½ to 17c.; clothing, 17 to 18c.; rejections, 12c.; unwashed, coarse, 9c.; do. fine, 10c.

Grey is to be popular for men's overcoatings the coming fall and winter.

Among the new things meeting with much favor are velvet shirt waists.

Canadian made dress goods are in increasing demand. Their popularity is undiminished, and next season will see their sale increased.

The Allen Manufacturing Co., Toronto, have recently installed in their establishment a fully equipped department for the manufacture of umbrellas.

—The name of the Dominion Burglary Guarantee Co. has been changed by Act of Parliament to the Dominion Guarantee Co., Limited. The company's headquarters will remain as at present, at 140 St. Peter St., Montreal, the change in name being designed to enable the company to extend its operations into a new field. This new sphere of operations is set forth in a paragraph of the act, as follows: "The company may guarantee the title to, or the quiet enjoyment of, property, either absolutely or subject to any qualifications and conditions, and may guarantee any person interested in or about to become interested in, or own-

ing, or about to purchase or acquire, any real property, against any losses, actions, proceedings, claims or demands by reason of any insufficiency or imperfection or deficiency of title or in respect of encumbrances, burdens or outstanding rights; and may guarantee the due payment of the whole or part of any loan, advance, mortgage, or claim, hypothecary or otherwise, or the interest thereon; and may issue its guarantee certificates or policies in such form as it determines and for such remuneration as it fixes." The company has been very successful, we understand, in the branch of its business providing insurance against burglary, and will no doubt be equally popular in its work of insuring against defective titles.

CHEMICALS AND DYESTUFFS.

Nothing new to report in change of prices. Very little doing in chemicals, but an improvement is expected soon

Bleaching powder	\$ 1 30 to \$ 1 50
Bicarb. soda	1 75 to 2 00
Sal. soda	0 75 to 0 90
Carbolic acid, 1 lb. bottles	0 35 to 0 40
Caustic soda, 60°	2 00 to 2 25
Caustic soda, 70°	2 35 to 2 50
Chlorate of potash	0 09 to 0 10
Alum	1 30 to 1 50
Copperas	0 65 to 0 75
Sulphur flour	1 50 to 1 70
Sulphur rock	1 60 to 1 80
Sulphate of copper	0 06 to 0 6½
White sugar of lead	0 07 to 0 08
Bich. potash	0 07 to 0 08
Sumac, Sicily, per ton	50 00 to 58 00
Soda ash, 487° to 387°	1 15 to 1 25
Clip logwood	1 50 to 1 75
Castor oil	0 07 to 0 08
Cocconut oil	0 07 to 0 08

NEW BLACK FOR WOOL



Absolutely Fast ONE DIP Black

Unequaled for depth of shade Users of black should investigate
Fastest Black on the market.

**F. E. ATTEAUX AND CO.
BOSTON.**

CANADIAN BRANCHES:

41 Colborne Street,
TORONTO

13 Lemoine Street,
MONTREAL

A. KLIPSTEIN & CO.

122 PEARL STREET, NEW YORK.

HAMILTON, Ont.,
24 Catherine Street, N.

MONTREAL, Que.,
17 Lemoine Street

Chemicals and Dyestuffs.

CARBIDE BLACK E

Cheapest and Best One Dip Black on the Market

HEADQUARTERS FOR

Caustic Potash 90%	Carbonate of Potash
Chlorate of Potash	Bleaching Powder
Phosphate of Soda	Refined Gutch A.K.C.
Yellow Prussiate Potash	Yellow Prussiate Soda

BRANCHES—

BOSTON—287-288 Congress St.
CHICAGO—126 Kinzie St.

PHILADELPHIA—10-52 N. Front St.
PROVIDENCE—13 Mathewson St.

Sole Agents for the Society of Chemical Industry, Basle, Switzerland.

JOHN W. LEITCH & CO.

Milnsbridge Chemical Works, near HUDDERSFIELD, ENGLAND.

PHENYLENE DIAMINE (DISTILLED)
TOLUYLENE DIAMINE (DISTILLED)

Bismarck Brown, Chrysoidine, Crystals and Powder. Largest makers in the world.
Soluble Blues—all shades.
Dinitro Benzol and Dinitro Toluol.
Reduced Indigo, Wood & Leather Stains.
Ortho-Nitro-Toluol & Para-Nitro-Toluol
Specialties for Cotton, Wool and Silk Dyers, Paper Makers, etc

FIRE PROTECTION.

**FIRE HOSE—
Cotton—Rubber Lined.**

**FIRE HOSE—
Linen—Unlined.**

Full Stock constantly on hand.

**HIGH GRADE
“GENUINE OAK”
(ENGLISH TANNED)**

LEATHER BELTING

No Shoulders, Necks or Bellies.

ENGLISH CARD CLOTHING

Full Stock on Hand.

QUALITY UNEXCELLED.

D. K. McLAREN,

132 Bay Street, Toronto.

751 Craig Street, Montreal.

Special Subscription Premium Offer

The remark is frequently made by readers of THE CANADIAN ENGINEER to the effect "that one new fact learned about one's occupation through a Journal like this may be worth ten times the price of the year's subscription." When your experience shall have proved the truth of this you will realize that the following is a liberal offer:

The Canadian Engineer for one year - \$1.00
The Engineers' Hand Book - - - - 50 cts.

THE TWO FOR - - \$1.35.

