

Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

Coloured covers/  
Couverture de couleur

Covers damaged/  
Couverture endommagée

Covers restored and/or laminated/  
Couverture restaurée et/ou pelliculée

Cover title missing/  
Le titre de couverture manqué

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:

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

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

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
									✓		

# CANADIAN Journal of Fabrics

THE JOURNAL OF THE Textile Trades of Canada.

Vol. XVIII.

TORONTO AND MONTREAL, FEBRUARY, 1901.

No. 2.

## Have You Seen It ? The Harriman Automatic Loom

It Stops to Change the Shuttle

Write for Illustrated Red Book.

The American Loom Company

READVILLE, MASS.

McARTHUR, CORNEILLE  
& CO.

Importers and  
Manufacturers of



**O**ILS . . . . .  
**C**HEMICALS

and **DYE**

310 to 318 St. Paul St.

MONTREAL . . . . . **STUFFS**

**MILL SOAPS**  
DOMINION DYEWOOD  
& CHEMICAL Co. TORONTO.  
MANUFACTURERS.

## WATSON JACK & CO.

7 St. Helen St., Montreal.

Full Lines of Dyewoods, Chemicals, Aniline  
and Alizarine Colors, New Chrome Blacks.

SOLE CANADIAN AGENTS FOR

The Society of Chemical Industry in Bale

**ANILINE COLORS.**

## New York and Boston Dyewood Co.

MANUFACTURERS OF

# DYEWOOD Extracts

Importers of INDIGO AND ANILINE COLORS.

SELLING AGENT IN CANADA

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

**ANILINE DYES** } Extracts  
**LOGWOOD**  
**SUMAC**  
**INDIGO**

HEMOLIN BLACK, MORIN YELLOW

WM. J. MATHESON & CO., Limited

96-98 Foundling 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.

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

Specialties:

Logwood for Cotton and Wool.

Fast Onedip Cotton Dyes.

Alizarines & Azo-Alizarines.

164 St. James St., Montreal

## Bellhouse, Dillon & 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—30 Wellington Street East.

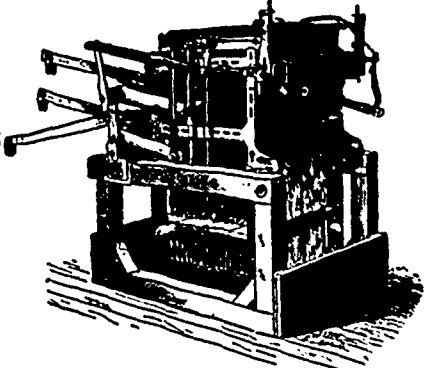
30 St. Francois Xavier St., Montreal

New York Office, 20 Cedar Street.

USE THE  
**"Halton"**  
**Jacquard**

**BEST MACHINE ON THE MARKET**

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



"1304" Fine Index  
 Double Lift.

The only  
 Reliable  
 Fine  
 Index  
 Machine.

**Thomas Halton's Sons**

Alleghany Avenue and C. Street, - PHILADELPHIA

**ANILINES**  
**ALIZARINES**

**DOMINION DYEWOOD & CHEMICAL CO.**  
 TORONTO

Direct Importers. Sole Agents in Canada for  
 Messrs. The **FARBENFABRIKEN Vormalis FRIEDR. BAYER**  
 & CO., Elberfeld, Germany.

C. G. THOMPSON.

J. S. MITCHELL.

**THOMPSON & CO.**  
 SHERBROOKE, QUEBEC.

Manufacturers of

**Bobbins and Spools**

OF EVERY DESCRIPTION

For Woolen, Cotton and Rope Mills. Extra facilities for  
 supplying new mills and filling large orders.

Correspondence Solicited.

Orders Promptly Filled.

**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.

W. H. PARKER

J. H. PARKER

**New Toronto Wool Stock Co.**

Manufacturers of

**CARDED and GARNETTED WASTE**

The Garnetting of Wool and Cotton Waste | Office and Works.  
 a specialty. Wool Stocks in every shade. | **NEW TORONTO, Ont.**

**JOHN WHITAKER REED CO.**

Established 1869

Manufacturers of

**Loom Reeds**  
 of every description.

For Cotton, Woolen, Carpet and Wire Cloth Mills.  
 Slasher Combs and Dresser Reeds of all kinds. **WORCESTER, MASS.**  
 JOHN McINTOSH, Proprietor.

**ROBT. S. FRASER**

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

**Tetlow's Card Clothing.**

(STOCK IN MONTREAL).

Manufacturers of Wastes and Shoddies.

**17 LEMOINE STREET,**  
**MONTREAL**

**INDIGO**

**EDWARD BOWER & CO.**  
**LONDON & MANCHESTER**

**INDIGO**

Representatives in Canada:

**ANDREWS, BELL & CO.,**  
**30 HOSPITAL STREET,**  
**MONTREAL**

# Canadian Journal of Fabrics

THE JOURNAL OF THE  
Textile Trades of Canada.

Vol. XVIII.

TORONTO AND MONTREAL, FEBRUARY, 1901.

No. 2

## 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, 6/ Advertising rates on application.

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

E. H. BIGGAR { BIGGAR, SAMUEL & CO. } PUBLISHERS R. R. SAMUEL

TRAVELLING REPRESENTATIVE: A. W. SMITH.

PHILADELPHIA AGENT: H. E. BURNETTE, Cor. Fourth and Locust Sts.

BOSTON AGENT: F. F. GRANT, 5 Gayland St., Roxbury.

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. Price, \$3.00.

BIGGAR, SAMUEL & CO., Publishers.

### CONTENTS OF THIS NUMBER:

	PAGE		PAGE
Among the Mills .....	15	Literary Notes.....	53
Army and Navy Clothing Store, Burlington of .....	38	Loom, The Snapping ..	54
Blender Twine Boom.....	41	Parks & Sons Cotton Mills, Wm. ....	44
Carpet Industry, Protection to .....	46	Piece Dyed Goods, spots in .....	48
Chemicals and Dyestuffs .....	54	Silk Industry.....	45
Chemistry of Paper Making .....	36	Tariff Preferential .....	44
Chrome Mordanting of Wool .....	48	Textile Design .....	47
Co-dage Journal's Opinion .....	51	Exports of Gr. Britain to Can-ada .....	52
Cotton Industry of U. S. ....	51	Fabrics, Canadian Failures in .....	48
Creases at the Selvage .....	52	Publicatio s ..	54
Dye's Recipes for .....	56	U. S. Shirt and Collar Combine ..	51
Dyestuffs, New .....	56	Wool Market .....	52
Fabric Items .....	52	Trade, German .....	38
German Wool Trade .....	38	Woolen Industry, Situation of Can'n ..	43
Gessner's New Century Press .....	40	Mill Situation .....	33
Hosiery, British vs. Foreign .....	34	Mills and the Tariff .....	39

### THE WOOLEN MILL SITUATION.

The situation of the Canadian woolen mills, under the preferential tariff, was briefly defined in last issue. The subject has been discussed a good deal during the past month in the newspapers and among public men, and a few opinions of the press, pro and con, are given elsewhere.

While this issue is going to press, a deputation, representing about 200 Canadian woolen mills, is waiting on the Dominion Government to lay before it the position of the home manufacturers at the present serious crisis. The deputation will represent that some nine months ago, when the Government announced its intention to increase the preference on British goods from 25 per cent. to 33 1-3 per cent., a strong deputation of our woolen manufacturers waited upon it to point out how this change would operate against the woolen industries of this country. They then

emphasized the spirit of loyalty and attachment that was felt equally by every manufacturer towards the Mother Land, and they raised no objection to the Government of the Dominion of Canada giving a fair preference to the products of Great Britain, so long as adequate protection was maintained for Canadian industries, and provision made to prevent the importation of German and other foreign goods, through the English channels for the purpose of securing the benefit of the preferential tariff. They pointed out, however, that with the resulting low tariff on woolen goods, this industry could not hold its own. At that time it was possible only to express their apprehensions as to what would result. Now, however, actual facts, as exhibited by the Government's own returns, show that the importation of woolen goods in the fiscal year ending June 30th, 1900, and those of the three succeeding months are vastly greater than ever before. The extent to which these foreign made goods are obtaining a foothold in our limited Canadian market is alarming, and this, coupled with the dullness prevailing in the Canadian woolen industry, indicates that under present conditions a great number of our woolen industries are doomed to disaster in the very immediate future.

The woolen manufacturers are now preparing statements that will prove the existence of these conditions, and they suggest a moderate increase in the tariff, so as to place the woolen manufacturers on a more favorable basis, and so preserve to Canada one of her most important industries, in which is invested some \$15,000,000 of capital, employing 12,000 persons, and supporting at least 60,000 people.

As pointed out in this journal at the time the preferential tariff was made, a great injustice was done to the Canadian woolen and other textile manufacturers in that all our mills were equipped with machinery on which a high rate of duty was paid, thus greatly increasing the cost of equipment, while at the same time no home industry was protected by the duties thus exacted since, for years past, no concern in Canada makes heavy textile machinery, such as looms and spinning machinery. The only concern to-day making this class of machinery is the Northrop Loom Co., of Valleyfield, started a year or two ago, and which makes a special type of loom for cotton mills only.

\$8.10; German machines, \$7.90; folders, \$6.80; shapers, \$6.35.

Females—Winders, \$4.55; embroiderers, \$4.50; ironers, \$4.50; cutters, \$4.40; button sewers, \$4.40; sewers, \$4.25; stampers, \$4.14; menders, \$4; unravelers, \$1.88.

Children—Helpers on cotton machine, \$4.15; nappers, \$3.90; apprentices, \$2.30.

FOR THE CANADIAN JOURNAL OF FABRICS

## THE CHEMISTRY OF PAPER MAKING

BY JOHN WADDELL, B.A., B.SC., PH.D.,

PROFESSOR OF CHEMISTRY IN SCHOOL OF MINING, KINGSTON.

The manufacture of paper is largely a mechanical process. The foundation material is cellulose which is derived from various sources and is provided by nature in a state of greater or less purity. Cotton fiber is almost pure cellulose though slightly modified on the outside and having a protecting film of wax and oily matter. The fibres consist of a single cell, for the most part between one and two inches in length and about 1-2000 inch in diameter. Linen fiber is not so pure cellulose as cotton but is stronger and has greater lustre.

In cotton and linen thread the fibers are twisted together in the direction of their length, and cloth is woven from threads which run in two directions. But in paper, the fibers should lie in all directions forming a felt, the length of fiber not being so important a matter as in thread and cloth. Hence when paper is manufactured from rags these must be torn and divided in such a way as to isolate the individual fibers. The mechanical treatment is however not usually sufficient. Rags are often dirty and must be cleaned. This is done to a certain extent by beating, but afterwards the rags are boiled for several hours with soda or lime. This treatment, moreover, removes size and attacks colouring matter which is thus more easily bleached. The amount of caustic soda is from five to ten per cent. of the weight of the rags, the pressure under which the boiling takes place is two or three atmospheres. Too great pressure would fix the dirt in the rags instead of removing it. For delicate fibers some manufacturers prefer lime, as being less injurious to the fibers, but a larger proportion of lime than is actually necessary to reduce the stock must be used and the excess must be washed out. Furthermore, lime is liable to contain small gritty particles which are apt to become fixed in the fibers.

Since the length of fiber is not so important in paper as in cloth, cellulose, which is not suitable for the latter may be employed in the former, and though cotton and linen rags furnish the best paper other raw material is largely used. Before the year 1837 there was in Britain an excise duty on paper of 3d. a pound and the demand for paper could be easily supplied by the use of rags. In that year the duty was reduced to 1½d. and the demand increased. When in 1861 the duty was abolished altogether, the demand for paper became still greater and other raw materials came into requisition, for example straw, esparto

or Spanish grass, and, most important in this country, wood pulp.

A very coarse paper may be made by simply grinding wood to a pulp, but the cellulose is mixed with intercellular tissue such as lignin and resinous matters which turn brown on exposure to light. "Mechanical pulp" is not suitable for the finer qualities of paper for which "chemical pulp" may be used. Chemical pulp is usually made by the action of soda or calcium bisulphite upon wood which has first been cut into boards, and, after being freed from knots, is broken or cut into small chips.

It may readily be imagined that many other chemicals have been used for the purpose. In most cases the action has consisted in hydrolysis or an addition of water, more or less aided by secondary reactions. In 1866 a process involving the use of water alone at a temperature of 150°C (302° Fahr.) was made use of. A brown pulp is obtained containing 70% of the original wood but there is an accumulation of matters of an aldehydic nature and there is a reversal of the reaction the wood being dehydrated by the high temperature. The addition of hydrochloric acid was tried for some time in Switzerland, and coarse packing paper was made, but the process was open to the same objection as with water alone. In 1852, the action of nitric acid was tried, also in 1862. Here the hydrolysis was aided by the oxidising action of the acid and a yield of pulp of 40% was obtained. But it is difficult to get large vessels to withstand the action of the acids and nitric acid is liable to yield explosion compounds.

Caustic soda was first used in 1853 and for some years continued to be the most suitable reagent discovered. There have been many patents and many slight variations in detail but the process practically consists in boiling the wood at a temperature 150° to 180°C (302° to 356° Fahr.) the pressure being about 90 pounds. The solution contains 10% to 20% caustic soda and the boiling is continued from eight to twelve hours. In some cases there is an alternation of treatment with soda and with chlorine, the soda in the later treatments being dilute. In the treatment with soda, the oxidation goes farther than with water or hydrochloric acid; for, instead of aldehydes, acids are produced and these uniting with soda form salts. The action is complicated as is shown by the number of bi-products.

In 1866 Tilghmann made use, though not very successfully, of sulphurous acid as a digester of wood, but obtained better results with acid sulphites. In 1882, Pictet also made use of sulphurous acid and apparently with some success. The sulphurous acid is largely recovered by being allowed to blow off from the digester into cold water where it is absorbed. As the sulphurous acid is little changed in the digester, its better action than that of hydrochloric acid is probably to be attributed to unstable compounds being formed under pressure and decomposed when the pressure is removed. About 40% of the wood is changed into a soluble modification and the brownish pulp which is left gives on bleaching a pure cellulose.

The rise of acid sulphites has an advantage over sulphurous acid alone. Calcium bisulphite is the most common reagent because usually the cheapest, but the presence of

magnesia is no disadvantage, hence magnesian limestone may be used in the preparation of the bisulphite. Limestone in a tower is subjected to the combined action of water and of sulphur dioxide, the gas being introduced at the bottom of the tower and melting a stream of water which trickles down over the limestone. The action of the bisulphites is very similar to that of the acid, but the organic aldehyde and acids produced, unite either with the sulphite itself or with its basic part. Secondary reactions by which tarry products are formed, when the acid alone is used, are not produced when the bisulphite is employed, probably because of the firm compounds formed by the union of bisulphite with aldehydes. The pulp has a brownish to creamy shade, not being so dark as when sulphurous acid is used. A larger amount of bleach is however required than one might expect from the light colour, 15% to 30% of bleaching powder being required. The bleaching causes little loss of cellulose the amount of which obtained is nearly if not quite half of the quantity of the original wood. The formation of the aldehyde bisulphite compounds helps in the hydrolysis of the ligno-cellulose which is one of the chief constituents of wood requiring decomposition. Since the soda and the bisulphite processes are the main competitors it is well to consider the relative advantages and disadvantages. The object aimed at is the loosening of the fibres from the encrusting material, including resin. Boiling with either soda or sulphite does this, but the resin is saponified by soda and is easily washed away. Though continued washing of the sulphite pulp with hot water, especially if containing hydrochloric acid, removes resin, the pulp darkens somewhat, and in some cases (doubtless where a special bleaching is omitted) a little bisulphite is added after the washing to improve the color. The improvement is, however, temporary, the paper is weakened, and soon becomes yellow. Digestion with soda gives a softer and more opaque pulp, but at the high temperature and great pressure necessary, partial dehydration of the wood takes place causing something similar to charring, and so producing a brown color. The cellulose itself is also attacked, and thus the fibre is weakened. The yield of pulp is considerably less, being in the case of white pine approximately 33% of the original wood, while treatment with bi-sulphite gives 45% to 50%.

There is an economy in the soda process, in that the soda can be easily recovered the solution being evaporated to dryness, and the residue roasted, thus forming carbonate. When heat for evaporation is easily obtainable the cost of recovery is small. The bi-products of the bisulphite treatment have so far formed no industrial application notwithstanding the fact that they contain non-cellulose materials in an almost unchanged condition. Which process may be most suitable, sometimes depends upon local conditions; the sulphite process is what is to be employed in the large mills at Sault Ste. Marie. Sulphite prevents oxidation, a feature of the soda treatment which diminishes the effect.

In the making of paper, boiled rags, grass, straw or wood, or a mixture of these materials, is thoroughly

broken up into the small fibres in a "beating engine" or "hollander," in which also the bleaching is frequently carried out, though a separate vessel, the "potcher" is sometimes used. Bleaching powder is the most common re-agent, the addition of alum to which is an advantage, preserving the fibres, probably because of less violent action.

The electrolysis of magnesium chloride solution is also employed. The solution contains 5 per cent. or less of magnesium chloride. By its electrolysis hypochlorous acid is produced at the positive pole and bleaches the material. The bleaching is more rapid than with bleaching powder, causes less loss in the substance bleached for the degree of whiteness obtained and requires less available chlorine.

When the bleaching is completed the bleach must be washed out or neutralized by an "antichlor" of which sodium hyposulphite (theosulphate) is the most common. Bleaching by chlorine in water or by hypochlorous acid, is practically a case of oxidation and the antichlor is a reducing agent.

Cellulose is the main constituent of paper, but pure cellulose forms a felt that is too open, and would allow ink to spread. Hence some substance is added to fill up the interspaces and to give the paper a firmer texture. This process is called loading. The loading material is often kaolin, but for the better qualities calcium sulphate (pearl hardening) barium sulphate and agalite (a form of magnesium silicate) are used. The loading is from 3% to 20%, or in some cases even as much as 40%. The loading must be in a fine state of division, and must not be allowed to settle to the bottom. Special care must be taken with barium sulphate, owing to its great specific gravity. The loading is added in the beating engine, where also some colouring matter is frequently put in. Bleaching gives a slightly yellow tint to the stuff, and to counteract this shade ultramarine is commonly employed. For making coloured papers aniline dyes are largely employed, though mineral colouring matters are also used. Starch is added to pulp, so that in the later stages it may give the paper a hardness and glaze that would not otherwise be attainable.

Sometimes size is also added in the beating engine, though sometimes it is applied later to the paper when formed. The object of size is to fill the pores even more completely than is done by the loading, and a material is chosen which has the power of resisting the action of water to at least a certain extent.

When size is added in the beating engine the material used is resin soap obtained by the action of soda on resin. Alum is afterwards added. If the sizing process is postponed till the pulp is manufactured into paper the material used is gelatine. But the chemistry of sizing is too complicated to be discussed at the end of an article. The pulp having been prepared it must be properly strained and supplied regularly to the frames of wire gauze, on which it is deposited, and on which the fibres are felted together, whence the paper is passed between press rolls, drying cylinders and calender rolls to compact, dry and polish the paper,

This part of the process has, however, little of a chemical nature in it.

—We would call the attention of the binder twine factory boomsters to the parallel drawn in another column with the history of cotton mill booming in the eighties. The remarks of the *Cordage Trade Journal* quoted in this issue, are also apropos.

