

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.

- 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.

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

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 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

CANADIAN Journal of Fabrics

THE JOURNAL OF THE
Textile Trades of Canada.

Vol. XV.

TORONTO AND MONTREAL. DECEMBER, 1898.

No. 12

The United Alkali Company, Limited, of England.



Caustic Soda, 60°, 70°, 74°, 76°, 77° Soda Ash. all strengths.
SAL. SODA. PURE ALKALI, 58°.

WILSON, PATERSON & CO., Montreal, Sole Agents.

Importers of Sulphate of Alumina, Hypo Sulphite of Soda, Bichromate of Soda, Silicate of Soda, Caustic Potash, Crystal Carbonate, Borax, Cocoanut Oil, Palm Oil, Castor Oil, Cotton Seed Oil, Resin Oil, ROSIN. All Chemicals used by Soap, Paper, Woolen, and Cotton Manufacturers.

NEW YORK OFFICE, - 133, 135, 137 FRONT STREET

McARTHUR, CORNEILLE
& CO.

Importers and
Manufacturers of

OILS
CHEMICALS
and **DYE**
310 to 316 St. Paul St.
MONTREAL **STUFFS**

MILK SOAPS
DOMINION DYEWOOD & CHEMICAL Co. TORONTO
MANUFACTURERS.

ANILINES - ALIZARINES

DYEWOODS, CHEMICALS, ACIDS, ETC.

MARSHALL'S INDIGOS AND ARCHILS

SOLE AGENTS IN CANADA FOR

CARL NEUHAUS—Alizarines, Acetates, etc.

ANILINE DYE WORKS, (FORMERLY A. CERBER & CO)—Direct Cotton Colors.

CHEMISCHE FABRIKEN VORM WEILER-TER MEER—Aniline Colors and Chemical Products.

JOHN MARSHALL, SON & CO.—Indigos, Archils, Extract Fustic and Logwood.

SCOTTISH ALUM CO.—Alum, Sulphate, Alumina, etc.

FRANCESCO, BRASSO & CO.—Sumac.

JACK & ROBERTSON 7 St. Helen St.
MONTREAL

New York and Boston
Dyewood Co. Manufacturers
... of ...

Sole Agents for the
United States and
Canada for the

DYEWOOD EXTRACTS

ACTIEN GESELLSCHAFT FUR ANILIN FABRIKATION

Manufacturers of ANILINE COLORS,
Berlin, Germany.

NEW YORK: 55 Beekman St. BOSTON: 115 & 117 High St.
PHILADELPHIA: 122 & 124 Arch St.

A. W. LEITCH, 16 Hughson Street South, HAMILTON, Ont.

ANILINE DYES LOGWOOD } Extracts
SUMAC }
INDIGO }

HEMOLIN BLACK, MORIN YELLOW

WM. J. MATHESON & CO., Limited
423-425 St. Paul Street, MONTREAL

Main Office: 182-184 Front Street, New York.

Branches: Boston, Philadelphia, Providence.

Works: Long Island City, Port of New York

W. T. BENSON & CO.
31 Common St., MONTREAL
Direct Importers of **FOREIGN WOOL**

And all lines of

CHEMICALS and DYESTUFFS

Also COCOANUT AND PALM OIL, and all other Soap Stocks.

Sole Agents in Canada for

The British Dyewood & Chemical Co., Limited

JOHN DAWSON & CO., } Branches.

W. R. SCOTT & CO., }

Manufacturers of

Extracts of LOGWOOD, FUSTIC, SUMAC, etc.

Complete stocks of all the above always on hand.

Bellhouse, Dillon & Co.

SOLE AGENTS IN CANADA FOR

THE WEST INDIES CHEMICAL WORKS, LIMITED,

Spanish Town, Jamaica, W. I.

TRADE MARK



ALLIGATOR BRAND

PURE EXTRACTS
LOGWOOD

Write for samples and prices.

FOR COTTON, WOOL AND SILK

Toronto Office—26 Colborne Street.

30 St. Francois Xavier St., Montreal

New York Office, 20 Cedar Street.

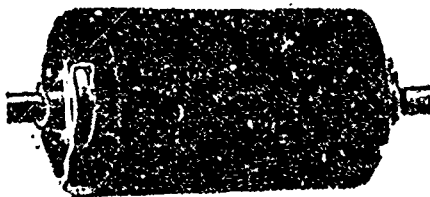
GEO. D. ROSS & CO.

WOOLEN COMMISSION MERCHANTS
MONTREAL and TORONTO

Tweeds Etoffes Shirts and Pants
Worsted's Blankets Fulled Socks and Mitts
Serges Yarns Gloves, Hosiery, etc., etc.

Advances Made on Consignments.

Correspondence Solicited.



Factory Brushes

AND ALL KINDS OF

MACHINE BRUSHES made, and Blocks re-filled.
Highest quality and best work-
manship guaranteed, and close-
st possible prices.

CHAS. BOECKH & SONS, Manufacturers, TORONTO

DYEWOOD EXTRACTS

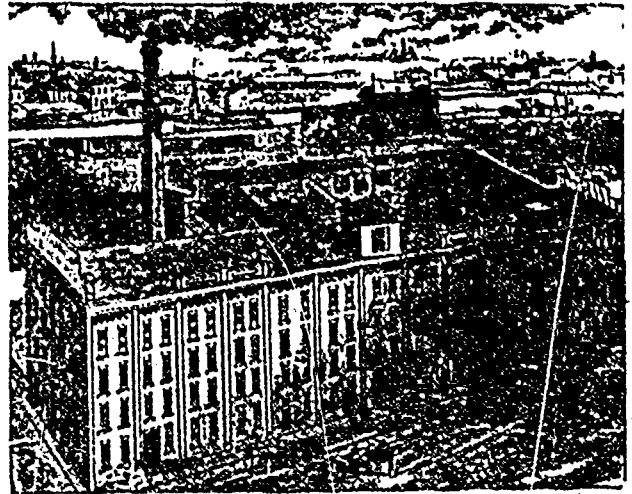
Manufactured by
MUCKLOW & CO., - BURY, ENGLAND

DOMINION DYEWOOD & CHEMICAL CO.
TORONTO

... SOLE AGENTS FOR CANADA ...

A. R. CLARKE F. G. CLARKE C. E. CLARKE

A. R. CLARKE & CO.



Manufacturers of **GLOVES and MITTS**
Office: 28 Front St. East TORONTO
Works: 100 to 200 Eastern Ave.
Branches at Montreal, Quebec, Halifax, Winnipeg and Victoria

PURE SOAP

FOR

Woolen Mills, Knitting Mills. Carpet Factories,
Shirt Factories, Laundries.

EMPIRE SOAP CO., HAMILTON



Samples and Price List on Applica-
tion. We have no Travellers, and
Sell to the Wholesale Trade only.

The Beaver Rubber Clothing Co.

THE PIONEERS IN THIS TRADE IN CANADA.

1490 Notre Dame Street, MONTREAL.
E. L. ROSENTHAL, Manager.

D. K. McLAREN,

VICTORIA
SQUARE

MANUFACTURER AND MILL FURNISHER

MONTREAL



OTTAWA



GALT

Genuine Oak Tanned Leather Belting

Lancashire Hair Belting

English Card Clothing

Western Trade—Please note our stock depot at GALT, ONTARIO, is now open, and our MR. R. M. W. McLAREN will be pleased to answer any enquiries, also to fill orders.

CANADIAN JOURNAL OF Fabrics

THE JOURNAL OF THE
Textile Trades of Canada.

Vol. XV.

TORONTO AND MONTREAL, DECEMBER, 1898

No. 12

Canadian Journal of Fabrics

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

Subscription Canada and United States, \$1.00 per year. Great Britain, 5s. Advertising rates on application.

Offices. 62 Church Street, Toronto, and the Fraser Building, Montreal.

E. B. BIGGAR | BIGGAR, SAMUEL & CO. | R. H. SAMUEL
PUBLISHERS

Agency in Europe Polsue Bros., 30 Poppin's Court, Fleet St., London, Eng.
Toronto Telephone, 1392 | Montreal Telephone, 2589

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 now in hand.

Price, on and after publication, \$3.00. Subscribers ordering in advance are given a discount of \$1.00

BIGGAR, SAMUEL & CO., Publishers,
Fraser Building Montreal

CONTENTS OF THIS NUMBER :

	PAGE		PAGE
Adulteration of Textiles. Chemical	354	Seaming and Knitting Machines.	369
Among the Mills	374	Novelies in	359
American Thread Co	356	Tannin From the Dock	359
Chemicals and Dyestuffs	370	Textile Purposes. The Preparation	
Chemistry. The Influence of on the		of Rhea Fiber for	354
Dyers' Art	362	Textile Centres Foreign.	366
Cloakings	361	Textile Designs	368
Dyestuffs, New	358	Trade with the Philippines, Possible	368
Fabric Items	374	Tapestry Carpet Yarns. The Print	
Fence, A Famous	370	ing of	378
Flocks	360	Textile Patents. Recent Canadian	376
Hosiery, Fancy Saxon	363	Textile Imports From Great Britain	358
India, Trade With	377	Twist	353
Knitting, The Future of...	361	Wools. Donskoi	373
Literary Notes	359	Wool Market The	373
Loom, A New	381	" Sales, Liverpool	373
Mercerized Cotton, Black on	359	" Mordanting	373
Patent Laws, British and American	365	" Wool Clip, The Australian	356
Probabilities, Fabric	353	" Sales, London	357
		Yukon, Trade in the	360

Editorial.

DONSKOI WOOLS.

An English trade circular of recent date states that Donskoi wools are being neglected in Russia. Donskoi wools have for many years been the chief worsted wools in the manufacture of American carpets. The condition which is set forth in the English trade circular is an unusual one, for this is probably the first time in a great many years that has shown an absence of competition for these wools. There is something of a contradiction in the

situation, for this apparent neglect occurs at a time when the yield of these wools is diminishing. It is a well established fact that the production of Donskoi wools has shown a large falling off in recent years. It is unfortunate that no reliable statistics are available. Russia the last few years has turned her attention to them, particularly for army purposes. Italy has also come into the market for them, though she has not by any means become a factor in the market.

FABRIC PROBABILITIES.

The influence that the fashions set in the United States have on both fabrics and make up is very well shown by the course of the retail trade at present. English influences are of course felt chiefly in the most expensive lines, but the larger influence in the market is from the United States. For example we may consider the present cut and materials for men's trousers. The cut is exceedingly close fitting, and that throughout, while the English cut at present goes to the opposite extremity, except at the ankles, where a moderately tight fit is secured. The English materials are checked chiefly and are pronounced in design, while quiet shades and unobtrusive stripes prevail in the United States. This is also the fashion at present in Canada very largely, which indicates that we can study to advantage not only what is at present worn across the line, but also what the authorities consider probable. What bids fair to sell very largely in the United States next season, says the Textile World, is a melton fabric, in weight, heavy enough for both overcoatings and for suitings. The former should be 28 to 29 ounces, and the latter 21 to 22. The navies are the best colorings to make, and those which are olive, that is, grayish olive, are the most desirable, as are also the slate gray and regular gray mixes. In fact, these are good in any line of fabrics the coming season. Coverts will have a large sale, particularly fancy backs, but the competition will be keen, and in making this fabric it would be well to bear in mind the existing lines, several of which have a firm place in the market. The fabrics which are the safest to make, are those with a ribbed face, where the cord stands up well, and backed with a bright plaid. These covert fabrics will meet with competition in the large number of fabrics which will be placed on the market containing cotton. While there will be a large sale of this grade, still the manufacturer who keeps clear of them will do better, for in the better grades with less number of lines, there will be

more profit. The plain back coverts will also sell, and in both fabrics there is no material difference in the colorings from last season. In suitings, cassimeres and worsteds are the fabrics, and in both of these there will be a large quantity of twist used. Cassimere patterns will be neat, and the twist checks are the patterns to make, also the large indistinct plaids. The same is true of worsted patterns, and the only bold effects will be used in worsted trouserings. The colors for both cassimeres and worsteds will be in the darker olives and the blue slates and gray mixes.

CHEMICAL ADULTERATIONS OF TEXTILES.

The Home Trade Sectional Committee of the Manchester Chamber of Commerce, at a meeting held at the offices of the Manchester Home Trade Association, on October 20th, 1898, had under consideration the question of the adulteration of textile fabrics which had been remitted by the Chamber of Commerce. The points discussed at the meeting were . 1. To ascertain, if possible, the extent to which adulteration takes place. 2. Is the adulteration injurious to health? The chairman observed that the Chamber of Commerce had referred the adulteration of sheets, shirtings, flannelettes, blankets, linings for trousers, denims, and blue jeans, etc., to the Home Trade Sectional Committee and he had to report that experts had been called in to assist the committee. Analysis of various goods had been made in the Chambers Testing House, manufacturers had been consulted and it was found there is a consensus of opinion that the articles used that is to say, chloride of zinc and magnesium and other salts, etc., are injurious to health and do no good to the cloth, in the manufacture of which they are used merely to give weight and feel—in no sense to permanently improve the goods. There is an equally strong impression of feeling amongst the numerous manufacturers who have been consulted that in the interests of the people whose health is endangered, the practice of using zinc and other injurious materials should be discontinued and the public meantime warned against purchasing goods so filled and adulterated. As traders and manufacturers, said the chairman, as reported in the *Dyer and Calico Printer*, we were all conscious of the fact that it is needful to use certain materials to assist in the weaving and to give niceness and softness of feel, but there can be no justification for using articles which are likely to produce consequences which are not only prejudicial to comfort, but may cause afflictions of a lasting character. The question, he continued, is one of grave importance to buyers of woolen and cotton goods containing the preparations referred to. The serious evil arises from the power such goods have of absorbing and holding damp from the atmosphere, and as such goods are often worn near the skin, either as an article of dress or the lining of one, or for use in the night, rheumatism or other afflictions may arise at any time and be of serious consequence to the person sleeping upon or under the sheet, bed tick, or blanket. All the facts before us are confirmed by medical men and by tests in our test-

ing house, and only one feeling exists among the producers and distributors that whether the goods be English or German make the adulteration with such injurious materials is an evil, and is most inconsistent to health and welfare of our people, and ought by some means to be stopped. Of course, the public have it in their power to put an end to it eventually, and when we inform them that, in addition to the evil of almost certain suffering from rheumatism and rheumatic fever, etc., which arises from the adulteration, they are actually paying for the vile and obnoxious materials double the price they would pay for wool or cotton out of which the fabric is made, surely their eyes will be open to the danger as well as the folly they are running. The dyers complain bitterly of the adulteration, and insist that its use should be discontinued. The secretary produced the analysis which had been made, showing the ingredients used in the samples submitted, and the various manufacturers present gave important evidence, supported by samples of materials manufactured. A number of other manufacturers and finishers beside those present at the meeting had written confirming all the facts and statements made, and all condemned the present adulteration.

THE PREPARATION OF RHEA FIBER FOR TEXTILE PURPOSES.*

BY PERRY F. NURSEY.

If there is one substance in nature which more than another is eminently suited for use in every branch of the textile industry, that substance is rhea fiber. And if there is one substance in nature which more than another for years baffled the ingenuity of the engineer and the chemist to subjugate and adapt it to textile purposes, that substance is rhea fiber. For close upon a century it has proved itself a most uncompromising will-o'-the-wisp to the inventor, always eluding his grasp at the moment when success appeared to be inevitable. True, success has many times been demonstrated in the laboratory, by experiments on an extended scale and by practical working, as the author can testify. But the practical has not always proved practicable when that inexorable arbiter, the commercial test, came to sit in judgment. Hence, several processes which were perfect in operation, perfect in result, and which appeared to embody all the elements of commercial success, have, from one cause or other, failed when the phase of commercial working was entered upon.

During the past sixteen years the author has had to investigate and report upon the working of several systems, both chemical and mechanical, which have been devised for preparing rhea fiber for use in the textile industry. In view, therefore, of the importance of the subject, and in the hope that the past failures of some may prove of service to others, who may at present, or in the future, be working in this direction, he has pleasure in placing his experiences before the society. He will not, however, confine himself entirely to his own experiences,

*From a paper read before the Society of Engineers.

but will supplement them by those of others who are or have been working in the direction under consideration, so as to bring the subject down to the present date. At the same time, he wishes it to be understood that he does not undertake that his paper shall include every known process for utilizing rhea fiber, nor that it shall constitute a Patent Office record of all the inventions—ingenious though many may be—by means of which inventors have endeavored to advance the rhea problem. A notice of even a title of the inventions for attaining the desired end would unduly encumber his paper, and might give rise to a discussion upon the questions of anticipation and patent right, the consideration of which questions is not permissible at our meetings. In order to clear the way for the proper understanding of the processes of treatment to be described, the author purposes in the first place to give some particulars of the plant which yields this remarkable fiber. This will be followed by a brief history of what has been done in the past with the view of extracting the fiber from the plant and adapting it for commercial use. The author will then describe those processes for effecting its utilization, the working of which has come under his own personal observation, as well as those which have subsequently been brought under his notice, but which he may not have seen in operation.

Before describing the rhea plant it will be as well, in order to avoid confusion, to explain that rhea fiber is distinct from china-grass, with which it is frequently confounded. China-grass is the popular name of a fiber first used in China in the manufacture of a beautiful fabric known as grass cloth. The name appears to have originated in the belief that the fiber was that of a grass. This, however, is not the case, as the fiber is obtained from the stem of the *Urtica nivea*, a species of nettle which grows abundantly in China and various parts of India. Rhea fiber, which is also known in the East as ramie, is obtained from the stem of the *Urtica tenacissima*, a textile plant which was indigenous to China and India. It is a perennial, easy of cultivation, and produces the longest, strongest, and most lustrous fiber in nature. The problem of its cultivation has long been solved, for within certain limits rhea can be grown within any climate. India and the British colonies offer unusual facilities, and present vast and appropriate fields for that enterprise, whilst it can be, and is, grown in most European countries. Even our own climate is not inimical to its production, as evidenced by the fact that rhea is grown by the Duke of Wellington at Strathfieldsaye. Rhea is also largely cultivated at La Reolle, near Bordeaux, the fiber being worked up in France.

When cultivated in Eastern climates the rhea plant is very prolific, and after the first year of planting several crops are obtainable. In the first year, if the planting took place early in the spring, the first crop may be cut in June. This crop, however, is irregular and its fibers coarse, so that it is not of very high commercial value. The second crop is generally ready for cutting in October. In the second year three crops can be gathered if climatic conditions are favorable. In the third year the plant has

reached its full development, and from three to seven crops may be gathered. This, of course, depends upon the fertility of the soil, the latitude where the plantation is located, and, more than all, upon the amount of moisture it receives, either by natural precipitation or by artificial irrigation. In the first year of planting there is no need for any other cultivation than that of weeding and cleaning the roots. In the second and following years the close stand of the stems practically suffocates all weeds. The growth of rhea stalks is irregular, one root producing at the same time stems of various lengths ranging from 2 to 8 feet.

Felix Fremerey, of Bakersfield, California, who has given considerable attention to the cultivation of the rhea plant and the utilization of its fiber, states that one acre will grow 20,000 plants, each having at least fifteen stalks equalling 300,000 stalks. From 100 stalks ranging from 6 to 7 feet in height, 1lb. of the stripped bark, or ribbons containing the fiber, can be obtained. The 300,000 stalks will therefore yield 3,000lbs. of marketable ribbons. These figures are for one crop only, and have to be multiplied by the number of crops cut during the season to give the total annual yield. Mr. Fremerey gives the foregoing figures as indicating the strength of rhea fiber as compared with that of other well-known fibers in general use, rhea being taken as unity. It will thus be seen that as regards tensile strength—a most important point—rhea fiber takes a very long lead.

	Rhea.	Hemp.	Flax.	Silk.	Cotton.
Resistance to tension.....	100	36	25	13	12
Elasticity before rupture	100	75	66	400	100
Resistance to torsion.....	100	95	80	600	400

So far as the cultivation of the rhea plant goes, no difficulties present themselves. It is only when the work of obtaining the fiber commences that trouble has hitherto come in. This arises from the conditions under which the fibers grow. They exist in the stem of the plant, being embedded in a peculiar kind of resinous gum, which is interposed between the wood of the stem and the bark. This gum, when once dry, holds the fibers tenaciously in its grasp, and refuses to part with them except under treatment which formerly rendered the fiber practically useless when obtained. Some idea of the remarkable character of this gum is afforded by a circumstance which occurred in connection with the trial in India, in 1869, of a decorticating machine designed and made by Mr. Greig, of Edinburgh, and to which further reference will be made. Upon one occasion a large quantity of rhea was treated by Mr. Greig's machine, the atmosphere at the time being close and murky. This was on a Saturday, and the ribbons—that is, the stripped bark with the cementitious matter containing the fibers attached to it—were placed in a heap in a shed, and remained there until the following Monday morning. Upon examination it was found to be a solid, compact mass, resembling isinglass, the gum and fibers being glued up together. Nothing could be done with it, and it had to be thrown away. Upon examining the machine, the table, rollers, and other working parts over

which the rhea stems had passed, were found to be thickly coated with a very hard varnish, which was only removed by chipping. The analysis of this substance is stated to have given 62 per cent. by weight of oxalate of lime, some alumina, oxide of iron, and other mineral matters which dissolve in hydrochloric acid. The residue, which was insoluble in dilute hydrochloric acid, consisted of coloring and resinous matter, and formed to 2.5 per cent. of the solidified juice. The incident, however, afforded a useful lesson, as it pointed to the necessity of decortication being effected directly the stems were cut, and of the operation being carried out in a running stream of water in order that the cementitious matter might be washed away whilst in its normal and amenable condition.

The author has stated that the utilization of rhea fiber has occupied attention for just upon a century. It was in 1873 that the plant was introduced from Bencoolen into Calcutta, where, under the care of Dr. Roxburgh, on behalf of the Government of India, it was for many years cultivated in the Botanical Gardens. In 1814, a quantity of the fiber, which was then known as Callooe hemp, was brought to England by Captain James Cotton, of the East India Company's service. The fiber was tested, and was thought so highly of that the Society of Arts awarded Captain Cotton a gold medal for his services. It does not, however, appear to have made any headway, the reason for this being stated in the following passage which occurs in the report of the jurors on fibers in the Great Exhibition of 1851: "The chief obstacle which interfered, however, with its use, was the difficulty which was found to exist in the preparation of the fiber from the stems of the plants. None of the processes usually adopted with flax or hemp were found to be at all suitable to them, and the rude, wasteful, and imperfect means employed by the natives in preparing the fiber for the manufacture of twine, thread and fishing nets by the mere process of scraping, were wholly inapplicable on a large scale, and gave besides only a very inferior result. When macerated or retted in water, it was found that the fiber itself was more easily destroyed than the glutinous matter of the stem. During the last forty years," continues the report, "various attempts have been made to devise a good and cheap process for preparing this fiber, but hitherto without much success, and consequently, until quite recently, the cost of the fiber was such as to preclude its being brought into the market as a substitute for flax. But recent investigations have shown that the *Urtica tenacissima* may be obtained in almost unlimited quantities in various parts of India, and a process which has lately been patented appears, to a very great extent, to have removed the practical difficulties which previously stood in the way of its employment by manufacturers, so that in a few years it is probable that the Callooe hemp will constitute an important addition to the fibrous materials employed in the arts."

—At the present time Canada is regarded as the most promising market we possess.—Draper's Record, London, Nov. 26th.