The Hand Book retails at 50 cents, and is good value at \$1.00.

Those who wish to take advantage of the offer should write at once, as this edition of the Hand Book is rapidly decreasing.

BIGGAR-SAMUEL, LTD.,

**TORONTO
AND
MONTREAL**

Name.....
Address.....

Name.....
Address.....

Please find enclosed \$1.35
in accordance with your
offer in JOURNAL OF
FABRICS

Please send me a sample
copy of THE CANADIAN
ENGINEER.

EVAN ARTHUR LEICH

35-36 Mason Bldg., Boston, Mass., U.S.A.

IMPORTER OF

Textile MACHINERY
Etc.

Agent for the U. S. and Canada for

Messrs. PLATT BROS. & CO.
(LIMITED), OF OLDHAM, ENGLAND.

BY FAR THE LARGEST MAKERS OF TEXTILE MACHINERY IN THE WORLD

Platt's Cotton, Woolen and Worsted Machinery.
Sole makers of Brown's Patent Carding Rollers for Wool—give
woolen yarn a worsted appearance.
Platt's Special Machinery for making English & French Worsted Yarns.
Platt's Special Machinery for making Cotton Waste into Yarns.
Also Sole Agent for U. S. and Canada for

Messrs. MATHER & PLATT
Salford Iron Works, Manchester, England.

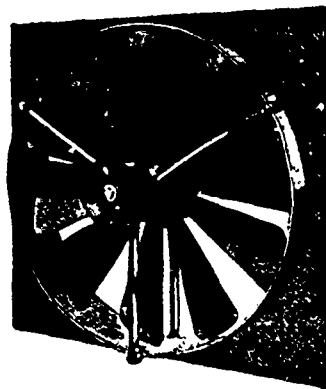
Bleaching, Dyeing and Finishing Machinery and Archbutt-
Deeley System of Softening and Purifying Hard Water.
The Best System on the Market.

Wool Washing and Drying Machines. Garnett Machines. French
and English Napping Machines. Sykes's Card Clothing for Cotton.
Critchley's Card Clothing for Woolen and Worsted. Valey's Fallers,
Harding's Pins and Circles. Dronsfield's Grinders and Emery Fillet.
Comber Aprons, Condenser Aprons, etc.

Textile Machinery Association, Limited,
Flax, Hemp and Jute Machinery.

George Hodgson, Limited,
Bradford, Looms for Worsteds, etc.

The Automatic Feeding Machine Company,
Feeders for Fibres of all classes.



CYCLONE FANS

THE BEST FOR DRYING AND VENTILATING

CYCLONE DRYERS

For Wool, Cotton Stock, Yarn, Underwear, and Stockings.
Carbonizing Machines, Yarn Scouring Machines.

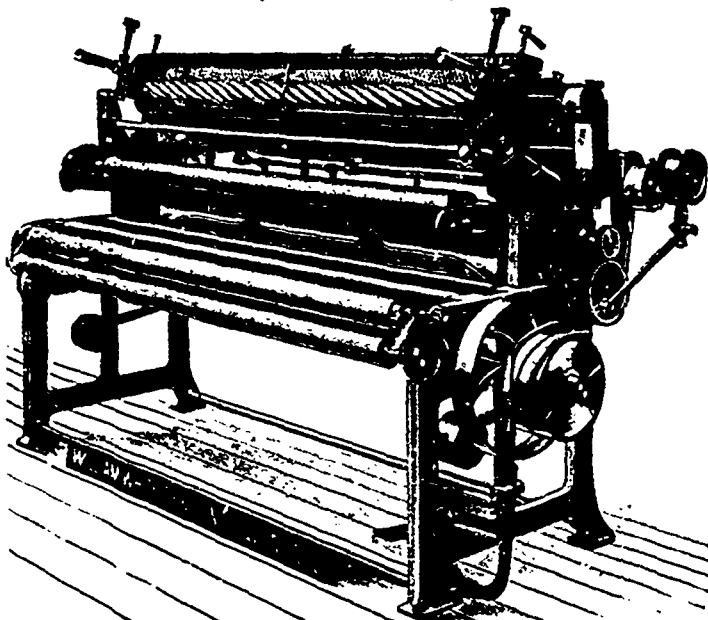
GARNETT MACHINES

Breasts, Burring Machines, Feed-Rolls

RE-CLOTHING Garnetts a Specialty

PHILADELPHIA TEXTILE MACHINERY CO.,
PHILADELPHIA, PA.

William Whiteley & Sons, Ltd.
LOCKWOOD, HUDDERSFIELD, ENGLAND



Complete Cloth Finishing Plants
Tentering and Drying Machines
Wool and Cotton Drying Machines
Improved Self Acting Mules
Winding, Warping and Sizing Machines
and other Woolen Machinery

Mercerizing Machinery. Complete Plant for Aniline Black
CATALOGUE ON APPLICATION.

WILLIAM FIRTH, President. EDWIN BARNES, Vice-President. JOHN H. NELSON, Treasurer.

WILLIAM FIRTH COMPANY

67 Equitable Bldg., - 150 Devonshire St., BOSTON, Mass.

SOLE IMPORTERS OF

ASA LEES & CO., Limited, Textile Machinery of every descrip-
tion for Cotton, Woolen and Worsted

SOLE AGENTS FOR

JOSEPH STUBBS Gassing, Winding and Reeling Machinery for
Cotton, Worsted and Silk.