### BURNING OF THE ARMY AND NAVY CLOTHING STORES.

A disastrous fire broke out in the Army and Navy clothing stores at 129 to 135 King street east, Toronto, on February 1, which might have caused a terrible loss of life. Luckily it was the dinner hour, and the employees were just returning to work, but some 30 men and women were at lunch at the top of the building, and on the alarm reaching them all but about a dozen rushed through the smoke and felt their way down the stairways and escaped. Those who were left on the second floor groped their way to the front windows, which they broke, and leaped into the fire nets held by the firemen to catch them. There were ten women and two men who jumped from the second floor windows as fast as the firemen could catch them; the girls displayed admirable courage in jumping, and only one of them Ada Morton, was seriously injured, by striking a sign as she fell. Richard Neville was also severely injured, breaking his leg in two places. The fire gutted the ground floor of the premises, but was confined to the building. The stock in the Army and Navy stores was destroyed. The stock was owned by Robert Mackay, for whom W. A. Thompson (formerly of the John Eaton Co., whose premises were burnt four or five years ago, giving rise to a series of law suits between the bank and insurance companies), acted as manager. The tenants on the upper floors were: B. Pollakoff, on the first floor, clothing contractor; George R. Mackie, clothing contractor for Lailey, Watson & Co., on the second floor; W. R. Johnston & Co., on the second floor, and Albert Pennylegion, clothing contractor, on the third floor. The eastern half of the building is owned by the Thompson estate, but the Bank of Toronto is in possession as mortgagee, and it is to the bank that the insurance policies are payable. The western half of the building is owned by the estate of the late Chief Justice Moss. Chief Thompson gave his estimate of the loss at \$15,000. All the insurance companies carrying risks on the stock had served notice last month on the policy-holders of their intention to cancel their policies. The fire occurred 24 hours before the expiration of the notice.

### GERMAN WOOL TRADE.

Gustav Ebell & Co., the wool merchants of Berlin, send us their annual review of the wool trade of 1900 from a German standpoint. After speaking of the remarkable decline in values last year, they say: The resolution to drop the sixth series of London sales, and to hold the fifth in October only resulted in postponing the eventual shaping of prices. As such artificial means, as a rule, only tend to create a transient effect, and lead to increased weakness afterwards, so in the present case the prevalent distrust became more accentuated. With business completely at a standstill, dealers, combers and spinners broke down in France, Germany and Austria, partly due likewise to abortive speculations in the futures markets, and it was only through the intervention of the banks that a general catastrophe was averted.

England had imported but sparingly during the time of the

rise so that when the fifth series of London sales opened with a further reduction of 15 per cent., and the Continental industry had even been compelled to throw wool upon the market in order to raise money, the English trade began to cover their most urgent requirements. Its own unaided strength, however, did not suffice to absorb the available quantity of 300,000 bales, and large withdrawals became the order of the day. Nothing can characterize better the period mentioned than the circumstance that at the beginning of the new season prices ruled lower in Australia than London parity, quite contrary to the practice hitherto observed. When in following the lead of the colonies the basis of sales-values in London gave way again up to 5 per cent., German and French buyers at last plucked up courage in face of the low level of prices and rapidly diminishing stocks. They commenced buying in London, though slowly, but continued to do so more freely at the November sales in Antwerp. The worst seemed to have been surmounted. Business soon displayed greater activity and as an increased demand leads to higher prices, wool and top towards the end of the year were sometimes transacted at an advance of more than 10 per cent. as compared with the days of the greatest depression.

America appeared only occasionally as a buyer during the year under review; as regards the future wool ought also to benefit by the general favorable state of trade there, although it would appear that on the other side of the ocean even far more than in the industrial countries of Europe the high prices of merinos have led to the employment of coarser material and substitutes.

Crossbreds in greater demand than during the previous twelvemonth, have this year accompanied the fall to a less extent, as they partook to a minor degree of the rise of the year before. Whereas merinos are 40 per cent. cheaper than they were a twelvemonth ago, fine crossbreds have receded only up to 35 per cent., medium, and coarse up to 25 per cent. A stop is thus put to their more extensive employment by merinos again offering greater advantages, a circumstance which should also make itself felt in regard to cotton and other substitutes, these having maintained an unusually high level of prices.

Taken altogether, the fall in wool has been occasioned through causes and effects which are to be sought for less in its statistical position than in consequences of a precipitate rise, so that by their removal the article ought again to recover. At any rate, the production of wool has continued to decrease, and as regards the distribution of stocks there is, as against a visible accumulation in first hands, a perceptible deficiency in second and third hands—a situation the exact opposite of the previous year! Clothing mills who have during the best part of the twelvemonth been satisfactorily supplied with orders, have been constantly in the market since the beginning of autumn. On the other hand the worsted yarn industry is still insufficiently employed, having likewise been greatly weakened financially, and at the close of the year is again existing the often regretted disproportion between prices of top and yarn and their cost of production from the raw wool bought simultaneously. Meanwhile the stock of combing yarn is visibly diminishing in consequence of the largely reduced productions of the combing mills, one result of which will be a certain firmness in the whole of this branch. If then all those concerned will only draw the lesson from the experiences of the last two years that no permanent improvement in business can take place by forcing prices or by means of mere speculation, and will allow legitimate requirements to make themselves felt, confidence will again take root, stocks which appear low for a normal state of employment will pass into consumption, and the article from the fact that production and consumption will again dictate prices, will obtain renewed vigor.

The importation of wool into Germany in 1900 showed an obvious falling off as compared with the preceding year. According to statistics more than half of the raw wool imported passed the frontier between January and March, that is to say that it had been bought in the colonies and at the River Plate at the dearest period, an eloquent commentary upon the enormous losses German wool importers, dealers and manufacturers have had to bear.

The worsted yarn branch in Germany suffered to a greater extent than cloth manufacturers, the latter having been very satisfactorily employed during the last semester, for a great deal on contracts for the army. The sale of fabrics to the home trade, which had largely provided itself a twelvemonth ago became dull. On the other hand the exportation of woollen yarns and goods amounts approximately to the same figures as in the previous year, a fact all the more pleasant to record under the existing trying circumstances.

The import of Cape wool into Germany amounted to:

	1900.	1899.	1898.	1897.	1896
Bales .....	80,000	155,000	137,000	118,000	129,000
Bales .....	1895.	1894.	1893.	1892.	1891.
	104,000	97,000	103,000	85,000	99,000

The diminished importation of Cape wool into Germany may be accounted for as well by the general state of trade as by the war in South Africa. The quantity not shipped is estimated to be 70,000 bales, partly held up country from want of transport, and partly warehoused at the ports in hope of obtaining better prices later on. The production may be short altogether by about 50,000 bales owing to the war; the quality of the wool, however, has not suffered. Over 30,000 bales of Transvaal and Freestate wools—being comprised in the above named quantities—were shipped via the neutral port of Lorenzo-Marques as consignments to continental firms of which about 4,000 bales were put up for public sale in Hamburg in the month of September finding a ready sale.

Imports into Germany and exports, taken from the Imperial Board of Trade returns, viz.:

WOOL AND SHODDY.

Imports—

	1900.	1899.	1898.
Wool } grease and fleecewashed... 1,265,500	1,612,800	1,768,100	
Shoddy .....	114,200	134,600	118,800
Total.....	1,495,400	1,911,100	1,886,900

Exports—

	1900.	1899.	1898.
Wool } grease and fleecewashed... 41,400	53,400	88,700	
Shoddy .....	143,100	151,200	149,400
Total .....	221,900	241,600	238,100

Excess of imports over exports..	1,273,500	1,669,500	1,649,000
German production .....	225,000	225,000	225,000

Left for consumption in the German Empire .....	1,498,500	1,894,500	1,874,000
---	-----------	-----------	-----------

WOOLEN YARN AND WOOLEN GOODS.

Imports—

	1900.	1899.	1898.
Woolen yarn .....	247,500	264,600	231,700
Woolen goods .....	20,600	18,600	17,500

Exports—

Woolen yarn .....	88,300	88,500	85,700
Woolen goods .....	256,000	261,000	264,300
Total imports .....	268,000	283,000	249,000
Total exports .....	344,500	349,500	350,000
Excess of exports over imports..	76,500	66,500	101,000

The above figures represent hundreds of kilograms. A hundred kilos is about 220 lbs.

THE WOOLEN MILLS AND THE TARIFF.

The following statement has been issued by the woollen manufacturers' section of the Canadian Manufacturers' Association, relating to the preferential tariff:

1st.—There is perhaps no manufacturing industry in Canada that has such a wide distribution, and is so common to all the different parts of the country as the woollen manufacturing industry

Almost every town or village has its woollen mill, taking the raw product direct from the farmer and converting it into some form of manufactured article for general use. Consequently the prosperity of this industry affects directly every class in Canada.

2nd.—The development of this industry in Canada has, however, been attended with the greatest difficulties. A comparison of the following items shows the conditions under which woollen manufacturers in Canada are placed as compared with mills in England.

(a) A woollen mill in Canada will cost from 40 to 50 per cent. more than one of the same capacity will in England. This is caused in part by the duties paid upon machinery (of which little has been imported under the preferential tariff, and hence has paid a duty of 30 to 35 per cent.), and also by the freight and packing expenses, (10 per cent. on machinery). The difference in this original outlay is a most important item.

(b) On the raw material, wool, as part of this is imported, a Canadian has to pay the freight, insurance and exchange, placing him at a disadvantage of from 2½ to 4 per cent., also an important item.

(c) Fuel is fully 50 per cent. cheaper in England; while owing to the milder climate at least 20 per cent. less is required.

(d) Wages are fully 40 to 60 per cent. higher in Canada than in England, while the difference as compared with Germany is still greater owing to the longer hours of labor in these countries.

(e) In England the average rate of interest is about 3½ per cent. as compared with 6 per cent. in Canada. This is a material item as it must be calculated as a fixed charge on the plant as well as on the working capital.

(f) A careful calculation of the differences arising in these points will show that the cost of production of woollen goods in Canada is of necessity from 30 to 33 per cent. higher than with British mills.

3rd.—British manufacturers continue to make large quantities of woollen goods for the United States, but on account of the high duty that has been in force since 1896 (100 to 200 per cent.) they can only export those lines that are in the height of fashion. When any line becomes unsaleable in that market through change of style, it is sold at a sacrifice to Canadian dealers, this country being the only one suitable for such goods.

In addition to this, many lines manufactured as above are retained in bond by United States merchants in New York, and if found unsaleable in the United States are sold into Canada in bond at a sacrifice, and then only pay duty according to the



invoice price, and so not proportionate to their value. This may not be according to law, but it is the actual condition.

4th.—The enormous reduction in ocean freight rates and the rapid delivery of goods make it now possible for goods to be laid down from Liverpool in car trade centres at greatly reduced prices, and the increased cable facilities affording a despatch that was formerly impossible, has eliminated a great portion of the former protection which accrued to Canadian manufacturers.

5th.—Another condition that the Canadian manufacturer has to face is the practice, which has now become common with many English manufacturers, of filling with chemicals woolen goods, with the object of giving them false weight and firm feel.

Reference to the leading textile journals of Great Britain and the United States indicates to what extent this practice has obtained among English manufacturers.

6th.—Further, there is good ground for belief that a large quantity of woolen goods made in Germany, Belgium and France, are being sent through English channels and receiving the benefit of the preferential tariff and competing most seriously with Canadian goods.

7th.—These conditions make it imperative that woolen manufacturers must have a net protection of at least 30 per cent. to enable them to compete with foreign mills. Since the reduction of the duty by the preference given to Great Britain, the imports have increased at an alarming rate so that for \$100 of woolen goods imported in 1897 there were \$141.90 imported in the fiscal year ending June 30th, 1900, and \$51.50 in the three months of July, August and September of 1900, which at the same rate for the whole of the present fiscal year would mean an importation of \$206. This was for three months following July 1st when the increase in the preferential to 33 1/4 per cent. came into force. Details of this are shown in Table III.

8th.—The following tables will indicate how serious has been the growth of the import of woolen goods during the past three years:

I.—TABLE SHOWING VALUES OF IMPORTS OF WOOLEN GOODS BY CLASSES, BY FISCAL YEARS WHICH END JUNE 30TH, EACH YEAR

ARTICLES	1897	1898	1899	1900	JULY, AUG., SEPT., 1900	
					For three months only	Which at same rate for whole year would be
Blankets .....	\$16,651	\$50,708	\$39,362	\$49,720	\$8,531	\$34,136
Cassimers, Cloths, Doeskins, Tweeds	1,616,173	1,599,156	2,073,491	2,228,256	1,012,312	4,049,248
Coatings and Over-coatings.....	443,574	498,290	558,821	592,131	177,670	710,760
Felt, Cloth and Horse Collar Cloth	31,721	38,783	40,215	27,292	13,309	53,236
Flannels .....	58,427	57,412	64,810	84,314	42,432	169,728
Knitted goods, Hosiery, Socks, Under shirts and Drawers	576,410	710,838	951,196	876,600	286,643	1,146,572
Shawls .....	58,466	57,114	77,448	73,174	48,686	194,744
Yarns.....	165,004	217,639	311,861	378,943	138,198	552,792
Fabrics, N.E.S. Dress Goods, Coat Linings, etc.....	2,579,798	3,098,388	3,425,182	3,447,905	1,264,979	5,075,636
Carpets .....	617,895	719,070	915,604	991,630	186,662*	746,648
Felt .....	128,651	183,373	178,083	173,399	60,731	242,924
Shoddy.....	874	1,419	717	9,414	585	2,310
Totals of Woolens above.....	6,295,057	7,232,250	8,676,790	8,933,007	3,244,691	12,978,764
Total Duitable Goods entered for consumption.....	66,220,765	74,625,088	89,413,172	.....	27,960,300	111,841,200

\*The imports of Carpets for the three months are really no criterion, as it is a time of year when very few are imported.

II.—TABLE SHOWING VALUES OF IMPORTS OF GARMENTS MADE FROM WOOLENS

ARTICLES	1897	1898	1899	1900	JULY, AUG., SEPT., 1900	
					For three months only	Which at same rate for whole year would be
Shirts of Wool.....	\$10,319	\$14,835	\$34,197	\$30,946	\$4,161	\$16,644
Blouses and Shirt-waists.....	.....	599	113	10,651	5,488	21,952
Ready-made Clothing.....	810,721	896,855	1,025,090	991,295	434,262	1,737,048

III.—TABLE TO SHOW GROWTH IN IMPORTS SINCE 1897, IN PERCENTAGE OF 100

ARTICLES	1897	1898	1899	1900	JULY, AUG., SEPT., 1900	
					For three months only	Which at same rate for whole year would be
Blankets .....	100	305	230.2	298.4	51.2	204.9
Cassimers, Cloths, Doeskins, Tweeds	100	98.9	128.3	137.9	62.6	250.5
Coatings and Over-coatings.....	100	112.4	126	133.5	40	160.2
Felt, Cloth and Horse Collar Cloth	100	115	119.3	80.2	39.5	158
Flannels .....	100	98.2	110.9	144.3	72.6	291
Knitted Goods, Hosiery, Socks, Under shirts and Drawers	100	123.3	165	152.8	49.7	199
Shawls .....	100	97.6	132.4	125.1	83.2	333
Yarns.....	100	131.9	189	229	83.8	335
Fabrics, N.E.S. Dress Goods, Coat Linings, etc.....	100	120.1	132.5	133.6	49.2	196.7
Carpets.....	100	116.4	148.2	160.5	30.2	121*
Felt.....	100	143.2	139.1	135.5	47.4	190
Shoddy.....	100	162.4	83.2	107.6	66.9	267.7
Totals of Woolens below.....	100	115	137.5	141.9	51.7	206.2
Total Imports Duitable entered for consumption.....	100	112.3	135	.....	42.2	168.9

\*Please note the large increases in imports for the three months of July, August and September, 1900, when the additional preference went into force.

DAVID GESSNER'S "NEW CENTURY PRESS."

AN INTERESTING TALK ON CLOTH PRESSES.

Twenty-two years ago the writer began to introduce into the United States his father's, Ernest Gessner's, double bed rotary press. It was the first original double-bed machine ever seen or used here. To-day hundreds of these old style Gessner machines are still running successfully in this country and Canada, giving good satisfaction. Had it not been the well-designed machine it was from the beginning, its popularity would not have endured after the incoming, later on, of other makers of rotary presses, who copied the double-bed system, but fail to produce anything better.

Good machine though the old-style Gessner press was, it contained certain faults. Chief among these was the impossibility of breaking contact between cylinder and bed plates when the pressure was removed, the bed plates still lying up against the cylinder even after a releasing of the pressure had been effected, thereby causing press marks whenever the machine had to be stopped.

It likewise was impossible to take out the bed plate lining or jacket, or to insert a new one, without dismantling the

machine to a considerable extent. A dismantling of it was required also when the cylinder needed to be taken out. These operations had to be followed every time by a readjustment of the pressure at the sides because, in dismantling the machine, the nuts which screw on to the ends of the coiled steel springs on top of the uprights of the old style Gessner press, had to be invariably removed, as had the springs themselves. Consequently after the machine was put together again, and the springs and these nuts were replaced and cloth was introduced, the press had to be regularly evened up again at the sides by a readjustment of the nuts at both ends, which involved more or less tinkering.

mony. The former coiled steel springs on top of the uprights have been superseded in the new machine by powerful pressure arms, hammered hard and straight out of a high-grade steel, and having simply a downward bend or horn at the front. When removing the detachable pins which unite these pressure arms with the screw connections on top of the rear uprights, the screw connections remain undisturbed, and the pressure arms can be turned upward and aside and out of the way of the cylinder when lifting the same from between the bed plates, which are mounted, as formerly, in the uprights. Connecting links pivoted inside the uprights, and shackled to swivel heads revolubly mounted inside the main frames a little below the

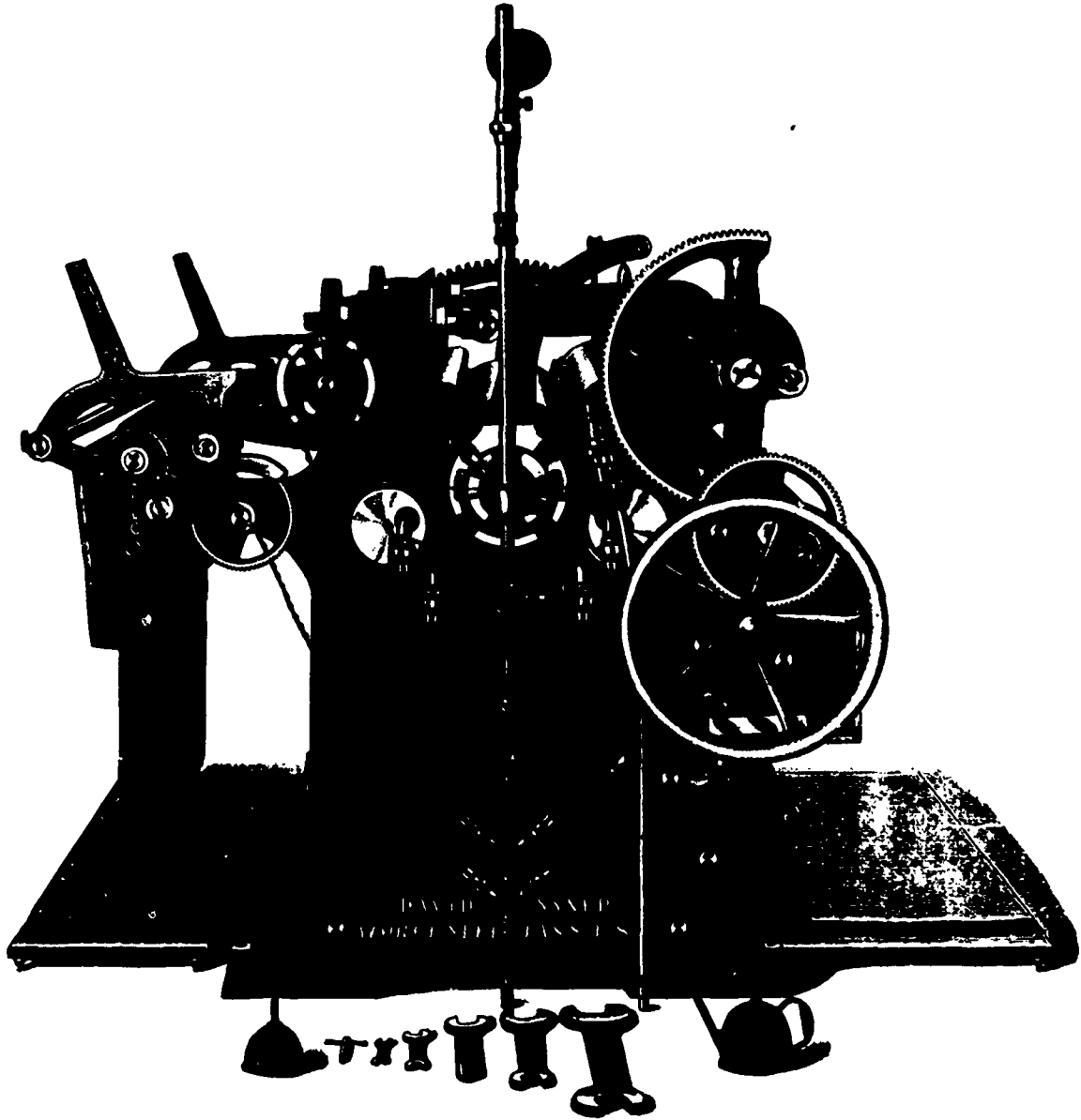


FIG. 1.—UNDER PRESSURE.