AMERICAN THREAD COMPANY.

The prospectus of the American Thread Company has been made known, and the subscription books opened. The companies which will become members of the new corporation follow: The Barstow Thread Company, Providence, R.I.; the Glasgo Yarn Mills Company, Glasgo, Conn.; the Glasgo Thread Company, Worcester, Mass.; the Hadley Company, Holyoke, Mass.; the Kerr Thread Company, Fall River, Mass.; the Merrick Thread Company, Holyoke, Mass.; the National Thread Company, Mansfield, Conn.; the New England Thread Company, Pawtucket, R.I.; the E. J. W. Morse Company, Boston, Mass.; the Ruddy Thread Company, Worcester, Mass.; the Warren Thread Company, Ashland, Mass.; the William Clark Company, Westerly, R.I.; the Willimantic Linen Company, Willimantic, Conn. The value of the property taken over is given as follows: Land, buildings, machinery, plant and effects, \$7,006,053; stocks in trade, \$3,447,051; book debts, \$1,205,424; total, \$11,658,528.

THE AUSTRALIAN WOOL CLIP.

The opening of the Victorian wool season took place on Oct. 12th, when a fairly representative catalogue was submitted to a full attendance of buyers from England and the continent; American representatives being less numerous than usual. The selection was mainly composed of clips from the Riverina, the Lower Darling, and Queensland, which elicited a strong competition from both the Yorkshire and the French buyers, whilst the German representatives showed less eagerness to operate at prices which, compared to last year's October values, showed an advance of 5 per cent. for the better classes of Merino and of 7½ to 10 per cent. for faulty fleeces and all kinds of pieces and bellies, states Fuhrmann & Co., Limited, Melbourne and Sydney, in one of their valuable circulars. Crossbreds alone did not share in this improvement, and, with the exception of the fine grades, ruled in buyer's favor; the Lincoln and lower classes being, at this present time, from 5 to 10 per cent. cheaper than at the opening of the last wool season.

As the sale progressed and catalogues became more important, the opening quotations were hardly maintained and under the influence of unfavorable news from European and American quarters, values have gradually receded. Scoured wools, too, are fully 5 per cent. dearer than they were in October, 1897. The clip compares very differently with the preceding one, according to how the various localities in a larger or smaller degree have suffered from the dry season. A number of West Victoria wools will very likely lack that soundness and light condition for which they are generally renowned, and also many Riverina wools, besides carrying more burr, will be of poorer growth than last year. The clip from the central and northern districts of New South Wales is well grown, but burr is abundant there. The Darling district wools and those sold at Adelaide are reported to be of a heavier condition than in 1897; the Queensland ones appear more

earthy or dusty, but dry in the grease. Deep-grown and clean wools will again be scarce this season, which is rather in advance of last year's. Losses of sheep through the drought have been heavy in Victoria and in the Riverina district; lambing has been bad in these two localities and only moderate in the other parts of Australia.

It is unlikely that there will be a material increase in production, if any at all, for the season 1898-99.

LONDON WOOL SALES.

The sixth series of the wool sales opened in London, November 29th, with a large attendance. Buyers were well represented from all sections except the United States. The majority of the sales were taken by the Continent on the first day. Merinos offered included many lines of New South Wales and Queensland stocks. New clips were in good condition, while cross-breeds contained a large proportion of slips throughout. The French and German buyers competed spiritedly with the home buyers for Queensland and New South Wales scoureds, which were in strong demand at high figures, and occasionally advancing 5 per cent. There was a fair inquiry for South Australian and West Australian greasies. A small supply of cross-breeds sold at unchanged rates. Medium coarse was neglected, and declined 5 per cent. Cape of Good Hope and Natal stock was well represented, and so brisk were the prices that the number of bales offered to-day was 12,438. The following are the sales of the first in detail: New South Wales, 1,500 bales—Scoured, 7d. to 1s. 4½d.; greasy, 7½d. to 10½d. Queensland, 4,430 bales—Scoured, 6½d. to 1s. 7½d.; greasy, 5¼d. to 9d. Victoria, 1,500 bales—Scoured, 4d. to 1s. 6d.; greasy, 4½d. to 10½d. South Australia, 1,400 bales—Scoured, 10½d. to 1s.; greasy, 5¼d. to 8d. West Australia, 1,200 bales—Greasy, 4¾d. to 7¼d. New Zealand, 1,000 bales—Scoured, 5½d. to 1s. 3½d.; greasy, 4¾d. to 7½d. Cape of Good Hope and Natal, 600 bales—Scoured, 8½d. to 1s. 6½d.; greasy, 6d. to 7¾d. On the second day the chief feature of the market was a hardening of prices in merinos. A large number of buyers were present at the third day's sale of the present series of the wool auction sales. There was great animation for all good qualities offered. Heavy cross-breeds showed weakness. A good selection of merinos scoured was eagerly competed for by Germany and Belgium. Lock and pieces were readily taken by the Continental representatives at full rates. Greasy merinos sold extremely well, the Continental buyers taking some. On December 6th, many lines of scoured merinos were bought by Continental buyers. Finer greasies showed a hardening tendency, several lots going to Russia. Cross-breeds were in better demand, and well-grown wools were slightly advanced. On December 8th, there was a full attendance of buyers. The market was active and firm, with a hardening tendency.

Scoured sold extremely well, but fine greasies were difficult to buy at late sales. The number of bales offered was 10,983, including a large selection of medium Queensland. Bidding was animated, and divided between the home and Continental buyers, the majority being bought by Yorkshire purchasers. The sales in detail were as follows: New South Wales—1,800 bales; scoured, 11d. to 1s. 5d.; greasy, 6½d. to 10½d. Queensland—3,400 bales; scoured, 10d. to 1s. 5d.; greasy, 7d. to 1s. Victoria—1,800 bales; scoured, 7d. to 1s. 9d.; greasy, 5½d. to 10d. South Australia—900 bales; scoured, 7d. to 1s. 3½d.; greasy, 4¼d. to 4½d. West Australia—1,000 bales; greasy, 4¾d. to 8d. New Zealand—1,300 bales; scoured, 6d. to 1s. 4d.; greasy, 5¼d. to 9½d. Cape of Good Hope and Natal—600 bales; scoured, 9d. to 1s. 5½d.; greasy, 5¼d. to 8d. The sales were not marked by any important feature till the 12th, when the offerings consisted of 9,933 bales, principally merinos, and generally of a good quality. The demand for this wool was very good. Medium greasies, however, showed a falling off. Better descriptions of New South Wales sold quickly, while a number of heavy Cape of Good Hope and Natal wools were withdrawn. The general tone of the sale was firm. The series closed December 13th, with a good attendance of buyers present. The closing tone was firm, and the prices realized to-day were practically the best of the series. The number of bales carried over was 21,000; 57,000 were sold to home buyers and 80,000 to the Continent. The next series is scheduled for January 17th, 1899, and the list will close on January 9th. The following is to-day's sale in detail: New South Wales, 4,000 bales—Scoured, 6½d. to 1s. 5d.; greasy, 4¾d. to 10d.; Queensland, 3,500 bales—Scoured, 1s. 0½d. to 1s. 4½d.; greasy, 4¾d. to 11d. Victoria, 300 bales—Scoured, 9d. to 1s. 2d.; greasy, 6d. to 7d. South Australia, 100 bales—Greasy, 5½d. to 7d. West Australia, 100 bales—Greasy, 6¾d. to 8d. New Zealand, 1,900 bales—Scoured, 6½d. to 11d.; greasy, 4¾d. to 9d. Cape of Good Hope and Natal, 500 bales—Scoured, 9d. to 1s. 6½d.; greasy, 6¼d. to 8d. Buenos Ayres, 700 bales—Greasy, 4¾d. to 7½d.

—We very frequently hear from our British friends rather sharp criticisms of Canadian business methods and the lack of proper bankruptcy legislation in this country, but the following report of a recent insolvency in Manchester, published in the Kidderminster Shuttle, is quite equal to anything of which we have heard. It states that the Official Receiver at Manchester Bankruptcy Court has just issued to the creditors of a well-known Manchester firm a remarkable balance sheet. The total liabilities of the firm in question are put down at £11,065, and the total assets are 5s. 6d. The assets are made up in an equally remarkable fashion. They consist of 1s. 6d. in cash, and a pawnticket of 4s.

NEW DYESTUFFS.

Toraline B Is a direct blue black for wool, and is a compound made from the coloring principle of logwood. Owing to the great attraction which wool has for this coloring matter, no mordant is necessary either before or after the dyeing-operation. Any required black (a jet or a dead black) can be obtained with the usual additions which are necessary to obtain with logwood black. It is specially suitable for low class shoddy dyeing, and has the following advantages: Cheapness, fastness to light, level dyeing, saves time, steam and labor, stands scouring and milling perfectly; is a powder, and therefore easily handled. Recipe: Prepare a bath containing 15 lbs Toraline B; enter goods at 160 deg. F., raise temperature to boil and boil half to three-quarters of an hour, lift and wash. The dye-bath is retained for future use and for succeeding lots of goods relatively smaller quantities of dyestuffs are required.

Pluto Brown R.—Up to the present time, a want has been felt for a cotton brown fast to acids, states the Dominion Dyewood & Chemical Co. Pluto Brown R meets this requirement to a great extent, and is even unaffected by dilute mineral acids. This feature makes the above color of use in the dyeing of stocking yarns, hosiery, etc., especially as its fastness to washing may be considerably increased by diazotizing and developing without altering the soft handle of the goods. Is also of use in the dyeing of half wool, dyes the wool and cotton the same color. One of its chief recommendations lies in its strong tinctorial power, relatively small quantities of dye-stuff producing deep full shades.

Benzo Dark Green B.—Another member of the Benzo Green family, applicable in the same manner as Benzo Green GB and 2B; dyes full deep bottle green shades. Especially suitable for half wool dyeing as it dyes both fibers equally level. In tinctorial power it is very strong and will be of interest to dyers, dyeing half wool Eskimo goods in one bath, a special card of which has just been prepared, No. 699, 1898. For shade cards or more complete information about any of the recent colors, write the Dominion Dyewood & Chemical Co., Toronto, sole agents in Canada for the Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany.

TWIST.

Regarding twist there is but little said, yet there are peculiarities connected with it which contribute considerably to the success of a manufacturing plant. The amount of twist to use for the different counts of yarn is based upon the fact that the diameters of threads vary in the same ratio as the square roots of their numbers. It is well that this rule as a foundation should be recognized and acted upon where there are no practical data at hand. In a short time, however, the necessities of the trade will convince us that a guess from experience would have done just as well. Practical carders are well aware that any attempt to twist roving by rule is a perilous operation, and the effects of such efforts sometimes appear absurd. That different causes produce different effects is well exemplified in the twisting of roving. If it is not soft enough to draw well on intermediates and finishers, we must break through every rule and precedent to make it so. By giving attention to these frames the practical carder knows how to manage the spinners' roving, and prevent a whole string of defects being hurled at him every day. The soundest judgment is needed to regulate the twist on roving. Theory cannot be depended on because of the varying qualities of the stock; the better the cotton the less the twist. Yet regarding this latter statement there would seem to be an inaccuracy, or something at variance with good judgment.

The English propound a certain number for one hank rove, while the American adds one-twelfth to it, and takes it as his

standard. I have no hesitation in saying that the American in nearly every instance uses a superior cotton for the same numbers, says a correspondent of The American Wool and Cotton Reporter. Why, then, should he twist his roving harder? Why can he not do with at least as few turns as the other party? It is because of the temperature, that difficulty has been solved by such mechanical means as ensure a continuous and steady supply of the accepted percentage of heat and moisture for the production of good work. The fact is, there is not a single difficulty in the way, either with machinery, help, buildings or atmospheric influences. Nothing of the kind. The advantages are on our side because we put in a better staple. We must not forget, however, if we persist in putting more twist in the roving that we are steadily losing in quantity.

Suppose the twist gear to be somewhere in the thirties, as it generally is, and you, because of your standard, which you deem it prudent to keep as close to as possible, are twisting with but one tooth different; you would be losing one bobbin in every, say, 34, or for every 34 doffings you ought to get 35. This is a serious matter, and if carried out, which I believe it is not, would tell greatly against production. Happily our carders are no theorists, but depend largely on how far they ought to follow a thing which they cannot make to tally with fact before forsaking it. Of course, in mills in which they have not yet been installed these mechanical devices for perfecting the temperature, the changes in the atmosphere still continue to give anxiety, and suitable twist must be put in, still keeping in mind that "strong enough to pull the bobbin round without stretching" is the practical thing to stand by. Without entering more fully into the twisting of roving, we will pass on to the yarns. In these the twist is of special importance, and the person who purchases them knows it, and makes the most of it. How would it be possible anyway to satisfy the yarn buyer? It simply cannot be done. In the most perfect yarn ever made there are faults, and he can ferret them out; if the yarn lacks the soft feel requisite, it will be condemned; if it has not the nice, crimped shade, it will be found fault with; if twist is not put in to impart the desired elasticity, it will not be suitable; if it is bunched and curled too much, it will not be good for anything. There must, therefore, be considerable skill used by the overseer responsible for marketable yarns. He must not only have good selling twist, but he must also have good spinning twist. This latter is not always in strict accordance with the wants of the market, but there are few frame spinners who would not risk their reputation in behalf of nice smooth running work. It was mentioned that the twist put into the roving in the preceding processes is regarded as having a good deal to do with the finished appearance of the yarn. Slubbing, intermediate and fine rovings are all twisted in the same direction; that is as it should be, because the convolution of the fibers is not reversed from process to process. We, however, in every case reverse the fiber; that is to say, we pull from opposite ends. In changing on the systems the fiber delivered from the rolls before doffing is the first presented for drawing on the following process, and it is presented wrong end about so that a relaying of the fibers takes place every time the sliver is drawn; but if there is any advantage to be gained by continual twisting in one direction we have it as far as the frames are concerned. The natural contrariness of the fibers which, in spite of all the parallelizing they receive still incline in opposite directions, does much to negative the good results expected. It is, therefore, very questionable whether an overseer can rely with any degree of certainty upon bettering the conditions of the twist by tinkering with the direction his spindles are running, in order to gain anything through spirality. Happily we are not entirely confined to yarn mills and the peremptory rules made imperative through the arbitrary doings of agents. We have our own looms, and other means of disposing of the yarns spun and

twisted at home. And while we may not be just as hard pressed by outside authority, we must not relax one whit our efforts to give the best that can be got. We are generally confined to warp yarns on the rings, and when we get into the custom of spinning a long time for a certain class of goods, we naturally come down a peg or two in vigilance, and let things remain as they are. There is no spinning master who will not admit the truth of this assertion, and further, who will not deny that he has often been caught napping under the security of uninterrupted leisure. While on warps he generally and without indulging, has a pretty "soft thing," so far as twist is concerned, a man who has been used to spinning warps all the time has but few qualifications for the difficulties attending the making of filling on frames. This method of producing shuttle pirns is becoming more general, and is likely in time to supersede the cop made in the old style. The spinning of it on rings requires a degree of knowledge which is seldom exercised on warps, especially those woven on the premises. No, no. The warp spinner, who gathers his information regarding twist and measures it by what he has learned in books and by the spells of ease afforded him between changings, is not the man to take charge of filling frames. He has got mired into him an idea which, in defiance of every effort to the contrary, will make its appearance to the detriment of the filling he produces. What is there, then, in filling that makes it so much more difficult to handle on a spinning frame than warps? In the first place, the former is not dressed for the loom, but enters into the cloth as it comes from the frame. It must, therefore, according to the natural characteristics of the fiber, partake to a certain extent of furriness. Now, these short outstanding fibers fill up spaces in a very serviceable manner. It will not do, therefore, to twist them down; they must be left soft to render the best feeling, as well as give the closest appearance. This idea is carried out still more thoroughly by having the twists reversed. By using opposite twists it will readily be seen that the combination will allow a prompt and facile compression.

TANNIN FROM THE DOCK.

What may prove to be a valuable discovery was made at the Colonial College, Hollesley, Suffolk, Eng., viz., that the dock is an important source of tannin, has created much interest throughout the country, and through the kindness of the secretary of this institution we are able to give full particulars. It was suggested by a former student of the college now in California, that canaigre could be grown with advantage in England. When the specimens of the plant forwarded by this gentleman arrived, the director of the college noted their practical identity with the too well-known English dock and naturally looked for similar if not necessarily identical chemical characteristics in the native plant. The roots of various varieties of dock were tested for tannic acid, and quantitative analyses were made comparing the percentages with those of canaigre, oak bark, valonia, and other recognized tannin materials. The difficulties connected with the quantitative estimation of tannic acid are well known to our readers, and making use of Loewenthal's method improved by Proctor, widely differing percentages were got, even with specimens of the same variety, the differences seeming to originate in the conditions of growth and the method adopted of drying the samples. The native plants were estimated along with a standard solution of commercial tannin and the highest quantity of tannic acid found in the Suffolk dock was 21 per cent., the sample of canaigre sent from California containing 36 per cent. It is not of course absolutely taken for granted, but there is reasonable hope that the English dock, which requires little or no labor in cultivation, may henceforth be a source of revenue to the farmer and a favorite tannin material in commerce. The college has received so many

communications on the subject that it has been found impossible to answer them individually, and this shows that the interest in the matter is widespread.

BLACK ON MERCERIZED COTTON.

The two dyestuffs Diaminogene B and Diaminogene extra have now been extensively adopted for the dyeing of cotton goods, and particularly of mercerized cotton goods, which hitherto have been dyed with aniline black, for instance cotton linings, etc., state Leopold Cassella & Co. The most essential advantages offered by the dyeing of such goods with Diaminogene blacks are, the makers state: Their equality in rank with aniline black as regards shade and fulness; a simpler and safer method of dyeing; the absolute immunity from all danger of tendering the fiber; their fastness to storing. Practical experience has also proved that dyeing with Diaminogene blacks does not entail any greater cost than the oxidation black process, they also state. Although hitherto the diazotizing and developing process has already been carried out on machinery allowing of a continuous working, the dyeing is still done on the jigger and in some cases on the winch.

We give full particulars of a process by which the dyeing with Diaminogene blacks can be done in a continuous manner, the details of which will be found in the following. The dyeing machine consists of three combined vats of the following dimensions: Height about 4 ft., length about 2 ft. 8 in., width according to the width of the goods to be dyed. These wooden vats are provided with guide rollers, and over each vat wooden squeezing rollers, padded in the usual way, are suitably adjusted. Above the vats a feeding tank is placed, containing the dyestuff solution to be used for additions. A coil is placed near the bottom of each vat to heat the bath. The heating of the latter with indirect steam is preferable to heating with direct steam, as it will avoid dilution of the dye-bath; at the same time the steam pipe may be provided with an arrangement for introducing direct steam when required. This will allow of heating up the bath quicker for the start, whereas the indirect heating should follow as soon as the boiling point has been reached. The speed of working should be such as to cause 45 revolutions per minute for the squeezing rollers of about 6 in. diameter; in this way a production of about 1,100 yards per hour will be attained. Should a greater production be desired, the passage has to be lengthened by adding a fourth vat, or if less production should be wanted, two vats will prove sufficient, the same being worked at a proportionately slower speed.

Fill the vats up to half with water, heat and charge each of them with (for narrow goods)—7 oz. soda ash, 4 lbs. 6 oz. Diaminogene B, pat., 1 lb. 10 oz. Turkey-Red Oil, 4 lbs. 6½ oz. desiccated Glauber's salt; (for wide goods)—14 oz. soda ash, 8 lbs. 13 oz. Diaminogene B, pat., 3 lbs. 5 oz. Turkey-Red Oil, 8 lbs. 13 oz. desiccated Glauber's salt. First put in the soda, then the dyestuff previously dissolved in hot water, boil up, then add the Turkey-Red Oil, and finally the Glauber's salt. The quantities given for the first bath need not always be strictly adhered to; modifications will and can be made, according to the quality of the goods to be dyed, and according to the time allowed for the passage. On the average, however, the quantities mentioned will be found suitable for the first trial; the examination of the first few pieces will show whether a further addition to the bath, or a dilution of the same will be required.

The additions to the dye-bath during the dyeing process are regulated by the weight of the goods to be dyed, and the following proportions should be adhered to: For every 100 lbs. of cotton (dry weight) take—8 oz. soda ash, 3½—4 lbs. Diaminogene B, pat., 8 oz. Turkey-Red Oil, 3½—4 lbs. Glauber's salt.

Under normal conditions the solution to be added to the dye bath may be prepared in one pan and the dye vats may be

charged with it continuously, it is not of great importance whether the liquor in one vat or the other becomes a little stronger or weaker, neither is it of any moment whether the additions are made at regular intervals, the only point to be watched is that the goods benefit to the full extent from the added liquor, while passing through the respective vat. The relatively strong concentration of the dye-liquor ensures more or less a regulation in itself. The goods must be thoroughly wetted before being entered into the dye-bath, and the latter must be kept boiling or at least near the boiling point. If bluer shades are required Diaminogene B. and Diaminogene extra may be mixed according to requirement, all the other ingredients being added in the same proportion. After dyeing rinse in cold water and diazotize and develop as usual on the continuous machine.

The diazotizing and developing process is described in the book "The Diamine Colors," issued by W. J. Matheson & Co., Ltd., agents for Leopold Cassella & Co., page 141.

TRADE IN THE YUKON.

A correspondent writes to The Canadian Journal of Fabrics on the possibilities of Canadian trade in the Yukon country as follows: "You ask for information concerning the dry goods dealers, tailors, hat and fur dealers and general stores of Dawson City. I am sorry that I cannot give you very much information as to specific dealers. My time there was too short and too fully taken up to allow of making myself so thoroughly acquainted with the trade demands as I would have liked. The principal traders are, The N. A. Trading Co., and the Alaska Commercial Co. These are the two great trading companies, who up to the past season have had a large monopoly of the local supply. They are United States trading companies, but none the less to be cultivated. Already they are purchasers of Canadian goods, and I made it my business to have them appreciate more than ever that it is in their interest to buy in Canada. Your letter suggests two very great lacks in our trade circles to-day. One is the fact that our merchants have not yet appreciated the advantage to Canadian trade of the Dawson or local demands. It is a striking fact that the commercial agencies' reports have no names in Dawson. It is time that this be remedied. Another fact suggested is in the reminder of the character of Klondyke trade. The average person is half inclined to doubt that Dawson has any demands that come within your province, textile, etc. There is a surprise in store for our wholesale merchants, in the character of the supplies needed at Dawson, especially this year. People for many months in the year, at least, dress there as here, except that the social exactions are less exacting. In the coming time however, there will be a growing demand for all the luxuries of metropolitan life, and there is an inside field open in meeting this demand. The change will come, and we ought to take due advantage of it. With next year will come closer and quicker connection with that country, and following cheaper transportation will be the increased demand I speak of."

FLOCKS.