GEO. HATTERSLEY & SONS, Ltd., Makers of every description
of Looms, &c.

JAMES MACKIE & SONS, Ltd., Makers of Flax, Tow, Hemp and
Jute Preparing and Spinning Machinery

GEO. ORME & CO.'S Patent Hank Indicators, &c.

JAMES YATES & SON, Hardened and Tempered Steel Card
Clothing for Woolen and Worsted Cards.

LOCKETT, CROSSLAND & CO., Engravers and Builders of
Leather Embossing Machinery, &c.

R. CENTNER FILS. Heddlies.

GOODBRAND & CO., Yarn Testing Machinery, Wrap Reels, &c.

JOSHUA KERSHAW & SON, Roller Skins, &c.

GEORGE SMITH, Doffer Combs, &c.

BRADFORD STEEL PIN CO., Comber Pins

CLAPHAM, SMITH & CO., Caps, Tubes and Spindles for Worsted,
ALSO AGENTS FOR

JOSEPH SYKES BROS., Hardened and Tempered Steel Card
Clothing for Cotton.

WILLIAM TATHAM & CO., Waste Machinery.

DRONSFIELD BROS., Limited, Emery Wheel Grinders, Emery
Fillet and Flat Grinding Machines.

COTTON CORD & VELVET CUTTING MACHINE CO.,

Corduroy Cutting Machines, &c.

Pick Glasses, Leather Aprons, Patent Wire Chain Aprons

The Manual of Lubrication,

Or, How to Choose and How to Use Lubricants for
any description of Machinery
With Methods of Determining the Purity and other Properties of Oils, etc.
By Louis Simpson

Price \$1.00
Post-paid

Address **BIGGAR-SAMUEL, Limited,**
Fraser Bldg., MONTREAL, Can.

JOHN SHAMBOW, Treasurer.

Woonsocket Reed and Shuttle Works

WOONSOCKET, RHODE ISLAND

Makers of Every Description of

Power Loom Shuttles

FOR SALE.

Water Power for Sale.

Near Toronto. Low freight rates. Splendid chance for any manufacturer wanting a good location — 21 acres of land.

Apply for particulars, etc., to

J. WALSHAW,
Bolton Woolen Mills,
BOLTON, Ont.

I offer for sale the following list of machinery at low prices in order to obtain space for other purposes:

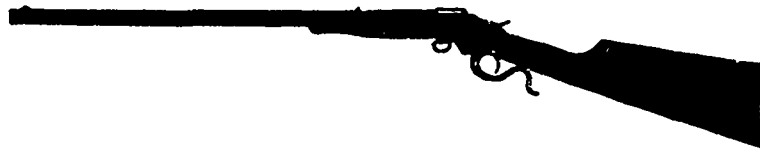
Four sets Davis & Furber 40 in. iron frame Cards, clothed and in good order.
Four sets of Self-feeders for same, Bramwell make.
Two sets of Davis & Furber iron frame 40 in. Cards, only partially clothed.
One 72 in. Gesner Napper, in fine order
One Suction Fan with necessary Piping, etc. Also counter-shaft.
One Rag Duster, not in good order.
One 24 in. Sargent Burr Picker, with extra Cylinders, in fine order.
One Broadbent Cone Winder, 60 ends.
Three Tomkins Winders, 10 Spindles each
One Butterworth Rag Picker, 24 in., with extra Cylinder.
One Davis & Furber, 12 section, 240 Spindle, self-operating Jack.
Two Johnson & Bassett, 12 section, 240 Spindle, self-operating Jack.
One Davis & Furber, 12 section, 240 Spindle, self-operating Jack, old.
Three Tables, 2 Cylinders, Campbell & Clute Knitting Frames, fitted with 12 Gauge for single plush work.
One Table, 2 Cylinders for 20 Gauge work.

Various sizes Campbell & Clute extra Cylinders for Knitting Machines.

Two McCreary Garment Brushes.
One Tomkins upright Napper.
One Calendar Frame with piping for winding and turning rolls of cloth.
One Tolhurst 40 in. iron frame, copper basket Hydro Extractor.
One Tolhurst 42 in. all copper, wooden outside case, Extractor, especially for Carbonizing.
About 300 extra Bobbins for Tomkins Winders
One steel Soap tank.
Several Exhaust Fans.
Four large, round Dye tubs.
Six Union Special Seaming Machines.
Three Union Special Over-seaming Machines.
One five apron Kitson Carbonizing or Stock Drying Machine, containing about 4,000 ft. of steam pipe.
One Kitson Automatic feed for feeding stock to the above machine.
One Kitson Automatic feed for feeding Carbonized stock to the Crush rolls.
One set Crush Rolls for crushing Carbonizing stock, Burrs, etc.
Will quote low prices for prompt delivery to mak room, as stated above. Correspondence invited.

Chas. W. Becker, Agt., **AMSTERDAM, N.S.**
Address Dept 10.

... STEVENS FAVORITE RIFLE ...



IS THE BEST SELLING RIFLE MADE.

The progressive Hardware Dealer to-day carries Firearms and you will find that our line is the most popular and profitable one to handle.

Your jobber can supply your wants. Send for our catalogue; full of interest.

J. Stevens Arms & Tool Co., 124 Main Street, Chicopee Falls, Mass.

Established 1848.