Another difficulty met with when pressing goods requiring a very hard pressing, was the too easy yielding of these coiled steel springs, so that it became necessary sometimes to replace them by straight bars, which, on the other hand, proved too rigid. All these objections have been completely removed in the machine illustrated to-day. Here a few turns of the hand wheel suffice to instantly throw off the bed plates for several inches from the cylinder, thus not only breaking contact whenever the pressure is removed, but giving a sweeping view of the pressing surfaces, and allowing ample room for taking out or inserting at any time a pair of jackets without any further cere-

cylinder bearings, permit tilting backward of the uprights. The length of these connecting links is so proportioned that when the uprights tilt back their full limit the uprights are held far enough apart by these connections to create ample room between the beds for the upward removal of the cylinder between them. No bracing up of the uprights is, therefore, required during this procedure or danger connected with it, as is the case in the old style Gessner presses. The only one thing necessary for the removal of the cylinder is a disconnection of the unions of its steam piping, and a removal of the caps that hold down its bearings. The horns of the pressure

arms where they are pivoted to the toggles of the power shaft upon the front uprights, render them yielding to a certain extent; however, they are plenty stiff enough to make the highest pressure ever demanded of the machine at all times an absolutely positive one.

To move the toggles that are keyed to the power shaft from the position shown in Fig. 1, for pressure, into that shown in Fig. 2, for no pressure, or vice versa, only a few turns of the large hand wheel are required, which is connected with the toggle shaft by compound gearing, so proportioned that no

are shackled to the straight ends of the pressure arms by detachable pins, can be lengthened or shortened at will by turning a little hand wheel at the ends of the worm shaft which engages with worm wheels screwed to these connections. Thus, the degree of pressure exerted by the pressure arms may be increased or decreased ad libitum. Turning the large hand wheel at the front uprights causes the toggle shaft on top of it to revolve until its toggles connecting with the horns of the pressure arms are carried a trifle over the centre, thus locking the beds firmly against the cylinder, as shown in Fig. 1. Or,

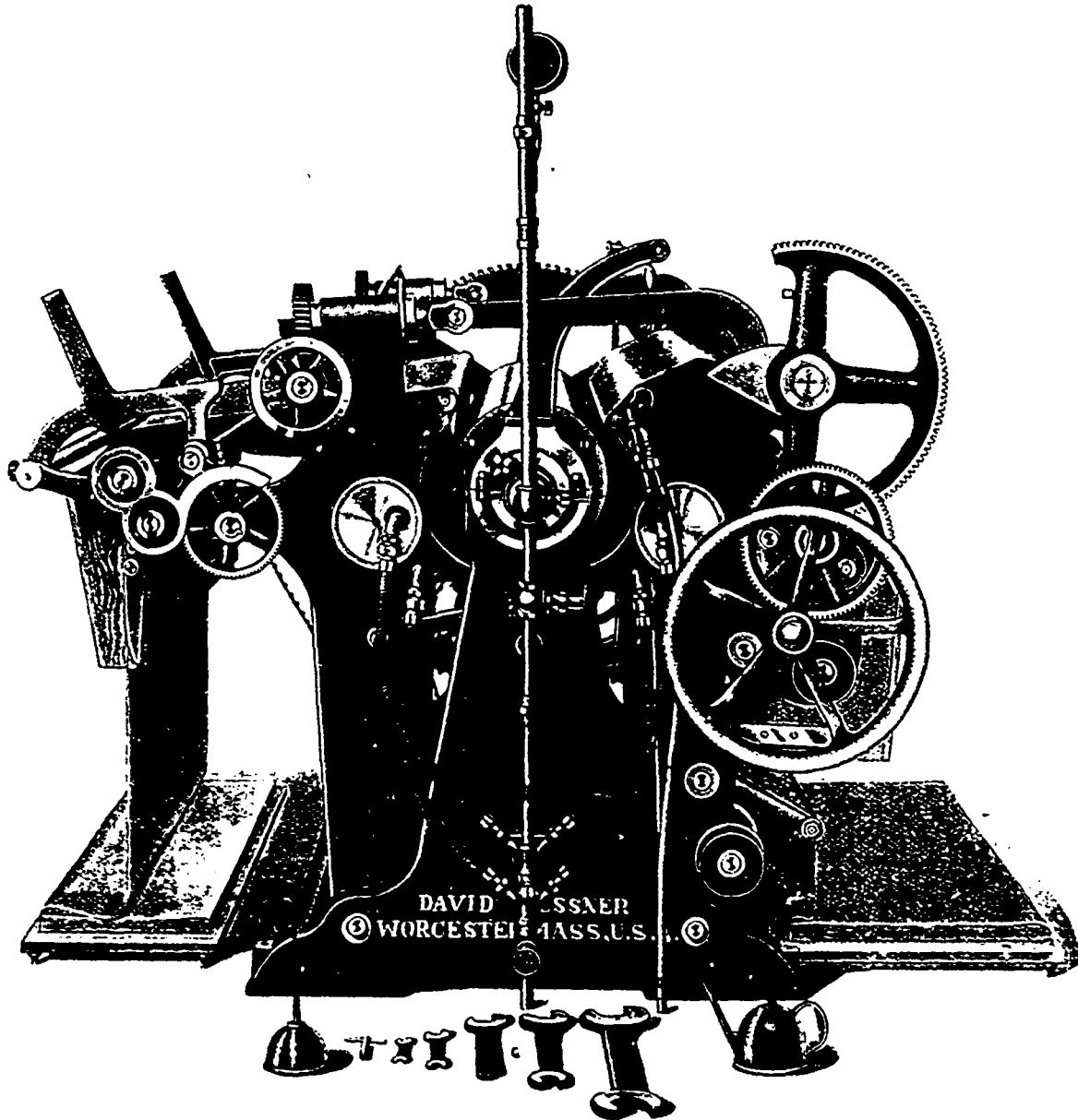


FIG. 2.—PRESSURE REMOVED.

effort is required to effect either the prompt putting on or instantaneous taking off of the pressure. The throwing open of the pressing surfaces in this manner never in any wise interferes with the steam connections of the bed plates. These connections are made of patent flexible metallic tubing, coming and going easily with every movement of the uprights, and never causing trouble by leaking.

All inlets and outlets of the steam connections for the bed plates and cylinder being confined to one end, they are easily gotten at all times without conflicting in anywise with other parts of the machine when applying wrench or pipe tongs.

The screw connections on top of the rear uprights, which

if this same hand wheel be turned the other way (see Fig. 2), the toggle shaft reverses until the toggles assume the reverse position, which causes the uprights and beds to fall away from the cylinder.

This falling away of the uprights when the pressure is removed causes the same open space between the front bed and the cylinder as between the rear bed, because the length of the connecting links between the uprights and the swivel heads inside the main frame is the same at both uprights, so that a pushing away of one is accompanied by an equal pushing away of the other upright at the same time. Hence, the beds always move simultaneously and alike. Turning the small hand

wheel upon the end of the main shaft at the rear upright to one side or the other, shortens or lengthens, as already stated, the screw connection of the pressure arms, hence increases or decreases the pressure. As this worm shaft, however, consists of two separate valves that are connected only by a sliding coupling, or clutch, a separation of this clutch permits, therefore, an independent turning of the worm at either end of the machine whereby the screw connection of each rear upright can each be lengthened or shortened independently of the other, while the screw connections can be moved in unison when the two halves of the worm shaft are locked together by the clutch.

This saves not only the bother of hunting up a wrench every time an adjustment of the pressure at the sides is deemed advisable, but it enables the operator to make a much nicer and more accurate adjustment, for by simply counting the number of the turns of the worm that he may elect to make (which means one tooth of the worm wheel to every turn of the worm), he knows precisely what he is doing.

A dial with numbers, facing both toward the front and the rear of the machine, records the changes made in the pressure by the operator. The beds of this machine are steam ground, that is to say, after planing, steam is placed inside of them of the same pressure as used subsequently in pressing at the mill, and while thus heated, all uneven swelling of the iron is cut out, until the pressing surfaces become absolutely true. The same thing is done with the cylinder.

Thus, and thus only, perfectly correct pressing surfaces can be had in any rotary press, and such could not be claimed for the old style Gessner press any more than for other machines following to-day in its wake. Should, in time, the middle of the beds become sprung by excessive trussing at the back, my patent double acting truss screws permit a pulling back of the centre as readily as they allow its pushing forward, which is another feature lacking in other machines of this kind, old or new.

The brushes of this machine can be turned end over end in their bearings to prevent one-sided wear of the bristles, and both of them can be reversed also as regards the direction of their speed, that is to say, the face or back of the goods can be brushed in either direction. The belt which drives them is self-adjustable, keeping always uniformly tight.

The height of the new machine has been reduced somewhat when compared with the old style Gessner press, but it is much more powerfully geared and built heavier throughout. All gears are cut from solid blanks, the pinions being cut from bar steel. The bearings are bushed with phosphor bronze, including the cylinder bearings, and all bushings are standard size, and made interchangeable. The cylinder bearings are self-oiling, and will require no attention for weeks at a time. No other press on the market is any better appointed in this respect. It insures sound cylinder bearings for many years to come, and prevents all cutting and grinding of the cylinder journals. All other parts, including even the frames, are made interchangeable also, and provided with numbers, so that, in ordering duplicate parts, no lengthy explanations are required, and confusion is avoided, while the workmanship is such that a perfect fit is guaranteed, all of which makes this machine the most desirable kind of press for mills located at a great distance. It is the export machine "par excellence."

No other rotary press was ever made simpler throughout, fitted up more carefully, or put together more nicely and accurately than this new improved machine, which I have styled my "Century press." It will be shipped to any reputable manufacturer who may wish, before purchasing a press, to try "The Century" alongside any other make rotary press in the market.

in order to let him determine for himself which is the best machine.

DAVID GESSNER.

Worcester, Mass., February 1, 1901.

### THE NEWSPAPER PRESS ON THE SITUATION.

The Canadian woolen industry is a fearful sufferer because of the tariff preference. Under the previous conditions our woolen manufacturers found their industry fairly well protected. They were obtaining a reasonable return upon their investments, they were giving occupation to large numbers of employees, they were paying good wages to labor, they were supplying consumers with fabrics than which there was none better, and at reasonable prices, and their mills required all the wool Canadian farmers could produce. But the tariff preference has spoiled all that, and the woolen manufacturers are facing the fact that unless something is done to avert the calamity, they will have to go out of business. Under a thirty per cent. tariff their industry was fairly prosperous, and if it is to again enjoy that prosperity, either the tariff preference as affecting woolen goods must go, or, if the preference is to be maintained, the duty must be increased to say forty-five per cent.—Canadian Manufacturer.

The report throws a good deal of light upon the question of the feasibility of a mutual preferential arrangement between Great Britain and the colonies, which in a sort of formal way the association approved. Here are men who clearly think that a reduction of one-third on the general tariff is quite enough, and ought to be safe-guarded in various ways. What would they say to the removal of the entire duty, without which the question of a reciprocal preference would not even be considered? It is in vain to say that free trade is not essential to such an arrangement, but that by some commercial miracle a plan could be conceived which would please everybody. When a public man in Great Britain says that the free importation of British goods into Canada would be an essential part of any plan of mutual preferential trade he is not merely insisting on a theory. He means that there must be an assurance that British goods will be imported into Canada in far larger quantities than at present: and this, again, means the displacement, not only of American, but of Canadian goods. The intention of a mutual preference is to substitute, to a certain extent, colonial or Imperial trade for foreign trade. It is useless to enter upon the consideration of the subject with a hazy notion that we can keep a certain trade for the Canadian manufacturer, and hand over the same trade to the British manufacturer.—Toronto Globe.

It is not too much to say that, as a party, the Liberals, from the days of Baldwin and Hincks, had always leaned to free trade. Under the circumstances in which manufacturers existed in 1896, the Government apparently believed, and acted accordingly, that to reverse the whole policy of protection, at a single stroke, would give rise to great loss among the protected class, and that some indulgence to them was in order under the peculiar circumstances. But in according that indulgence, they armed themselves with a check which a preference in favor of British, as against foreign goods, afforded. Last session this policy was emphasized by an addition to the amount of the preference. Now one class of manufacturers is inclined to seek the modification of that policy in their own favor. Such is the attitude of two parties comprising one section of the manufacturers enjoying protection to the admitted extent of 17 per cent., and the men in whose hands the full political power of the country has been committed. The majority at the back of the Government renders them absolutely supreme; the Opposition not having the least prospect of being

able to overcome that supremacy. We prefer to let the facts speak for themselves, without offering any opinion as to how the appeal of the woolen manufacturers will be met. It may be taken for granted that if the woolen men could succeed their course would be followed by many other interests.—*Monetary Times.*

Mutual preferential trade within the Empire has not yet been adopted, and until it is adopted our policy must be based on conditions as we find them. The question to be settled at the present moment is whether the mills for manufacturing the woolen goods used by Canadians should be located in Canada or Great Britain. We say without hesitation they should be located in Canada. A woolen mill in Canada ought to be just as valuable an Imperial asset as a woolen mill located in Lancashire. From an Imperial point of view Canada has just as much right to look after its interests as has Great Britain the right to look after its interests. Until Great Britain is ready to adopt inter-Imperial preferential trade we are not called upon to consider whether that principle would be inconsistent with the principle of protection to Canadian industries or not. The Canadian woolen manufacturers are asking for an increase of duty under existing conditions, not under conditions which do not exist.—*Toronto World.*

The Ottawa Free Press says it is the general impression that the Government is not going in for any revision of customs tariff this session. Letters are pouring in, however, from a variety of interests calling for more favorable tariff consideration.

Sells Commercial Intelligence calls attention to the means resorted to in Germany to enter the manufactures of that country as those of Great Britain in order to secure the benefits afforded under the Canadian British preferential tariff. According to *The Frankfurter Zeitung*, a large number of German goods are sent to this country to be made up as British goods, and then despatched to Canada to take advantage of the preferential tariff. If this be true it is high time that the Canadian customs took special precautions to guard themselves against an impudent imposition. According to our contemporary a case in point was recently brought to light: Some German dress material had been made up as British in England, and duly found its way to Canada as *British made*, and discovery of the fraud occurred only because the British intermediary had not done his work thoroughly, and allowed some old German newspapers to remain between the folds of the material. Of course as we all know, custom houses are like acts of Parliament in one respect, viz., people soon find how to drive coaches and four through them, but it is particularly hard on Canada if much of this kind of thing occurs.—*The Shareholder, Montreal.*

#### TORONTO BOARD OF TRADE AND THE PREFERENTIAL TARIFF.

The president of the Toronto Board of Trade in his annual address thus referred to the operations of the preferential tariff: This country, however, in the matter of Germany, is able to retaliate by shutting out German products. German goods come into this country on equal terms with those of any foreign country. Our total imports from Germany last year amounted to \$7,382,000; our exports only totalled \$2,220,000, of which \$1,120,000 represented the value of foodstuffs, two-thirds of which consisted of Indian corn from the United States, which merely passed through Canada in transit. At one time we exported cattle to Germany, but we are not able to do so now under the tariff. It would seem that we have the matter in our own hands, and as our imports from Germany are so large in comparison with our exports to that country, we should be able, even without reference to the Imperial authorities, to stop

this discrimination. No nation having any respect for itself would continue to submit to such an injustice, without in some practical way showing its disapproval. I venture to think that if Germany discriminated in her tariff against the United States in like manner, that it would not continue for a longer period than the time it would take for the United States Government to pass a retaliatory law. Under the United States tariff nearly double the rate of duty is exacted on importations from Germany, than those which are levied by Canada; moreover our imports from Germany are steadily increasing, yet the products of the United States have fair treatment by Germany, and we are discriminated against, doubtless on account of the recognized easy going methods of the British people, in respect to trade matters when dealing with foreign countries.

#### WM. PARKS AND SON'S COTTON MILLS.

At a meeting of the stockholders of the New Brunswick Cotton Mills (Wm. Parks & Son, Ltd.), held in St. John, January 31st, the directors submitted a report showing the conditions of the liabilities and assets to be as follows:

##### LIABILITIES.

Mortgage and interest .....	\$138,000
Bills payable and open account, partly secured by stock of cotton in process and supplies, etc. ....	75,000
Taxes and water assessment .....	2,000
	<hr/>
	\$215,000

##### ASSETS.

Land, building and machinery in mill of the company	\$608,726
Stock in process and supplies.....	40,000
	<hr/>
	\$648,726

The directors' report, as given the *St. John Telegraph*, attributed the cause of the present difficulty to the fact that the company could not secure its supply of cotton in the summer of 1899, when material was at a low price. If a sufficient supply had been obtained as it was decided judicious to do at the time the mills' profits in the last 18 months would have been \$100,000 more than they were, and the financial position would have been good. In consequence of the failure to get a supply the mills had to pay from 2½ cents to 5 cents a pound on the material and compete with other companies who purchased on the opportune occasion and made large profits.

The mortgage was placed in January, 1893, for \$200,000 at seven per cent., with a bonus of \$11,764.70. During the first year \$40,000 was paid off, and \$30,000 in each of the succeeding years, cutting the loan to \$130,000. The money realized by the mortgage did not enable the company to pay off all its indebtedness, and left a deficiency of working capital. Owing to Messrs. Jones and Turnbull commencing foreclosure proceedings to have the mortgage paid off, the Bank of New Brunswick declined to advance further funds to operate the factories.

The directors added that the business was in a healthy state so far as quality of goods and transactions with customers were concerned. Customers were satisfied and bought freely. The sales during the first half of last year were \$50,000 higher than in previous periods of the same duration. No losses were incurred by bad debts in the last year. In order to have something definite to place before the meeting the directors obtained from Jones and Turnbull an option upon their mortgage, providing for the acceptance of a new one of \$100,000 on the property for five years. A committee was appointed to consider ways and means to raise money to pay off the liabilities. Adjournment was then made until the annual meeting, which will be held February 19. Meanwhile the mills are still closed.

Since writing the above a despatch has been received by The Mail and Empire, stating that the committee reported at the annual meeting just held that it was found impossible to raise the necessary cash to pay off the liabilities. The meeting adjourned for two weeks' further consideration.