The fact that flocks need not be a detriment to woollen goods although well recognized by those in a position to know, is not accepted by the general buying public. We cannot help but admit that in many instances this aversion of the public is well founded, for on the lower grade of goods flocks are in most cases a decided detriment to the goods. The reason for this detriment may in each instance be easily pointed out, but at the time of pointing out such cases the goods in question are certainly past redemption. The subject of flocks and flocking should therefore receive careful attention: not alone

from the finisher, but also from those who often control the finishers' actions in this respect. The question naturally arises, why is it that flocked goods are mostly objected to? asks a correspondent of The Textile World. We find the answer in every case to be, that it is principally on account of the tendency of the flocks to drop out and gather in the lining. So far as the finisher is concerned most of the blame is generally put on his shoulder, and while there may be instances where the manner of putting on the flocks has considerable to do with their staying capacity, it is more than likely that the powers furnishing the finisher the flocks to use are more to blame than he. If poor flocks are furnished simply on account of their cheapness, fault should not be found with the finisher if the goods turn out to be cheap decidedly. The poorer the flocks which are used, the more will have to be used in order to reach the final results aimed at, i.e., making up of weight, and it does not matter how the thing is figured out, in the end it will be found that the cheap flock is generally the dearest. In the first place, there is more waste and from 50 to 75 per cent. more flocks will have to be used to arrive at given results than would be required of a good quality of flock. Besides all this the looks and general appearance of the goods will suffer considerably with the cheaper flock, for it is next to impossible to keep flocks from the face of the goods, no matter how good they are tacked, if from three to four times the amount needed to make weight has to be put on the goods in order to have enough stay on to have them come up to weight. However, a cheap flock is not always a poor one, and we often find a lot which is quite a bargain as to quality. In many instances, in fact, in most instances, the goods have as much to do with the flocking as the flocks themselves. If goods are largely composed of shoddy and other inferior stock, it is folly to think that flocks will adhere and felt in as readily to this as to a fabric composed of good clear stock. So we find that in order to be successful this item must be taken into consideration and the flocking conducted accordingly. If we should put on the same amount on this latter class of goods as we do on cotton warp goods, the goods would come out stiff and boardy and entirely too heavy; in fact, would not be considered as fit to use. The unimpaired wool fiber will hold many particles of flocks, and this taken together with the felting capacity which should be in the flock itself, will show plainly that a different mode of treatment is necessary here. The worst practice the finisher has to contend with, is the habit of manufacturers to provide a good quality of flocks for an all wool fabric, and as the goods made are cheaper so also the grade of flocks supplied grows cheaper, which to our mind is exactly opposite from what ought to be. All-wool goods, that is to say, wool not the shoddy all-wool kind, have all the felting capacity there is in the fiber and therefore are able to absorb and hold a poorer flock than is usually put on, and gave excellent results. Of course we do not mean to say that a flock which is so poor as not to have any felting capacity in itself should be used, for this kind we hold to be unfit for use on any kind of goods. Having tried and experimented on this line quite a little we have come to the conclusion that a medium quality flock is the thing for a good fabric. In considering cotton warp goods a different state of things confronts us, however. As these so-called union cassimeres are generally woven the same weight the year round, and the heavy weights are mostly produced by the use of flocks it is readily seen that quite an amount is likely to be needed. Flocks being applied to the back of the goods we naturally look first at what we have here to felt a flock to, and find that we have practically nothing of a nature to help us. We find nothing but the cotton threads with here and there a little of the filling exposed and most of the time this also is of very questionable quality, and to try and put a poor grade of flock on such material is sure to result in failure. To be sure we

may be able to paste enough of them on to have them come to weight, but how long will they stay on is the question. Certainly as soon as the goods are handled they will begin to drop out, and this will not stop till all has dropped out as the goods are worn. But the great thing sought after it seems is to get the goods out of the mill with enough flocks in them to have them up to weight no matter what happens afterward. Here is the place to employ a good quality of flock and the goods will be so much better for the use of them that the reputation of the firm will be enhanced and in the end if things are figured close, there will not be such a great difference in the cost. This leads us to the consideration of the problem of good and bad flocks. Now it is a very hard matter to determine the value of flocks until after they are used, for even if the flocks are made of good stock the chances are that they have been spoiled at the cutting or rather the grinding, as it should be called. The value of a shear-flock which is recognized as the best quality, is due to the very reason of their being cut by sharp knives and not ground, thus retaining all their felty capacity intact even if the fiber is shortened. The grinding process of the average flock cutting machine is detrimental to the felting property of the wool fiber and therefore too much care cannot be bestowed upon this machinery. Flock-cutting machines should be kept as sharp as possible, and by reversing frequently and paying due attention that no foreign matter gets to the knives with the stock, it will be easy to keep them in good condition. The best of stock is easily spoiled on dull machines, and the trouble will show itself after the goods are finished, when it is too late to remedy the matter.

CLOAKINGS.

There is a class of cloths made for ladies' cloaks and coats and capes, that is of fairly open texture, with some nap, and with good draping qualities, which might be profitably noticed. These cloths somewhat resemble kerseys, but they are not kerseys. They are lighter in weight, and the nap is rather a thread nap than a nap worked up out of the body of the felt. This peculiarity gives the goods an open and pliable finish that makes them much more appropriate for this design. A cloth that does not drape well and does not fit properly into the form is not a cloth that is altogether successful as a cloak cloth, writes a correspondent of *The Boston Journal of Commerce*. But such is not the case with the goods in question. The cloak goods in question finish about twelve ounces to the yard, and are not felted to any appreciable extent. This lack of felt and body adds quite considerably to the value of the cloth for many purposes. If the cloth is rightly laid out and made in the looms there will be very little fulling to be done, in fact in most cases the cloth hardly needs to go up in length at all. Then the weave is so simple and the stock usually of such value and quality that very few imperfections appear. The result is, that the initial processes are by no means of as much importance and significance as in many fabrics. When these processes have been gone through with the cloth is ready for the tulling.

The slight kind of fulling that is required makes it desirable, along with other considerations to run the goods double in the mill. The piece is laid out, or measured so that the center can be found, and then this is tied with a string. The end is run in over the roller until this marked place comes up, and then the other end is started. When the two ends come together they are sewed together, and the piece is then doubled ready for good work. As felting lengthwise is to be merely a nominal matter, the soap has got to be carefully chosen. Little of it as can be employed, and no heavy bodied articles, is the rule. An olive-oil soap of good quality will be most likely to

meet all the needs of the case. If they are run about three-quarters of an hour in the mill with a good soap capable of acting on the wool oils that are used in the early processes, the work will be satisfactory. There will be some trouble just here if the lubricating oils have been badly chosen or if alum has been used in the carding. If good oil only has been employed, that is, an oil that will combine or be acted upon by the soap in the mill, it is well to start the grease while the goods are yet in the mill. They must not be made too damp with the soap in the mill, but enough must be used to give even and uniform work and also to start the grease. At the close of the allotted time of fulling, the cloth, since traps have been open, will likely be found to have stretched considerably in length. This tendency must always be carefully watched, for varying weights of goods will likely come out in very different conditions unless the fulling is regulated by quantity and quality of soap and by the length of time during which the goods are kept under action.

When the cloth gets to the washer it will take a liberal and generous application and use of warm water to remove the dirt, grease and soap; and unless all traces are removed there will be trouble in the dyeing, for these goods are usually dyed in the piece. After the water and soap have been well used in connection with the goods a bath or a run in a fuller's earth solution will very much help in making the goods thoroughly clean, and in producing a neat and desirable finish. In making the solution do not attempt to make it any stronger than a pail of the earth to a barrel of water. Any larger proportion will not thoroughly dissolve and the result will be a deposit on the goods that is disastrous. Ten minutes in the earth solution will take away all traces of soap and dirt, and at the same time will add very much to the life and beauty of the finish. Rinse thoroughly, extract, and roll up tightly and allow to lie all night in this shape; then in the morning the gigging may take place.

The fact that there is no felt on this class of goods, and therefore little or no nap to be handled, makes the gigging less important than it often is. A medium class of work and gigging only one way are what is required, and gradual increase in the sharpness of the work will complete the process. The steaming follows this operation and must be very thorough. In fact, it is sometimes advisable to give two or three, or even four applications of the steam before the desired finish has been attained, and then besides the number of applications it is also well to reverse the goods and steam again in this condition. Each steaming should be alternated with a cooling, and in this way the effect of the steam is allowed to fix itself upon the cloth and fibers.

The dyeing now follows, and if need be the treatment of burrs and specks and then wet gigging takes place. This operation must also be thorough, with a liberal use of water; and after it is completed the goods are again rolled and allowed to stand all night. Next morning extracting and dyeing are undergone and brushing and back hurling prepares the goods for the shear. As with the gigging also with the shearing, we find that the light fulling and absence of felt has made the operation little more than routine. All the shear is expected to do is merely to even up the nap, and leave it practically as it is already. Brushing with steam follows and then the piece is ready for the press. The pressing must be thorough, the goods are run face down, and the finish must be well set. On this process much of the permanence and wearing quality of the finish will depend. Steam off the worst of the gloss after pressure and then when cool they are ready to be rolled and prepared for the market. The result will be a clean pliable handsome fabric which sets well on the figure and makes a most useful cloth for cloaks and jackets for women's wear.

THE INFLUENCE OF CHEMISTRY ON THE DYER'S ART.

DR. E. REISSE, IN THE BERLIN FÄRBER ZEITUNG.

A century is nearing its end which has well named the iron age—the generation of discoveries. It is characteristic of this cultured epoch that in all matters it is penetrated, as regards the practical questions of life, by the clear and elucidatory spirit of science. New points of vantage have been always reached by means of scientific explanations and scientific analysis of what has gone before and have enabled us to get a better idea of the secrets of nature.

All kinds of progress testify to the co-operation of science and trade in an astonishing manner as we look back upon the achievements of the nineteenth century. There are many real triumphs celebrated by theory and practice hand in hand, and they continue to be gained. Above all, it is natural sciences—and particularly the sister sciences of chemistry and physics—that have set their mark upon the present age, and one branch of industry which chemistry has revolutionized and mightily advanced is the art of dyeing. In the beginning of the present century, Vitalis wrote in France, "Of all the services which chemistry can render to the arts, there are none finer than those by which it has laid securely the foundations of the art of the dyer. Till chemistry had turned its light upon dyeing it was not worthy to be called an art. There is no trade which presents greater difficulties, both in theory and practice, and which, therefore, requires deeper knowledge. How great the labor has had to be, and how persevering the study of nature before people learned how to use colors and to impress them durably upon the fabrics, the value of which they so largely increase." If this learned man could write in such a fashion at a time when chemistry was only just beginning to develop into an independent science, and the foundations of the since ever-increasing art of making artificial organic coloring matters had only just been laid, an art which opened up an entirely new field for the dyer, what words of inspiration would he have used had he foreseen what chemistry would be to the dyer now, what influence it has over him, and with what abundant proofs of its creative power it has now endowed him? To recognize the effect of chemistry upon dyeing and properly to appreciate it, we must look more closely into both earlier and more recent times.

Up to the middle of the century the dyer was exclusively dependent upon the natural dyes. These had been used from remote antiquity to improve the appearance of fibers, and to satisfy the taste of men for harmonious colors. With time the range of natural colors widened, and some of them have such excellent qualities that they still enjoy the preference of many dyers. Among these logwood, redwood, madder, sandal wood, fustic, quercitron, woad, curcuma, catechu, archil, indigo, cochineal, and some others of animal, vegetable, or mineral origin, still hold their ground. These dyes were used by strictly adhering to certain recipes, transmitted from one person to another, both verbally and in writing. Experience and close observation had taught under what conditions the dyeing processes were most successful, but the why and wherefore of the precautions to be taken was either known imperfectly or not at all. The dyer usually worked more or less in the dark, and his art was wholly empirical. As a material result, inexperienced hands used processes requiring all sorts of really unnecessary labor, and the art at last reached a point beyond which the knowledge in existence could not bring it. As soon, however, as chemical science acquired strength it was at once applied to dyeing, and with the wonderful results which we all know. It replaced isolated and inadequate efforts by the organized research of learned men and those enlightened members of the trade who foresaw what science was likely to do for them. Wilhelm von Kurrer writes in 1848: "What science has done

during the last fifty years for the dyers' art, before then entirely carried on by rule of thumb, surpasses the whole progress of the art before that time. Such thinking and creative spirits as Bancroft, Berthollet, Dangler, Hermbstadt, Kreyrig, Kurrer, Koechlin, Vitalis, Schlumberger, Thilloge, Chevreul, Persoz, Dumas, etc., have caused the dyeing and color printing trades to make enormous strides by basing them upon fixed and well-defined principles, and have given them their present degree of perfection, both scientific and practical. Results are no longer left to chance, but are based on scientific knowledge of the various coloring matter and of the materials such as wool, hair, feathers, leather, silk, cotton and linen, to which they are to be applied. During the last half-century men have arisen, thanks to the propagation of works on dyeing, to the institution of research laboratories, who have been induced to devote themselves with enthusiasm to the application of chemistry to dyeing. This has happened in every European country, and they have devoted themselves to its scientific and practical application to the trade. The light has found its way even into the smallest workshops, and has rooted out many a deep-seated prejudice, and paved the way for a knowledge of better things."

Thus we see dyeing becoming a branch of applied chemistry, and subjugating itself and its processes to the wide-reaching laws of that great science. But what had only begun in the first half of this century was victoriously continued in the second. The artificial dyes were yoked to the triumphal chariot on which the beneficent science made its entry into the dye-house. Scientific investigation of the products of the distillation of coal-tar has led to the erection of the coal-tar color making industry, a monument more enduring than bronze to those to whom it owes its existence. The first of these colors did not appear until at the end of the first half of this century, but by the happy combination of science and practice the number of these dyes has been increased in unexampled fashion during the last few decades. While the dyer was previously dependent upon the comparatively few dyestuffs furnished to him ready-made by nature, he has now an unbounded choice at his disposal. This immediately put him into a position to produce shades such as are only seen elsewhere in the productions of nature, and at the same time dyeing processes became to some extent simpler than formerly, because the accurate knowledge of their constitution which was possible in the case of the artificial dyes, enabled the best methods of using them to be worked out. Light was thrown on all dyeing processes by the exact chemical researches carried out in the laboratories which were erected in connection with all the larger dyeworks, and it became possible to regulate the methods with precision. The researches into the nature of the dyes were combined with investigations into the properties of the substances which had to be dyed, and the two kinds of work laid the foundations of the art securely. Not a few new branches of the art owe their origin to the discovery of artificial methods of making dyes, and all others owe at least immense development to the same cause. For example the Turkey-red process was directed into entirely new channels by the discovery of artificial alizarine, and the troubles caused by having to use madder, never pure and never the same thing twice running, disappeared.

We must also remember the immense impetus given by the coal-tar colors to silk dyeing. Cotton dyeing, too, has become quite a different industry since the introduction of the substantive colors and of basic mordant dyes fast to washing. The former are the cotton dyes par excellence. Everyone knows the part which acid and alizarine dyes have played in the growth of wool dyeing. Just imagine a piece dyer now without artificial coloring matters! There is no kind of textile material which has not benefited by the discovery of these bodies. One thing remains to be noted in conclusion. The present

colossal dimensions and many-sided character of the dyeing industry require corresponding qualifications on the part of its masters. Without theoretical knowledge they stand on very slippery ground and prove helpless at every turn. Chemical knowledge is now a *vade-mecum* for the intelligent dyer and enables him to conduct his business with success. Knowledge of the importance of these matters has persuaded State authorities to provide opportunities for dyers to acquire chemical and technical skill during their earlier years. The high position of chemistry to-day gives every reason for expecting that it will long continue to guide the dyers' art in the paths of progress. Much has already been done but more remains behind. May the century to come do more than the nineteenth in spreading scientific and technical knowledge.

LOOKING FAR AHEAD.

BY A GERMAN.

Reproduced from the Knitters' Circular.

During the past few weeks, the Saxon hosiery manufacturer has been lamenting the death of fancies, for such he believed the lull that took place to be. All the usual symptoms of a deceased fashion, with its legacies of claims and cancels, was troubling the people of Chemnitz. The latter half of the month, however, has revived hopes somewhat, for, though there is not much material cause for rejoicing in the way of orders, yet stocks are said to be moving on the other side, from which sure demand for fancy styles may be concluded. Yet everything is so problematical, that men cannot help feeling uneasy. For it is not only the loss of an article for sale, and the usual annoyances of a transition period, that enter into a consideration of the question, but also the capital invested in new machinery and in adapting old frames, for the twelve months or so that have now been devoted to making fancies is too short a period for paying any return. This is the most serious aspect for the little men—the factors, who rushed to seize the moment's whim with their characteristic flexibility, that quality which is being preached more than any other to Englishmen, as the weapon by which Germany conquers. In this instance, however, if not in others, the victory for the fancy trade may have been bought too dearly. This fancy trade, coming in about the same time that the Dingley Tariff commenced operating, kept folks too preoccupied to watch the effects of the latter very carefully. But the recent slackness has given them both time and cause to stop and consider, and his meditations are perhaps scarcely sanguine.

There are also disquieting rumors abroad of machinery, old and new, and workmen in alarming numbers leaving for the States. Much vain vituperation of individuals regarded as the motive cause, is heard in many places, and some assert that the Governments on both sides are active for and against such movements. Some emigrating of men and machines is undoubtedly going on, but for the rest, it is probably the wisest to discount it at the rate which all vague rumors deserve. All these things, however, make the German realize that the supply of the States is gradually being manufactured there instead of by him, as formerly. Hopes, almost like those the drowning man puts in the straw, are expressed of Russia taking the place of America, a huge Asiatic Russia, perhaps including China, or such part of it as Germany will kindly spare. Paternal government is also making colonizing efforts, but, even at the rate of a few Kiantschans a year, no sufficient territory can be gained, but such hope, especially that of Russia, seems mainly characterized by hopelessness. To regain the American market is regarded as possible to some extent, on account of the instability of American governments. An exceptionally prosperous year, due to a favorable conjuncture of the world's grain market, has made the increased duties in imported manufactures bearable

to the American consumer, but any falling off in this prosperity, which is more or less highly probable, is likely to bring into power a party to cheaper imports or a basis of duties gravitating towards the Wilson tariff, and then the German reckons he can get in again. The men speculating this way forget that in two years' time American manufacturers will be better able to compete against the 50 per cent. ad val. rate, than they were two years ago. Wages in America are bound to come down nearer to the European level. After all, too, the duties may not be lowered, nay, they might even be raised, for will there not be the birth expenses of an army and navy to pay?

No doubt, hosiery is a manufacture more trodden under foot than any other, yet it is typical of the future of all German export manufacture. While some few narrow minded Chauvinistic asses are braying for a tariff-war, or differential duties, to spite the States, the sound German economist is rather in favor of a deferential treatment of its mighty trans-atlantic opponent. He recognizes that Germany owns no lever equal to forcing concessions out of the States. The game is entirely one-sided. Some trivial concession might be forced out of the giant by a repeal of the cattle prohibitions, but that is all, and hardly worth considering. The cry of "what shall we do to be saved?" is gradually being transferred from England to Germany. Somehow, the results of the Spanish-American war have brought things far off, to the near future. The German economist's sleep is disturbed by alarming nightmares of Pan-American and Greater British clouds descending dark and fateful, and threatening to crush the life out of the poor little Fatherland. For it is becoming clear that the size of the future economic sphere will be set by such combinations above referred to, and, whatever cannot measure itself with them, will have to drop out of the race. The first condition of survival will be the self-sufficing presence of agricultural resources to back the manufacturing, such as Pan-American, Greater Britain, or European-Asiatic Russian empire would have. Here lies Germany's great difficulty. The agricultural interest is suffering and cannot revive or even survive, without higher import duties; these again would cut off markets for manufactured articles, which are at present feeding the larger, and ever increasing portion of the nation. To keep up against the States in manufacturing, even for a comparatively short period to come, involves sacrificing the remnant of farming. But the time will not fail to come when the German workman is put out of competition with the American, because of the latter's cheaper food, a time when even free trade on the part of the States could not save the doomed country.

Yet, as things now stand, it would be impossible to sacrifice the industrial majority to the farming minority. What then can Germany do to be saved? Perhaps the only chance lies in creating an economic sphere of the requisite size and constitution, by federating with a sufficient number of European neighbors; above everything, getting elements into the alliance that will provide the agricultural independence of its members. The theatrical entry into Jerusalem, which is now being got ready for the world's stage, is, perhaps, no mere romantic Crusade-revival, but diplomatically calculated to impress all who lie along the route from Berlin to Jerusalem, with the desirability of kinship with Germany. It is perhaps remarkable that Palm Sunday was not chosen for the function by a monarch so imbued with the idea of his divine right.

ABOUT SAXON FANCY HOSIERY.

The ingenuity of the Saxon hosiery men has been severely taxed during the past eighteen months. The variety of styles that has been produced, and the many new duties old iron has been made to serve, are quite astonishing. Many more or less important improvements have also sprung up, about which our readers will be interested to hear. Numerous old *Faget frames*

have had striping tackle put on, consequently the originally very limited production of three and four-end horizontal striped goods has become much larger than was ever thought possible, when the demand first set in. Cotton's rotaries have also been constructed for making four, and even five-end goods. The fancy trade is, however, usually of too fleeting a nature for many to invest the capital required for new Cotton's machines. The latest construction is much simplified by doing away with the cumbersome arrangement of a separate carrier for each striping color. Only one carrier is used for all colors up to five. The cylinder of the carrier, by which the thread is held, is slit, and the thread, after making a course, slips out. By an automatic arrangement the thread of the color which the pattern next requires, is put in such a position, that the carrier, in passing, takes it along, catching the thread in the slit of the cylinder. Eight-at-once machines have also been built for making the plated plaids. The back is worked in horizontal stripes up to five colors, while the plating of silk or lisle is carried by separate threads over, say 4, 6, or 10, etc., needles each, every one of which threads may be of a different color. A 33 gauge head, with a plating division of 10 needles, requires 27 bobbins for the plating alone; consequently these large machines of eight heads are not likely to prove a practical success, such high-priced goods bringing in orders of only a very small quantity of a pattern. Another obvious detriment is the loss of time and material, whenever a slip occurs in any one of the eight heads. In spite of this it cannot be denied that the machine is a very clever piece of workmanship. Most of these plated plaids are still being made on the small hand frames, two or three legs at once. By transposing the whole set of plating threads one needle to the right or left, after each course, very beautiful slanting and zigzag effects are produced. All kinds of vertical stripes are also converted into serpentine and zigzag lines by transposing the carrier of the vertical. Sometimes more than one vertical—three or more—are run side by side, forming a cord, say of red, enclosed by white on either side. To make the vertical heavier it is thrown over two needles, and when this double vertical keeps being transferred by one needle only, i.e., half its width, to either side, the effect resembles embroidery.

The most complicated and perfect frame of this nature makes a fabric which is best described as a back of horizontal striped rotary fabric, with a veil of very thin warp-fabric woven in. There are half as many plating threads as the head has needles, each thread passing over two needles. The plating threads are carried by a thin bar, with holes through which they are threaded. By means of the lateral movement of this bar the plating threads can be transposed to either side after each course. By having two bars, holding alternate threads, which can be transposed independently of each other, a further variety is introduced. There is clearly no end to the different styles which this construction can supply. A very skilled workman only can master this frame, each head of which is fed from 140 separate tiny bobbins. Where the leg is narrowed the plating fabric which projects is cleared with a pair of seissors. The regular Jacquard frames have not been so well employed, except in making very cheap 1-19ds. boot patterns in the Vandyke style. The symmetrical figures, made by these frames, are too angular and stiff to again find favor. Another new method for making fancies is illustrated by a machine which plates a colored ground with a thin black front, or vice versa. At a regular interval, say every tenth needle, the plating thread recedes behind the other, just whilst passing over the one needle, this results in the back color coming to the front and forming a one needle vertical stripe. Of course, this arrangement can produce any grouping of verticals. The same machine may be run on a horizontal striped back, and the vertical can be adjusted to form checks with the striping color.