A. EICKHOFF

(A. KRAMER, Proprietor)

Manufacturer and Dealer in
Hatters', Furriers', Tailors',
Glovers' and Shirt Cutters.

KNIVES AND SCISSORS.

Knives for all kinds of business always on hand and warranted. All kinds of Cutlery ground and repaired.

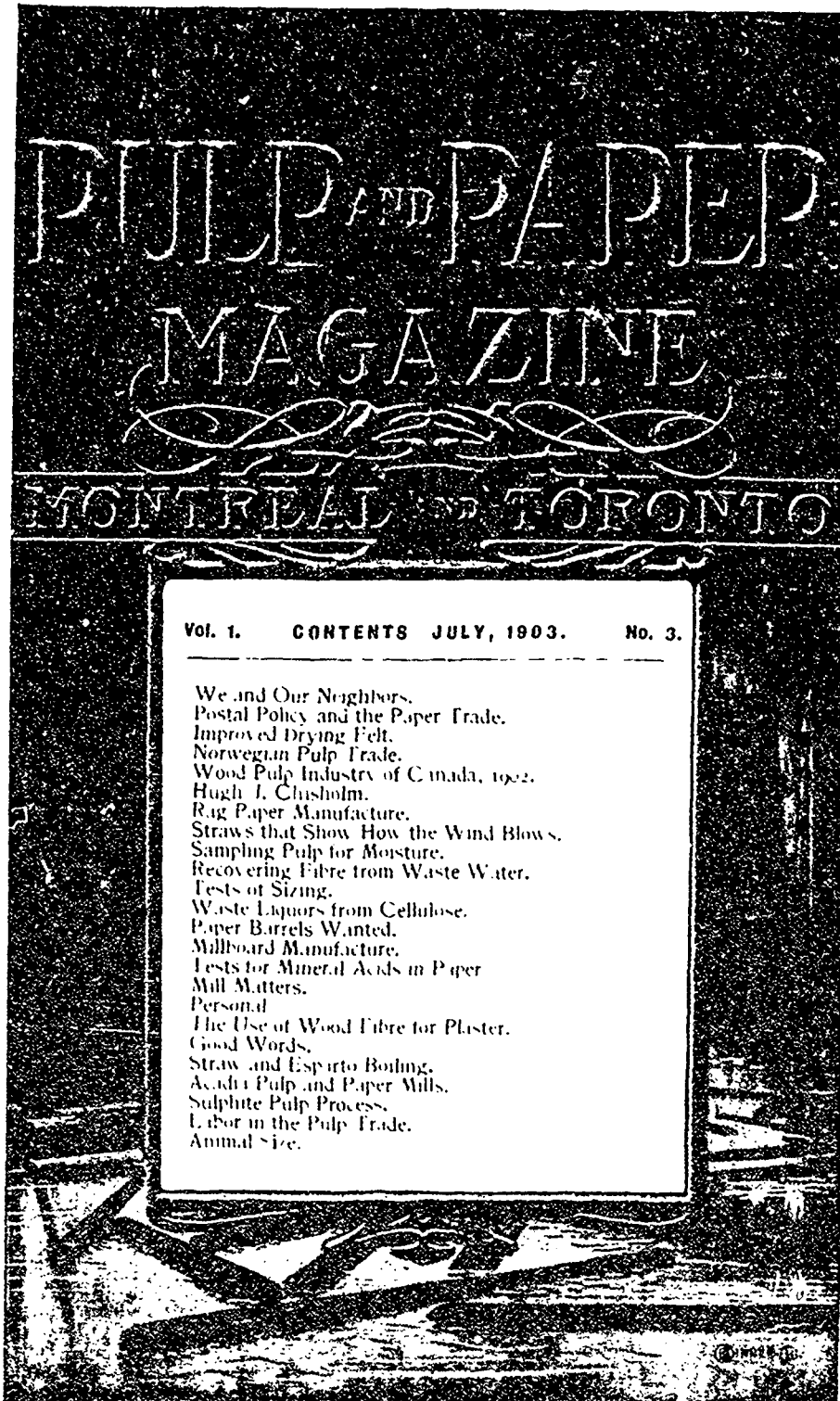
No. 381 BROOME STREET,
Between Broadway and Bowery.

NEW YORK CITY

—The July bulletin of crops in the Northwest Territories shows the flax crop of the Territories to be the best on record. The acreage is 27,599, against 17,067 last year, and the estimated yield, 234,500 bushels of flax seed, against 258,185 bushels last year.

The cotton mills of New England have entered into an agreement to purchase no more cotton from the element which is controlling the July, August and September options, but to defer covering their requirements until the new crop is harvested in October. In the meantime these mills will curtail their consumption of cotton by running their machinery on short time.

CONTENTS OF JULY NUMBER.



Subscription \$1.00 a year.

If interested write the publishers.

BIGGAR-SAMUEL, Limited,

18 Court Street, **TORONTO**

or

Fraser Building, **MONTREAL**

ESTABLISHED 1859
THE C. TURNBULL CO.,
 OF GALT, Limited.

Full Fashioned Lamb's Wool Underclothing, Hosiery and
 Knitting Yarns, Perfect Fitting Ladies' Ribbed Vests,
 Sweaters, Jerseys, Knickers.

"WE HOLD THEE SAFE."

**The Dominion
 Guarantee Co.**
 LIMITED.

Head Office, Montreal, Can.