### BINDER TWINE BOOM.

The big dividend declared last year by the Farmers' Binder Twine Co., of Brantford, has generated a regular craze for new binder twine factories. At the meeting held the other day to organize the binder twine factory at Chatham, Ont., mentioned elsewhere, one of the promoters gave the following glowing picture of the trade: "This company is being formed for the purpose of securing a share in the highly remunerative trade in binder twine. It is a well known fact that enormous profits have been made by existing companies in this business, and the demand is steadily increasing. Fully sixty per cent. of the binder twine used in Canada is imported from the United States, the product of one of the strongest combines in existence. Now, there is no reason why Canadian farmers should import over half their binder twine and send huge profits across the line to fatten a combine, when they can share in the profits by becoming stockholders in a factory owned and controlled by themselves. That the American combines do not adversely affect profits of Canadian factories is proven by the fact that the Farmers' Binder Twine Co., of Brantford, in 1898, paid a 60 per cent dividend; in 1899, 100 per cent. dividend, and in 1900, a dividend of 90 per cent. This proves also the increasing demand for binder twine, and the corresponding profits. It is believed there is more binder twine used in the counties of Kent, Lambton and Essex than any similar area in Canada, and it is only reasonable to expect that an immediate market can be found at our doors for the output of the factory."

The chairman then introduced Mr. Henderson, another of the promoters of the company. Mr. Henderson said, "that should a binder twine factory be established here, the counties of Essex, Kent and Lambton would easily use the entire product of a three-ton plant. The Brantford factory had declared an annual dividend of 10 per cent. for the first five years it had been established. In 1898 it had paid 60 per cent.; in 1899, 100 per cent., and in 1900, 90 per cent. If it were possible to get the farmers to take hold, there would be no difficulty in establishing a binder twine factory in Chatham. Then the men who owned the factory were the men who used the twine, and every stockholder would be an advertising agent for the factory."

This reminds one forcibly of the boom times in the cotton manufacturing trade. The dividends earned by some of the cotton mills between 1878 and 1880 led a great many people having spare cash to invest it in new mills, and in three or four more years the manufacturing capacity of the Canadian cotton mills was doubled. A trade depression then occurred, and bankruptcy stared more than half of them in the face. Their only way out of the "hole" was the amalgamation of these mills into two strong corporations, who were able to carry them by reducing the cost of management and operation, and by diversifying the products of a number of the mills at a considerable further outlay for new machinery. Even then it took ten years of steady effort, and close economy before the cotton mills were again on their feet. We don't suppose, however, that this reminiscence will make much impression on the farmer manufacturers of binder twine, who have such confidence in their ability as advertising agents.

Robt. Dunlop, for some time loom fixer in Thoburn's woolen mills, left Tuesday night for West Superior, where he has secured a similar position.—Almonte Gazette.

### THE SILK INDUSTRY.

In a recent lecture on this subject in London, A. E. Garrett, F.R.G.S., said that England might still be considered to be the first manufacturing country in cottons and woollens, but England was nowhere so far as silk was concerned. He would show by figures that the great proportion of silk goods which were used in England was imported from France. Of course, it was not always like that. There was another point in which the manufacture of silk goods differed entirely from the two previous manufactures he had dealt with. As his audience knew, woolen and cotton fibers were very short, and they had to undergo a process of spinning to form the yarn.

Now silk was a continuous fiber, and ordinary silk, that was the fine kind of silk from the cocoons, had to undergo a totally different process from spinning. There was, he knew, spun silk, but that was only from the waste or short lengths of silk. Continuing, Mr. Garrett said that silk was obtained from that remarkable envelope which many kinds of caterpillars weaved round themselves preparatory to the change from the caterpillar into the chrysalis state. That envelope, which was more especially obtained from domesticated worms, was termed the cocoon. The *Bombyx mori*, or mulberry worm, was the most important, and was the only domesticated species. It dated back, among the Chinese, some 2,000 or 3,000 years B.C. The great bulk of the silk of commerce came from the cocoons of the *Bombyx mori*. Mr. Garrett proceeded to detail the conditions necessary for successful silk culture, and gave a highly interesting account of the egg, worm, cocoon, and moth stages. He said that 100 lbs. of cocoon yielded about 9 lbs. of raw silk.

The total production of silk from the silkworm in China was estimated to be more than twice as much as that of all the countries in Europe, and of that quantity more than two-thirds was for export purposes. There was a large amount of silk also obtained in China—roughly, about a quarter of the whole production—from various other moths, and from the wild silkworm. About one-eleventh of the total export of silk from China was classed under the head of wild and coarse silk. During the last year or two there had been some very alarming statements made respecting the production and reeling of silk in China. The Commissioner of Customs for Shanghai made some statements in his report on the trade of that port during 1898, in which he called attention to three things in respect to the silkworm rearing industry: (1) The inferiority of the cocoons in China for that year; (2) the spread of disease amongst the worms; and (3) the general lowering of the vitality of the produce. Ten years ago, when the question of Chinese silk culture was taken up, many of the silk-growing districts were free from disease, but in consequence of the neglect of the warning then given, the disease had so extended that it was now stated there was not a single district in China where silk culture was carried on quite free from the disease. The commissioner at that time stated that the Chinese should be taught how to select the healthy eggs. Two of the viceroys were now establishing proper farms for the culture of the silkworm, and were introducing experts in order to train the Chinese in the selection of healthy eggs. Japan supplied from one-third to a half as much raw silk as China did. In India the mulberry was chiefly cultivated in Bengal, but it had not obtained such importance as in China or Japan. Much silk in India was obtained from wild moths, which were found chiefly in Assam, the Central Provinces, and in the western part of Bengal. The silk produced by those wild worms was generally all included in the name of Tussar. The true Tussar piece goods were those Chinese goods which were made in the provinces of Szechwan and Shantung.

Italy furnished three-quarters of the total of the raw silk produced in Europe, the chief silk rearing regions of that coun-

try being the great plain lying to the north, where the majority of the trees were mulberry. In France the industry was chiefly carried on in the southern part, in the valley of the Rhone. France, however, had suffered very much from the disease of the silkworms since 1856 to 1876. In the latter year M. Pasteur was appointed to enquire into the matter, and he discovered that, by the aid of a microscope, the moths that laid the healthy eggs could easily be picked out. A year or two ago some silkworms were imported into Bulgaria. The results of last year's experiments were now published, and seemed to be of a very satisfactory nature. Bulgaria, which had a suitable climate, might therefore, in the near future, be looked upon as a silk-producing country.

The silk fiber being continuous, there was no need to spin it, but the true silk yarn was made by a process called throwing, which consisted in giving the fibers a slight twist so as to enable them to bind better with each other. The special fabrics made from silk included satins and velvets.

In reeling or throwing of the silk, Italy stood first among European countries, Lyons since 1898 being beaten. In 1898 Milan produced reeled and thrown silk to the extent of 16,643,400 lbs.; Lyons produced 14,247,500 lbs. The Lyons dealers attributed that change to the new means of transportation, and to the French duty on raw silk. Years ago, before the balance of the trade began to be turned to the side of Milan, the great bulk of transportation from the East was in the hands of the English and the French, which made Marseilles the principal stopping point in the Mediterranean. The German line, which now did a great deal of business between the Peninsula and the East, made Genoa its principal stopping place in the Mediterranean, and as a consequence the large quantity of raw silk from the East was brought to Milan, where it was thrown; then, by means of the Gotthard Tunnel, it was sent to Switzerland, Germany and other places.

About 11,000 bales of raw silk were annually landed at Genoa, which were formerly put down at Marseilles. France, which manufactured more silk goods than any other country in Europe, produced about three times as much as Germany, which stood next in importance. The centre of the industry in France was Lyons. At that place there was now a school for teaching the manufacture of silk, and young men came there from all countries to learn to make the silk goods. All kinds of silks, velvets, plain and figured goods were made by the learners under the superintendence of skilled workmen with the most improved machinery. The cost of education was £33 per year for Frenchmen, and £50 for foreigners. In the municipal school at Lyons any boy, 15 years of age, with residential qualification, could learn the practice and theory of silk weaving, designing and making patterns for 7s. 6d. The course of study in that instance extended over ten months. The night course, for those employed during the day, extended over three years. Each learner was required to keep a carefully written diary of his work, with abstracts of lectures, etc.

The output of Lyons in 1894 was to the value of 379,000,000 francs; in 1898, 415,000,000 francs; in 1899, 451,000,000 francs. The increase had been very slow indeed up to 1898, as it must be remembered that in that year there was a great increase in the price of raw silk. The proportion of raw silk raised in France had been steadily diminishing since 1871, when it was 37 per cent. of the world's output, to 1899, when it was only 9 per cent.

The percentage received in the Lyons Conditioning House from different producing countries in 1899 was as follows:

Piedmont .....	1.74 per cent.
Italy (excluding Piedmont) .....	8.72 per cent.
Bengal .....	1.7 per cent.

China (excluding Canton) .....	17.4 per cent.
Canton .....	26.0 per cent.
Japan .....	13.17 per cent.
Persia .....	8.32 per cent.

The total receipts for 1899 reached £16,512,712.

There were several reasons for believing that France would always possess a large silk industry, and that it would centre in Lyons, for no matter how the progress of invention might lower the cost of production, the French peasantry could always make silk economically, and the industry would be able to compete with steam. They had the advantage over other nations in the creation of artistic designs, a fine design costing from 50 per cent. to 75 per cent. less in France than in any other country. About the beginning of the present century the industry in Lyons received a great stimulus by the introduction of the Jacquard loom for the weaving of figured patterns. Silks of inferior quality had been more sought after, and Germany and Switzerland speedily adapted themselves to meet the wants of that case. The French industry at first suffered in competition, but it was now adapting itself for the new trade.

Sixty years ago our importation of raw and thrown silks amounted to 4,000 lbs. At that time 180,000 men, women and children were employed in the trade at an average wage of 8s. a week. The sale of goods produced in England amounted to £10,500,000; the importation of silk goods in volume were about 1,000,000 lbs. The export of manufactured goods was £963,000, and the revenue obtained in taxes on silk was £250,000. With a population of 25,000,000, the average silk consumption per head was 8s. 6d. In 1898 we imported £20,000,000, from France and other countries of manufactured goods, duty free, and of the raw material we imported less than £1,000,000 worth. In 1898 we imported foreign goods to the value of 10s. 6d. per head, and the value of British goods was only 1s. 6d. per head, so that during the past sixty years the industry had dwindled away—a state of affairs due to (1) not being able to produce raw material; (2) the opening of the Suez Canal, since which England had been less and less a market for Eastern goods; and (3) in 1860, the abolition of duty on imported silk goods. There was a superiority in Continental manufactures, especially in dyeing and finishing silk goods, and the process known as weighting. Pure silk was capable of absorbing a surprising amount of salts of iron and tin, while still retaining a silky appearance. The spinning of waste silk had been growing in England, chiefly in the counties of Lancashire and Yorkshire.

## PLEA FOR PROTECTION TO CARPET INDUSTRY.

### SECOND ARTICLE BY SCRUTATOR.

Before touching on the cost of yarn, which is the raw material of a carpet, it may be well to compare the cost of building, cost of machinery, labor, mill expenses, rate of interest, and advantages in sight rates, etc., Great Britain has, with the exception of Canada. This will show in a clear way the relations or rather values of the two countries in a manufacturing sense:

In Canada cost of building in excess of G.B.....	60%
In Canada cost of plant and machinery in excess of G.B.....	40%
In Canada rate of interest in excess of G. B.....	2½%
In Canada cost of freight in excess of G. B.....	5%
In Canada cost of fuel in excess of G. B.....	80%
In Canada cost of labor proportion in excess of G.B.....	15%
In Canada cost of mill running in excess of G. B.....	4%

It gives an insight to the problem of suitability of manufacture to a country. The same inequalities existed fifty years ago in the United States when carpet manufacturing was com-

menced in Philadelphia and other centres. As to the necessity of bringing certain influences to bear to make a success commercially of what may not be naturally so intended, it may be permitted to point to the Erie Canal and the consideration now being given to make Montreal a seaport.

If then the whole nation admits that it is advisable the people should bear a very heavy tax that vessels belonging to other countries shall have a safe channel to an unnatural port, and which do not employ Canadian labor, it is a strong reason why an industry which does employ both Canadian capital and labor should be protected by keeping out of this country manufactures which can be made in this country, and in which the internal competition will guarantee the consumer the lowest price. It is no argument that because the Canadian manufacturer can sell as cheaply as the foreign manufacturer that that is a reason why the duty should be removed. No; it is because he can run his whole plant that he can do so, having the entire market. Nor, if a manufacturer exports and sells in a foreign market at less price than in his own country is it a reason why he should be compelled to surrender part of the market in his own country to the foreigner.

Many reasons can be offered in evidence of this, and one as an example will suffice as an explanation. Take the wholesale trade to whom the Canadian manufacturer expects to use the bulk of the mills output. Here in Canada the manufacturer has to buy sample trunks, pay baggage excess, salesman's wages, and his travelling expenses to show the samples at the warehouse, whereas the buyer goes from Canada to the mills in Europe at the expense of his firm, and thus saves the manufacturer 3 to 5% at least.

To surrender to an argument that under such circumstances Canadians should give up all idea of manufacturing would be an admission that the world has not progressed through the most difficult and trying obstacles. The foregoing clearly indicates that to foster manufacturing in Canada is a duty of those who have been elected to watch the best interests of the country, and consider the conditions existing in comparison with the countries from which the competition to our industry comes.

The carpet industry is one of those industries, which have been established in this country for years, and in which large capital is invested, and many people employed. It has a very uphill battle for an existence, for many reasons, not the least being the prejudice (which happily is growing less by the merit of Canadian manufacturers), of Canadian people for articles of Canadian manufacture. Another reason is the difficulty of procuring proper yarns and help. In other countries there are schools to teach the process of textile manufacture and of dyeing methods. Difficulties are not placed in the way of procuring new designs, which from the point of art should be given a great latitude. To emphasize the argument for an increase in duty on carpets or a reduction of the tariff on yarns, there is here submitted a comparative statement of two instances; one the Canadian manufacturer, who imports the yarn to make the carpet, and the imported yarn in the carpet made in Great Britain. A roll of 100 yards of all-wool ingrain carpet finished, weighing 130 lbs:

In Canada—	
36 lbs. 2/14s. worsted, 28c.....	\$10 08
Duty, 30% .....	\$3 02
Preference, 33 1/4% .....	1 00
	2 02
110 lbs. wool yarn, 12c.....	14 28
Duty, 30% .....	\$8 52
Preference, 33 1/4% .....	2 84
	5 68
155 lbs. freight, 1 1/4c.....	1 94
	\$34 00

Imported—	
36 lbs. 2/14s. worsted, 28c.....	\$10 08
Duty, 35% .....	\$3 52
Preference, 33 1/4% .....	1 17
	2 35
119 lbs. wool yarn, 12c.....	14 28
Duty, 35% .....	4 99
Preference 33 1/4% .....	1 66
	3 33
130 lbs. 2c.....	2 60
	\$32 64

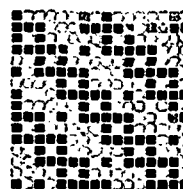
Consistency demands that no reduction should be asked for on yarns. The Canadian spinner is entitled to the protection of his industry, as well as any other manufacturer, but the foregoing evidence clearly shows that the difference in the protection is 16% in favor of the yarn manufacturer. The percentage of labor in the production of yarn of course varies with the grade of yarn made, but as it is the carpet trade that is being discussed the reference is made to yarns for this industry, and as the example is being given on an ingrain carpet, then ingrain carpet yarn is understood.

The cost of labor on this yarn is about 5%. The cost of labor on the carpet is about 30%. The class of labor—with the exception of a few foremen—on the yarn is mostly small boys and girls; on the carpet not 5% is unskilled labor.

The deductions from the foregoing arguments then are two-fold. That the carpet industry requires an advantage of at least 35% before it is on a level to compete with the foreigner, and should have at least 10% protection over that, thus making the duty 45%. The yarn manufacturer has now a net duty of 2c%, which in proportion to the labor on his finished product is ample.

## Textile Design

### WOOLEN SUITING.



Complete Weave.  
Repeat 16 x 16.

Warp—4,200 ends, 16 harness straight draw.

Reed—15 x 4 = 70 inches wide in the loom.

Dress—

1 end black and khaki, 3/4 run woolen.

7 ends black, 3/4 run woolen.

—

8 ends in repeat.

Filling—60 picks per inch, arranged thus:

1 pick black and red, 3/4 run woolen.

1 pick dark green, 3/4 run woolen.

1 pick khaki, 3/4 run woolen.

1 pick dark green, 3/4 run woolen.

1 pick khaki, 3/4 run woolen.

1 pick dark green, 3/4 run woolen.

1 pick khaki, 3/4 run woolen.

1 pick dark green, 3/4 run woolen.

—

8 picks repeat.

Finish—56 inches wide.—From The Textile Record, Philadelphia.



## CANADIAN FAILURES IN TEXTILE FABRICS.

The following is R. G. Dun & Co.'s report of the failures in certain branches of the textile trades for 1900, compared with 1899 and 1898:

	1900		1899		1898	
	No	Li'abilities	No	Li'abilities	No	Li'abilities
<b>Manufacturers:</b>						
Woolen .....	3	\$8,397	4	\$48,865	3	\$6,233
Cotton .....					1	4,500
Clothing .....	61	271,110	45	623,657	65	148,933
Hats and caps .....	5	34,840	3	4,612	2	10,213
	69	\$314,347	52	\$677,134	71	\$169,879
<b>Dealers:</b>						
Clothing .....	90	\$839,427	60	\$551,084	63	\$568,969
Other textile fabrics..	109	1,677,174	74	1,247,464	94	1,198,514
Hats and caps.....	14	49,081	10	72,619	20	212,380
	213	\$2,880,029	196	\$2,548,301	248	\$2,149,742

## SPOTS IN PIECE-DYED GOODS.

Yellowish spots in black-dyed piece-goods can arise from various causes (says a writer in the "Farber Zeitung"). I have known of their being caused by card wire getting into the yarn. The wire became wet in the weaving and fulling processes, and the rust from the wire caused spots on the fiber. The wire itself, however, was shaken out of the cloth in the gigning, and this made it very difficult to discover the cause of the spots. At another time small oil spots appeared on the goods, caused no one knew how. Oil dropped on the cloth often contains a small quantity of iron, causing bad spots in the goods, which cannot be entirely removed, while they easily escape notice in the white goods.

But I wish to speak now of some yellowish green spots that at one time appeared in black pieces, and could not be removed by any known means. Not the slightest trace of them appeared in the goods before dyeing; from this it was assumed that the spots were caused in the dyeing process. They were scattered through the cloth, and had the shade of the prepared goods. It was imagined that they were caused by resin or gum which had got into the cloth in the course of manufacture, but this seemed improbable. This suspicion, however, was completely verified. The tartar used in dyeing the goods had been packed in barrels that had previously contained resin, and small particles of this resin became mixed with the tartar. Not one dyer had ever thought of this cause, although his work was threatened with dangers from all sides. Spots caused in this way are not susceptible to the action of boiling or of the log-wood, and preserve the appearance of the undyed cloth. After the discovery of the cause the tartar was first dissolved in cold water and filtered before using, which remedied the trouble completely.

## THE CHROME MORDANTING OF WOOL.

BY GEORGE H. HURST, IN THE DYER AND CALICO PRINTER.

(Concluded from last issue).

Lactic acid, which is offered to the wool dyer in the form of a brownish liquid, containing from 40 to 50 per cent. of the active agent, has of late been used in the mordanting of wool. By using from 2 to 3 per cent. of bichromate of potash, and 3 to

5 per cent. of lactic acid, one can get an equally good and level, but somewhat strong and less green; mordanting of the wool as with the same quantity of bichromate of potash and using tartar or argols. It is a considerable improvement to use a little sulphuric acid in combination with the lactic acid. Thus for dark shades there can be used 2 per cent. bichromate of potash, 3 per cent. lactic acid, and 1 per cent. sulphuric acid.

The goods are entered into this bath at about 90° F., the temperature is slowly raised to the boil, and the working continued for half an hour, then an examination of the goods is made; if they have not acquired a green color  $\frac{1}{4}$  per cent. more sulphuric acid may be added and the mordanting continued at the boil for a quarter to half an hour longer. The working of this mordant is rather quicker than with bichromate and tartar, therefore it is desirable to start at a low heat, not to add too much sulphuric acid, and to raise slowly to the boil, otherwise the mordanting may come up uneven.