Subdued Scotch effects can be brought out in this way. In lace goods, specially machine made, there have been great improvements made. The patterns made on machines used to be very poor and thin, but now styles, elaborate enough to please the most fastidious, are being shown. In connection with the manufacture of stripes, quite an industry sprang up with the tambour-machines, which put cords of lisle-thread or silk as striped goods to convert them into "genuine" Scotch plaids. These goods, however, have fallen into disgrace, as they turned out most unsatisfactorily, the cords breaking and unroving often when the hose was first put on. This defect is not inevitable, though great care is necessary to make tamboured goods sound. It is essential that the fabric should be stretched by trimming before being tamboured. The needle of the tambour machine should be fine in proportion to the gauge of the hose. The stitch must not be too slack, or it forms slovenly loops, nor too tight, or it breaks out and rends the fabric. The number of silk or lisle-thread used must be adequate to the size of the mesh.

The trouble was, that when the rush for goods came, one and all these precautions were absolutely ignored, and now—well, the punishment fits the crime. The tambour people, however, have not given themselves up to vain lamentation, but are making efforts to get work by new applications of their machines. They are using the zigzag stitch of gloves to embellish plain stockings with fancy verticals. By placing them between the drop stitches of Richelieu and Rembrandt ribbed goods, very neat effects are gained. This glove stitch is also more reliable than the plain cord, and will not tear so easily. As black and white styles seem likely to find favor, these verticals are being put on white and striped black goods to form checks. Some showy styles, imitating hand embroidery, have also been made with tambour machines by working the goods inside out; the back of the tambour-stitch being shown on the surface of the goods as it were.

There is quite a call for goods with white extracted polka dots, and Saxony is, as usual, ready to meet the bill, and threatens the French with usurpation of a specialty of theirs. Hitherto in Germany these dots were mostly printed on the dyed and pressed fabric by hand, with blocks of wood, in which the pattern is fixed with metal points, a thin layer of lead making them firm. These blocks covered a sock, or half a stocking at a time, the block being daubed on an elastic cushion, on which the paint (a mixture of bleached linseed oil, kalm, and other substances) is spread. The obvious defect of this process is the uneven density of the paint, resulting in faint patches; and in hose there is often a blemish, where the two applications of the block join. The print is fast enough for the purpose, only becoming fainter with each washing. A great many throw-outs are incident to this primitive method. Now, however, a printer has got out a patent for doing the whole process by machinery, and is successfully working it. The goods are not embellished with daubs of paint, but the pattern is extracted by a chemical process.

After being thoroughly cleansed of soap by chemical bleaching, the goods are passed through a chemical bath, that renders them susceptible to oxidation by heat. They emerge a creamy shade, and after drying are passed between the two rollers of an automatic machine. On these cylindrical rollers the pattern is fixed in metal pins, they revolve, and touch the fabric passing between them on both sides, top and bottom, simultaneously, thus impressing the pattern. A series of rollers transfers the extracting fluids from a groove, in which the lowest roller revolves evenly into the pattern-rollers. Hosiery is stretched on very thin boards of cardboard, when passed between the rollers. The great virtue of the patent lies in securing the fabric passing between the rollers at the same even rate at which the latter revolve. There are a number of ingenious arrangements applied for adding to the accuracy of the work and warding off acci-

dents. Of course, a number of pairs of rollers can be placed side by side, and, for printing two or more colors, more pairs of rollers can be placed behind each other. For hosiery, however, white only is required, and, after passing through the printing machine, the goods turn green, and then black, under the oxidation process by dry heat, the spots, however, retaining the white color. Of course, colors undergo a different dyeing process, but the extracting is done in the same way. The extracting can, of course, be done by hand in the old-fashioned style; the patent above referred to only applies to the automatic printing machine. In speaking of fancy hosiery, we must not omit to mention hand embroidery, which is just now one of the most hopeful features of the fancy trade. Surely, the unabating efforts of the people here, to catch every sign of a demand in any direction, deserves being rewarded by adequate profits.—By the Saxony correspondent of The Knitters' Circular and Monthly Record.

TEXTILE IMPORTS FROM GREAT BRITAIN.

The following are the sterling values of the textile imports into Canada from Great Britain for October and the ten months ending October, 1897-1898.

	Month of October.		Ten months ending October.	
	1897.	1898.	1897.	1898.
Wool	£10,574	£ 1,776	£30,976	£32,657
Cotton piece-goods	17,750	23,427	315,879	402,868
Jute piece-goods.....	15,710	11,238	108,037	110,179
Linen piece-goods.....	7,770	10,386	99,533	126,555
Silk, lace.....	350	211	4,647	6,199
" articles partly of.....	1,385	2,135	17,367	27,040
Woolen fabrics	6,954	12,743	202,245	261,889
Worsted fabrics.....	26,776	25,386	491,648	507,754
Carpets	4,900	10,397	120,793	159,552
Apparel and slops.....	28,702	21,227	265,579	294,404
Haberdashery	7,124	5,303	127,187	131,371

BRITISH AND AMERICAN PATENT LAWS.

At a meeting of the Society of Patent Agents held in London, recently, W. Gadd, C.E., delivered his presidential address. In doing so he stated that after long experience he had arrived at the conclusion that, although the United States patent system might be accepted in theory as perhaps the best in the world, there were irremediable features in practice which converted it into one of the worst. The practical blots to which he more particularly alluded were the preliminary examination for novelty and the cast-iron forms affected by the department in which patent claims were solely acceptable. He had often pictured to himself and to others the great contrast between a British Court and a United States examiner when looking into and deciding upon a question of novelty and subject matter. In the case of the Court, there might be a learned judge of ripe experience and great knowledge, assisted by an array of five or six trained counsel and half-a-dozen scientific and technical witnesses, yet the investigation might baffle their united efforts for four or five days; and even then a Court of Appeal might afterwards find real and valid reason to reverse the decision arrived at. On the other hand, a United States examiner—or for that matter a German one either—might decide all the points involved in as many hours or possibly in much less time, and with little or no assistance. He did not hesitate to say that under the United States system many patents were refused which ought to have been granted while others were allowed which ought to have been refused. The same remark might be as justly indulged in with regard to Germany. The truth of this was demonstrated by the number of litigated patents in both countries, notwithstanding the supposed indefeasibility of the grants.

If a search into the novelty of an invention did not prevent such novelty afterwards being called into question before the courts, he failed to see the value of such search from either a patentee's or the public's point of view. Surely it would appear the better method to at once grant the patent, if only to give the patentee the prima facie right to establish validity in law, if he was able to do so. That was the basis on which the English system rested, and it was rather a curious commentary on newspaper and other suggestions to exchange this system for that of the United States to find in America a growing agitation in favor of adopting the English method. Referring to what he termed "bogus patents," Mr. Gadd said their number appeared to be on the increase. His own experience of that sort of thing had almost exclusively been in relation to the textile industries, which perhaps more readily than most others lent themselves to that kind of enterprise. He would give a short history of two actual cases, one as between England and Germany and the other as between the United States and England. Taking the Anglo-German case first, some time ago an English manufacturer had been exporting to Germany a certain woven fabric which he had for years been manufacturing, but for which there was no patent in this or any other country. Although it was really an old production it was limited in extent, and few weavers at that time had any knowledge of that particular mode of manufacture and fewer still were engaged in the trade. After this man, however, had been exporting these goods to a resident agent in Germany for a short time, another English manufacturer—a rival of his in trade—applied for and, what is more, obtained a German patent for a mode of producing such goods, and immediately took action against the first man's agent in Germany, but refrained from taking any action in England against the real manufacturer, although a British patent for the same process was obtained. The German patent experts and counsel—probably for want of sufficient technical knowledge of weaving—could see no means of defence to this action except to impugn the validity of the patent and to set it aside, this course being doubtless dictated by the high estimation they hold of the power and scope of a German patent. The action was tried in the German Court of First Instance, and resulted in the patent being upheld as valid, and the plaintiff was allowed damages and costs, together with complete sequestration of stock in store, as is usual in Germany. At this stage the whole case was submitted to him (Mr. Gadd) for advice, and, after a careful investigation of all the facts and documents he was able to report that it was an example of the bogus patent. The truth was that the German patent might reasonably be held as novel, as it merely claimed and described an intricate but quite impracticable mode of weaving old and well known goods. The method described in the specification was not actually impossible, but was difficult and disadvantageous in practice and the old, well-known process was far preferable in every way. Of course the defendant did not adopt, and never had adopted, the patented method of production, but the curious thing about the matter was that neither did the patentee. Under Mr. Gadd's advice, an appeal was made to the higher court, and practically a new trial was obtained, at which a simple plea of non-infringement of the patent, which was not impugned in its validity, was entered, and after new expert evidence had been given showing clearly the technical facts, judgment was at once reversed. The other case was really of a similar nature but this time the patent of origin was obtained in the United States. It was for an alleged improved mode of manufacturing another unusual class of woven fabrics. Doubtless to ensure the specification passing the requisite examination for novelty the patentee found it necessary to describe a process which, if not entirely impossible, was certainly of a very impracticable character, and so far as technical examination and chemical analysis

could show was never in practice followed by the patentee himself. The patent for the invention, so called, was also taken out in England, and under cover of the supposed value given to it by a prior American grant, actions were threatened against parties who were making that class of goods by the most ancient methods known to the weaver's art. In many cases manufacturers actually gave up their rights of common manufacture simply from their belief in the efficacy of an American search for novelty, without perceiving by what strange and devious means the search had been evaded. That state of things resulted from the fact that both United States and German patents had to a large extent come to be regarded with a sort of superstitious respect, and all in consequence of an alleged or supposed infallibility, which they did not possess, resulting from the preliminary search for novelty and subject matter in those countries.

Foreign Textile Centres

MANCHESTER.—The development of the mercerizing process illustrated recently by a meeting in connection with the formation of the Lustreing Company is interesting, writes the Manchester, Eng., correspondent of *The Draper's Record*. The process is being taken advantage of by many buyers, some of whom, however, prefer to have their goods treated in the piece. In the quilt sections there are some very attractive makes treated by the mercerizing process. In the cotton sections there has been a steady enquiry for Calcutta. Sateens are in better request, as also are home trade cloths generally. The home demand generally has been brisker, and flannelettes have improved their position, although the season, speaking generally, has not been altogether satisfactory.

LEEDS.—The clothing trade is already feeling the benefit of the colder and more winter-like weather of the past week, as orders have actually been received in fair quantity from the country for overcoats and other heavy woolen fabrics which used to be sold at this season and as suitings are also wanted the factories are distinctly busier. Manufacturing clothiers complain greatly of the large amount of "special" orders which they now get in place of the bulk lines of a few seasons ago, as in this way the amount of d-tail work is greatly increased.

DEWSBURY.—In Dewsbury and Batley manufacturers' stocks have been more than equal to any demand for heavy woollens which may have been created by the colder weather, and makers of heavy weight woollens of the overcoating class are beginning to despair of doing even an average season's trade. Some manufacturers who have produced novel neat effects in tweeds are doing well with them for the coming summer season, and some makers of low-priced serges and vicunas are also busy. The heavy woolen district has during the week been the scene of two most painful cases of suicide, both of which can only be accounted for by the wearing effects of the life of the business man of to-day.

HUDDESFIELD.—Business in Huddersfield, on the whole compares favorably with any of the other woolen centres, and makers of the best classes of fancy woollens are particularly busy. The white blanket trade, although rather better, is still quiet, but there is still a fair business doing in colored blankets and rugs.

BRADFORD.—At present the demand for the cheaper classes of colonial crossbred wools here is very poor and on this account the continuous large supply from both Australia and the Argentine has forced down prices to a point fully 10 per cent below anything previously known and the question before the

trade to-day is as to whether any further decline is possible. The opinion of some of the best informed traders in this market is that these wools are now so cheap that fabrics made from them can be produced at prices which will compete with the "wool and company" productions of *Batley and Dewsbury*, and that we may now confidently look for a gradual recovery in the prices of even these lower crossbred wools which have lately been such a drug on the market. Most classes of English wools are still much neglected, but as the feeling for bright dress goods is still well sustained, the best English lustre wools are certainly very safe property at present prices and are nearly certain to pay well for keeping. At the present time the demand for both raw mohair and alpaca is quiet, but there is no quotable change in prices. In ordinary worsted yarns, although the Continental demand is quiet, spinners are, as a rule, kept better employed by the home trade, which is taking quite an average amount of miscellaneous yarns. In dress goods the early part of December is always looked upon as a quiet time, as many of the wholesale houses are busy with stock-taking, and nearly every retailer is devoting his whole attention to the "bazaar" department. There are, however, certain hopeful signs even at this unfavorable season, and the very low price of dress coating serges is attracting attention to these very reliable fabrics. Also, as the spring season comes nearer, any specially cheap cloths in plain black mohairs are being snapped up, as retailers' stocks of these goods were pretty well cleared out at the end of last summer. New designs in fine black mohair jacquards are being well bought for the coming spring season, and some of the most expensive of these goods are very beautiful fabrics indeed.

HALIFAX.—The following is the Halifax Chamber of Commerce trade report for November: *Wool*—Fine merino wools and the finest crossbreds keep very firm, with rather a hardening tendency. In crossbreds and English wools business is extremely slow, and prices are hardly sustained. Short wools are practically unchanged. *Woolens*—As yet, the colder weather has had little effect on the woolen trade, which continues quiet. Orders may be a little more numerous, but are not of sufficient amount to materially reduce the stocks held. *Worsted Yarns*—Most spinners are still finding orders very scarce and unprofitable. *Pieces*—Business is still very quiet in this branch, and manufacturers complain of the paucity of orders. The weather has been against a trade in winter goods, and merchants have given few repeat orders. *Spun Silk*—The demand during the month has somewhat slackened, with little or no change in prices. *Carpets*—There has been considerably more activity in the carpet trade during the past month. *Cotton*—Spinners and doublers of two-fold 40's and 42's for the far East still complain loudly of the poor margin, and wherever practicable are turning production on to other counts. *Warps* are also extremely quiet. *Fustians and Ready made*—Demand still continues active, with full employment all round.

ROCHDALE.—It is stated that there are a great number of mules in the town which are now devoted to turning out low numbers. A slight improvement has been noted recently in the flannel market, and should the cold weather continue, it is expected that there will be a very fair demand. The London wool sales were not looked forward to with any great amount of interest, as prices were expected to rule about the same, and the season is now too far advanced for any special alteration in the price of flannels. The majority of the manufacturers are working full time.

KIDDERMINSTER.—Manufacturers may now be accurately described as being well employed, says the *Shuttle*. Current business, which comes in day by day, is no doubt rather small but the orders for the Spring trade are reported to be good, showing on the whole a decided improvement in volume on the

first part of December of last year. The market is healthy and prices firm, though with a somewhat slow sale. This is attributable to the mildness of the season. Dealers in woolen goods naturally hoped that the sharp weather of the early part of last week would continue, so as to give an impetus to the sale of warmer clothing and materials. Drapers have heavy stocks in these departments, and carpet travellers report a present indisposition among the retail houses to increase stocks by giving orders for carpets for immediate delivery. They are consequently delaying purchases. Still trade is sound, even if manufactured goods have to be stocked for the present. Spinners have a little more to do as the season advances, but there is a tendency in certain quarters to keep stocks of yarn as low as possible, in view of early stocktaking. The wool trade does not show very much activity just now.

NOTTINGHAM.—Although the drapers are busy with their Christmas bazaars, and are making big displays in connection therewith, the activity is not reflected in the wholesale houses in this city, which have to do exclusively with lace goods. It was thought that the lacemakers' dispute at Caudry would have a favorable influence on business in Nottingham, says the *Draper's Record*, but from all accounts it has not made much appreciable difference. Manufacturers are, however, looking forward to an improved trade with America in the near future, now that the country is settling down after the war, and some of them are also expecting an increase of orders from those colonies, and British possessions, which have adopted ocean penny postage, when it comes into operation. If the mail service is accelerated there is no doubt that English trade generally will be benefited. Fancy millinery laces have met with a moderate demand, both for home trade and for shipment. Valenciennes and Victoria laces are mostly in favor, with Point de Paris and fine Malines laces for special markets. Oriental laces are not so much sought after as formerly, the market apparently having been overdone with inferior qualities. Maltese, Bretonne, and other cotton laces for making-up purposes move slowly. Torchons in cotton and linen are receiving a moderate amount of attention. Some fair orders have been placed for Honiton braids, beadings, and purls in cotton, linen, and silk. A limited demand is experienced for American laces and warp goods. Silk laces continue in a very depressed state, but local manufacturers have the satisfaction of knowing that their Calais rivals are in no better case than themselves as regards these goods. The plain net, light tulle, and heavy mosquito net branches continue to prosper. The machinery is well engaged, there are no stocks, and prices remain at the highest level. Rice and Paris nets are only in moderate request, and there is not an average demand for other stiff foundation nets. Point d'esprit nets meet with steady enquiry, and Brussels, Mechlin, and Zephyr tulle are also enquired for. Silk nets and tulle are selling in small quantities. With the near approach of Christmas, the making-up branches are showing more activity. The novelties produced in caps, aprons, ruchings, and other fancy articles are receiving a fair amount of attention. The plain and fancy veiling departments are doing a fair amount of business, but prices are run very low by the prevailing competition. Crochet edgings, Irish trimmings, and Swiss embroideries are dull of sale, and the machinery producing everlasting trimmings is only partially employed. A startling development of French competition in the lace trade may be looked for very shortly, says the "*Nottingham Express*." Suitable factory premises have been secured in Nottingham, and the trade will soon be supplemented by the manufacture of certain French novelties and specialties in veilings, etc., by a firm from Lyons, which is bringing its own machinery. This will be a complete bouleversement of the ordinary course of proceedings in the lace trade; but the advantages to the French firm are obvious.

DUNFERMLINE.—The local linen trade is quiet, as is usually the case just before the wholesale houses take stock. The export trade is inactive, and prospects are rather uncertain.

SOUTH OF SCOTLAND.—The present state of the South of Scotland woolen trade is not at all up to the mark. Although some manufacturers, especially those making worsteds, are moderately busy, trade as a rule is very quiet all round. Repeat orders are not coming in well, and as it is now getting on between seasons, if these orders do not come to hand a dull period must ensue.

KIRKCALDY.—Both mill spinners and linen manufacturers are busy, and in one or two instances a scarcity of hank is experienced. Great activity characterizes the floorcloth and linoleum industry. The negotiations for the amalgamation of the principal firms in the trade in the district (it is not proposed to include any outside), are proceeding, and it is believed that the combination will be the means of still further developing the industry. In connection with this manufacture, it is just notified that Mr. M. B. Nairn, Dysart House, has patented a process of inlaid linoleum manufacture, which it is believed to be of great value in connection with the trade.

BELFAST.—There has been a regular demand in all quarters of the linen trade, and the best features of the market recently were well maintained. Yarns are selling slowly, and without improvement; prices nominally unchanged. The manufacturing end is fairly brisk, most descriptions of brown goods meeting with a satisfactory amount of attention, and producers are engaged for some time ahead. There is no improvement in prices, though these keep firm throughout. Bleached linens for home consumption are moving fairly well for the period of the year, but prices rule very low. The United States market is fairly satisfactory in the cheap end of the trade. Better class goods are quiet. The general export demand is fully sustained.

LYONS.—The raw silk market was only moderately active recently, but the transactions show regularity. No speculative purchases are made, manufacturers contenting themselves with securing only those materials required for immediate consumption. From the figures registered by the Conditioning House, it may be seen that, despite the many complaints, a fair amount of business is continually being done. Most of the deals are for comparatively small quantities. There is no other reason for this continued caution on the part of manufacturers than the general uneasiness over the political situation. Fashion is unmistakably in favor of silks, and there can be no doubt that without these disturbing influences, great activity would prevail. The present condition, however, is not favorable for high prices, and a certain weakness has resulted, although quotations are not appreciably lower. Japanese grades alone declined, in consequence of lower quotations from Yokohama, where the absence of the American demand is beginning to have an unfavorable effect. The supplies in the hands of our manufacturers are very light, especially in best grades. Purchases are, therefore, more numerous in fine Italians, which are principally used for the orders on taffetas. The demand for Japans is not brisk, although the lower prices at which they can now be bought bring them again within the reach of the mills. These grades have evidently lost ground through the high prices at which they were held, and they have been supplanted, to some extent, by the cheaper Cantons. The latter now form by far the greater part of the shipments arriving here every week from the far East. There was a better demand for thrown silk at slightly lower prices. European organzines were bought, but trans-Asiatic grades received the preference.

ZURICH.—There is little change in the situation of the raw silk market. The demand continued light, and prices were about the same as during the preceding week. There was

more demand for Japans in consequence of lower quotations, but the few deals concluded had the effect of making prices firmer again. The mills hesitate, as they find it difficult to secure orders at paying prices. Some buyers from London visited our market and placed orders, but not in sufficient volume to satisfy the requirements of the mills. Staple articles are bought moderately, but regarding fancy, great uncertainty seems to exist. Neither stripes, nor checks, nor warp prints command much attention. A good Spring business, is, however, anticipated, and all appear to wait for some striking novelties to be brought out. The Paris orders are more liberal, but there, also, great caution is observed. The impression prevails that, in consequence of the present cautious buying, a sudden demand will develop after the opening of the Spring season. It is thought that desirable styles will then be somewhat scarce.

MILAN.—The demand during the week under review was fairly well divided over all the different grades of raw silk. The low bids made by buyers, however, rendered the successful conclusion of deals extremely difficult. The holders refuse to make further concessions, which are being asked on all new transactions. The prices, it is claimed, are already too low to leave any profit to the reelers, who, during the crop season, were forced to pay high rates for their cocoons. Some deals, however, were concluded, and, although it must be admitted that in medium and low qualities the weakness is increasing, best grades, which are not plentiful, brought nearly full prices. In the Piedmontese districts, the resistance offered by the holders is still stronger, it being the general impression in Turin that the mills will ultimately be forced to pay the full prices, as in these goods the supply is small. One important transaction became known during the week for grand extras at the satisfactory price of 54 francs

Textile Design

HEAVY-WEIGHT MIX TWILL OVERCOATING.

Yarns dyed in stock. Finished weigh 31½ ozs. for 56-inch width.

Dressed—4,536 ends, 3-run black warp.

Woven—99 picks to inch.

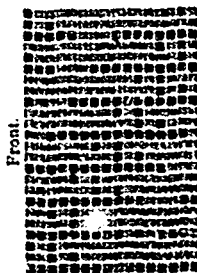
2 picks, 5 run, mix fill

1 " 3½ " "

3 picks in pattern

Drawn straight on 16 harnesses; reed 80 inches inside selvage.

Chain Draft.



Twill to right.

All warp yarn twist to left

All face fill " "

All back " " " right

4,536 ends, 3-run warp

66 picks, face fill, 5-run

33 " back " 3½-run

Weight 6.4 yard from loom equals 27.03 ozs.

All yarns average to shrink 12½ per cent.—A. W. & C. R.

POSSIBLE TRADE WITH THE PHILIPPINES.