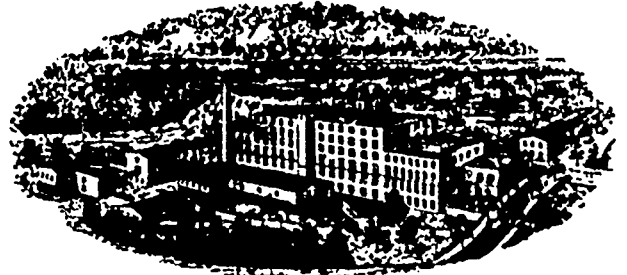
CAPITAL, \$200,000.

Insurance against burglary and housebreaking. Policies clear
 and free from vexatious or restrictive clauses.

CHAS. W. HAGAN, General Manager

ROSAMOND WOOLEN CO.

ALMONTE, ONT.



Fine *TWEEDS, CASSIMERES, and Fancy WORSTED
 SUITINGS AND TROUSERINGS*

Colors warranted as fast as the best British
 or Foreign Goods.

Dominion Oil Cloth Co'y
 Limited

MANUFACTURERS OF

**Oil-
 Cloths**

of every description

Floor Oil-Cloth, Table Oil-Cloth, Carriage
 Oil-Cloth, Enamelled Oil-Cloth,
 Stair Oil Cloth, etc.

Office and Works:

Corner St Catherine and Parthenais
 Sts., MONTREAL, QUE.

TO WOOLEN MANUFACTURERS.

MESSRS. REICHE & CO.

Wool, Tops, Nolls, Yarns, etc.

BRADFORD, ENGLAND.

Represented in Canada by **JAMES A. CANTLIE,**

22 St. John Street, Montreal.

Samples and Lowest Quotations promptly supplied.
 Correspondence solicited.

John D. Lewis,

Importer and Manufacturer of

Dycstuffs, Dyewoods, Chemicals and

DYEWOOD EXTRACTS

3 & 4 Exchange Place, PROVIDENCE, R.I.

Mills: Charles and Bark Streets.

HAMILTON & CO.,

Wool Importers

52 Wellington Street W., Toronto.

Wools, Tops, Nolls, Waste and Shoddles.

ELLIOT _____

Send for
 Circular.

Cloth Folder and Measurer

For Cotton and Gingham Mills, Bleacheries,
 Print Works, etc.

Manufactured by **Elliot & Hall,** Worcester
 Mass.

WILLIAM CRABB & CO.

Manufacturers of all kinds of

Hackle, Gill, Comb and Card Pins, Picker Teeth, Needle

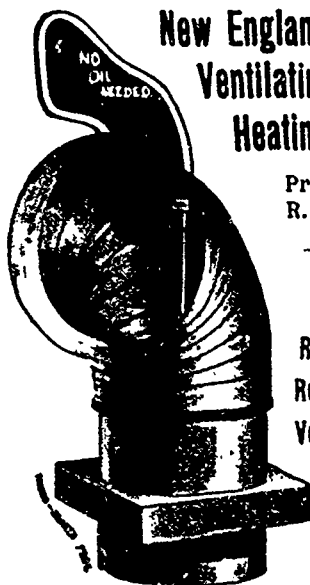
Pointed Card Clothing in Wood and Leather for

Flax, Jute, Tow, etc.

Hackles, Gills and Wool Combs made and repaired; also Rope Makers' Pins, Picker Pins, Special
 Springs, Loom and Shuttle Springs, English Cast-Steel Wire, Cotton Banding and General Mill Furnishings

Bloomfield Avenue and Morris Canal, NEWARK, N. J.

**New England
 Ventilating and
 Heating Co'y.**



Providence,
 R. I.

Manufacture
 of

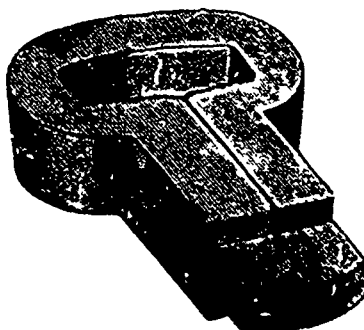
**Richardson's
 Revolving
 Ventilator**

For use
 where
 power is
 available.

This Ventilator is balanced, has ball bearings
 and revolves with the least perceptible current of
 air, having no obstruction to its outlet, and never
 fails to give satisfaction. Specially adapted for
 Mills, Dye Houses, Workshops. They are so com-
 pleted that any carpenter can erect them.

OFFICE AND WORKS.

926, 928 & 930 Manton Avenue



JOHN W. BARLOW

Manufacturer of

LOOM PICKERS,

LAWRENCE, MASS.

This cut represents Barlow's Pat. Bow Picker
 with solid interlocking foot. Pat. Feb. 26, 1889.

HANDY TO HAVE AND TO HOLD

The Engineers' Hand book, just issued by the proprietors of THE CANADIAN JOURNAL OF FABRICS makes a book of over 160 pages in flexible binding, for handy reference. It contains useful tables and data for the Power User and the Practical Man.

The tables, etc., relate to Steam, Hydraulics, Electricity, Wireless Telegraphy, Strength and Weight of Materials, Methods of Measuring and Calculating, Tables of all kinds of Weights and Measures, including the Metric System, Wages and Interest Tables and Miscellaneous Information.

Price, 50 cents per copy.