It has been recommended to add 1 per cent. of ammonium sulphate instead of the sulphuric acid at the start. The use of this salt retards the mordanting effect of the lactic acid, and so tends to lead to greater levelness of dyeing. Towards the end of the operation  $\frac{1}{2}$  per cent. of sulphuric acid may be added to complete the exhaustion of the bath. Certainly it may be said of lactic acid, it is one of the best of the chrome-mordanting agents.

Under the name of lactolin, the acid lactate of potassium is offered to wool dyers in the form of a liquid containing 50 per cent. of the substance. This may be used with or without sulphuric acid. The proportions are the same as for lactic acid, and the advantage of lactolin over the latter body is said to be that it produces more level shades, as its action on the bichromate is slower. When lactolin is used alone the mordanting bath is not completely exhausted of chrome, it may be retained, and for each succeeding lot of wool about four-fifths of the original quantities can be taken. If from  $\frac{1}{2}$  to 1 per cent. of sulphuric acid is added to the bath then the exhaustion is more complete, and the mordanted wool can be dyed in fuller shades.

Messrs. Kalle and Co. have introduced for the mordanting of wool a liquid product which they have named Lignorosin. This product is obtained in the treatment of wood with sulphite liquors for the manufacture of wood pulp. Its composition is not fully known, but it will contain the lignin and resinous constituents of the wool along with a little lime and some alkali. It possesses strong reducing powers on chromates, and for that reason it can be used in mordanting of wool. For pale colors it is recommended to use  $1\frac{1}{2}$  per cent. bichromate of potash, 3 per cent. lignorosin, and  $\frac{1}{2}$  per cent. sulphuric acid; for dark shades, 3 per cent. bichromate of potash,  $4\frac{1}{2}$  per cent. lignorosin and  $1\frac{1}{2}$  per cent. sulphuric acid. The working is carried on at the boil for  $1\frac{1}{2}$  hours. The bichromate is fairly well reduced, and the wool takes a light brownish color. This mordanting material may be used with all mordant colors.

Fluoride of chrome has been used for the mordanting of wool, and it has been found very useful in connection with the dyeing of Alizarine cyanine. When it is used the mordanting bath is made from 4 per cent. of the fluoride and 2 per cent. of oxalic acid. The wool may be entered into the bath at a temperature of 100° F., the heat slowly raised to the boil, and the work carried on at that heat for  $1\frac{1}{2}$  to 2 hours. It is somewhat expensive, which is a drawback to its use, then it tends to impart a harsh feel to the wool, and, lastly, it cannot be worked in copper vessels. Chromium fluoride has found some application in the after-chroming process of dyeing wool with such dyes as Diamine Fast Red, Anthracene Yellow, etc., where it possesses many advantages over bichromate of potash.

Bisulphite of chrome is well worth attention as a mordant-

ing agent for wool for producing the green non-oxidizing mordant. It is sold as a green liquid, or can be readily prepared by mixing a strong hot solution of chrome alum with bisulphate of soda; on cooling, sulphate of soda and potash crystallises out, and can be separated. The clear solution is then ready for use. From 5 to 10 per cent. is required, and no other substance need be added to the mordanting bath. The wool is evenly mordanted.

Attention may be directed to the possibility of mordanting the wool with bichromate and sulphuric acid in the usual way, and then passing the chromed wool through a boiling bath of bisulphate of soda; the chromic acid on the wool is thereby reduced to the green nonoxidizing mordant. The disadvantage of this process is that it entails a double working, and so is rather expensive.

## 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.**

The Imperial Cotton Company, Hamilton, Ont., are expected to commence operations about March 1st.

Albert Batty, of Sarnia, is going to Galt as dyer at Newlands & Co.'s.

The electric plant is being installed by T. B. Caldwell, the new proprietor, into the Mississippi woolen mill, Appleton, Ont.

J. T. Wood, manufacturer of hosiery and knitted glove linings, Rockwood, Ont., is now manufacturing his own yarns, having recently installed a set of cards, and a jack of 240 spindles.

Chas. Clarke, boss finisher in the Canada Woolen Mills, Carleton Place, has gone to Almonte, to be boss finisher in No. 1 mill. A. McFadden succeeds Mr. Clarke, at the Canada Woolen Mills.

The Colonial Printing and Bleaching Company, of St. Henri, Que., have decided to erect at Shawemgan Falls, above Three Rivers, a cotton mill of the capacity of 1,000 looms to supply the cotton cloth necessary for their print works.

It is reported that the Canada Woolen Mills, Ltd., are considering the question of having their shoddy department established at Toronto Junction, the vacant Hess furniture factory building being mentioned as a possible site. Meantime since the destruction of the mill at Lambton Mills this branch is being put in shape at Hespeler.

The Waterloo Chronicle: Mr. Burrows, of the Breslau Carpet Works is looking for a site, and though other places have offered inducements, he looks on Berlin with favor. The Board of Trade has taken up the matter, and it is not improbable that this plum will be secured for Berlin. Mr. Burrow's reason for leaving Breslau is that labor is scarce there, and if hands were brought from outside points they could not be accommodated in the village.

The case of Talbot vs. Dresser has reached its conclusion, the arbitrators to whom it was submitted having rendered their decision as follows: "The said Fred. Talbot has no claim whatsoever against the said Warren S. Dresser or the Dominion Brussels Carpet Company, Ltd., and the said Fred Talbot is not entitled to receive anything from the said Warren S. Dresser or the Dominion Brussels Carpet Co., Ltd., on account of the matters in dispute between them. The arbitrators in the case were Messrs. F. P. Buck (chairman), S. W. Jenckes, W. E. Paton, W. R. Webster and D. McManamy, the latter dissenting from the finding of the arbitration board.—Sherbrooke Gazette.

A number of mill hands from Lambton Mills, with a quantity of machinery, have already been transferred to the Canada Woolen Mill Company's Upper Mills at Hespeler, which will soon be in operation in the manufacture of shoddy.

The Evansville cotton mills, of Evansville, Ind., have placed an order with the Wm. Firth Co., for hard waste breaking up machines. They are of the well-known make of Wm. Tatham & Co., of Rochdale, for whom the Wm. Firth Co., are sole agents in Canada.

Geo. Reid & Co., textile machinery dealers, 11 Front street east, Toronto, have issued a very serviceable foot ruler, containing not only inches and fractions of inches, but metric measures, such as decimeters, centimeters and millimeters. It will be very handy for those in the textile trades who wish to get familiar with the metric system.

There is a rumor that A. W. Brodie, late of the Brodie mills, Hespeler, contemplates the erection of a worsted mill at Peterboro, with the financial assistance of Senator Cox.

The Almonte Gazette says: We understand that the Cannon water power property below the stone bridge has been purchased from the executors of the Cannon estate, and will be used by the Almonte Knitting Co. The purchase price is said to be \$5,000.

The evidence at the inquest on Huot, the unfortunate man who fell down the elevator shaft at the Montmorency cotton mills a few days ago, showed that he walked into the shaft in the third story, and that he had evidently been conscious after the fall, as, when found, it was clear that he had attempted to stop the flow of blood with shavings, but as there was no one around or within hearing to help him, his strength gradually ebbed away, and he was found frozen to death next morning where he had fallen.

The Wm. Firth Co. are receiving many orders for spinning frames. They have recently received orders from the following mills for the Fall River Machine Co.'s spinning frames, for whom they are agents. Corsicana Cotton Mills, Corsicana, Texas; Waxahachie Cotton Mills, Waxahachie, Texas; Alpha Cotton Mills, Jonesville, S.C.; West Huntsville Cotton Mills, Huntsville, Ala.; Josephine Mills, Cedartown, Ga.; Tifton Cotton Mills, Tifton, Ga., and the Millen Cotton Mills, Millen, Ga.

The annual meeting of the Northrop Loom Company of Canada was held a few days ago in Montreal. The reports for the year were satisfactory. The following directors and officers were elected: A. F. Gault, president, George Otis Draper, vice-president; S. H. Ewing, R. R. Stevenson, S. Finley and Edgar McDougall. J. H. McIntosh is secretary. It was decided to change the name of the company to the Northrop Iron Works, Ltd., of Valleyfield, Que.

A serious conflagration took place at Inglis Falls, three miles south of Owen Sound, on 28th January, in which the Inglis woolen mills were totally destroyed. The fire originated in the picker-room and had extended to the wool store-room before it was noticed. There is no fire protection, and in a couple of hours the building and available plant were in ruins. The mill changed hands only a fortnight ago. For many years it was operated by John Benner & Son, but passed recently into the hands of David Graham & Sons, of Inglewood, who were operating it. The building was a large three-story frame structure, with stone basement, and valued at about \$2,500. Much of the machinery was modern, and the loss on plant is estimated at \$7,500. The building and about half of the machinery were the property of Peter Inglis. There is some insurance on both, but the amount is not known. About twenty hands have been thrown out of employment. It is a coincidence that just eleven years ago a woolen mill which stood on the site of the burned structure was also destroyed by fire.

The Upton woolen mill at Nicolston, near Alliston, is closed.

The Chaudiere Falls Pulp Co., Quebec, has applied for incorporation; capital, \$200,000. W. A. Marsh and Hon. L. P. Pelletier, both of Quebec, are promoters.

Oswald A. Possitt, superintendent of the pulp mill at Chicoutimi, says his company are about to start another mill, capable of producing 60 tons of pulp a day.

The National Association of Wool Manufacturers of the United States has removed its headquarters from Kilby street to the Essex Building, Atlantic avenue, Boston.

Thomas Gibson, one of the founders of the Maitland woolen mill at Wroxeter, also the flax mills at the same place, died last month at the age of 76. He held a seat in the Ontario Parliament continuously from 1871 to 1898.

Jos. Stanley, tutor for Bertha Roberts, a minor, is suing the William Clapperton Company for \$1,999 for damages for injuries suffered by Miss Roberts in the loss of a finger cut off by machinery while employed in the company's thread works.

The Wm J Matheson & Co., Ltd., Montreal and New York, continue to issue their very instructive dye sample books. They now regularly publish besides, a monthly bulletin called "Dyestuffs," containing notes on dyeing processes. We understand it is mailed free to dyers interested.

Geo. Reid & Co., 11 Front street east, Toronto, have been appointed special agents in Canada for the James Smith Woolen Machinery Co., of Philadelphia, an old established firm making all kinds of woolen machinery, including a number of patented machines and items of mills supplies.

Chief Justice Meredith a few days ago granted an order for the winding up of the Ever Ready Dress Stay Company, of Windsor. C. C. and H. B. Kippen are the petitioners. They advanced money to the company, whose liabilities are \$15,000, and assets \$6,000. The claim of the petitioners is \$10,000.

Wm. Morrison, superintendent of the Carleton Place branch of the Canada Woolen Mills, Ltd., has been transferred to the Hespeler mills, and his brother, Archie M. Morrison, for some time in charge of the machinery repair department of Geo. Reid & Co.'s establishment, has gone to fill the vacancy at Carleton Place.

It is reported that Francis Willey & Co., manufacturers of noils, Bradford, Eng., are arranging for the transfer of their business to the United States. The proposed plant will employ 2,000 hands in the manufacture of wool tops. The reasons given for moving to the United States is that they cannot compete with Americans under the present tariff. Geo. Reid & Co., Toronto, are the Canadian agents for this firm.

The Spanish River Pulp and Paper Company, which has a large concession of pulp land, has now been incorporated. The capital is \$1,500,000, and the directors include, Angus McLeod, M.P., of Bracebridge; Charles McCool, M.P., Ottawa; John R. Barber, M.P.P., Georgetown; W. J. Sheppard, Waubaushene; Hugh Sutherland, Toronto; M. J. Dodge, New York; C. Kloefer, Guelph; William Irwin, Peterboro; James L. Playfair, Midland; T. H. Sheppard, Orillia, and W. D. Lummis, Spragge, Ont.

R. Newbold, for many years connected with the knitting mills of Canada, and who for some time has been manufacturing hosiery and mitts in Montreal, has recently taken into partnership his brother from England. The firm, now styled Newbold Bros., have just completed six months' partnership, and the results have been very satisfactory. They are arranging for a more extensive development of their business during the current year.

Price Bros. & Co., Montreal, are organizing a company with \$200,000 capital to erect a pulp mill on the River Du Sud, Quebec.

The annual meeting of the shareholders of the Merchants Cotton Company was held January 11 in Montreal. The report submitted was considered most satisfactory and the following were re-elected officers for the ensuing year. President, A. A. Ayer, vice president, Jas. Cathern, directors, R. B. Angus, J. P. Cleghorn, Jonathan Hodgson, Robert Mackay, W. G. Cheney and W. S. Barker, secretary treasurer.

After the death of the late John R. Harris, woolen manufacturer, Rockwood, Ont., that business was turned into a joint stock company, under the style of Harris & Company, Ltd., with Wm. Harris as president and superintendent, and Charles Harris, secretary-treasurer. The capacity of the mill was last year enlarged to two sets of cards, and 14 broad looms, and the output of the mill in friezes and homespuns is now sold through Dignum & Monypenny, Toronto.

James Tolton, secretary-treasurer of the Walkerton Binder Twine Co., has called a special general meeting of the shareholders for Feb. 22nd., at Walkerton, to confirm a bylaw enabling the directors to borrow money on the credit of the company from time to time as they may think fit. R. Truax, Walkerton; Andrew Waechter, Brant; Adam Sieling, Walkerton; Peter H. McKenzie, Kinloss, Wendel E. Shantz, Berlin; W. T. Whail, Goldstone. Geo. R. Barrie, Galt, have been elected directors of this company for 1901.

Richard Westwood, of Guelph, wishes to establish a carpet factory in Cornwall. He asks the town to give him a site, exemption from taxation, except school taxes, and a loan of \$12,000, without interest, in return for which he would guarantee to spend \$10,000 in wages, the first year, and at least \$15,000 during succeeding years, and to employ forty hands in the second year. Mr. Westwood has given up his proposition to start a factory at St. Catharines. The proposed mill would be operated by steam, and have 16 looms; to be ready for work in August. The voting on the bylaw will take place on the 9th March.

The Rosamond Woolen Co., Almonte, took a unique method of marking its respect for the deceased Queen. Promptly at 10.30 on the day of the funeral, says The Gazette, the giant engines and all the whirring machinery stood still for five minutes—every wheel, every loom, everything that had been contributing to the busy hum—and the hundreds of operatives remained in a meditative mood. The scene was changed completely and thoroughly in a moment, and in the breathing spell all had time to ponder on the solemnities that were taking place at Windsor and through the streets of London, as the body of Victoria the Good was being carried to "the lone couch of her everlasting sleep."

The Sherbrooke Examiner says: There seems to be a good deal of uneasiness among the workmen in a section of the Dominion Cotton Company's mill at Magog, and for some days there have been persistent rumors of a strike. A number of men who were connected with the strike last year were notified the other day that their services would be dispensed with. No satisfactory answer was given the men when they asked why they were being discharged. The sympathizers of the men who are under notice to quit, threaten that unless they are re-engaged they will quit work. The company, however, state that there is nothing in the report. The men who are under notice, they state, with one or two exceptions, were not implicated in the recent strike, and therefore the discharge is not for the reason alleged. The employees approached the city council recently and asked that body to approach the company with the view of having the trouble adjusted. The council decided to address the company on behalf of the men.

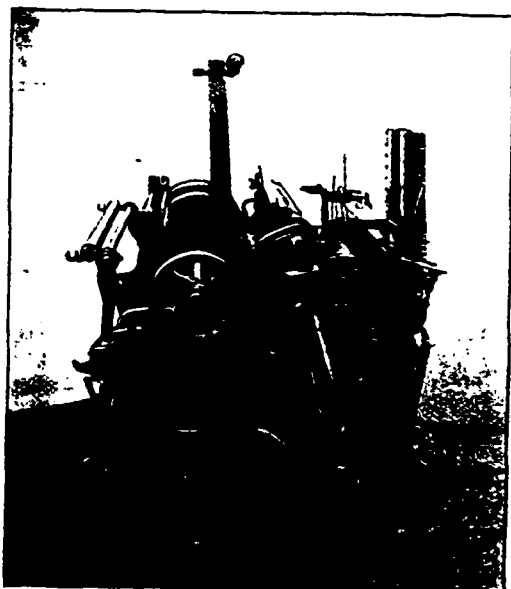
**U. S. SHIRT AND COLLAR COMBINE.**

The New York Tribune says. "The long-talked-of syndicate of Trojan collar, cuff and shirt wholesale houses is now regarded as a certainty by the manufacturers concerned. No outside capital will be required by the combination, the name of which will probably be the American Collar, Cuff and Shirt Company. With a few exceptions, every well-known house in the trade having factories at Troy will, it is said, be identified with the new order of things. The interests of those represented in the deal aggregate \$20,000,000. Instead of having individual offices in the different cities, a single clearing house will be established in each market covering the general business."

**THE STOPPING LOOM.**

The stopping of the weaving for a long enough time to slowly and surely change the shuttle, and then the automatically restarting of the loom is a new idea in the textile art. Henry I. Harriman, having conceived this valuable idea immediately began to develop it. An ordinary plain loom was taken, and by degrees equipped with the necessary mechanisms to amply demonstrate the virtue of this new system.

The American Loom Company in behalf of Mr. Harriman has spent much time and talent in perfecting the first crude designs, and to-day offers to the mills a simple, practical, automatic loom. After the automatic motions for changing shuttles and detecting the breakage of warp ends had become thoroughly effective, a new loom throughout was designed. To do this, all the looms on the market were carefully studied, and the plain American loom represents what is claimed to be a combination of the best weaving ideas yet developed by all loom builders. Then, too, in building the loom de-novo, the actions of the automatic mechanisms were constantly kept in mind so



that every part and motion of the loom proper was constructed to be in harmony with the peculiar actions of the automatic parts. The advice of weavers of long experience, and that of the best of mechanical engineers has been combined to make the Harriman automatic loom scientific in action and strength. A minimum breakage of parts is thus obtained as well as accuracy in the performance of the various motions.

The action of the Harriman automatic shuttle changer is as follows: When the filling breaks or is exhausted the regular fork acts to stop the loom as in every plain loom. The fork,

moreover, also initiates the rotation of the "change shaft." This change shaft gets its power from either the loose loom pulley or the cam shaft, according to the style of mechanism used. A triple cam on this shaft through its levers and connections, and while the weaving is stopped, replaces the spent shuttle with a new one. The weaving is then automatically restarted, and the change shaft thrown out of action. So simple are the few settings, and so accurate are the motions that the mechanism is thoroughly practical for use in any mill weaving "plain goods."

The warp stop motion has several distinctive features on which the claim of superiority to all others is based, namely, simplicity in drawing in, exceptional ease on the yarn, and lack of delicacy in handling the drop wires when in the loom. There is no danger of injuring the drop wires by the feeler striking them on the flat side as the supporting bar is so arranged as to allow the least possible strain to be put upon the wire at this time.

An effective thread trimmer leaves the shortest filling end when the new shuttle is inserted. It hardly seems possible that so many virtues could be combined in one loom but the experience of nearly sixty mills, up to date, is the warrant for the assertion.

The American Loom Company has a large and handsome plant at Readville, Mass., fully devoted to the manufacture of Harriman Automatic Looms and Harriman Automatic Mechanisms to be applied to other makes of plain looms, new or old. There is also at the factory a small weave shed, where a number of looms are constantly running on a variety of fabrics. The "Illustrated Red Book" tells the story, and for a copy of this book those interested should write to the American Loom Co., Readville, Mass.