The following figures showing the textile demands of the Philippine market and the ruling prices have been furnished a contemporary. The prices given are the importers' quotations to the wholesale trade during the first week of April last. The unit of value taken is the Mexican dollar:

White shirtings, 27 to 34 inches wide, 40 yards; low, medium and fine qualities sold at \$4.50 to \$6 per 40 yards. Gray shirtings, 35 inches wide, 35 yards, weights about 8¼ lbs.; low, medium and superior qualities. The two former qualities sold at about \$3.25 to \$3.75 per 40 yards. Gray longcloth, 28 inches to 30 inches wide, 35 yards, weights, 7½ to 8½ lbs.; ordinary Spanish qualities are quoted at \$3.50 to \$3.75 per 40 yards. Gray drills, 25 inches to 36 inches, 30 yards, weights 8 to 10 lbs.; low, medium and good qualities. The two former grades \$3.50 to \$4 per 32 yds. was quoted. Gray "T" cloths, 24 inches wide, 24 yards, weights about 6 lbs.; for medium Spanish makes \$1.87 to \$2.25 per 24 yards was quoted. Yarns, Spanish make 30s., 40s., 50s., white met with a good demand. Gray yarns were also imported. Dyed yarns 22s., yellow sold at \$90 to \$92.50 per bale, and the same counts in green and orange sold at \$95 to \$97.50 per bale. Turkey red yarns, 24s., sold at \$115 and \$120, and 30s.

at \$125 to \$130 per bale. Trouserings, 24 inches, 30 yards, were quoted at \$3 to \$3.50 per 30 yards. White cotton drills, 25 inches, 30 yards, sold at 21¼ to 25 cents per yard for superior English makes. White croydons, 24 inches to 25 inches, 20 yards, medium Spanish qualities were quoted at \$1.62½ to \$1.87½ per 20 yards. Ginghams, 24 inches to 32 inches, 20 yards to 24 yards for ordinary 24-inch Spanish goods, \$2.37½ to \$2.50 per 20 yards was quoted. Wove checked muslins, 24 inches to 25 inches, 10 yards, 81¼ to 87½ cents was paid per 10 yards. Sarongs, 40 to 74 inches are always salable. White jaconets, 29 to 30 inches, 20 yards, medium to fine qualities, sold at \$2 to \$2.50 per 20 yards. Cambayas, 36 inches to 40 inches wide. Victoria lawns, 32 inches wide, 10 yards, medium qualities in demand at \$1.06¼ to \$1.31¼ per 10 yards. Bishops' lawn, 26 inches to 36 inches, imported in pieces of 10 yards. White Swiss checks, 23 inches wide, 10 yards, 87½ cents to \$1 per 10 yards. Prints, 23 inches to 25 inches, 24 yards, found a large sale among the native classes. These goods are generally gotten up in striking colors, in which red and yellow predominate. Printed jaconets 22 inches to 23 inches wide, 10 yards for ordinary white grounds, 59¾ to 68¾ cents per 10 yards was paid.

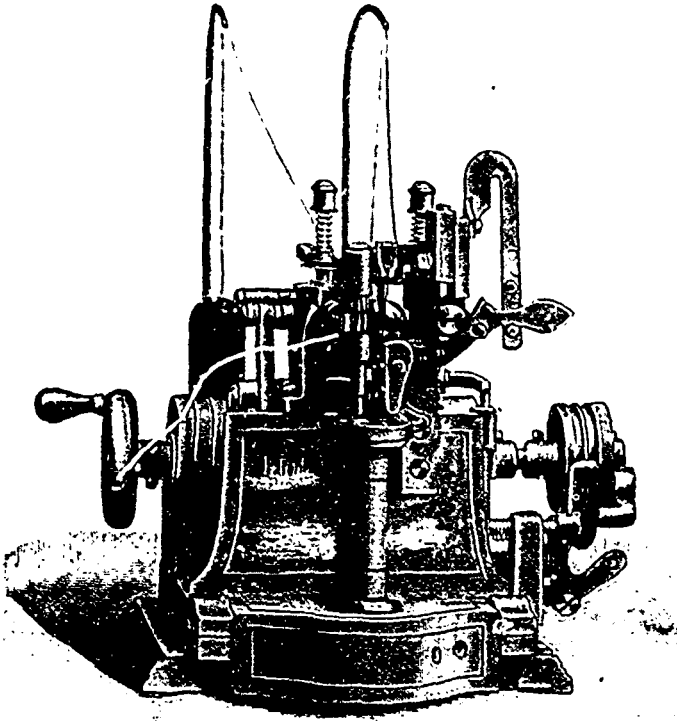
The military tariff provided by the Philippines, which went into operation when the American arms occupied Philippine territory, levies the following duties. (The gold peso remains the monetary unit and its value is \$1.034. The kilogram is equivalent to 2.2064 pounds). Raw cotton, per 100 kilos., .24 pesos; cotton yarns, spun or twisted in one or two threads, unbleached, bleached or dyed up to No. 35 inclusive, per kilo., .25 pesos; the same for No. 36 and upward, per kilo., .35 pesos; the same twisted with three or more threads, unbleached, bleached or dyed, per kilo., 50 pesos. Close woven tissues, plain, unbleached, bleached or dyed, in the piece or in handkerchiefs up to 25 threads inclusive, per kilo., .20 pesos; the same up to 35 inclusive, 32 pesos; the same with 36 threads and over, per kilo., .44 pesos. Tissues, printed, twilled, and figured in the loom, up to 25 threads inclusive, per kilo., .25 pesos, the same up to 35 threads inclusive, per kilo., .40 pesos; 36 threads and over, per kilo., .55 pesos; transparent tissues kilo., .44 pesos; the same up to 31 threads and over, per such as muslins, cambries, etc., up to 30 threads inclusive, per kilo., .64 pesos. Quiltings and piques pay 50 per kilo.; velveteens, corduroys, and other thick tissues for wearing apparel, 52 pesos per kilo.; tulle, 1 peso; lace except crocheted, 1.25 pesos; crochet lace made by hand or in the loom, .70 pesos;

hosiery piece goods, jerseys and drawers, .50 pesos, and hosiery in stockings, socks, gloves and other articles pay .60 pesos per kilo. In addition to the duty on raw cotton, and on cotton yarns, there is a surtax of 25 per cent. on the duty, and on the close woven tissues, the printed and figured tissues of 36 threads and above, the transparent tissues up to 30 threads, and lace, except crochet, pays an additional surtax of 20 per cent. on the duty.

NOVELTIES IN PATENT SEAMING AND KNITTING MACHINES.

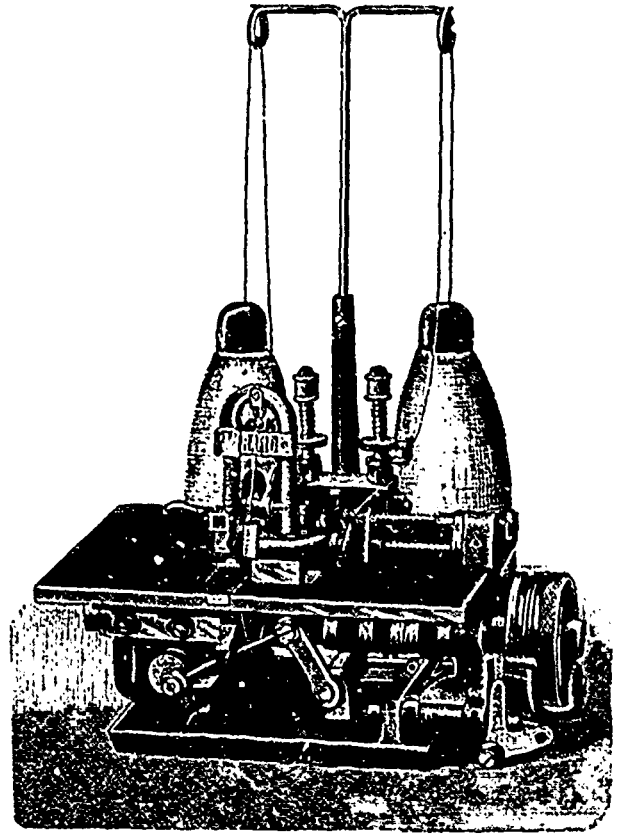
In the following we illustrate a few of the latest novelties of the well-known knitting and sewing machine patentee, Arthur

and hemmer (for cut fabrics), making the strong concealed overlocked seam, covering all raw edges, and being very elastic and durable. This machine is guaranteed to run 3,000 stitches per minute, it cuts or trims ahead of sewing (actually in one operation). This machine is delivered to all Canadian manu-



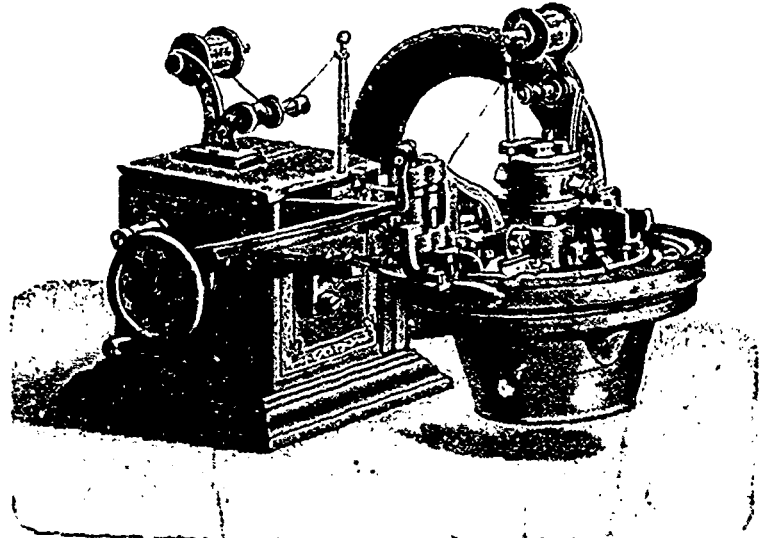
ILL. 1

Mueller, of 754-760 Lexington avenue, Brooklyn, N.Y., who has what he states to be the most complete and largest establishment for handling seaming and knitting machines of the latest type. The first cut shows the new patented double thread lock-stitch rapid over-seamer and hemmer, for selvage knit goods, running at a speed of 3,000 stitches per minute, the seams made on this new patent machine are perfectly flat and very elastic (superior to hand seaming), and as it is a two-thread lock-stitch, cannot run down. This new machine, although specially built for selvage fabrics, will also seam cut edges. For large garments the machine is made with the front suspended cup or cylinder. For hemming or welting hosiery or underwear this new machine will be of great value. By means of a small hemming attachment a hem or welt can be sewed at the same high rate of speed, viz., 3,000 stitches per minute. The raw edge of the cloth to be hemmed is folded inside of the hem so that two selvage edges are overseamed, making a very flat hem and preventing the stitch from sewing through the cloth and showing on the face side. The hem thus made is of unusual durability and elasticity, and is claimed to be flatter and nicer than any other hem made. The second cut represents another novelty of importance, namely, the new two-thread rapid overlocked seamer



ILL. 2

facturers at a very low price, and under full guarantee. This machine is very simple in construction and not liable to get out of order, the motions being all obtained by direct cam action. For seaming, over-edging or welting all kinds of coarse or fine cut fabrics, there is said to be no better machine in the market

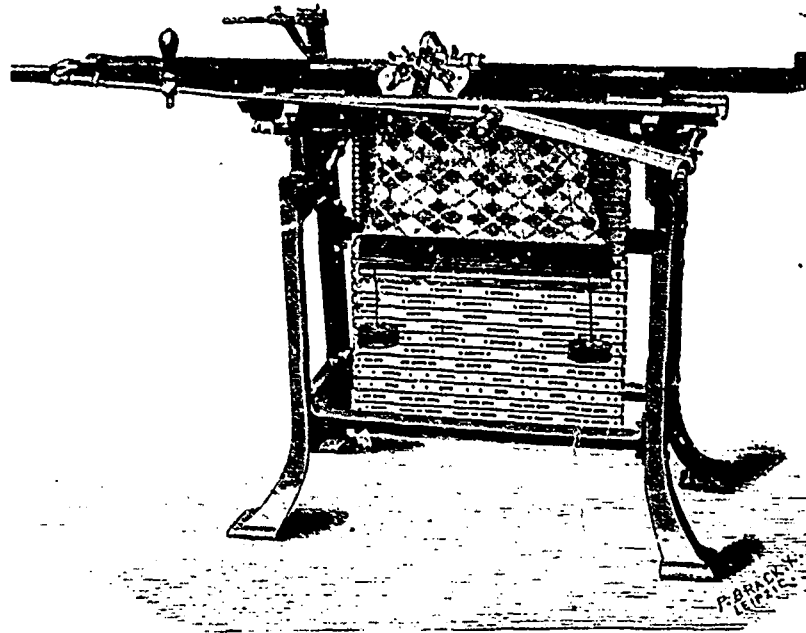


ILL. 3

The machine having a double feed, both the top and bottom sides of the fabric are propelled in unison, and the possibility

of puckering in the seam avoided, which is especially very important in seaming striped goods. In the accompanying illustration the plate on the front of the machine has been taken off in order to show the mechanism. This overlocked machine is also very advantageous for edging or facing lace curtains in bow form. The third cut shows the new patent two-thread

fashioned), where each section works entirely automatically and independently each from another. Each section could be of another needle gauge, and one person is able to tend to all six sections. For samples of work and all further particulars apply to the main office, 751-760 Lexington avenue, Brooklyn, N.Y.

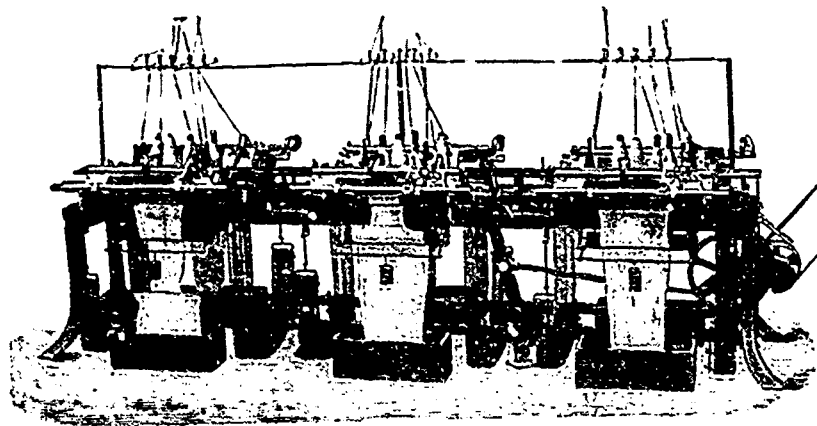


ILL. 4.

lock-stitch circular looper, which the maker states to be the best linking, joining, turning-off, or point or wale seaming machine in the market. The machine is with the adjustable knife and patent automatic self-clearing attachment (no clearing by hand). This machine makes a very neat, strong, thoroughly elastic and unbreakable two-thread lock-stitch, which cannot run down. The knife fixed on the machine performs the work of an automatic raveller, trimming the edge close down to the

A FAMOUS FENCE.

The Hamilton, Ont., papers have recently recorded the final disappearance of what were famous a few years ago as "Gray's Fence" and "Harry Gray's Lot." Henry Gray, of H.M. Customs, owned some property on MacNab street, Hamilton, and had a row of houses on the side of the lot—the only property in the block not owned by the Cotton Company. Mr. Gray,



ILL. 5

loops on the points of the machine. This knife cuts at any depth required and can be put out of action when required. The machine can be had with or without this automatic trimmer. Illustration four shows the Grosse knitting machine, making any kind of fancy pattern work entirely automatically, of special advantage for making fancy golf hose, sweaters, jackets, ladies' skirts, and all plain or fancy knitted goods. These machines are made to run by hand or by power. The fifth illustration shows another Grosse knitting machine, running by power, having six sections making six garments at one time (till

expecting to sell the property to the company, removed the houses; then a dispute as to price occurred and the company did not buy the lot. Mr. Gray then had a high close-board fence erected to shut out the cotton factory's light, and he had it painted black. The company asked the city to have the fence removed. On the ground that it was dangerous to the public safety, in case of fire, the city ordered the removal of the fence. Mr. Gray would not remove it, and the Fire Department was called out and soon demolished it. Mr. Gray took the case to court and defeated the city at every point. The outcome was that

the city had to replace the fence, and it has blocked the cotton company's windows ever since. Time, however, has healed the breach between Mr. Gray and the big manufacturing corporation, which has at last bought the lot, and the big black fence is no more in evidence.

TRADE WITH INDIA.

Editor CANADIAN JOURNAL OF FABRICS.

By dint of sheer luck I came across your valued journal, The Canadian Journal of Fabrics, published by your good selves at Montreal and Toronto, with a view of furthering Canadian products. I find from the issue before me that wool is imported from Australia by the manufacturers, and as your paper is the leading one for fabrics I take the liberty of sending you with this letter two samples of wool and would ask your favor if you would recommend a capitalist or enterpriser to open a branch of his business here for the exportation of wool and the importation of Canadian products to this country, as Karachi is the place for pushing goods for the Northwest Provinces, Panjab, the frontier and Sind. I also enclose price current and market report, and from which you will be able to judge the local trade; and beg to say that these are only the leading articles. As regards the wool business, the local merchants consign to London, where it is sold in public auction, the consignor here receiving from the firm through whom the consignment is sent 75 per cent. of the value of the goods. In case the wool is sold at a low rate the merchant has to pay the draft; hence any capitalist or merchant buying here for cash will reap gold harvest. The following are the chief articles exported from this port: Grains—Wheat, barley, dari, bajree, mitter, maize, millet, rice, etc. Seeds—Gingellyseed, rapeseed, jambaseed, mustardseed, linseed, poppyseed, cottonseed, castorseed, etc. Sundries—Wool, cotton, indigo, hair, skins, hides, bones, fishmaws, seedlacks, saltpetre, henn, horns, matches, dyestuffs such as babool bark, georgic seeds, and many others too numerous to detail here. The following are the chief articles imported here from foreign countries, and from here they are sent to the markets of the Northwest Provinces, Panjab and the frontier or even as far as the Russian boundary.

I shall be very happy to work on commission for manufacturers in any line, and also as traveling agent, and I can furnish you with best testimonials. I am in direct touch with the leading buyers here, and well acquainted with their ways—hence my applying—and shall feel highly obliged by your inserting my name as commissioned agent in your valued directory, The Canadian Textile Directory. Please send me the fourth edition of the Canadian Textile Directory when published. On hearing from you I shall give further information if required and will be very happy to do anything in my power for the furtherance of Canadian goods. Hoping you will give due consideration to this letter, and intimating me with your views. I remain, yours sincerely,

F. N. D'SOZSA,

Rambhag Gharikhatta,
Karachi.

East India, November 10th, 1898.

LITERARY NOTES

It was in the year 1847 that the first issue of The Canadian Almanac was published, and every year since then for more than half a century it has regularly made its appearance, and been welcomed by business and literary men alike as an invaluable assistant and store of information. On turning over the pages of the issue for 1899, now before us, one is struck by the progress shown by the increase in size of the Almanac, which has grown from a pamphlet of about 100 pages to a handsome book of 376 pages. Among the contents of the book which

are especially valuable are: The Customs Tariff, Postoffice Guide, and Directories of various persons and officials, all of which are brought up to date, while the articles on the British Army and Navy, and Forms of Government throughout the world, are interesting and reliable. A feature that appeals particularly to all who are interested in the current history of the world is the Historical Diary, which is carefully prepared each year, and gives an excellent resume of the year's history. Altogether we think the publishers are to be congratulated upon the appearance of the 52nd issue of The Canadian Almanac. Price, 25 cents. The Copp, Clark Co., Limited, Toronto.

John Lovell & Son, the well-known publishers of Montreal, and proprietors of the Montreal City Directory, have issued a very complete business directory of Montreal for 1898-99. It contains a classified directory of all business firms, with an index to streets, and a guide to all institutions, religious, business and philanthropic, in the commercial capital of Canada. It contains 364 pages, and is a very cheap publication at \$1.50.

The Rev. Chas. M. Sheldon's books, now so universally read, make it plain that that writer's hopes of the regeneration of the world lie in getting individuals more and more to do their daily tasks on Christian principles no matter what the sacrifice involved. In the best known of his books, "In His Steps," he clearly looks to the newspaper carried on upon Christian principles, as largely the hope of the "coming kingdom." In looking about him for a newspaper upon his model, he seems to have hit on The Montreal Witness, to which he has addressed a letter, part of which we quote: "I have read The Witness with much interest. I cannot say that I know of any other daily paper in the United States that is conducted on such high Christian principles. I wish I did, for if ever we needed such a paper in our country we need it now. Let me express to you my appreciation of the Christian heroism and consideration which make a paper like The Witness a possibility. I have always believed it possible for a Christian daily to succeed. You have proved that it can. So much of the ideal newspaper in 'In His Steps,' is therefore real. I pray that you may continue to be blessed in your work. I do not know a more glorious opportunity for building up the kingdom on earth than by means of Christian journalism. I take the greatest pleasure in sending the copies of The Witness to newspaper friends of mine for their inspection. Very cordially yours, Charles M. Sheldon, Topeka, Kansas."

The Blue Book, Textile Directory, with Patent Index, 1898-99. The eleventh annual edition of this book, which is a very complete directory of these industries in the United States, has been issued, and a noticeable fact is the large number of new mills added to the book since the previous issue, a separate list of these being shown in the front of the book the largest increase being among the hosiery and knit goods, and silk manufacturers, these lines branching out to a great extent into the State of Pennsylvania. The book can be obtained from the publishers, Davison Publishing Co., 401 Broadway, New York. Price, office edition, \$3; traveler's edition, \$2.50.

The Review Printing Co., Ltd., of Peterborough, have issued a handsome correspondence envelope, showing a design suitable to the new Imperial Penny, or two-cent, postage rate to the Mother Country, which comes into force on Christmas Day.

—The Christmas number of The Century appears in a striking cover, designed by Tissot, the famous French artist, who illustrated the "Life of Christ." The design represents the visit of the Magi to the Christ-child and was printed in colors in Paris. The issue has been entirely exhausted and no further issue is possible, as the cover was printed in France and cannot be duplicated.

THE LAST CHANCE.

The Canadian Textile Directory, now rapidly going through the press, is more than a mere directory of names. It gives facts and figures about the textile trades of Canada which have been attempted in no other work. It contains not only a list of all the general stores, retail dry goods dealers, hat and fur dealers, clothiers and haberdashers, tailors, milliners, etc., (the retail lists contain over 10,000 names), but all the wholesalers and commission merchants or manufacturers' agents in similar lines, and all the mills and factories engaged in manufacturing fabrics of all kinds connected with the textile and kindred trades. These will be found specified in the lists detailed below, and by referring to them it will be seen that it gives information of special value relating to the capacity, products, sale agencies, and other facts of interest to those seeking information. The publishers desire completeness above all things, and a great amount of money, time and correspondence have been spent to obtain this completeness. Considering that all this information is of most benefit to the manufacturers and dealers themselves, one would think that not a single dealer or manufacturer in the country would fail to report promptly, seeing that it is of more importance to themselves than to the publishers. Yet there are a few who have been thus negligent or forgetful. If this touches any reader of this notice will be read over the announcement

below and send in his report at once, as the work will soon be issued. As an advertising medium the Canadian Textile Directory is unequalled. The cream of the manufacturers and dealers in every line we represent are the most prominent users of space in this work. Every copy goes to the trade and counts in influence because it is a standard work. The first edition contained 318 pages; this edition will make a book of over 500 pages. It is the only work in Canada which gives a full list of the boards of trade, travelers' associations, and dry goods and kindred associations, while the immense amount of statistical information, such as the details of the imports and exports of dry goods, etc., the tariff of Canada, the United States and Newfoundland, sterling exchange rates, etc., make it indispensable in any office of any pretensions. Hence its value as an advertising medium. A single copy in the reading rooms of one of these institutions is consulted by hundreds of merchants and manufacturers. In each line of business reported it covers the whole Dominion and Newfoundland.