ADDRESS:

BIGGAR-SAMUEL Limited
MONTREAL or TORONTO

E. T. CARTER
 Successor to JOHN HALLAM
 35 years at the old stand
WOOL
 83 & 85 Front Street East
TORONTO
 DOMESTIC AND FOREIGN WOOLS

LONG & BISBY
 DEALERS IN
 Foreign and Domestic
WOOL AND COTTON
 GENERAL COMMISSION MERCHANTS
 HAMILTON, ONT.

JOHN E. BROWN,
 Foreign and Domestic
WOOL
 77 McNab Street N.,
 HAMILTON, ONT.

B. Spedding & Co.
 72 St. Henry St., Montreal
 Wholesale Dealers in all kinds of Foreign
 and Domestic Woolen & Cotton Rags.
 Paper Stock and Metals Graded
 new Woolen Clips a speciality
 Agent for
 George Hirst & Sons, Exporter of Woolen
 Rags, Hirstall, England
 Telephone 2582.
 Cable—"SPEDDING," Montreal.

The R. Forbes Co.
 (Limited)
 Manufacturers of
WOOLEN AND WORSTED YARNS
 For Hosiery and other work
HESPELER, ONT.

WOOL **WM. GRAHAM**
 54 and 56 Wellington
 St. East, TORONTO
 Dealer in
**Foreign and Domestic
 Wools**
 My manufacturing experience assists me in import-
 ing wool for any desired goods

THE MONTREAL BLANKET CO.
 Manufacturers of
**Shoddies, Wool Extracts
 and Upholstering Flocks**
 Office and Works: COTE ST. PAUL
 P.O. Address: MONTREAL

WOOL
A. T. PATERSON & CO.
 MERCHANTS,
 Lon. & Lanc. Ins. Bldg.
 164 St James St., MONTREAL
 REPRESENTED BY MR DAVID GUTHRIE.

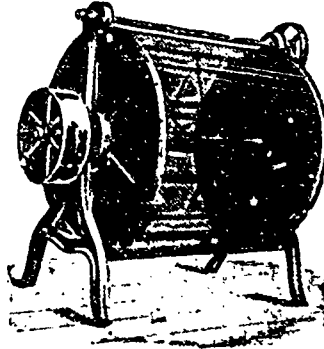
SMITH WOOLSTOCK CO.
 Manufacturers of Wool Stock and
 Shoddies of every description.
 Dyeing and matching of colors for the Western
 Mill trade a speciality
 Office and Works :
 219 FRONT STREET EAST, TORONTO

**PATENT
 WASTE CLEANER**

— As supplied to the —
 Slingsby Manufacturing Co., Limited
 BRANTFORD.

John A. Humphrey & Son,
 MONCTON, N.B.
 And all the Principal Woollen
 Mills in Europe.

Does Not Cut up | Loses Nothing
 the Waste ! | but the Dirt !



Price, £25—Packed—Liverpool.
 Space occupied 6' 2" x 1' 6". Power required,
 ½ H.P. Cleans 1,000 pounds per day.
 Weight, packed, 14 cwt.

HENRY ISITT, BRADFORD,
England.
 Exporter of All Kinds of
 Woollen Machinery.

Matte's, Hughes' and
 Robinsonian
 Interest Tables

Buchan's, Oates' and
 Robinsonian
 Sterling Exchange Tables

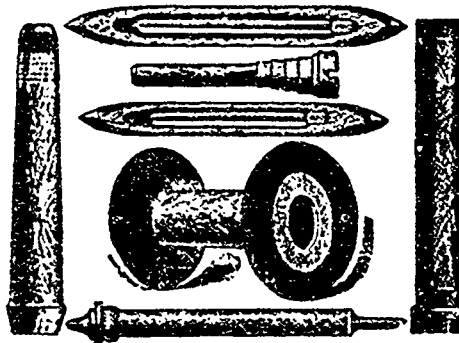
Tables in French and
 German Exchange.

Sent for Catalogue.

MORTON, PHILLIPS & CO.
 Stationers, Blank Book Makers
 and Printers
 1755-1757 Notre Dame St., Montreal

WILSON BROS.
Wool Importers
 38 Front Street East, - Toronto.
 B. A. WOOLS and CARBONIZED
 NOILS a speciality.

The Lachute Shuttle Company



We are the largest Shuttle
 Manufacturers in Canada.

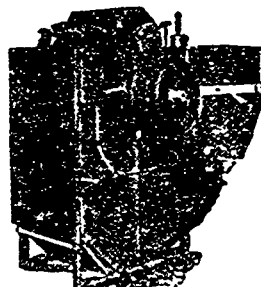
Shutting, Roving and all kinds
 of Bobbins and Spools for
 Cotton and Woollen Mills

We have always on hand
 a large stock of
 Thoroughly Seasoned
 Lumber.

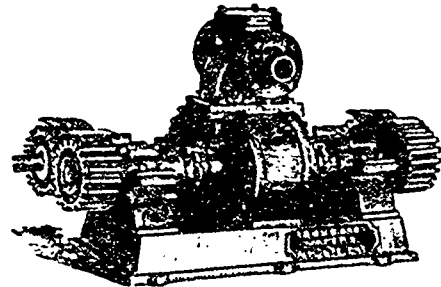
Orders solicited and all work guar-
 anteed to give satisfaction.

E. F. AYERS, Manager
 LACHUTE, P.Q.

MISSISSIPPI IRON WORKS



ESTABLISHED
 1875.