**UNITED STATES COTTON INDUSTRY.**

The census returns of 1900 give the following figures showing the progress of cotton manufacturing in the United States in the past ten years:

	1880.	1900.
Number of spinning mills .....	756	905
Capital invested .....	\$208,280,346	\$354,020,843
Value of production .....	\$198,090,116	\$267,981,724
Cotton consumed (in 1,000 lbs)....	714,506	1,202,524
Number of workers .....	174,659	221,580
Raw material per worker per lb....	3,090	5,427
Production .....	\$1,090	\$1,209
Average wages per year .....	\$240	\$313
Capital per worker .....	\$1,191	\$1,598
Value of the year's production per \$1,000 capital .....	\$922	\$756

The large weight of raw material got through by the workers, and the small increase of their number, shows the effect of improved machines. The increased use of machines is also obvious from the increased value of output per worker, as well as from the amount of the capital which was necessary to be laid out, before a worker could be employed. The last item in the list shows how prices have gone down with the use of new inventions.

**A CORDAGE JOURNAL'S OPINION.**

While there is always room "at the top" in every industry for new men and plants, extreme caution should be observed in entering any business that has an abundance of facilities for supplying the demand. These considerations should not be overlooked by those who are organizing farmers' binder twine companies in Canada. Because one company was fortunate

enough to make a large profit in two or three years—largely due to conditions over which it had no control—is not a guarantee that new companies, managed, perhaps, by men who are not familiar with peculiar features of a most intricate business, will duplicate that record or even make four per cent. on the money invested. Investors will serve their own future financial welfare by scrutinizing closely projects for making binder twine in farmers' five ton mills in Canada. Possibly one or two may make a fair return to the investor, but others will make a heavy loss, especially if 50 or 100 companies are started, as is stated to be the plan of the projector of some recent companies in Canada.

### TEXTILE EXPORTS OF GREAT BRITAIN TO CANADA.

The following are the values in sterling money of the exports from Great Britain to Canada for December, and the year ending 1900:

	Month of Dec.		The Year to December 31.	
	1899. £	1900. £	1899. £	1900. £
Raw wool .....	6,959	3,800	31,090	44,139
Cotton piece goods .....	60,795	56,255	547,549	662,875
Jute piece goods .....	9,052	9,113	112,404	141,855
Linen piece goods .....	15,489	14,250	171,256	186,591
Silk, lace .....	387	446	14,737	13,144
Silk, articles partly of....	3,329	3,189	52,176	52,565
Woolen fabrics .....	20,134	14,737	310,577	404,612
Worsted fabrics .....	65,947	38,186	567,868	578,047
Carpets .....	11,297	9,643	189,030	217,897
Apparel and slops .....	9,838	9,395	229,022	252,673
Haberdashery .....	5,678	5,780	155,701	152,633

### CREASES AT THE SELVEDGE.

When worsted chevots crease close to the selvedge, or as we generally call it, "freezing of the selvedge"—for we have seen pieces turned over in places, all along the listing, and so matted together, that it was very hard to pull them apart—it is usually found that the goods are being fulling in the grease, before being scoured. If the goods are scoured first, they will go into the fulling mill much softer, and the chances of their cracking or wrinkling will be reduced to a minimum. A neutral scap can then be used, making them felt easier, crease less, and handle much softer when finished. If fulling in the grease, an alkaline soap has to be used to saponify the dirt and grease in the goods; and alkali is a maker of wrinkles, and an enemy to felting and soft handling.

If this is not the cause, if the goods have been scoured before fulling, and they wrinkle, then the trouble may be in the weave of the listing. If the goods are a four or six harness twill, the listing should be the same weave with the twill reversed. If they are through and through goods with no backing, woven as we state, they should give very little trouble in fulling, if scoured first.

Another cause for this trouble may sometimes be found in the quality of the stock. Some stocks are very hard to keep from wrinkling. Often we find that the twist in the yarn causes it; also a two-ply warp with a single filling, or a fabric with a back, that has any kind of a listing other than a basket weave. The only way to prevent creases from any of the last named causes, is to tack the selvages together in a sewing machine, and run the goods in a fulling mill like a bag. They should be sewed up all the way, with only a space near the seam about nine inches long left open, to let some of the air escape each

time as the seam comes around. If this space is not left open, the goods will get so full of air, and bag up so much, that they will lift the stop motion up every few minutes, and stop the mill, and should the stop motion fail to work, the pieces would be full of chafe marks and holes. This is a very satisfactory way of fulling goods that are made of coarse stock, or have a complexity of weaves or yarns, as the goods will not run long enough in one position to get a wrinkle in any part. The tacking is best done when the goods are dry, before scouring.—Textile Manufacturers' Journal.

### THE WOOL MARKET.

In the Montreal, Toronto, Hamilton and Winnipeg markets there is the same story to be told this month—"nothing doing." Quotations are nominally as last month, but there are no transactions of sufficient importance to base fresh prices on. Generally speaking the supplies at foreign wool centers are large, and because of this, and the nearness of the new clip there is not likely to be much animation in the wool trade for some little time.

### FABRIC ITEMS.

All the girl employees in Erb & Co.'s glove factory at Berlin are out on strike as a protest against charges for power and machine rental, which they unavailingly requested the management to change.

Some forty girl employees of the Dominion Suspender Company, Niagara Falls, have struck work, owing to the management having remodelled the wage schedule. The girls claim that the new scale means wages reduced 25 per cent.

Mr. Trudel, revenue officer, Quebec., has returned from Beauce, where he seized a large quantity of men's suspenders of American manufacture, which had been smuggled over the border. It appears that there is a large contraband traffic in these articles constantly going on.

The charred remains of two men were found in the ruins of Saxe & Co.'s clothing factory, Montreal, in which the terrible fire of January started. One of the bodies was supposed to be that of M. Rosen, but he afterwards turned up in Guelph. The other body was that of H. Peskin, who worked for Louis Glazier, a clothing contractor, who sublet the top floor of the building from Saxe. There is no explanation forthcoming as to the origin of the fire.

J. H. Hamilton, a well-known dry goods man of Deseronto, and W. R. Bird, for 18 years one of the most successful travelers for William., Greene & Rome, the collar and cuff makers of Berlin, Ont., have opened a shirt, collar and cuff factory at 41 Yonge street, Toronto. The firm will be known as the Hamilton-Bird Co., and are manufacturing the finer grades of goods. The company have their new samples now ready, and will this month have three travelers on the road.

The annual meeting of the wholesale dry goods section of the Toronto Board of Trade was held on February 6, when the following officers were elected: Chairman, W. L. Brock; vice-chairman, J. W. Woods; secretary-treasurer, Edgar A. Wills. Executive, John Macdonald, Chas. Reid, C. B. Lowndes, J. D. Ivey, A. W. Allen, Jas. D. Allan, H. J. Caulfield, R. W. Spence and J. W. Woods. The vice-chairman, who is also a member of the council of the board of trade, was requested to bring to the attention of that body the urgent necessity for a Dominion insolvency law.

H. Vineberg & Co., clothing manufacturers, who are negotiating with the town of St. Louis, state that they employ 200 hands, and paid in wages last year \$79,691.77 to manufacturing hands, and \$32,000 to non producers, such as clerks, travelers, etc.

The Montreal City Council are being asked by the working tailors of that city to compel clothing manufacturers to have clothing made within the limits of the municipality, instead of getting it made by farmers' daughters and others, thus depriving them of part of their living.

Gough Bros. dry goods and clothing store in Peterboro, was set on fire on February 9. It was fortunately discovered early near the rear doorway, and with the aid of the chemical engine was soon extinguished, when it was found that the premises had been entered and the cash register tampered with.

The old dry goods firm of McLaren & Co., of St. Catharines, Ont. (formerly Woodruff & Co.), have applied for a charter of incorporation as a joint-stock company, the directors of which will be R. McLaren, A. McLaren, C. O. Borrowman, E. Wismer and A. Robertson, all of St. Catharines; capital stock, \$50,000.

A. A. Valiquette, dry goods merchant, of Notre Dame street, Montreal, has assigned at the demand of Thibaudeau Bros. & Co. The liabilities are about \$10,000, while the assets consist of the stock in the store, and lot of land at St. Laurent. The principal creditors are Dame M. Bourgoin, \$3,743; J. G. Mackenzie & Co., note \$2,090; Thibaudeau Bros. & Co., \$960; S. Greenfields Son & Co., \$753, and the W. R. Brock Co., \$318.

Canadians stood high at the twenty-first annual meeting of the Custom Cutters Association of America, which was recently held in Cincinnati, Ohio. Henry A. Taylor, of Toronto, was elected president by a large majority. On the executive board are John McLean, Toronto, and Charles A. Nickel, Hamilton; John Burton, of Toronto, was selected chairman of the Practical Work Committee. Two gold medals were awarded for best made garments.

Owing to the recent fire at the Board of Trade Building, Montreal, the following have changed their address: Wilson Paterson & Co., to 30 St. John street; Dominion Commercial Travellers' Association, to 9 Bank of Toronto Building, and A. H. McKee, to 113 Temple Building. Thos May & Co. have also moved to temporary premises at 196 McGill street, Montreal, since their fire. Archer Robertson and Robt. Meighen have removed from Board of Trade Building to Merchants' Bank Building, St. James street.

The business formerly carried on in Toronto by M. Love, W. H. Smith and C. W. Stephens, under the name of the Canadian Feather and Mattress Company, is being incorporated as a joint-stock company, under the name of the Canadian Feather and Mattress Company, Ltd., with M. Love, W. H. Smith, C. W. Stephens, Lucy Love and Mary E. Smith, all of Toronto, as charter members; capital stock, \$25,000; head office, Toronto.

### LITERARY NOTES.

The publishers of Crerand's Cloak Journal, 732 Broadway, New York, have issued a neat pocket directory of the manufacturers of cloaks, suits, skirts, waists, wrappers, furs and children's wear of the principal cities of the United States. It is 3 x 5 inches, and the price is 50 cents.

Sheldon's Buyers' Reference Book for 1901 is issued. This is a standard pocket reference book, published by J. L. Sheldon & Co., Leonard street, New York, and contains the names and addresses of manufacturers, agents and importers in all branches of dry goods and fancy goods. It is bound in cloth, 3 1/2 x 5 inches, 544 pages.

The 1901 edition of Dockham's Directory of Textile Manufactures and wholesale dry goods trade of the United States, Canada and Mexico, is a memorial edition celebrating the 18th issue and the 35th year of the work, the frontispiece being a very finely engraved portrait of C. A. Dockham, the founder. In this issue is reprinted the list of textile mills which appeared in the first issue of the work in 1866, a comparison of which with those of the present year shows the great progress of American textile industries. It is interesting to note from the introduction that the census of 1860 gave 5,235,727 cotton spindles and 3,209 sets of wool cards in the United States, while now there are 22,152,926 cotton spindles, 8,141 sets of cards, and 1,451 worsted combs. Dockham's directory gives the capacity and products of each mill in every branch of the textile trades, with lists of manufacturers' agents, and the wholesale dry goods trade, and the present issue makes a large volume of 664 pages, 7 1/2 x 10 inches, substantially bound in cloth; price, \$6.

The Newhall Chain Forge & Iron Co., 26 Cortland street, New York, have just got out a catalogue, referring to all kinds of conveying machinery, door hangers, expansion bolts, etc. These goods are all new in the Canada trade.

**Wanted** Situation as boss finisher by a man capable of taking charge from loom to case. Understands all classes of woolen goods. Highest references. Address "OVERSEER," care of Canadian Journal of Fabrics. 1-3

**A WELL ESTABLISHED KNITTING CONCERN** in the city, with good wholesale connection would remove to country town if advantageous offer was proposed. Address "BONUS," care Canadian Journal of Fabrics, Toronto, Ont. 1-2

## Felt Maker

**WANTED**—Position by a thoroughly practical, up-to-date man who understands all the machinery used in making all kinds of felts—plano, organ, tapestry, glass polishing, shoe felts, and harness felts of all grades. Twenty-eight years' working experience in mill and office and on the road. Well up in wools and wool stock of all kinds; understands mixtures. Good manager of help. Capable of teaching new help. First-class references and testimonials as to character and ability. Can come at once. For further particulars write to Box H.D., c/o Canadian Journal of Fabrics, Toronto.

## FOR SALE 3-SET WOOLLEN MILL 230 HORSE POWER, WATER

Suitable for manufacturing either blankets or tweeds, having mules and all broad looms.

Stone Building No. 1 (70x31)—6 stories, each flat 10 ft. from floor to ceiling.

Stone Building No. 2 (50x30)—Dye house 1 story.

Stone Building No. 3 (55x35)—5 stories, each flat 10 ft. from floor to ceiling.

Stone Building No. 4 (30x20)—3 stories, each flat 10 ft. from floor to ceiling.

Stone Building No. 5 (14x9)—2 stories, 1st floor engine room, 2nd floor superintendent's office.

Building No. 6 (50x26)—2 stories, stone warehouse.

For full particulars apply to

**CEO. REID & CO.,**

11 and 13 Front St. East, Toronto

**TEXTILE PUBLICATIONS.**

In order to accommodate readers of The Canadian Journal of Fabrics, the publishers will be pleased to mail any book in the following list on receipt of the publisher's price, duty free. Books on technical and practical subjects, not in this list, can be obtained and mailed at publisher's prices. In ordering, please give full address, written plainly:

- Loom Fixing; a handbook for loom fixers working on plain and fancy worsteds and woollens; containing chapters on shuttles and bobbins, and their management; head motion; putting in warps; filling; adjusting and starting new looms; chain building, etc.; 104 pages, by Albert Ainley .....\$1 00
- Technology of Textile Design; explains the designing for all kinds of fabrics executed on the harness loom, by E. A. Posselt ..... 5 00
- Structure of Fibers, Yarns and Fabrics, the most important work on the structure of cotton, wool, silk, flax, carding, combing, drawing and spinning, as well as calculations for the manufacture of textile fabrics, by E. A. Posselt ..... 5 00
- Textile Machinery Relating to Weaving, the first work of consequence ever published on the construction of modern power looms, by E. A. Posselt..... 3 00
- The Jacquard Machine Analyzed and Explained; explains the various Jacquard machines in use, the tying up of Jacquard harness, card stamping and lacing, and how to make Jacquard designs, by E. A. Posselt..... 3 00
- Textile Calculations; a complete guide to calculations relating to the construction of all kinds of yarns and fabrics, the analysis of cloth, etc., by E. A. Posselt.. 2 00
- Wool Dyeing; an up-to-date book on the subject, by E. A. Posselt ..... 2 00
- Worrall's Directory of Cotton Spinners, Manufacturers, Dyers, Calico-printers and Bleachers of Lancashire, giving the mills of the British cotton district, with

- number of looms and spindles, products of the mills, cable addresses, etc .....\$2 00
- Worrall's Directory of the Textile Trades of Yorkshire, comprising the woolen, worsted, cotton, silk, linen, hemp, carpet, and all other textile mills, giving looms and spindles, and the various lines of goods manufactured, etc .....\$2 00
- Worrall's Textile Directory of the Manufacturing Districts of Ireland, Scotland, Wales, and the counties of Chester, Derby, Gloucester, Leicester, Nottingham, Worcester, and other centres not included in preceding works, with capacity, products of mills, cable addresses 2 00
- The Wool Carder's Vade-Mecum, by Bramwell; third edition, revised and enlarged: illustrated; 12mo. .... 2 50

**CHEMICALS AND DYESTUFFS.**

There are no changes of any note; prices remain steady. Buyers are ordering in small quantities.

Bleaching powder .....	\$ 2 75	to	\$3 00
Bicarb. soda .....	2 00	"	2 05
Sal soda .....	0 75	"	0 80
Carbolic acid, 1 lb. bottles.....	0 50	"	0 60
Caustic soda, 60° .....	2 35	"	2 60
Caustic soda, 70° .....	2 60	"	2 85
Chlorate of potash .....	0 12	"	0 15
Alum .....	1 35	"	1 50
Copperas .....	0 65	"	0 70
Sulphur flour .....	2 00	"	2 50
Sulphur roll .....	2 00	"	3 00
Sulphate of copper .....	6 00	"	6 25
White sugar of lead.....	0 08	"	0 08
Bich potash.....	0 11	"	0 12
Sumac, Sicily, per ton .....	75 00	"	80 00
Soda ash, 48° to 58° .....	1 30	"	1 40
Chip logwood .....	1 90	"	2 00
Castor oil .....	0 09	"	0 10
Cocoon oil .....	0 10	"	0 11

**NEW BLACK FOR COTTON**



**DOUBLE STRENGTH**

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

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

CANADIAN BRANCHES:  
53 Colborne Street, TORONTO | 13 Lemolne Street, MONTREAL

**A. KLIPSTEIN & CO.**

122 PEARL STREET, NEW YORK.

*Chemicals & Dyestuffs*

Fast Color for Wool—Dry Allzarine, 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 Gutch A.K.C.

**WRIGHT & DALLYN, Agents, Hamilton, Ont.**

**JOHN W. LEITCH & CO.**

Milnsbridge Chemical Works, near HUDDERSFIELD, ENGLAND.

**PHENYLENE DIAMINE** (DISTILLED)  
**TOLUYLENE DIAMINE** (DISTILLED)

**Bismarck Brown, Chrysoidine,** Crystals and Powder. Largest makers in the world.

**Soluble Blues**—all shades.

**Binitro Benzol and Binitro Toluol.**

**Reduced Indigo. Wood & Leather Stains.**  
Specialties for Cotton, Wool and Silk Dyers, Paper Makers etc.



# JAMES YATES and SON

MANUFACTURERS OF

## Card Clothing

Joint Inventors and Patentees of combined  
Round and Flat Wire Cards.

Established 1820

**CLECKHEATON, ENG.**

All Correspondence to be addressed to Canadian Stock Depot.

“Genuine Oak” Tanned Leather Belting,  
Mill Furnishings of every description.

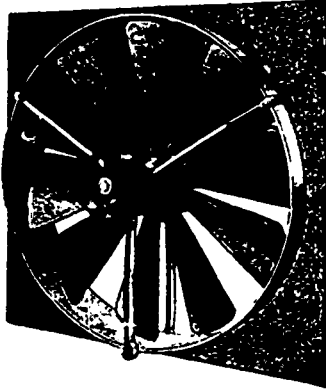
We would also draw your attention to our “LANCASHIRE” PATENT HAIR BELTING  
for exposed situations.

# D. K. McLAREN,

Head Office and Factory: MONTREAL

Branch: 88 Bay Street, TORONTO





## CYCLONE FANS

THE BEST FOR DRYING AND VENTILATING

## CYCLONE DRYERS

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

## GARNETT MACHINES

Breasts, Burring Machines, Feed-Rolls

RE-CLOTHING Garnetts a Specialty

PHILADELPHIA TEXTILE MACHINERY CO.  
PHILADELPHIA, PA.

## The Denn Warping Machinery.

Linking Slasher      Baling Beam  
WARPERS

100 to 3,200 Ends.

Electrical Stop-Motions Applied to all Creels

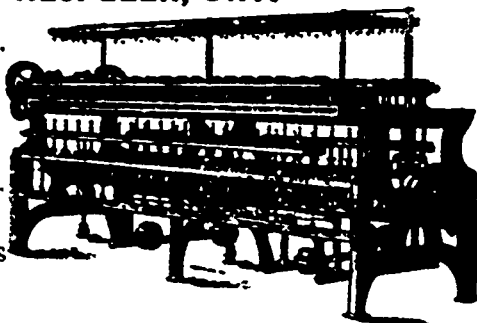
SEND FOR CATALOGUE

GLOBE MACHINE WORKS, Oxford St., Frankford  
PHILADELPHIA

## H. W. KARCH, HESPELER, ONT.

Manufacturer of

Woolen Machinery,  
Rotary Fulling  
Mills, Kicker Full  
ing Mills, Soaping  
Machines, Cloth  
Washers,  
Wool & Waste  
Dusters, Rag Dus-  
ters, 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.