The price of the book to non-subscribers is \$3, to subscribers \$2, and the advertising rates are as follows: One page (4½ x 7 in.), \$25; one-half page, \$15; one-third page, \$10; one-quarter page, \$8; one-sixth page, \$6 one-eighth page \$5.

DO NOT NEGLECT

TO SEND YOUR REPORT FOR THE NEW "CANADIAN TEXTILE DIRECTORY"

It costs you nothing, and will be to your advantage. If you do not report, do not complain if your name and business are incorrectly given, or, possibly, omitted.

The following is the information required in the various branches of trade —

Woolen Mills, Cotton Mills, Carpet and other Factories where Weaving is done: Name and address of Proprietors, and names of the Officers, if a joint stock company; the capacity in sets of cards, looms and spindles (in the case of knitting mills, the number of knitting machines, and whether hand or power machines); when established, whether water, steam or electric power, description of goods manufactured, whether the mill has a dye house; and names of selling agents, if any. When situated in cities, the street address is desired.

Carding or Fulling Mills: Name, address, capacity (number of carding machines); date established, and whether steam, water or electric power.

Cordage and Twine, Jute and Flax Mills: Name, address, date established, capacity in spindles, steam, water or electric power, kind of goods made and material used (whether cotton, hemp, flax, etc.); selling agents, if any.

Sail, Tent and Awning Factories, Furniture, Upholstery, Wall Paper and Window Shade Factories; Rubber, Oil Clothing, Felt, and Miscellaneous Factories in Textile Fabrics: Name; address; date established; steam, water or electric power; description of goods made; and selling agents, if any.

Clothing, Glove and Mitt, Collar and Cuff, Suspender and other Factories in Men's Furnishings; Button Factories; Corset and Ladies' Wear Factories: The same as in preceding list, adding, whether selling through agents, or to the trade direct, or whether manufacturing for custom work only, or for the wholesale or retail trade.

Hat Factories: Name; address; date established; steam, water or electric power, whether manufacturing Wood Felt, Fur Felt, Silk, Cloth or Straw Hats; and whether selling to the wholesale or retail trade.

Fur Manufacturers: Name, address, kind of goods manufactured, and whether selling to the wholesale or retail trade.

Bleachers, Dyers and Feather Dresser: Name; address; whether Job Dyers, etc of garments only, or leathers, etc.

Laundries: Name, address, and state whether a machinery or hand laundry.

Paper and Pulp Mills: Name; address; Officers, if a stock company; capacity, in tons per 24 hours; date established; steam, water or electric power; number and capacity of engines and cylinders, kind of paper manufactured; selling agents, if any.

Manufacturers Agents or Commission Merchants: Name and address, and in what branch of the Textile trade, whether Woolens, Cottons, Hats, Furs, Carpets, etc.

Wholesale Dealers: Name, address and line of business; specifying whether dealing in any or all of the following branches: Dry Goods, Clothing, Men's Furnishings, Tailors' Trimmings, Carpets, Upholstery Goods, Hats, Furs, Millinery and Ladies' Wear. In case you manufacture Fabrics also, state in what lines.

ADDRESS **BIGGAR, SAMUEL & CO., PUBLISHERS**

62 CHURCH ST., TORONTO, or FRASER BUILDING, MONTREAL, CANADA

THE WOOL MARKET.

Montreal.—Fine wools in first hands are getting very low and prices are advancing all the time but the manufacturers are buying very sparingly, as they are now showing samples for next winter's wear, and may have them in the market for stock early in the year. The shortage of the fine wool clip all over is to have a telling effect in prices shortly, as merino wools cannot be replaced to-day at selling prices. Capes, 14½ to 16¼c.; Natal, 16¼ to 18½c. Some sales have been made at the latter figures.

Toronto.—The demand for Canadian fleece wools is very light. Much of the clip is held at prices above market quotations, and quantity in first hands is very small. The mills are very well employed and increased demand is expected soon.

LIVERPOOL WOOL SALES.

The final East India wool auctions for 1898 were held at Liverpool, from November 22 to 24. Under existing conditions it was scarcely to be expected that a very satisfactory clearance would be effected. The selection, as a whole, could not be described as attractive, while many holders were unable to bring themselves to accept the low offers made by buyers. Of 18,886 bales brought to the hammer 13,485 were sold. A considerable proportion of the withdrawals consisted of Persian, cashmere, and defective Yarnar and other wools, descriptions which are not in demand at present, and for some of which, indeed, not a bid was made. The competition was only moderate and both demand and values tended to slacken off as the sales progressed. An advance on September values of ¼d was paid for soft Kandahar grays, due to their scarcity. Vicksaneers, white and yellow, best Joria and choicest Kandahar white, were unchanged. In the prices realized for medium white Joria, Kandahar white, with the exception mentioned above and badly washed Vicksaneer white, a decline of ¼d. was apparent. American operators took a fair quantity of wool costing under 6s., but nothing above that figure.

MORDANTING WOOL.

The following quantities for mordanting wool have been found satisfactory in practice: Three per cent. of lactic acid (50 per cent.), 1.5 per cent. of potassium bichromate, and 1 per cent. of sulphuric acid. The mordant is especially suitable for dyeing with alizarine coloring matters, also with logwood when the production of a good black is the main object. When the cost of dyeing is taken into consideration, it is found that the green chrome-mordanted wool, owing to its incapability of exerting any oxidizing action on the dyestuff, requires more of this, and that dyeing with it is, in consequence, more expensive. It is also found that tightly-spun yarns and tissues of thick texture are not penetrated so well or mordanted so evenly by means of the above mixture as they are with potassium bichromate and tartar. Sometimes this is due to the presence of fatty substances in the wool. In the case of such materials the mordanting must be so performed that little chromium becomes fixed during the first half-hour of boiling. This is accomplished by the use of a mixture of potassium bichromate (1.5 per cent.), lactic acid (3 per cent.), and ammonium sulphate (1 per cent.). The last compound becomes gradually decomposed, during boiling, into ammonia, which escapes, and sulphuric acid, which, in conjunction with the lactic acid, acts upon the potassium bichromate and affects the mordanting of the wool. If any fatty matter should be present in the wool, these become acted upon by the ammonia prior to its being volatilized, and are thus removed from the wool.

An oxidizing mordant which is to be recommended for dye-

ing compound shades from alizarine dyestuffs and logwood is obtained from a mixture of potassium bichromate (2 per cent.) and lactic acid and ammonium sulphate in the proportions given above, the operation of mordanting being interrupted when the bath has a pale yellow color. This mordant gives colors which closely resemble those produced on a mordant obtained from potassium bichromate and tartar. A slight redness of shade is to be seen in the logwood blacks dyed upon mordants fixed by the agency of lactic acid. This is not to be ascribed to the fact that the mordant is in the condition of a chromic hydroxide, since the dyes fixed upon wool which has been mordanted with potassium bichromate and tartar and afterwards treated with sodium bisulphate do not exhibit any such shade. It is probably due to the absence of oxidizing action on the wool on the part of the mordanting mixture. Such an action may be brought about in the case of lactic acid by performing the mordanting in two operations, the wool being treated first with potassium bichromate, and afterwards in a separate bath with a mixture of lactic and sulphuric acids. The first of these baths should be kept and used again after the necessary quantity of potassium bichromate (or chromic acid) has been added to it. The wool mordanted in this manner dyes the same as wool mordanted with potassium bichromate and tartar.

—At Soka, about half a dozen miles from Osaka, and some other towns in Japan, carpets, rugs and fabrics of the same class are extensively manufactured. There are no large carpet factories, but hand looms may be seen in nearly every house. The weaving process is set to music. The children are taught to sing a sort of nonsense verse to a certain tune, the superintendent or head worker leading, and that air means a certain pattern, the deft fingers of the little workers, rhythmically following the notes. At the right moment the woman in charge of a loom changes the tune, and the little ones instantly take it up and as quickly change the pattern to suit the music. It is consequently quite correct to speak of these productions as a "one tune," "two tune" or "four tune" carpet. The actual

WANTED—A thorough competent JOB DYER AND SCOURER, who understands the dyeing of mixed goods, also dry-cleaning. Must be strictly sober and furnish references; steady job all the year round to the right man. Address "DYER," care of Canadian Journal of Fabrics, Fraser Building, St. Sacramento St., Montreal.

WANTED by a young man, a position as second hand in a large cotton mill. Had experience as weaving and cloth-room overseer in small mills. Good technical education. First-class certificate (London and City Guilds exams). Address "TECHNICAL," care of Canadian Journal of Fabrics, Montreal, Que.

A NATURALIZED New England spinner of old English birth, would like a good steady job in Canada. Can introduce improvements. Have worked in English mills. Address "SPINNER" care of Canadian Journal of Fabrics, Fraser Building, Montreal, Que.

SITUATION WANTED as carder by a man of sixteen years' experience as overseer; could also take charge of pack spinning. Temperate habits, well recommended. Address DONALD JACK, P.O. Box 333, Peru, Ind.

POSITION WANTED—Young man of good education, at present employed as superintendent in a large woolen mill in the south of Scotland, would like similar position in Canada. Can assist in designing. Address "SUPERINTENDENT," care of Canadian Journal of Fabrics, Montreal, Que.

SITUATION WANTED

Wanted situation as manager or superintendent of woolen mill by a man who has had a large and most successful experience on shoddy goods. Married, 39 yrs of age. Address J. E. C. L., care Canadian Journal of Fabrics.

SITUATION WANTED

Experienced long chain dyer and yarn printer desires situation. Fast colors. Economical. Nine years with leading gingham, shirting, and fancy cotton, woolen and silk dress goods mill in New England. Age 39. Married. Address "M," care of Canadian Journal of Fabrics.

SITUATION WANTED—By experienced practical cotton piece B eacher, can bleach all grades and is competent to take charge of any size bleachery. Middle aged, married, temperate. Would take position as assistant in Canadian mill. Address "NEW YORK" care of Canadian Journal of Fabrics.

workers are, it is said, for the most part, children of from seven years upward, and from two to four, five or even six work at a single loom under the direction of an adult, generally a woman. Some 5,000 boys and over 13,000 girls are thus employed.

FABRIC ITEMS.

The London sales of seal skins took place December 15th, and the prices realized were higher than last season. Skins were from \$9.80 to \$10 each.

Mrs. T. J. Coristine is suing James Coristine, to recover some \$68,000, which she claims is due her as her husband's share in the business of James Coristine & Co., Montreal.

W. H. Scroggie has leased the Queen's Block, St. Catharine street, Montreal, for a term of years for a departmental store. About \$100,000 will be spent on remodeling the premises.

The Gutta Percha & Rubber Mfg. Co., Ltd., Toronto, has bought the property, corner Front and Bay streets, Toronto, occupied by the W. R. Johnston Co., wholesale clothiers, for \$50,000.

Thomas Dickison, of Dickison & Nicholson, fancy dry goods merchants, London, Ont., was seriously injured a short time ago, as the result of a fall from a train while traveling from New York to his home in London.

John McLean and Company, wholesale millinery and dry goods merchants, Montreal, are in business difficulties. The firm has sent out notices to its creditors that a meeting is about to be called, and that a statement is being prepared of the affairs of the firm.

With the close of the year, two well-known Halifax wholesale dry goods houses, Murdoch's Nephews and Kenny & Co., will go out of existence. The firm of Murdoch's Nephews was one of the oldest in the Maritime Provinces, and bore a high reputation. While this was partly due to the possession of ample capital a greater part of their reputation was due to the personal qualities of their able manager, Thomas K. Jenkins. Mr. Jenkins has been connected with this firm for over a quarter of a century, and has won the esteem of all with whom he has come in contact in business. Whether he may continue in business on his own account we do not know, but we are certain that many friends throughout Canada will regret the severance of business relationships if he does. Since the foregoing was written we learn that Kenny & Co. have reconsidered the matter, and have decided to continue. James Heenan will retire and Albert Woodhill and Edward G. Kenny will continue under the old name.

A reduction in the price of cottons has been announced by the Merchants' Cotton Company of Montreal, in a circular to manufacturers of cotton goods and to the wholesale trade. The reduction, which is generally from $\frac{1}{2}$ to $\frac{3}{4}$ cents per yard, but in some instances one cent per yard, applies to nearly all lines made by that company, including grays, sheetings, pillow cottons, sheets, ducks and drills. It is only on goods invoiced on and after December 1st that the reductions apply, not on goods invoiced or in stock before that date.

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 share in "The Canadian Journal of Fabrics" by contributing occasionally such items as may come to your knowledge, and receive as dividend an improved paper.

A. Pion & Co.'s glove factory, Quebec, was burned down December 2nd; damage, \$25,000.

Coaticook, Que., is seeking to raise the tax valuation on the local cotton mill by quite one-half.

Steps are being taken to form a company for the purpose of establishing a pulp factory at Douglas, Renfrew county, Ont.

L. H. Lemoine has opened an office in Montreal, where he handles the output of the Anchor Knitting Co., Almonte, Ont.

Two hundred couples attended the annual ball of the St. Croix cotton mill loom fixers on Nov. 23rd, in the Milltown Opera House.

Frank Publow, an employee in the Perth woolen mills, had his hand badly scalded while working in the dye house a short time ago.

The Schofield Woolen Co., Oshawa, has recently added a complete outfit of knitting machinery especially adapted to produce sweaters.

Emma Porter, who is employed in the Yarmouth, N.S., Cotton Mill, had her finger so badly crushed recently that it was amputated.

The Northrop Loom Co., Valleyfield, Que., has, it is said, orders enough in hand to keep in running for a year when operations are begun.

The Eagle Knitting Company, Hamilton, Ont., which has an extension in contemplation, will ask that its present assessment, municipal, be fixed for ten years.

We regret to announce the death of Mrs. S. O. Shorey, wife of the senior partner of the well-known firm of H. Shorey & Co., clothiers, Montreal, which occurred in Montreal, Dec. 15th.

Roxton Falls, Que., has increased its offer to secure the Waterloo Knitting Mills to \$30,000, of which \$25,000 is to be a cash bonus and \$5,000 towards a site, water power and buildings.

The T. Eaton Co., Toronto, is progressing with its new whiteware factory on Albert street. The cost will be over \$20,000, and the building is to be connected with the company's store by a tunnel which is now being built.

The Elmira, Ont., Signet, says. The Woolen and Felt Co. is making extensive improvements in its plant. The new brick building, 40x55 feet, is now under roof, and the order will shortly be given for a new 40 h.p. engine and boiler.

A deputation of Montreal dry goods men, including A. F. Gault, J. Hodgson, G. B. Greenshields and R. A. Thibaudeau, was in Ottawa recently to see the Government and urge no compromise in the case of the firm of Fitzgibbon & Schapheitler, Montreal, against whom the Government is proceeding for a very large amount for duties withheld through alleged fraudulent entries as mentioned in a former issue.

Wool Washers

Dryers and Carbonizers

KITSON - - -
MACHINE CO.
LOWELL, MASS.

R. Berryman, wool dealer, Hamilton, Ont., met his creditors, December 20th.

Things appear to be shaping themselves for the establishment of a large woolen mill in Toronto at an early date.

The Sewing Silk and Machine Twist Manufacturers of the United States have advanced prices 10 per cent., owing to rise in raw material.

A. R. Clarke, glove manufacturer, Toronto, has added a hydro-extractor to his plant, which he secured through the Geo Reid Woolen Machinery Co., Ltd., Toronto.

The Goldie & McCulloch Co., Ltd., Galt, Ont., has been offered a location in Toronto, and negotiations are at present going on which may result in the removal of the firm to Toronto.

A small failure in the woolen business is reported in the assignment of M. & W. Reid, woolen mill, Garden Hill, Ont., to J. T. Hemwood of Port Hope. A meeting of the creditors has been called.

Winger Felt Boot Co., Elmira Ont., is installing a lot of new machinery, including a rotary press and other felting machinery, etc. The manager, Mr. Peel, made an extensive trip through the United States before selecting the machinery.

The bonus of \$40,000 has been voted by the town of Belleville, Ont., to the Belleville Carpet Co., whose formation was described in last number of The Journal of Fabrics. The plant in Elora, which is to be removed to Belleville, was bought along with the stock and book debts by W. S. Dresser, for \$25,000, some time ago.

A. Allan, H. A. Allan, J. O. Gravel, J. J. McGill and J. Baillie, Montreal, are applying for incorporation as the Dominion Oil Cloth Company, Ltd., to acquire the business of the Dominion Oil Cloth Co., and carry it on in Montreal; capital, \$50,000.

The manufacturers of cotton have reduced the price of cotton $\frac{1}{2}$ cent to 1 cent per yard. This was occasioned by the continuance of the low prices for the raw material. The reduction in prices, the trade has been notified, applies only to orders given since December 1.

While Duncan Forgie, employed in the Rosamond Woolen Co.'s mill, Almonte, Ont., was working at a lathe in the machine shop recently, the machine jolted, causing a half-inch set-screw to fly back and bore its way through his left hand between the joints of the first and second fingers.

R. Dodds, R. E. McPherson and G. McPherson, C. Klepfer and R. Howie, Guelph, Ont., have been incorporated as the Guelph Carpet Mills Company, Ltd., to manufacture carpets, furniture-coverings and curtains and to deal in woolen and cotton goods; capital \$40,000; chief place of business, Guelph, Ontario.

J. R. Stouffer, J. Betzner, M. F. Antles and Harriet Smonds, Berlin, Ont., and Herman Greeff, Barmen, Ger., have been incorporated as the J. R. Stouffer Manufacturing Company, Limited, to carry on the manufacture and dealing in buttons and suspenders now done by J. R. Stouffer, Berlin, Ont.; capital \$40,000.

The Stag Dominion Hair Cloth Factory, St. Catharines, Ont., has been moved into a new steel-clad building on St. Paul street, where excellent fire protection is had. The power is a Northey gas engine, which will give a uniform and satisfactory service, and avoid the troubles formerly experienced through the unwatering of the canal.

The English firm of Lever Bros., soap manufacturers, have acquired five acres of property in Montreal, for the purpose of erecting here a large soap manufactory. A representative of the firm visited Canada in this connection some months ago, and looked over sites in Toronto and other cities, as well as in Montreal, and decided in favor of the latter.

The Imperial Manufacturing Co., Ltd., St. Stephen, N.B., has been incorporated to do business in Canada. Work will begin Jan. 1st, and the output will be shirts, shirt waists, lace curtains and white goods generally. Electric power will be used. The officers of the company are: President, R. W. Sawyer; treasurer, G. E. Elliott; vice-president, J. P. Tucker.

The Sanford Manufacturing Company, Hamilton, Ont., will, it is said, have all the men employed in its factory join the local branch of the Garment Workers' Union, and have the label of that union placed on all the clothing turned out by the company. An agreement to this effect has been signed, with the understanding that for a year there shall be no change in the existing scale of wages.

A. F. Gault, president of the Montreal Cotton Company, in company with the directors and a number of invited friends, visited Valleyfield recently, for the purpose of celebrating the twenty-fifth anniversary of the company's start in business and also to inaugurate a new wing to the works of the company in that town. The new building has been erected, but has yet to be fitted with its machinery; it is expected it will be open on March 1 next. A banquet was held in the school-house at the conclusion of which a cordial vote of thanks was tendered to A. F. Gault and the members of the directorate for the courtesy they had shown to the visiting guests.

It had been announced that Lord Mountstephen had made a trust deed handing over \$2,800,000 to trustees for the benefit of his relatives. The three trustees to whom the administration of the \$2,800,000 has been given are John Stirling, New York; Robert Meighen and John Turnbull, Montreal. The beneficiaries will receive their shares in full, or the interest of the

The Royal Electric Co. MONTREAL TORONTO

CANADIAN MANUFACTURERS OF THE

S. K. C. TWO-PHASE APPARATUS

Alternating Current Generators

Alternating Current Motors

Alternating Current Arc Lamps

Served from the same circuit

S. K. C. TRANSFORMERS

Correspondence solicited for all kinds of Electric Installations

capital, as the trustees decide. All of Lord Mountstephen's brothers and sisters, and the members of their families, are remembered in the deed of trust. Mrs. James A. Cantlie is a sister of Lord Mountstephen, and the wife of James A. Cantlie, the well-known manufacturers' agent in Canadian woolsens.

RECENT CANADIAN TEXTILE PATENTS.

- No. 60,764.—Ripping attachment for sewing machines; Maurice W. Talen, Genesee, Ill., U.S.A.
- No 60,844.—Improved mule; Arthur Taylor, Batley, York, England.
- No. 60,959.—Press for cotton, wool or hair; Geo. Archibald Lawry, Chicago, Ill.
- No. 61,033.—Loom picker protector; John Bannister, Santa Clara, Mexico.
- No. 61,035.—Lace making machine; Julio de Vargas, Macheuca, San Vincenta, Alicante, Spain.
- No. 61,047.—Knit fabric; D. F. Halstead, New York, N.Y.
- No. 61,326.—Method of marking out cloth for cutting; James M. Standish, Lancaster, Eng.
- No. 61,327.—Method of cutting out cloth; J. M. Standish, Lancaster, Eng.
- No. 61,498.—Sewing machine; Industrial Mfng. Co., Camden, N.J.
- No. 61,158.—Loom; Wm. F. Grubb, Boston Mass.
- No. 61,161.—Warp stop-motion for looms; The Draper Co., Portland, Me.
- No. 61,165.—Improvements on warp stop motion for looms; The Draper Co., Portland, Me.
- No. 61,174.—Spinning mule; S. Green, Moseley, Lancaster, England.
- No. 61,200.—Weaving apparatus; Chas. G. Hill, Nottingham, England.
- No. 61,204.—Knitting machine; Chas. Cooper Bennington, Vermont, U.S.A.
- No. 61,210.—Braiding machine; A. V. Groupe, Philadelphia, Pa., U.S.A.
- No. 61,217.—Knitting machine; Geo. F. Sturgess, The Inglenook, Leicester, Eng.
- No. 61,218.—Knitting fabric, Geo. F. Sturgess, The Inglenook, Leicester, Eng.
- No. 61,226.—Rag picking machine, O. E. Hodddick, Buffalo, N.Y.
- No. 61,234.—Method of tanning; M. C. Dezer, East Weymouth, Mass.
- No. 61,235.—Warp-drawing machine; J. Clarke, Boston, Mass.
- No. 61,072.—Stop motion for looms; Fred. M. Armstrong, Pawtucket, R.I.

—The Hospital for Sick Children, Toronto, is an institution deserving of every assistance, especially from those outside Toronto, for a very large proportion of the patients are from points outside the city. The work has been carried on during the past year without stint. Over 5,000 children were helped back to health. Of these 633 patients were cared for in the cots. In twenty two years the Hospital for Sick Children has been the means of helping 30,000 sick children. This year the mortgage of \$50,000 falls due, and half the amount of the mortgage must be paid off. The increase of patients during the past year precluded any possibility of saving a single dollar towards this object. The trustees of the Hospital in this critical emergency make a strong appeal to the people of Ontario. Readers of this journal may forward contributions to J. Ross Robertson, chairman of the Hospital Trust, Toronto. Their gifts will be promptly acknowledged by the treasurer in the columns of The Toronto Evening Telegram

CHEMICALS AND DYESTUFFS.