Manufacturers of English or American Pulling Mills and Washers, Wool Pickers,
 Exhaust Fan Drivers, Dusters, Rotary Force Pumps for Fire Duty, Boiler Feed
 Pumps, Shafting, Hangers, Castings, Pulleys, Gearing, Forgings.
 Equipment of MILLS of every kind.
YOUNG BROS., Almonte, Ont.

Established 1852.

41 Highest Awards

**Wilson Brothers
Bobbin Co., Limited**

Telegrams "Wilson, Cornholme"
A.E.C. and A1 Codes used.

BOBBINS & SHUTTLES

POSTAL ADDRESS:

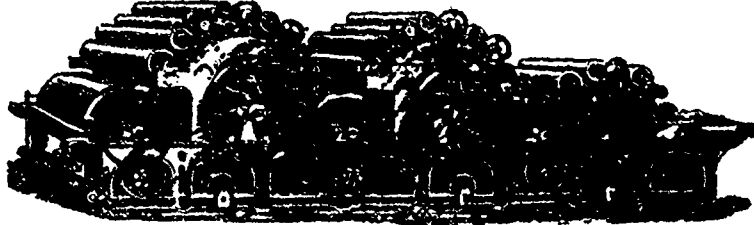
Cornholme Mills, Garston, Liverpool.

OFFICE:

14 Market Place, Manchester.

The best results in
Card Grinding
are obtained by using 
**DRONSFIELDS' PATENT
GROOVED EMERY FILLETING**
SPECIAL MACHINES FOR GRINDING CARDS
MACHINES FOR COVERING ROLLERS WITH LEATHER
DRONSFIELD BROS. LTD.
Atlas Works, **OLDHAM, England.**

TEXTILE MACHINERY (New and Second Hand)



English Sales Attended.

CARD CLOTHING TETLOW'S
Stock in Canada

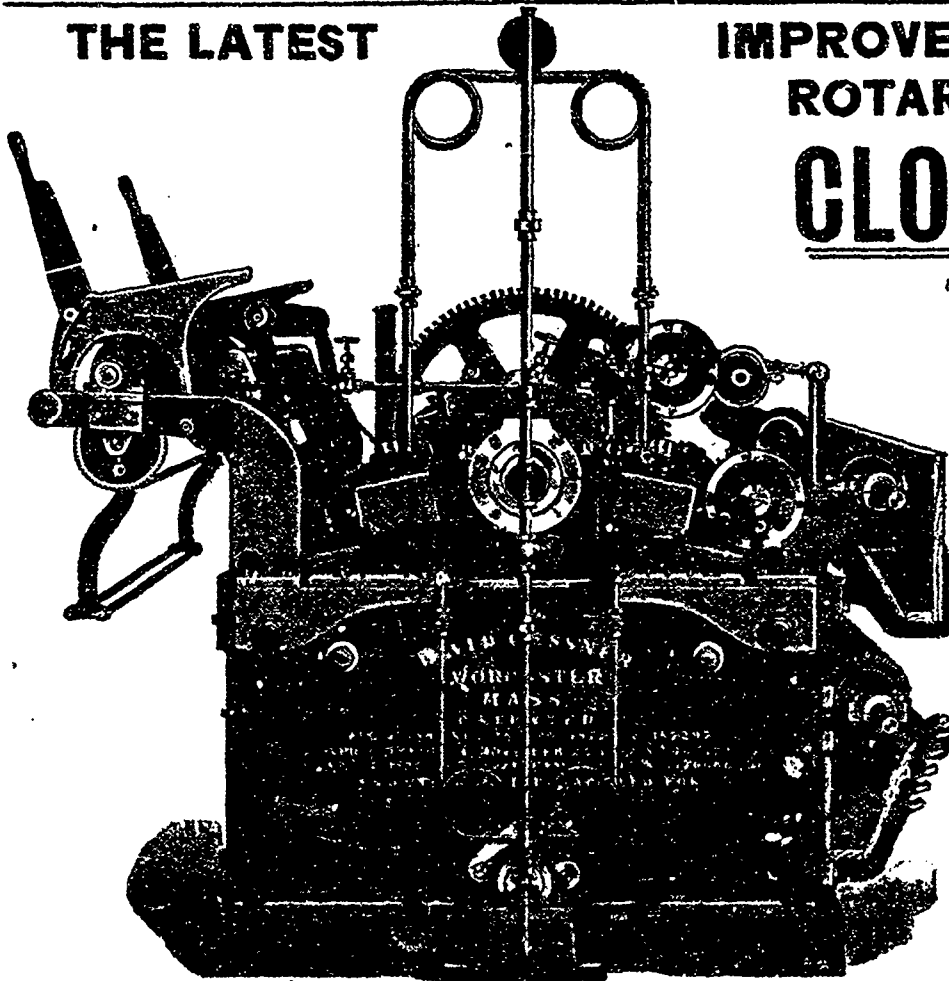
Condenser Aprons Buffed Surfaces
Plain & Grooved

Oak-Tanned and White Belting
Cotton Banding, Rim Spindle and Braided
Shuttles, Pickers, Heddles, Harness
Patent Frames, GENERAL FURNISHINGS

ROBT. S. FRASER

17 LEMOINE ST., MONTREAL

THE LATEST



**IMPROVED DOUBLE-BED
ROTARY**

CLOTH PRESS

The bed plates are self-adjusting, the levers that operate them being mounted upon sliding steel fulcrum bars within the frames. The trussing apparatus of the bed plates is so arranged as to permit not only a forcing of the centres of the bed plates in a forward direction, toward the cylinder, but also away from it, which is of the utmost importance if the bed plates should ever become sprung. Bed plates and cylinder after being cold finished, are ground absolutely true while heated by steam at 75 lbs. pressure, insuring perfectly straight and uniform pressing surfaces. Pressure is applied and removed instantaneously, and by power.