## NEW DYESTUFFS.

**Rhoduline Heliotrope B.**—This is a new color of the series of Rhoduline basic dyes. It dyes cotton which has been previously mordanted with tannic acid and tartar emetic. Using 2 to 3 per cent. of dyestuff, it gives nice reddish violet shades, which are bright and have a good fastness to light. Using small quantities of dyestuff, fine bluish heliotrope shades can be got. On mercerized cotton the shades are fine and bright. Rhoduline Heliotrope B dyes both silk and wool in very fine and brilliant shades of heliotrope to violet. In calico printing Rhoduline Heliotrope B can be used alone with a tannic mordant with good effect, good bright heliotrope to violet shades being obtained. These have a good degree of fastness to light and washing. As it is not discharged by either tin crystals or zinc dust, it may be used to produce colored discharge effects on clothes dyed with direct dyes.

**Benzo Fast Scarlet G.S.**—This is a sister dyestuff to the Benzo Fast Scarlet 4 B S, which has been previously noticed in these columns. It dyes cotton direct from baths containing Glauber's salt and soda, when it gives with 3 to 4 per cent. of dyestuff fine and bright scarlet shades, and with ½ to 1 per cent. good pink tints. These shades are quite fast to acids and alkalis, resist washing and soaping, and stand light very well. Like its sister dyestuff, it represents a marked advance on the older Benzo Purpurines and Congo Reds. It can be used in dyeing half-wool (union) fabrics, wool, silk and half-silk goods. It can be discharged with tin crystals and zinc dust, and so either white or colored discharges can be produced on it.

**Benzo Fast Blue B N.**—This is the latest addition to the direct blues, and is comparable with the older brand—Benzo Fast Blue B, which was brought out some time ago. It dyes good bright blue shades from baths of Glauber's salt and soda, the dye going on to the fiber very well. The shades are very fast to light, and in this respect the blue takes high rank. The blues stand soaping and washing very well and are quite fast to acids and alkalis, very useful properties. The blue can be discharged with either tin crystals or zinc dust, and so either white or colored effects can be produced on it.

Samples, instruction circulars, and any of the above new shade cards mailed gratis to interested dyers by the Dominion Dyewood and Chemical Co., Toronto, Canada, sole agents in Canada for the Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany.

## RECIPES FOR DYERS.

**Violet on Worsted Yarn.**—For 100 lb. worsted yarn, prepare the dye bath with 1 lb. acid violet 6B. Have the bath neutral. Enter the yarn at 120° F., bring slowly to the boil, and dye at this temperature for one hour. Add the dyestuff in portions, but below 180° F., and towards the end of the dyeing add 1 per cent. of acetic acid to brighten. Acid violet 6B is recommended for its pure and bluish shade of violet and its high coloring power at an exceedingly low cost.

**Dark Green on Woolen Goods.**—For 100 lb. wool, a dye bath is prepared containing 10 lb. Glauber's salt, 1½ lb. fast yellow, 1½ lb. cyanol green B, 6 oz. azo acid magenta G, 4 lb. sulphuric acid. The goods are entered at 150° F., and worked a short time; the dye bath is then heated to the boil, the goods worked to shade, lifted, washed and dried.

**Dark Slate Green on Wool.**—For 100 lb. wool, mordant the fiber in the usual way with 3 lb. bichromate of potash, 2½ lb. tartar. Rinse, and enter into a cold dye bath containing 10 lb. brilliant alizarine cyanine 3G, 3 lb. alizarine cyanine RS extra, 1½ lb. diamond brown, ½ oz. alizarine red S, 3 lb. acetic acid. Treat as in the last recipe.—Textile Mercury.

The Montreal Cotton Company is to apply for powers to increase its capital from \$2,000,000 to \$4,000,000. It is not expected that this entire new capital will be called in the immediate future, the whole sum not being required. It is expected, however, that \$500,000 will be needed in order to meet the obligations incurred in the erection of the new mill at Valleyfield. The remaining \$1,500,000 will provide for any further extensions and improvements in the future. The annual statement read to the shareholders at the meeting last month was very satisfactory. The directors elected were: A. F. Gault

president; Charles Garth, vice-president; Jacques Grenier, Hon. J. K. Ward, R. R. Stevenson, S. H. Ewing and Samuel Finley.

—A big carpet amalgamation has been effected in the United States, following on the heels of the Lowell-Bigelow combine. The Higgins Company, of New York city, who employ something like 2,000 hands, have combined with the Hartford carpet mills, at which 1,100 people are engaged. The three biggest carpet concerns in the United States now are Smiths' mills; Lowell and Bigelow, and Higgins and Hartford.

# C. E. RILEY & CO'Y.

281-285 Congress Street, Boston, Mass.

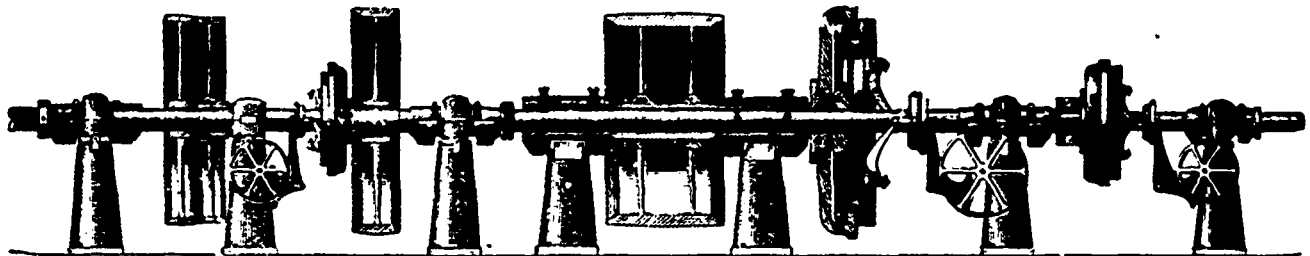
Builders and Importers of

COTTON, WOOLLEN, WORSTED

## MACHINERY

CARD CLOTHING, EMERY FILLET, EGYPTIAN COTTON, SPINDLES, FLYERS, FLUTED AND SHELL ROLLS, GRINDING ROLLS, &c.

POWER TRANSMISSION MACHINERY. ( COMPLETE OUTFITS.



DODGE MANUFACTURING COMPANY, TORONTO, CAN.

SEND FOR B6 CATALOGUE FOR 1900.

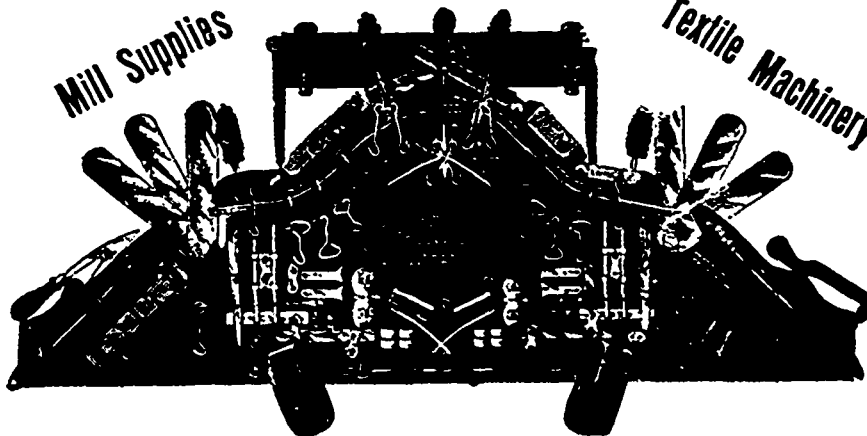
## GEORGE REID & COMPANY,

WOOL MERCHANTS

PHONE 8391

Mill Supplies

Textile Machinery



SOLE AGENTS FOR THE

Hamilton Cotton Co.'s Warps.  
Samuel Law & Sons' English Card Clothing.  
Francis Willey & Co., Bradford, Eng., Wool and Noils

Specialties—Collar Boards and Brass Collars for Jacks and Mules, also Steps.

OFFICE: 11-13 FRONT ST. EAST.  
WAREHOUSES: ESPLANADE ST. (foot of Jarvis) TORONTO

## 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; Etoffes Friczes and Tweeds.  
D. Fisher, Paisley, Ont., Etoffes and Tweeds.  
John J. Ashley & Co., Bradford, Eng., Dress Goods and Wois eds.  
Horner, Determann & Co., Barmen, Germany, Buttons, etc.  
S W. Whitam, Leeds, Eng., Woolens.  
Merrinack 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.

**COP TUBES**  
Cones and Shells  
WORSTED TUBES  
CONICAL TUBES  
MAILING TUBES  
Haworth & Watson, Lowell, Mass.

NEW ENGLAND

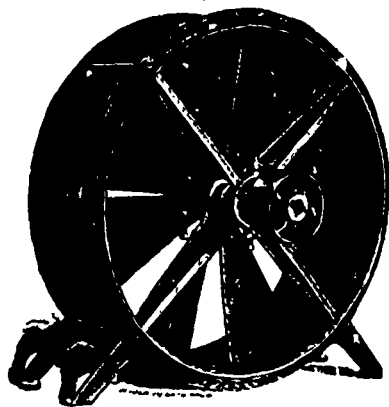
# Ventilating & Heating Co.

PROVIDENCE, R.I.

R. RICHARDSON, Treasurer

Manufacturers of

Exhaust Fans, Blowers  
Ventilators & Sheet  
Metal Pipes.



A workroom well ventilated will increase its production.

Our Exhaust Fans are used extensively for removing smoke, dust heat and for drying by air circulation.

Office and Works:

926, 928 & 930 MANTON AVE

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.

## YARNS

William Hollins & Co., Limited, Nottingham; Cashmere, Worsted, Merino Yarns  
David Sandeman & Co., Glasgow; Worsted and Woolen Yarns.  
William Aykroyd & Sons, Bradford; Mercerized Yarns.  
James Smeithurst & Sons, Manchester and Bolton; Cotton Yarns.  
Bent Ley Silk Mills, Melham; Spun Silk Yarns.  
J. & R. Young, Belfast; Linen Yarns.

Agent for the U. S. and Canada

**W. M. CROWE, 477 Broome St., New York**

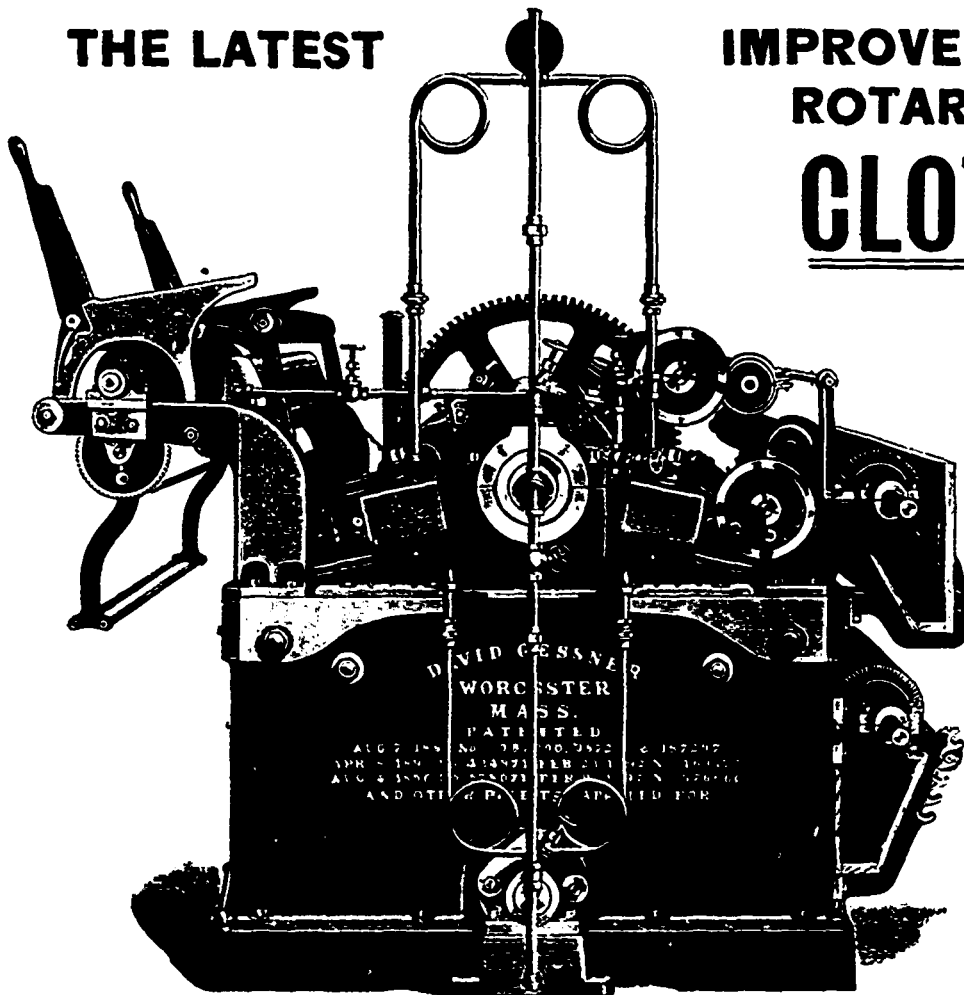
Represented by J. A. ROBERTSON, Board of Trade Building, Montreal

## THE LATEST

## IMPROVED DOUBLE-BED

## ROTARY

# CLOTH PRESS



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

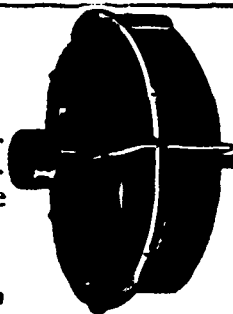
**DAVID GESSNER,**  
WORCESTER,

MASS., U.S.A.

# Fans and Heaters

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

**McEachren Heating & Ventilating Co., Galt, Ont.**



WILLIAM FIRTH, Pres. ELWIN BARNES, Vice-Pres. JOHN H. NELSON, Treas.

**WILLIAM FIRTH CO.**

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

IMPORTERS OF

ASA LEES & CO., Limited, Oldham, England—Textile Machinery—including Bale Breakers Revolving Flat Cards for Cotton, Drawing Frames, Slubbing Frames, Intermediate Frames, Roving Frames, Combers Ribbon and Comber Lap Machines, Carding Engines for wool, wadding, and also condensers.

SOUTHERN AGENTS FOR

FALL RIVER MACHINE CO.—Ring Spinning Frames and Coiler Railway Heads.

SOLE AGENTS FOR

WILLIAM TATHAM & CO.—Waste Machinery.

JOSEPH STUBBS—Gassing, winding and reeling machinery for cotton, worsted and silk.

JOHN PERRY, Limited—Worsted Machinery, on French and English system, also patent wool washers and special silk machinery.

GEORGE ORME & CO.'S patent hank indicators, etc.

SELLING AGENTS FOR

JOSEPH SYKES BROS.—Hardened and tempered steel card clothing for cotton.

DRONSFIELD BROS., Limited—Emery wheel grinders and emery fillet.

Southern Office, 40 South Forsyth Street, Atlanta, Ga.  
C. E. W. DOW, Representative.

**ESTABLISHED 1865**

**GEORGE W. PAYNE & CO.**

PAWTUCKET, R. I.

Builders of the

PAYNE & MATHEWSON



**PATENT  
UPRIGHT  
CONE  
WINDERS**

For Hosiery purposes,  
Winding from Cop, Skein or Bobbin

**SKEIN SPOOLER**

with adjustable skein holders for cotton wool and worsted, Upright Quillers, quills from cop, skein or bobbin, Ring-Dresser, Spooler and Reel Spindles, Cop Skinners, Warp Spools, Spooler Guides, Bolsters and Steps made and repaired at short notice.

"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

**EVAN ARTHUR LEIGH**

Successor to E. A. LEIGH & COMPANY

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

IMPORTER OF

**Textile MACHINERY**  
Etc.

Sole Agent for the U. S. and Canada for

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

BY FAR THE LARGEST MAKERS OF TEXTILE MACHINERY IN THE WORLD

Platt's Cotton, Woolen and Worsted Machinery. Sole makers of Brown's Patent Carding Rollers for wool—give woolen yarn a worsted appearance.

New Patent Noble Comb—increased production, better work.

Platt's Special Machinery for making English and French Worsted Yarns.

Platt's Special Machinery for making Cotton Waste into Yarns.

Also Sole Agent for U. S. and Canada for

**Messrs. MATHER & PLATT**

Salford Iron Works, Manchester, England.

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

Wool Washing and Drying Machines. Garnett Machines. French and English Napping Machines. Card Clothing for Cotton (Sykes's), Woolen and Worsted (Critchley's). Valey's Fallers and Circles, etc.

Fine Cotton and Worsted Yarns. Machinery delivered duty and freight paid.

**Lowell Machine Shop**

LOWELL, MASS.

**COTTON  
MACHINERY.**

**Revolving Flat Cards**

**Railway Heads**

**Drawing Frames**

**Roving Frames**

**Ring Spinning Frames**

**Twisters, Spoolers**

**Warpers, Slashers**

**CLOTH ROOM MACHINERY.**

**Looms**

**E. T. CARTER**

Successor to JOHN HALLAM  
83 & 85 Front St. East, - - - Toronto  
Wholesale Dealer in  
**DOMESTIC AND FOREIGN WOOLS**  
Sumac, Japonica, &c.  
Sole Agent for Wm. Parks & Son, St. John, N.B.,  
Cotton Warps.

**LONG & BISBY**

DEALERS IN  
Foreign and Domestic  
**WOOL AND COTTON**  
GENERAL COMMISSION MERCHANTS  
HAMILTON, ONT.

**JOHN E. BROWN,**

Foreign and Domestic

**WOOL**

77 McNab Street N.,  
HAMILTON, ONT.

**B. Spedding & Co.**

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

**The R. Forbes Co.**

(Limited)

Manufacturers of

**WOOLEN AND WORSTED YARNS**

For Hosiery and other work  
HESPELER, ONT.

**WOOL** **WM. GRAHAM**

54 and 56 Wellington  
St. East, TORONTO  
Dealer in

Foreign and Domestic  
Wools

My manufacturing experience assists me in importing  
wool for any desired goods.

**THE MONTREAL BLANKET CO.**

Manufacturers of

Shoddies, Wool Extracts  
and Upholstering Flocks

Office and Works: COTE ST. PAUL  
P.O. Address: MONTREAL

**WOOL**

**A. T. PATERSON & CO.**

MERCHANTS.

Lon. & Lanc. Ins. Bldg.  
164 St. James St., MONTREAL  
REPRESENTED BY MR. DAVID GUTHRIE.

**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.  
210 Front St. E., Toronto | Foot of Ontario St.

**WM. D. CAMERON,**

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

**HAND BOOK**

OF THE

**CANADIAN CUSTOMS TARIFF AND  
EXCISE DUTIES**

With list of warehousing ports in the Dominion—  
Extracts from the Canadian Customs Acts—Sterling  
Exchange, Franc, German Rixmark, and the prin-  
cipal Foreign Currencies at Canadian Customs  
values, and other useful tables, will be issued at  
close of present session of Parliament.

Price—F'cap 8vo, Cloth  
Limp, 50c.

Discount to the Trade.

**MORTON, PHILLIPS & CO.**

Stationers, Blank Book Makers  
and Printers

1755 & 1757 Notre Dame St., Montreal

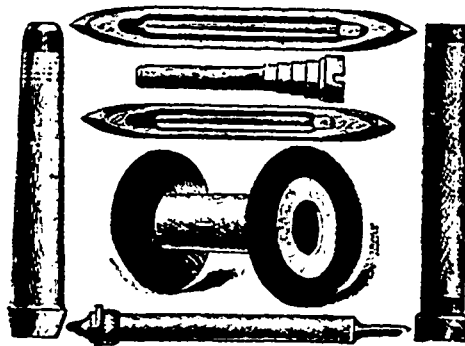
**WILSON & COMPANY**

DEALERS  
IN ALL KINDS .....  
OF

**WOOL**

102 FRONT STREET WEST,  
TORONTO, ONT.

**The Lachute Shuttle Company**



We are the largest Shuttle  
Manufacturers in Canada.