Business, now that navigation has closed, is practically of a hand-to-mouth character. Bleaching powder is easier. Ceylon cocoanut oil has advanced 1c. per lb. Sulphurs are scarce and in demand at advancing prices. Bluestone is strong and fully ½c. per lb. higher. The following are current quotations in Montreal:—

Bleaching powder	\$ 1 95	to \$ 2 00
Bicarb. soda	2 00	" 2 05
Sal soda	0 70	" 0 75
Carbolic acid, 1 lb. bottles	0 35	" 0 37
Caustic soda, 60°	1 75	" 1 80
Caustic soda, 70°	2 00	" 2 10
Chlorate of potash	0 13	" 0 15
Alum	1 35	" 1 50
Copperas	0 70	" 0 75
Sulphur flour	2 00	" 2 50
Sulphate of copper	3 00	" 3 50
Sulphate of copper	4 50	" 5 00
White sugar of lead	0 07	" 0 08
Bich. potash	0 09	" 0 10
Sumac, Sicily, per ton	55 00	" 60 00
Soda ash, 48° to 58°	1 15	" 1 25
Chip logwood	1 90	" 2 00
Castor oil	0 09	" 0 09½
Cocoanut oil	0 06½	" 0 07

A. KLIPSTEIN & CO.

122 PEARL STREET, NEW YORK.

Chemicals & Dyestuffs

Fast Color for Wool—Dry Alizarine, Phenocyanine, Gallocyanine.
Direct Cotton Colors—Auramine, Congo Red.
Azo Colors—Naphthol Yellow, Orange, Scarlets, Fast Red.

HEADQUARTERS FOR

- | | |
|--------------------|----------------------|
| Caustic Potash 90% | Carbonate of Potash |
| Chlorate of Potash | Bleaching Powder |
| Phosphate of Soda | Refined Cutch A.K.C. |

WRIGHT & DALLYN, Agents, Hamilton, Ont.

ESTABLISHED 1859

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

MANUFACTURERS OF

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

MILLS FOR SALE

Excellent Water Powers.

CAMPBELLFORD WOOLEN MILL—4 story stone building—never failing water power for sale or rent. **GLEN TAY MILLS**—with 4 set of machinery, stone buildings and a never failing water power. **CANNING WOOLEN MILL**—a two set mill, brick and stone building; excellent water power. **BLYTH WOOLEN MILL**—Peterboro, Ont, entire plant for sale. Send for catalogue. Also a one set Woolen Mill with a splendid custom trade.

For full particulars, &c., apply to

GEO. REID & CO.
118 Duke Street, Toronto.

FIBRE AND FABRIC A Weekly Textile Journal
Subscription \$1.00 per year
\$1.00 for 6 months.
Advertising Rates furnished on application.

Wade's Overseers' Bureau Canadian Manufacturers should notify us when in need of employees. Overseers out of work should enter our bureau. Textile books and directories furnished at publishers' prices.
JOS. M. WADE & CO., Boston, Mass.

See that all your
LINEN THREAD
 and . . .
SHOE THREAD
 carries
 this Trade Mark
 ———
IT IS
ALWAYS
RELIABLE



THOS. SAMUEL & SON, SOLE AGENTS

8 St. Helen Street, Montreal
 22 Wellington Street West, Toronto
 473 St. Valler Street, Quebec

FULL STOCK CARRIED AT EACH ADDRESS

'WE HOLD THEE SAFE.'

**The Dominion Burglary
 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. HAGAR, General Manager

DICK, RIDOUT & CO'Y

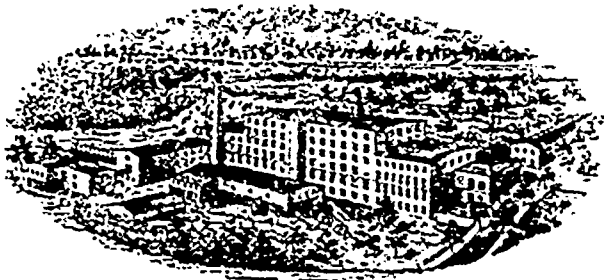
TORONTO, ONT.

Manufacturers of

Jute and Cotton Bags
 Horse Blankets, Hessians, Buckrams
 Tailors' Canvas
 Hop-Sacking, Binder Twine, Yarns, Etc.

Agents for LOUIS BEHRENS & SONS, Manchester, England,
 Velveteens, Velvetas, Furniture Coverings.

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

Richard Schofield, Toronto

Manufacturer of all kinds of

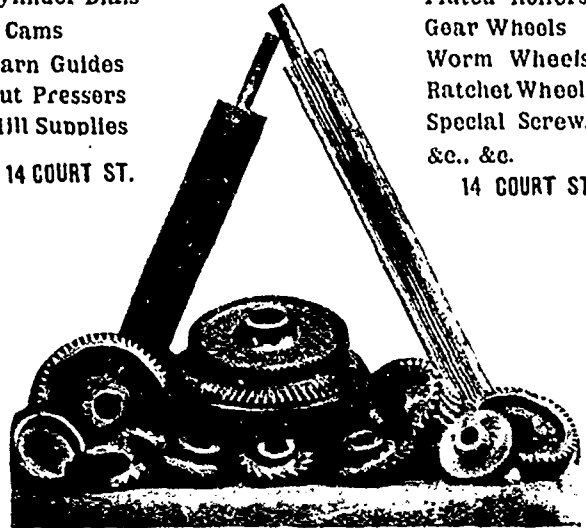
Power Knitting Machines

Cylinder Dials
 Cams
 Yarn Guides
 Cut Pressors
 Mill Supplies

14 COURT ST.

Fluted Rollers
 Gear Wheels
 Worm Wheels
 Ratchet Wheels
 Special Screws
 &c. &c.

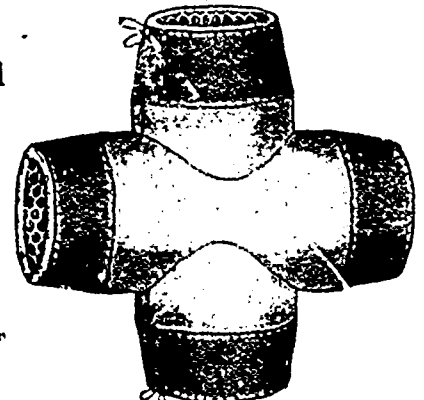
14 COURT ST.



Ontario agent for the well-known Union Special Sewing Machine for
 Plain and ornamental stitching, as used in the manufacture of shoes, gloves,
 underwear, etc. 14 Court Street.

**... MICA ...
 Boiler Coverings!**

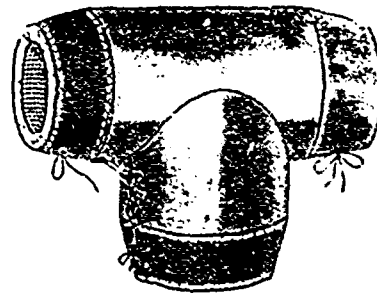
All Steam
 Users should
 See the
 New Mica
 Boiler and
 Pipe
 Covering



CROSS CLOSED.

It is Flexible, Durable
 and a Magnificent
 Non-Conductor
 ...of Heat...

Tested by Mechanical Experts of the Canadian
 Pacific Railway Co., Grand Trunk Railway Co., Michigan
 Central Railway Co., Boiler Inspection Insurance Co., and
 proved to be the **Best of all Non-Conductors.**



TEE

Full particulars, or reports
 of trials, prices, testimonials,
 &c., &c., from

**Mica Boiler
 Covering Co.**

LIMITED.

9 Jordan Street
 TORONTO

G. ROOT & COMPANY,

Wool and Noil Merchants
Combers
and Top Makers

Cable Address—
Roots,
Bradford.

BRADFORD, ENG.

**Australian, Cape and
B. A. Wools
Tops, Noils, Wastes**

AGENT:**R. S. FRASER****17 LEMOINE ST. MONTREAL**

YOUR ENGINEER OUGHT TO HAVE A COPY!!

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 & CO.,**
Fraser Bldg., MONTREAL, Can.

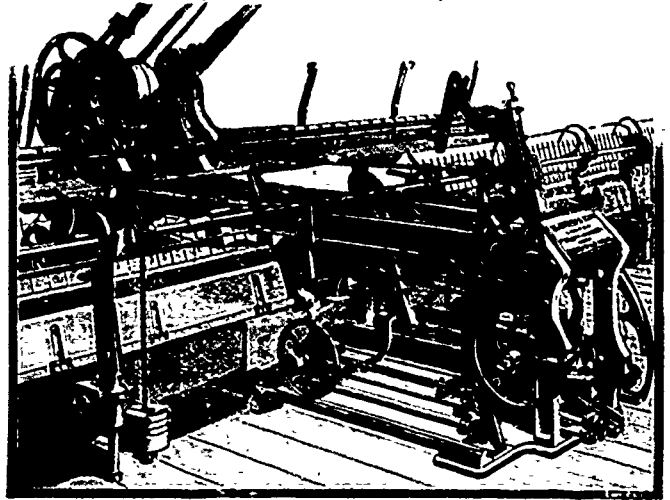
THE PRINTING OF TAPESTRY CARPET YARNS.*

BY DAVID PATERSON, F.C.S.

As the process of manufacturing tapestry carpets differs so widely from all other methods of carpet-making, it may be of interest, before entering into practical details, to consider a few notable features of the process. The method of printing the various colors on the yarn, which is most ingenious, was invented and patented by Mr. Richard Whytock, of Edinburgh, in the year 1832. By this method carpets can be made of dyed or colored warps without new blocks being required for each new pattern. The carpets may have a looped surface like the Brussels, or the loops may be cut in the weaving, giving a velvet pile like the Wilton carpets.

Whytock's invention shows a sound knowledge of the arts of weaving and dyeing, as well as mathematics. Such a process, even though conceived, could not have been brought into practical work except by one thoroughly acquainted with these arts. Like many other useful inventions, its early progress was slow and disappointing. Manufacturers and dealers were not in favor of the new fabric, and printing drums were erected only a few at a time. After fifteen years, however—in 1847—we find fifty six tapestry looms working, the greatest number of these being employed in the firm of Henderson and Widnell, at Lasswade, near Edinburgh. The great success which has attended the tapestry carpet industry is owing principally to the energetic and enterprising manner in which the eminent carpet firm, John Crossley & Sons, of Halifax, entered into its manufacture. It has now become an important branch of textile industry, extending over the whole world. By employing the same principle of printing and weaving, all kinds of beautiful and inexpensive velvet pile carpets, tablecovers, sofas, rugs, etc., may be produced at a price within the reach of all. Many improvements in

*Condensed from the Dyer and Calico Printer.

WILLIAM WHITELEY & SONS, Limited**LOCKWOOD, HUDDERSFIELD, ENGLAND.**

Winding Machinery, Improved Self-Acting Mule, Suspended Steam Driven Centrifugal Hydro-Extractor, Tenting and Drying Machines, Patent Wool and Cotton Dryer, Patent Wool Scouring Machine, Cross Raising Machine, Patent Crabbing and Winding-on Machine, Warp Sizing, Cool Air Drying and Beaming Machine, and other Woolen Machinery.

CATALOGUE ON APPLICATION

SHAW BROTHERS, - Agents**164 McGill Street, - Montreal.**

details have, of course, been made on Whytock's invention of 1832; but the principle of imparting to the yarns their various colors remains practically unaltered. In Brussels carpet manufacture all the yarns are dyed self colors in the dyebath, each separate thread representing one color in the carpet. In order to have a small piece of a color in a Brussels, a thread of that color must traverse the whole pattern. The colors in Brussels are limited to five or six, and if another shade is desired, it can only be inserted by the process of planting, which is substituting it at the desired place for another color already working in the carpet. Whytock's process overcomes this inconvenience. A single tapestry thread is printed various colors, and there is practically no limit to the variety of shades which can be employed. This, indeed, has been brought forward by some writers as a positive objection to the tapestry process, as the results are apt to become vulgar and "offensive to anyone having artistic taste." But the fault here lies, not in the process itself, but in the taste of the colorist or designer. A soft, harmonious coloring, which would satisfy the most fastidious taste, can be employed with great effect in tapestry carpets. No doubt the coloring in many tapestries is crude and garish, but such are generally intended for foreign export, where they have a ready market. With many nations there is a strong demand for bright, showy colors and glaring contrasts, which to our eye would appear offensive. This freedom in the employment of colors, then, instead of being a fault in the tapestry process, is indeed a positive advantage, as it enables the manufacturer to supply the demands of other nations, though their taste, perhaps, be not the most cultivated. Within late years tapestry carpets, as a whole, have greatly improved in coloring, the many excellent productions from our best firms have no doubt done much to elevate public taste. In a Brussels all the dyed threads lie in layers, one on top of another, under the surface of the carpet, and only reappear on the surface at the certain place

where they are required to produce the design. In this way a large amount of dyed yarn must of necessity be concealed under the surface. In a Brussels of five colors, or a five-frame carpet, only about one-fifth of the dyed worsted forms the surface of the carpet and is invisible, while roughly speaking, about four-fifths lies under the surface and is lost to view. By Whytock's process this great loss of valuable material is altogether avoided, all the colored yarn in the tapestry carpet being on the surface and visible. Another point of advantage is the saving of space with tapestry looms, a Brussels loom occupying three times the space in length that a tapestry one requires. In the early days of Whytock's invention the yarn was wound on the printing drum from bobbins, by rotating the drum by means of a hand crank, while a simple arrangement guided the threads across the breadth of the drum. At that time the colors were applied to the yarn, not by means of a printing pulley and color-box, as now employed, but with straight wooden sticks or rulers which were dipped into the color paste and then applied to the yarn across the drum. The edges of the printing sticks were covered with felt. Originally the printing drum seems to have been made of tin and covered over with waterproof cloth. The point at which these color rulers were applied was midway up the drum, where a ledge or guiding shell was erected to keep the ruler exactly parallel to the edge of the drum. The introduction of rollers or pulleys running in a small box and color paste, and printing at the bottom of the drum instead of the side, was a great improvement on the old system.

Like the majority of clever inventions, Whytock's method of coloring tapestry carpets is very simple in theory, yet in

actual practice the many little important details requiring attention give it a complexity which renders it difficult to comprehend at first sight. The following explanation will give an intelligent idea of the tapestry process of carpet making to those unacquainted with it in actual work. The design of the carpet pattern is first painted on paper divided into little squares or parallelograms, each little oblong representing a loop in the finished carpet. This colored design, which somewhat resembles a mosaic, is pasted on a board and hung beside the printer.

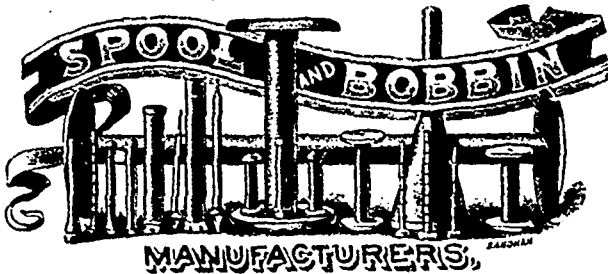
The circumference of the large cylinder or drum, which is made of wood, is first covered with varnished or glazed cloth to prevent the dyes from entering and staining the wood. It is then wound evenly round with one layer of the carpet yarn, giving it the appearance of an immense bobbin covered with one layer of thread. The drum is covered only half-way across with yarn, thus making only half the number of carpets. Underneath the drum, and running in the direction of its axis, is a small set of rails, on which runs the carriage for the color-boxes for supplying the various colors to the yarn. In each box and partly submerged in the color paste, is a roller or pulley varying in width from $\frac{1}{4}$ to $\frac{1}{2}$ -inch, which, as the color-

THOMAS KER

J. HARCOURT

KER & HARCOURT,

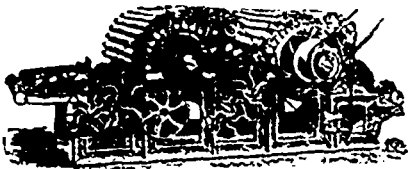
ESTABLISHED 1857



Orders by Mail will receive prompt attention.

Parry Sound, Ont.

CANADA GARNETT CO.



MANUFACTURERS OF
Garnetted Wastes and Shoddies
Waste Openers and Pullers

Office 17 Lemoine Street
Works, Canal Bank, near
Seigneur St., Montreal

H. W. KARCH,
HESPELER, ONT.



Manufacturer of
Woolen Machinery,
Rovary Pulling
Mills, Kicker Pulling
Mills, Soaping
Machines, Cloth
Washers,
Wool & Waste
Dusters, Rag Dusters,
Drum Spool
Winders, Reels,
Spooling & Doubling
Machines, Ring
Twisters, Card
Creels,

Dead Spindle Spooler for Warp or Dresser Spools.
Pat. Double Acting Gigs, Dyeing Machines.

Loom Picker Co.
BIDDEFORD, ME.
H. P. GARLAND, Treas.

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.

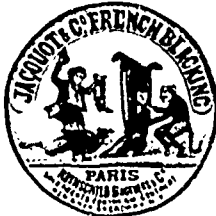
TEXTILE MACHINERY (New and Second Hand) CARD CLOTHING TETLOW'S



English Sales Attended.

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

ROTHSCHILD BROS. & CO.Manufacturers, Manufacturers' Agents
and Importers**BUTTONS.**Sole Agents for the
American ContinentSole Agents for the
American ContinentOFFICES—466 & 468 Broadway, N.Y.
28 Rue de la Victoire, Paris, France.
11 & 13 Front St. East, Toronto.

Established 1848.

A. EICKHOFF

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. 391 BROOME STREET,
Between Broadway and Bowery,**NEW YORK CITY****The R. Forbes Co.**
(Limited)

Manufacturers of

WOOLEN AND WORSTED YARNS

For Hosiery and other work

HESPELER, ONT.**Just Out****THE CANADIAN CUSTOMS &
EXCISE TARIFF**

Corrected to June 23rd, 1893

ContainingExcise Duties. Ports of Entry.
Extracts from the Customs and
Tariff Acts.Reciprocal and British Preferen-
tial Tariffs.Tables showing Sterling, Francs
and Rixmarks reduced to \$ & c.
and other valuable information.Cloth Limp for the Pocket,
by Mail, 50 Cents.**MORTON, PHILLIPS & CO.**Stationers, Blank Book Makers
and Printers

1755 & 1757 Notre Dame St., Montreal

G. B. FRASER,**3 Wellington Street East
TORONTO**

REPRESENTING

Miller Bros. & Co., Montreal; Paper and Celluloid
Collars, Cuffs and Shirt Bosoms.W. D. VanEgmond, Seaforth Woolen Mill; Ettoffes,
Friezes and Tweeds.I. A. Teskey, Appleton, Ont., Fine Tweeds and
Cassimeres.

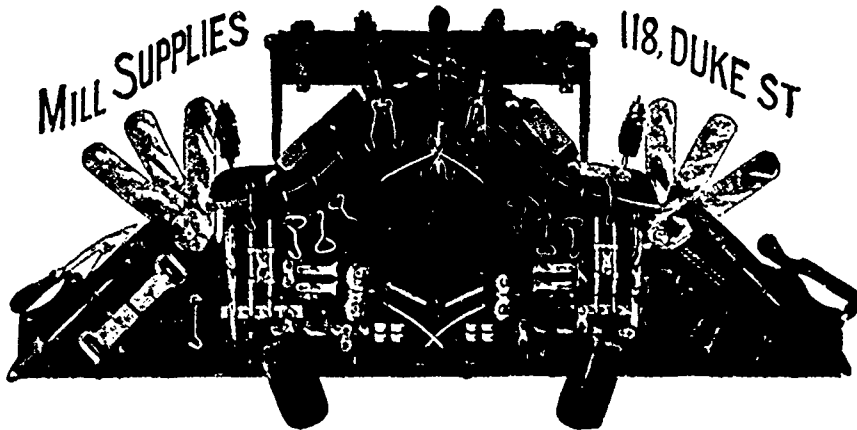
D. Fisher, Paisley, Ont., Ettoffes and Tweeds.

John J. Ashley & Co., Bradford, Eng., Dress Goods
and Worsteids.Horner, Determann & Co., Barmen, Germany,
Buttons, etc.S. W. Whitham, Leeds, Eng., Woolens.
Merrimack Print Mfg. Co., Lowell, Mass.

Burton Bros. & Co., New York; Linings, &c.

H. T. Lamkin & Co., Cotton Brokers, Vicksburg
Mississippi Long Staple Cotton a specialty.**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**GEORGE REID & COMPANY**SUCCESSORS TO
PAUL FRIND WOOLEN MACHINERY CO., Limited**WOOLEN MACHINERY**Cards, Mules, Looms, Pickers, etc. All
kinds for sale.**WOOLEN MILL SUPPLIES**

Every description kept in stock.

WOOLSole Agents for FRANCIS WILLEY & CO.,
Bradford, Eng. A large stock always on
hand.**BEAM WARPS**

Sole Agents for HAMILTON COTTON CO.

MILLS FOR SALE**CARD CLOTHING**Our MR. REID is Sole Agent for Messrs.
Samuel Law & Sons, Cleckheaton, Eng.,
and has always a large stock on hand.**E. W. MUDGE & CO.**

5 St. Peter St. - Montreal.

TRIMMINGS

-FOR-

Knitting Mills and Woolen Mills**TYING-UP RIBBONS.****Pink & White Cotton Tapes**

COP TUBES
Cones and Shells.
WORSTED TUBES
Conical Tubes.
MAILING TUBES
Haworth & Watson, LOWELL, MASS.

CHAS. F. TAYLOR

Successor to Burgess Cop Tube Co.

Manufacturer of

PATENT MACHINE

PAPER**COP TUBES**

48 Custom House St.

PROVIDENCE, R. I.**U. S. A.**

JOHN HALLAM,
83 & 85 Front St. East, - - - Toronto
and
88 Princess Street, - - - - - Winnipeg
Wholesale Dealer in
DOMESTIC AND FOREIGN WOOLS
Sumac, Japonica, &c.

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

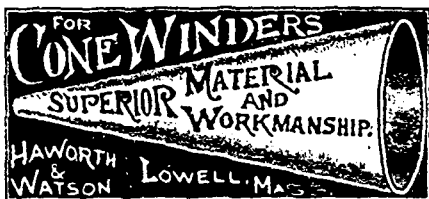
WOOL.
A. T. PATERSON & CO.
MERCHANTS,
35 Francois Xavier St., Montreal.
REPRESENTED BY MR DAVID GUTHRIE,
THE SMITH WOOLSTOCK CO.

Manufacturers and Dealers in all Lines of
Wool Stock, Shoddies, &c., Graded Woolen
Rags, Carbonizing and Neutralizing.
Best prices paid for Wool Pickings, Woolen
and Cotton Rags, Metals, &c. Hard Waste, &c.
purchased or worked up and returned.
219 Front St. E., Toronto | Foot of Ontario St.

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 specialty.
Agent for
George Hirst & Sons, Exporter of Woolen
Rags, Bristol, England
Telephone 2882.
Cable—"SPEDDING," Montreal.

ROBT. S. FRASER
Wools, Cottons, Noils, Yarns
Specialties:
English Pick Lambs and Downs
Foreign Wools and Noils
Egyptian and Peruvian Cottons
Fancy Yarns
17 Lemoine St., MONTREAL

WM. D. CAMERON,
Woolen & Cotton Manufacturers'
Agent,
HALIFAX, N.S., & ST. JOHN, N.B.
Address P.O. Box 401. - HALIFAX, N.S.