DAVID GESSNER,
WORCESTER,
MASS., U.S.A

MONTREAL Factory

J.C. MCLAREN BELTING CO.
OAK EXTRA TANNED EST. 1856

TORONTO
50 Colborne St.

LEADS FOR QUALITY

SAMUEL LAWSON & SONS, LEEDS, England

MAKERS OF

**Machinery for Preparing and Spinning
Flax, Tow, Hemp and Jute
Special Machinery for the Manufacture of Binder and Ordinary Twines**

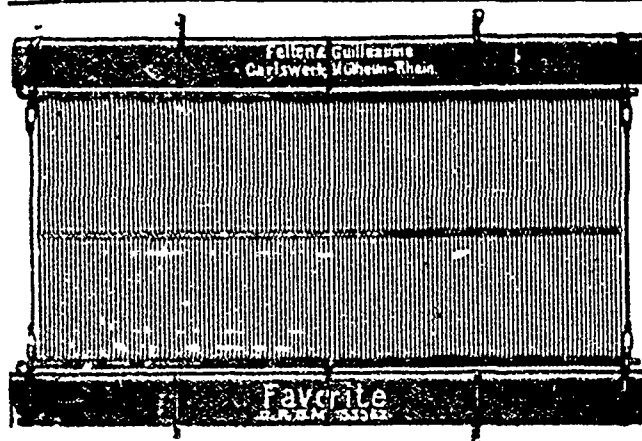
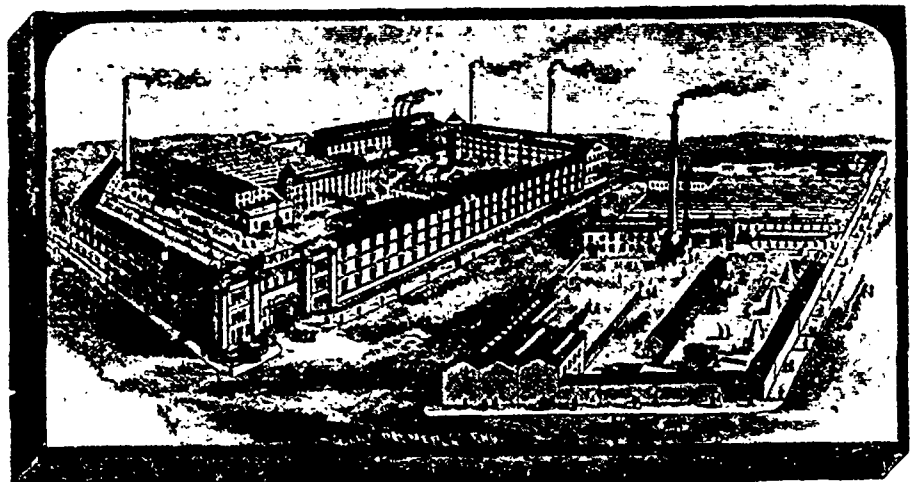
**Good's Patent Combined Hackling
and Spreading Machine**

**Patent Automatic Spinning Frames
Improved Laying Machines
and other special machinery for the
manufacture of Rope Yarns.**

ALSO OF

**Brownell's Patent Twisting and Laying
Machines for Twines**

Council Medal, London, 1851; Grand Medal,
Paris, 1867; Prize Medal, Moscow, 1872; Diploma
of Honor, Vienna, 1873; Highest Award, Phila-
delphia, 1876; Gold Medal, Paris, 1873; Highest
Award (Medal), Melbourne, 1850.



*Fellen & Guilleaume, Carlswerk
Adien-Gesellschaft, Mülheim-on-Rhine*

Manufacturers of

Tinned Cast Steel Wire Heddles

made on Patent Automatic Machines and consequently perfectly uniform in every respect. The Lightest, Exactest and most Uniform Wire Heddles ever made and surpassed by any other Wire Heddles in the market.

Patent "Favorite" Shafts for Weaving

combined with above Heddles, the best, most Reliable and most Durable Heddles, either made with one or two carrying wires inside the wooden frame. These shafts have already been adopted by a great number of weavers, who speak most favorably of them, as can be seen from many testimonials in the possession of the makers. For Prices apply to

L. S. WATSON MANUFACTURING CO., Leicester, Mass.

**L. S. WATSON MANUFACTURING CO.
LEICESTER, MASS.**

Sole Agents for the BEST
pinning & Twisting Travelers
Made by Prouty Wire Co.

Send samples of the Travelers you use and
we will send you a sample box to match
of our make free of charge.

Manufacturers of WATSON'S PATENT MACHINE WIRE HEDDLES

Guaranteed to be perfectly adapted to weaving all kinds of Woolen, Cotton and Worsted Fabrics, Fancy Cotton, etc., etc.
Superior Harness Frames furnished promptly. Also Hand Cards of every description.

Also Agents for the SMETHURST Reving and Twisting Gear for all woolen manufacturers and makers of yarns. Write us for particulars