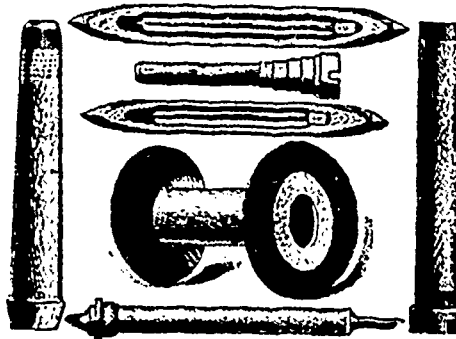


WILSON & COMPANY

DEALERS
IN ALL KINDS **WOOL**
OF

CORNER FRONT AND CHURCH STREETS,
TORONTO, ONT.

Lachute Shuttle and Bobbin Works



We are the largest Shuttle
Manufacturers in Canada.

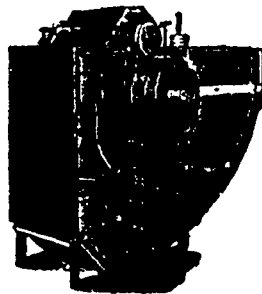
*Slubbing, Roving and all kinds
of Bobbins and Spools for
Cotton and Woolen Mills.*

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

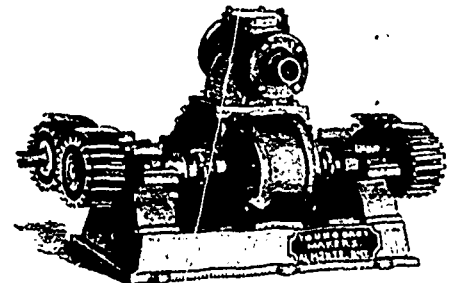
Orders solicited and all work guar-
anteed to give satisfaction.

John Hope & Co.
LACHUTE, P.Q.

MISSISSIPPI IRON WORKS



ESTABLISHED
1875

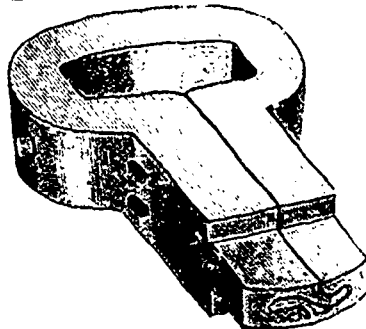


Manufacturers of English or American Pulling Mills and Washers, Wool Pickers, Ex-
haust Fan Drivers, Dusters, Rotary Force Pumps for Fire Duty, Boiler Feed Pumps,
Shafting, Hangers, Castings, Pulleys, Gearing, Forgings.
Full equipment of mills of every kind. **YOUNG BROS.,** Almonte, Ont.

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.



JOHN W. BARLOW

Manufacturer of

LOOM PICKERS,

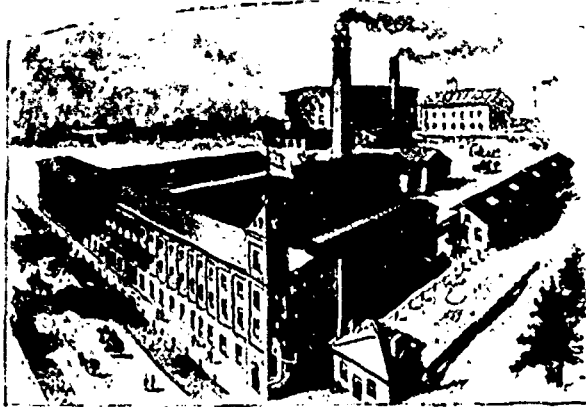
LAWRENCE, MASS.

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

Hamilton Cotton Co., Hamilton

MANUFACTURERS OF

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



SOLE AGENTS:

WM. B. STEWART, 18 Front St. East, Toronto.
Agent for Warps. GEO. REID, 118 Duke Street, TORONTO

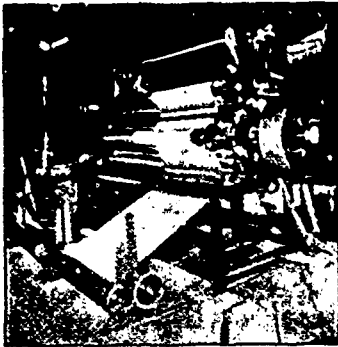
DEROCHIE BROTHERS, Cornwall, Ont.

We build

NAPPING MACHINES

up to 80 inches wide, to nap one or two pieces in width. The machine naps cotton or woolen goods; can either furnish folders or winding attachments; this machine is so geared that the changing of small gears changes the nap on cloth that is needed. The main shaft is 3 1/2 in. in diameter. All Roller Bearings are bronze and self-oiling. All Rolls are made of hydraulic piping—and every part of the machine is first-class in every respect.

Some of the machines are running at Canada Mills, Cornwall, Montreal Cotton Co.'s Mills, Valleyfield, Wm. Parks & Sons, St. John's, Dominion Cotton Mills, Halifax.



box runs underneath the drum, presses up against the yarn by means of springs adjusted to the carriage, and thus rules a streak of the color right across the yarn on the drum.

In tapestry printing, one becomes impressed with the great importance of attention to the minutest details. Without this, the process would become most uncertain, and the many separate threads would become hopelessly confused. Inexperienced or careless printers, in not paying due heed to the proper tying of each separate hank on the drum, the numbering of each drum of yarn as it is printed, the accidental breaking of a thread, or the emptying of a bobbin while the drum is filling, or omitting to tie the certain kind of knots on the thread ends in order to guide the winders, and many little similar points, all apparently mere trifles in themselves, if not attended to will give rise to serious trouble and waste of material in the subsequent operations through which the yarn has to go. Likewise in the printing, the furnishing of the yarn is a question of importance.

Furnishing the Yarn—If the colors be barely printed on the yarn they come out thinner and lighter in color than the shade desired; and should an excess of color be used, the opposite effect is produced in making the colors much deeper in tone than they should be. In both instances a color which might be carefully matched to the standard shade by the color chemist can be put off the desired tone in the printing by using either an insufficient or excessive amount of color. This is sometimes a cause for difference of opinion between the printmaster and

Second-Hand Machinery

Leonard-Ball Engine, 8 1/2 x 10 cylinder, .42 h.p. indicated, nickel plated fittings.

Boiler .42 in diameter by 12 ft. long, 35 h.p., 60 ft. smoke stack and fittings

Set English Wool Cards.

Fulling Machine.

Hand Cloth Press.

Felting Machine.

All of above in first-class order and may be had cheap.

Lancaster Machine Works,

113 OAK STREET,

LANCASTER - - ONTARIO



The Underwood

Visible writing start to finish—tabulating attachments for invoicing, billing, etc. No extra cost, easy touch, rapid action, handsome designs—
fully guaranteed.

All other makes, new and second-hand, at reduced prices.

GREELMAN BROS. TYPEWRITER CO.

15 ADELAIDE ST. EAST, TORONTO

color chemist; and only those experienced in the business can believe how much a color may be altered in appearance, either lighter or darker, according to the bare or full manner in which the color has been printed. It is quite possible to make the same color present three stepping shades, light, mid, or dark, by applying the color paste barely, in medium quantity, or excessively to the yarn on the drum. Hence arises the necessity for preserving all through a pattern a medium and uniform amount of color to be administered. The print overseer must attend to the wipers or doctors on the color box, that they be neither too wide nor too tight, and that the spring of the carriage of the color box be so adjusted as not to press the pulley too firmly against the drum, and thus squeeze out the color. It is, however, no easy matter to produce exactly the same shade of color on yarns widely different in quality. Different yarns require slightly different treatment, and it is only from experience that the print overlooker learns to adjust the little details to produce satisfactory results. Some of the poorer or "hungry" yarns absorb a much larger quantity of color than those of fine quality; and the finer the lustre of the wool, the richer and fuller is the color produced. In printing fine yarns the colors as a rule are put on as thinly as possible, as the wool is easily satisfied but when the yarns are heavy or are of an absorbent nature and contain what is known as "kemps" or dead hairs, a greater quantity of color is absorbed. It is impossible to get rich and full-bodied colors on a harsh, lustreless wool; they look dry and impoverished. With such yarns the color-box is

often used without wipers in order to get as much color on the yarn as possible. When printing large patches or grounds of a single color it is always necessary to use the color liberally, as a barely furnished ground is sure to turn out unsatisfactory, being alike poor in its quality of color and stripey in appearance. Often a successful pattern is spoiled by having a blotchy, uneven ground; this, in many cases, might be overcome by printing more fully and keeping that uniformity of color throughout the whole pattern. Rubbing the wet drum carefully with rollers, or, what is even better, brushing it with a small hand brush, is of great assistance in getting out level grounds.

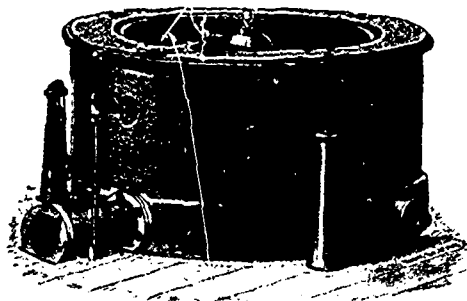
A NEW LOOM

The report of the United States commercial agent at Roubaix, France, about the new loom recently described as being in operation there shows that this machine is the semi-weaving and knitting loom known as the Millar loom, which was described and illustrated in several of the textile papers some time ago, and first, it is said, in *The Textile World*. The United States representative at Roubaix admits that the working rapidity of the machine is the only point that it has in common with the Northrop loom, as the principle of weaving is different, and, says an exchange, it produces a sort of knitting stitch. He says that, "on one side of the working machinery, the warp thread is disposed on its frame, and beneath this machinery is the tissue, which rolls itself up. There are

also two arrangements of bobbins, one above the other, each carrying from 100 grams to 1 kilogram or more of wool yarn. One series of these bobbins supplies the straight thread and the other the chain stitch. They are both propelled by a similar movement by means of an endless chain, which moves along two parallel straight parts united at their ends by two round pieces. The two straight parts vary in length according to the width of the goods. When the bobbins, drawn by the endless chain, pass into the round pieces, they cease to work, but when they are brought back to the straight parts, they pass before a plate which sets them in motion—one series supplying the straight threads and the other the chain stitch. Nothing could be more simple than the Millar machine, which substitutes the knitting motion for the ordinary shuttle.

"The texture shows the woven effect on one side and the knitted on the other; but the woven effect can be produced on both sides, and the chain stitch can be made less prominent in wool or cotton goods by using four threads on the bobbin that feeds this stitch, and by fulling in drapery goods. The machine lends itself readily to weaving yarns of different color and quality, as the various bobbins can be supplied according to taste. Raw material of inferior quality can also be used, as there is little strain on the thread in this mode of weaving, the weft thread floating like that of a knitter. The production is astonishingly rapid; 120 to 200 meters can be woven in a day of ten hours. There is also great economy of hand work, one workman being able to oversee six machines. The motive force is perhaps one-half that demanded by the ordinary machine, the Millar having the motion of a sewing machine or of knitting needles."

BROADBENT'S HYDRO EXTRACTORS



Direct Steam Driven. No Shafts or Belting required.
Suspended on Links and requiring no Foundation.

Adapted for **Manufactories, Dyehouses, Laundries,
Chemical Works, Sugar Refineries, etc., etc.**

—SEND FOR CATALOGUE—

Thomas Broadbent & Sons, Limited

CENTRAL IRON WORKS

HUDDERSFIELD, - - - ENGLAND

Telegrams: "BROADBENT, HUDDERSFIELD."

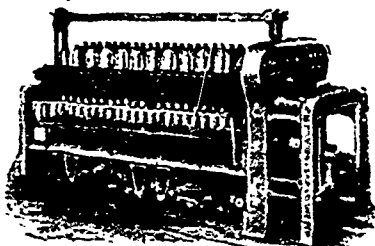
Agents for Canada: - - SHAW BROTHERS, 164 McGill Street, Montreal.

Brooks and Doxey

— Manchester, England

Telegrams:
Union, Manchester, Athlons, Boston

Makers of **Cotton, Cotton Waste and Woolen Machinery**



WE have a complete set of our latest Cotton Machinery at work in our Show Rooms at 161 Pearl Street, Boston, and our agents, MESSRS. W. L. HAINES & COMPANY, will always be glad to see buyers and to explain the various valuable improvements embodied in the machines. Our machinery is made of best materials only, particular care being paid to the finish of the various parts, and is constructed very substantially so as to withstand the highest speeds, and give the greatest production combined with best quality of work.

Dominion Oil Cloth Co'y

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:

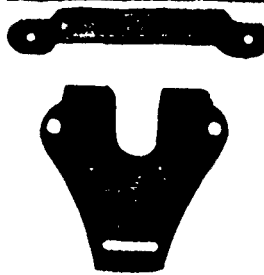
Corner St Catherine and Parthenais Str., MONTREAL, QUE.

MILTON L. HERSEY, B. A. & Co.

Consulting Chemist of the Canadian Pacific Railway Company.

Analyses and Assays

of ores, coal, cements, steel, oils, paints, waters, liquors, foods, etc. Examination of processes. Co-operation with engineers in all lines. Samples by mail, 1 cent per 4 ozs limit, 24 ozs 16 St. Sacramento St., Montreal, Que.



THE Dewey BAND FASTENER

Strong, Durable, and in every way satisfactory — besides being lowest in price.

Samples sent free on request.

THE EAGLE CLASP MFG. CO.,

Corner St. Paul and Baltimore Streets. Baltimore, M.D.

—Negotiations were completed at Bradford, England, on Oct. 29, for the purchase of 98 per cent. of the dyeing businesses in the woole- piece-dyeing trade of the district, and their flotation as a limited liability company with four million pounds capital Twenty-three businesses in Bradford, Leeds, Halifax, and the district are included in the amalgamation. The businesses are taken over as from Sept 30, last, and are still to remain under the management of the former owners, who are to receive salaries for their services, and to have a bonus on the profits above a certain amount.

—As we go to press we learn that the warehouses of S. Greenfields and McIntyre, Sons & Co., wholesale dry goods, Victoria Square, Montreal, were destroyed by fire, Dec 20th Loss nearly \$1,000,000.

THE CANADIAN ENGINEER
METAL TRADES JOURNAL & MECHANICAL SCIENCE REVIEW

ISSUED MONTHLY IN THE INTERESTS OF THE

CIVIL, MECHANICAL, ELECTRICAL, LOCOMOTIVE, STATIONARY, MARINE MINING, AND SANITARY ENGINEER; THE MACHINIST AND FOUNDER, THE MANUFACTURER AND CONTRACTOR. SUBSCRIPTION, \$1 - - A YEAR - -

The increase in its circulation is remarkable, as is shown by the following detailed statement confirmed by the affidavit of A W Law, Secretary of The Monetary Times Printing Co., our printing contractors THE CANADIAN ENGINEER stands to-day unrivalled among Canadian trade papers for the wide distribution and character of its circulation

VOLUME III.		
Date of Issue	Copies Printed and Mailed	
No 1, May, 1895	2,000	
" 2, June, "	2,000	
" 3, July, "	2,100	
" 4, Aug, "	2,200	
" 5, Sept., "	2,400	
" 6, Oct., "	2,400	
" 7, Nov, "	2,500	
" 8, Dec, "	2,600	
" 9, Jan, 1897	3,500	
" 10, Feb, "	4,000	
" 11, March, "	3,100	
" 12, April, "	3,150	
VOLUME IV.		
No	Date of Issue	Copies Printed and Mailed
1, May, 1896		3,250
2, June, "		3,450
3, July, "		3,600

VOLUME V.		
No	Date of Issue	Copies Printed and Mailed
4, Aug, 1896		3,450
5, Sept, "		3,975
6, Oct., "		3,725
7, Nov, "		3,800
8, Dec, "		4,050
9, Jan, 1897		4,100
10, Feb, "		4,350
11, March, "		4,350
12, April, "		4,350

No	Date of Issue	Copies Printed and Mailed
1, May, 1897		4,350
2, June, "		4,000
3, July, "		4,350
4, Aug, "		4,400
5, Sept, "		4,500
6, Oct., "		4,400
7, Nov, "		4,600

Departments devoted to Civil Engineering, Surveying and Mining to Mechanical, Electrical, Locomotive, Stationary, Marine and Sanitary Engineering Sample copies sent free to intending subscribers Advertising rates on application

BIGGAR, SAMUEL & CO., Publishers
FRASER BUILDING, MONTREAL,
Or 62 Church Street, TORONTO

ROBERT & COMPANY
Manufacturers' Agent,
Woolen & Cotton Mill Supplies
14 St. Michael's, - MONTREAL, Que

THE Curtis Pressure Regulator
for Steam, Water, and Air, is a regulator which is unequalled for simplicity, efficiency, and reliability.
These regulators have now been in use for twelve years, and have established a reputation second to none.
The use of this regulator means decreased expenses.
Manufactured by the
D'ESTE & SEELEY CO.
29 to 33 Haverhill St., Boston.
New York: 109 Liberty St.
Chicago: 218 Lake St.



HAWTHORNE

WOOLEN CO, Limited

CARLETON PLACE,
Ont.

MANUFACTURERS OF

**Fine Tweeds,
Cassimeres, etc.**

JAS. LOCKHART, SON & CO.,
Selling Agents, Toronto.

The best results in
Card Grinding
are obtained by using  TRADE MARK.

**DRONSFIELDS PATENT
D GROOVED EMERY FILLETING**
SPECIALITIES; MACHINES FOR GRINDING CARDS
MACHINES FOR COVERING ROLLERS WITH LEATHER

DRONSFIELD BROS. LTD.
Atlas Works, **OLDHAM, England.**

GIBBY'S

THE McCORMICK TURBINE ..

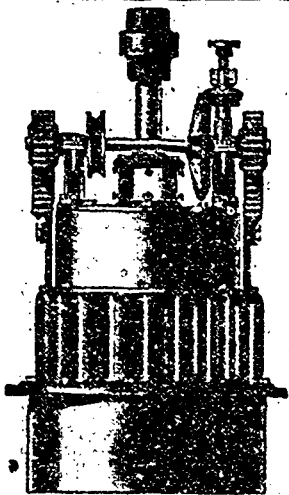
FEATURES WORTH CONSIDERATION:

Great Capacity, High Speed, Unequalled Efficiency, Steady Motion,
Easy Working Gate, Greatest Power from a Limited Quantity of
Water, at Smallest Cost.

Undoubtedly the Most Popular Turbine Manufactured.

Write for Catalogue.

S. MORGAN SMITH CO., York, Pa.
U. S. A.



CO-OP. KNIT MACHINE CO.

MILLSTONE LANE, LEICESTER, ENG.

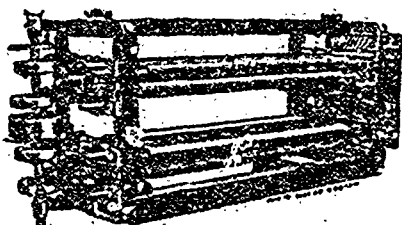
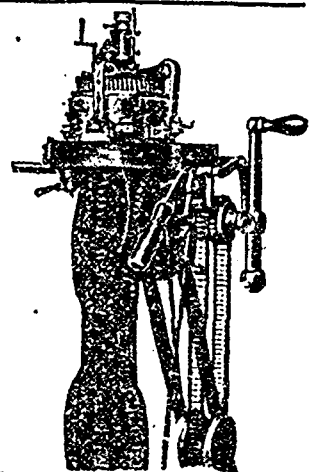
Sturgess Designer Machine

For making Hand Knit Hosiery (Seamless), Golf and Cycling Hose, Gents' Fine Socks,
Ladies' Fancy Hose and Gloves in hundreds of fancy designs. The chief features are —
Simplicity of Construction, Enormous Production, Variety of Design.

AUTOMATIC MACHINE COMPLETE, £47 13s. 6d.

Designers Separately for attachment at \$50.50 each. Transfer Needles 10c. each.

Made and sold for Canada under Patents 52,124 and 52,125, 1896, by Biggar, Samuel & Co., of 62 Church
Street, Toronto, who will be glad to receive offers for the purchase of these Patents outright or on royalty.



We manufacture Barker's
Patent Notices, Fast-
Running Darning Comb

Barker's Patent Double Apron Rubbing Motions for Condenser Cards

Are in successful operation on all grades of stock, being generally
adopted because they change carding and spinning
rooms for the better.

James Barker, Cotton and Woolen Machinery
Second and Somerset Streets, **PHILADELPHIA, Pa.**

ENGLISH
OAK-TANNED

BELTING

The J. C. McLaren Belting Company

69 Bay St., Toronto.

292-294 St. James St, Montreal

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**

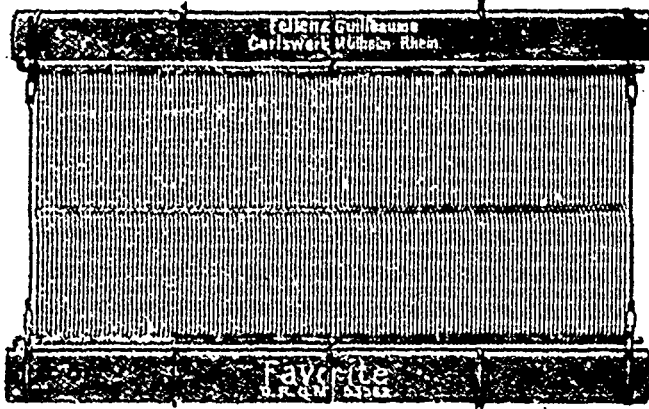
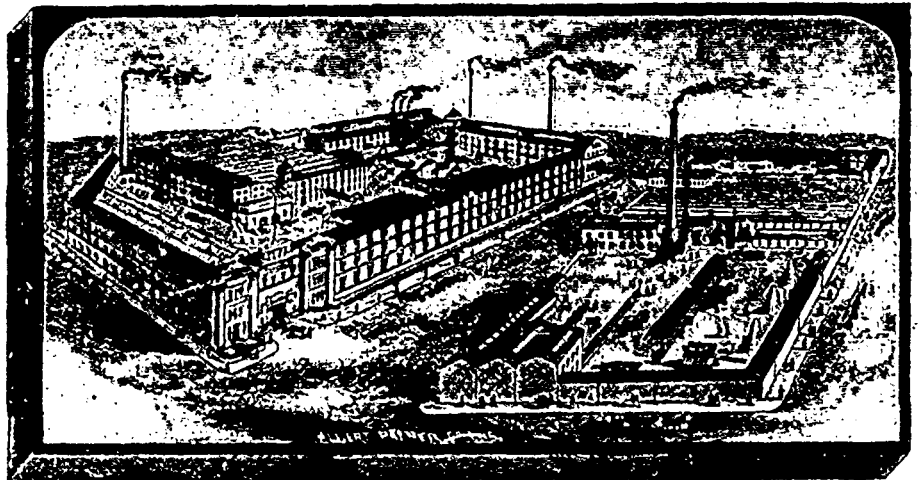
**Patent Automatic Spinning Frames
Improved Laying Machines**

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, 1875; Highest
Award (Medal), Melbourne, 1880.



Felten & Guilleaume,

MÜLHEIM-ON-RHINE, GERMANY

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, un-
surpassed by any other Wire Heddles in the market.

Patent "Favorite" Shafts for Weaving

give, combined with above Heddles, the Best, most Reliable and most Durable Har-
ness, 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

JACK & ROBERTSON, 7 St. Helen St., Montreal.

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

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.