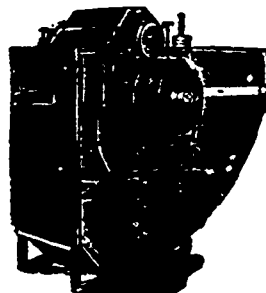
Slubbing, Roving and all kinds  
of Bobbins and Spools for  
Cotton and Woolen Mills.

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

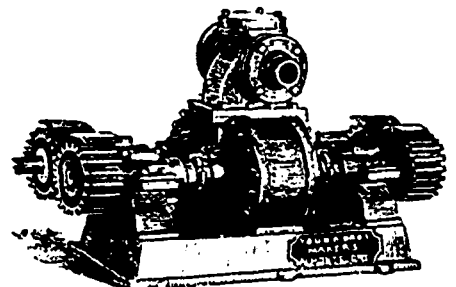
Orders solicited and all work guar-  
anteed to give satisfaction.

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

**MISSISSIPPI IRON WORKS**



ESTABLISHED  
1875



Manufacturers of English or American Pulling Mills and Washers, Wool Pickers, Ex-  
haust Fan Drives, 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.**

**ROTHSCHILD BROS. & CO.**

Importers and Manufacturers of  
all kinds of

**BUTTONS AND FANCY GOODS.**

Sole Agents for

**JACQUOT & CO.'S FRENCH BLACKING**

Sole Agents for the  
American Continent



Sole Agents for the  
American Continent

OFFICES—466 & 468 Broadway, N.Y.  
78 Bay St., Toronto.  
And 56 Faubourg Poissonniere, Paris.

**John D. Lewis,**

Importer and Manufacturer of  
**Dyestuffs, Dyewoods, Chemicals and  
DYEWOOD EXTRACTS**

3 & 4 Exchange Place, PROVIDENCE, R.I.  
Mills: Charles and Bank Streets.

**CARBONIZER**

Much Superior to Acid for use in  
**Wool, Piece-Goods & Rags.**  
Address MERRIMAC CHEMICAL CO.,  
77 Road St., Boston,  
Mfrs. of Acids and Chemicals.

REGISTRATION OF DESIGNS.

**PATENTS** IN ALL COUNTRIES

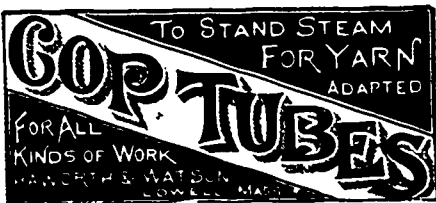
GUARANTEED

**BEAUDRY & BROWN**

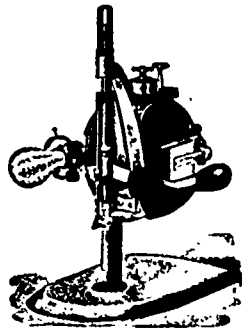
CIVIL ENGINEERS AND LAND SURVEYERS

107 ST. JAMES ST., MONTREAL

WRITE FOR BOOKLET.



**ELECTRIC  
CLOTH  
CUTTING**



The Eastman Electric Cloth Cutter is being used by all up-to-date manufacturers of clothing, cloaks, mantles, shirt waists, blouses, shirts, underwear, overalls, pants, duck clothing, &c., &c. It makes a clean and accurate cut up to 3 1/2 ins. high. Cuts 24 dozen white shirts in one cut. All machines put on trial free. Hundreds already in daily use in Canada and U. S.

**EASTMAN ELECTRIC CLOTH  
CUTTING MACHINE CO.**

206 George Street, TORONTO, ONT.

Established 1848.

**A. EICKHOFF**

(A. KRAMER, Proprietor)

Manufacturer and Dealer in  
**Hatters', Furriers', Tailors',  
Glovers' and Shirt Cutters'  
KNIVES AND SCISSORS.**

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

No. 381 BROOME STREET,  
Between Broadway and Bowery,  
**NEW YORK CITY**

**ELLIOT** Send for Circular.  
**Cloth Folder and Measurer**

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

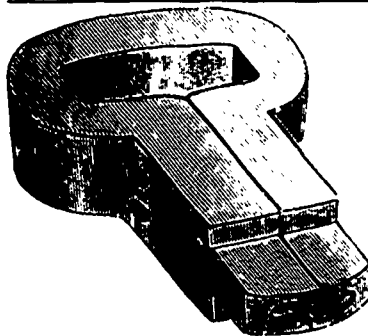
Manufactured by **Elliot & Hall, Worcester, Mass.**

**WILLIAM CRABB & CO.**

Manufacturers of all kinds of

**Hackle, Gill, Comb and Card Pins, Picker Teeth, Needle  
Pointed Card Clothing in Wood and Leather for  
Flax, Jute, Tow, etc.**

Hackles, Gills and Wool Combs made and repaired; also Rope Makers' Pins, Picker Pins, Special Springs, Loom and Shuttle Springs, English Cast-Steel Wire, Cotton Banding and General Mill Furnishings  
Bloomfield Avenue and Morris Canal, NEWARK, N. J.



**JOHN W. BARLOW**

Manufacturer of

**LOOM PICKERS,**

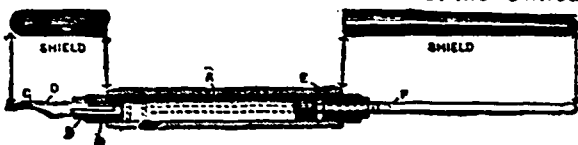
LAWRENCE, MASS.

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



**The Post Fountain Pen**

is a self-filling and self-cleaning pen and is as near perfection as possible in a fountain pen. The retail price of the POST FOUNTAIN PEN is \$3, but each new subscriber to THE CANADIAN JOURNAL OF FABRICS will get one at \$2.50, including the year's subscription to the paper. Some of the most eminent writers of the United States have given their unqualified endorsement of the Post Pen.



ADDRESS **BIGGAR, SAMUEL & CO.,**  
Canadian Journal of Fabrics,

**TORONTO or MONTREAL**

# DICK, RIDOUT & CO'Y

Office—69 Bay Street,  
**TORONTO.**

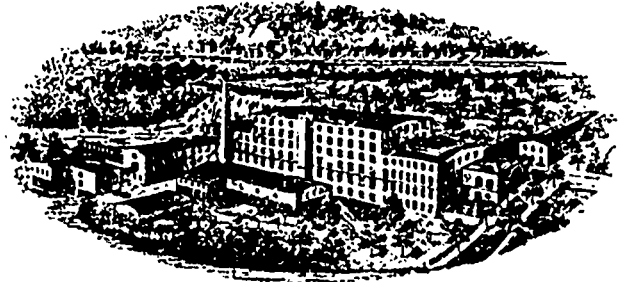
Works,  
Cobourg & Winnipeg

Manufacturer of

Jute and Cotton Bags  
Hessians, Starched and Dyed Jute Canvas.  
Jute Binder Twine, Horse Blankets, Etc  
**WOOLEN GOODS, TWEEDS, Etc.**

Agents for LOUIS BEHRENS & SONS, Manchester, England,  
Velveteens, Velvettas, 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.

# Dominion Oil Cloth Co'y,

MANUFACTURERS OF Limited

# Oil-Cloths

of every description

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

Office and Works:  
Corner St Catherine and Parthenais  
Sts., MONTREAL, QUE.



## New England Ventilating and Heating Co'y.

Providence,  
R. I.

Manufacturers  
of

Richardson's  
Revolving  
Ventilator

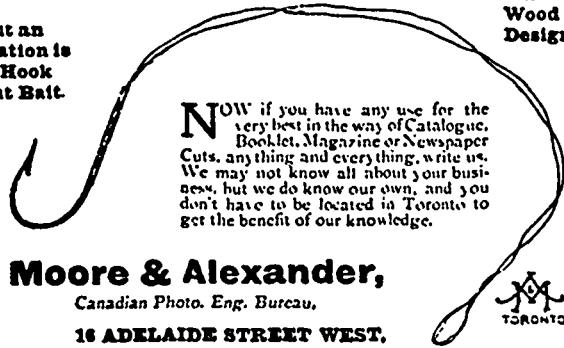
For use  
where  
power is  
not  
available.

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

OFFICE AND WORKS:

926, 928 & 930 Manton Avenue

An Ad.  
Without an  
Illustration is  
Like a Hook  
Without Bait.



**N**OW if you have any use for the very best in the way of Catalogue, Booklet, Magazine or Newspaper Cuts, anything and everything, write us. We may not know all about your business, but we do know our own, and you don't have to be located in Toronto to get the benefit of our knowledge.

### Moore & Alexander,

Canadian Photo. Eng. Bureau,

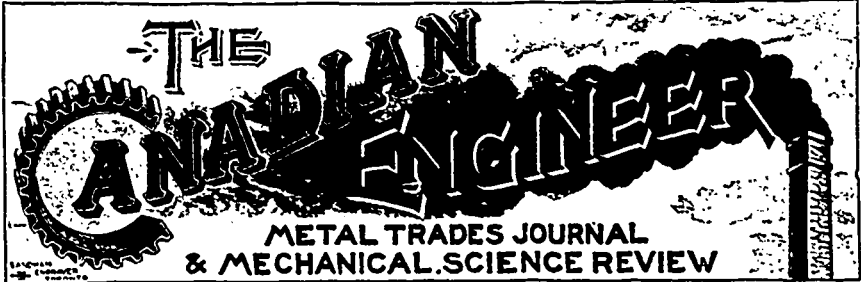
16 ADELAIDE STREET WEST,  
TORONTO, CAN.

Half-Tone  
Zinc Etching  
Wood Engraving  
Designing

**MERIT  
ALONE  
WON'T  
BRING  
BUSINESS**



We have  
learned this by  
experience.



ISSUED MONTHLY IN THE INTERESTS OF THE

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

THE CANADIAN ENGINEER stands to-day unrivalled among Canadian trade papers for the wide distribution and character of its circulation. It has in fact the largest circulation of any trade journal in Canada.

Sample copies sent free to intending subscribers. Advertising rates on application.

## BIGGAR, SAMUEL & CO., Publishers

FRASER BUILDING, MONTREAL,

62 Church Street, . . . . . TORONTO

JOHN SHAMBOW, Treasurer.

# Woonsocket Reed and Shuttle Works

**WOONSOCKET, RHODE ISLAND**

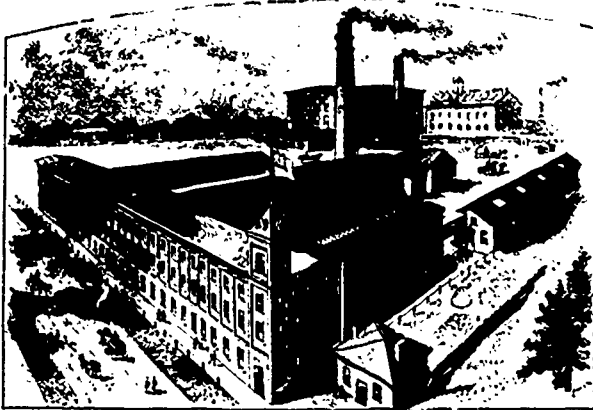
Makers of Every Description of

## Power Loom Shuttles

### Hamilton Cotton Co., Hamilton

MANUFACTURERS OF

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

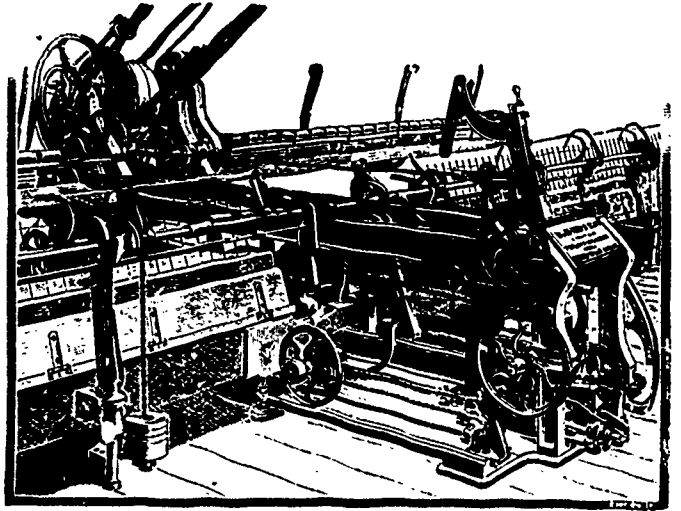


SELLING AGENTS

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

### WILLIAM WHITELEY & SONS, Limited

LOCKWOOD, HUDDERSFIELD, ENGLAND.



Winding Machinery, Improved Self-Acting Mule, Suspended Steam Driven Centrifugal Hydro-Extractor, Tentering 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**

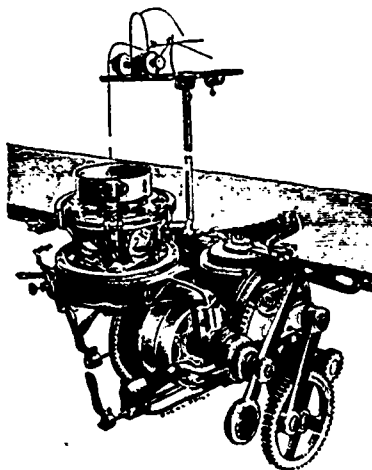
164 McGill Street, - Montreal.

## Richard Schofield

**TORONTO**

Manufacturer of all kinds of

### Power Knitting Machines



Cylinder Dials, Cams, Yarn Guides, Cut Presses, Mill Supplies, Fluted Rollers, Gear Wheels, Worm Wheels, Ratchet Wheels, Special Screws, &c., &c.

Canadian Agent for the Branson Machine Co., Philadelphia.

14-16 Court Street  
Toronto

ESTABLISHED 1859

## THE C. TURNBULL CO.,

OF GALT, Limited.

MANUFACTURERS OF

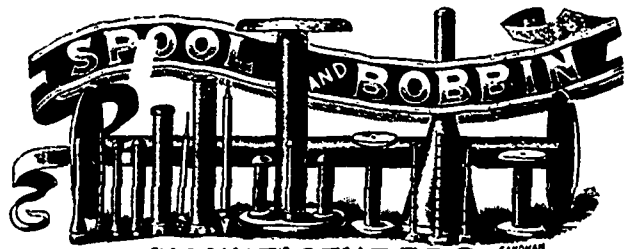
Full Fashioned Lamb's Wool Underclothing, Hosiery and Knitting Yarns, Perfect Fitting Ladies' Ribbed Vests, Sweaters, Jerseys, Knickers.

THOMAS KER

J. HARCOURT

## KER & HARCOURT,

ESTABLISHED 1857



MANUFACTURERS,

Orders by Mail will receive prompt attention

**Parry Sound, Ont.**



Send for  
Our

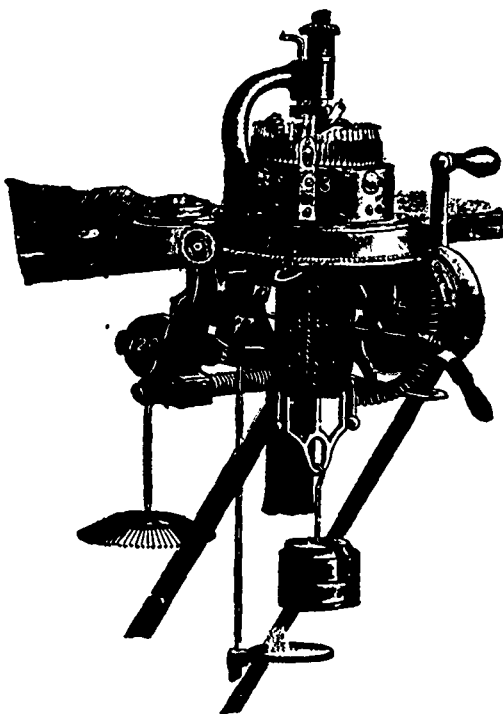
Got  
That  
Oliver  
Typewriter  
Yet?

1901  
Catalogue

**Linotype Company, Manufacturers,**

**MONTREAL,**

Toronto Branch: 55 Victoria St.



Seamless Hosiery

## Knitting Machines

We have been hard at it for nearly one-third of a century.

We have had Success.

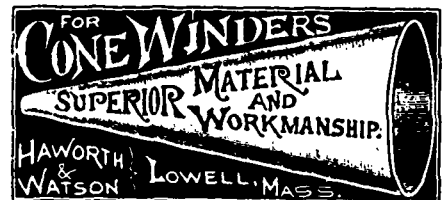
Our customers have had Success.

**Why?**

Merit and Superiority in our Machines tells the story. Catalogue free.

**CREELMAN BROS.**

Manufacturers  
GEORGETOWN, ONTARIO, CAN.



SEVENTH EDITION.

## THE BOER WAR

Its Causes, and Its Interest  
to Canada.

A History of South African Colonization  
with a Statement of the Grievances  
of the Uitlanders.

Also miscellaneous statistics of South Africa  
and a glossary of Cape Dutch and Kafir  
terms used during the war. Forty pages.  
Price, 10 cents.

BIGGAR, SAMUEL & CO., Publishers,  
Toronto and Montreal

Established 1833.

41 Highest Awards.

# Wilson Brothers Bobbin Co., Limited

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

## BOBBINS & SHUTTLES

POSTAL ADDRESS:

Cornholme Mills, **ALSO** Atlas Works,  
Todmorden. **Liverpool.**

OFFICE

14 Market Place, - - - Manchester.

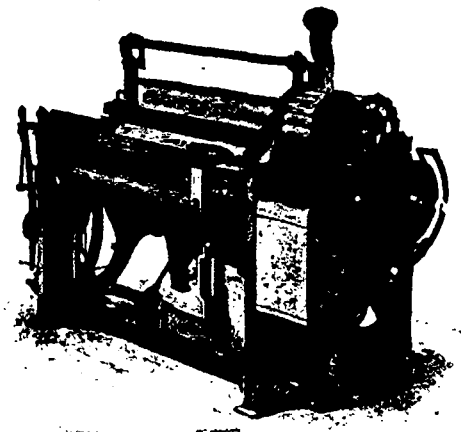
The best results in  
**Card Grinding**  
are obtained by using



**DRONSFIELDS' PATENT  
GROOVED EMERY FILLETING**  
SPECIALITIES: MACHINES FOR GRINDING CARDS  
MACHINES FOR COVERING ROLLERS WITH LEATHER

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

COUNTY C.



THE NORTHROP LOOM

There is Only One Profitable Plan—

# BUY NORTHROP LOOMS

With Them the Future is Assured.

They are no Experiment.

Thousands have been running in the United States, and a large number  
are now in Canada. Sales steadily on the increase.

"The Mills that refuse their opportunities will find their future  
utility serving as picturesque ruins in the landscape."

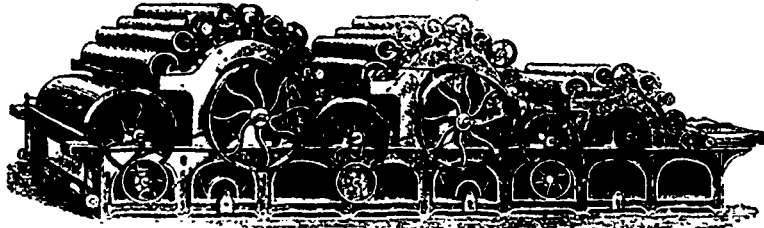
We also Manufacture the Best Warper at present  
known—also Spoolers.

Write for particulars and quotations. Address

**THE NORTHROP LOOM CO. OF CANADA, LTD.**  
**VALLEYFIELD, P. Q.**

TEXTILE MACHINERY (New and Second Hand)

CARD CLOTHING **TETLOW'S**  
Stock in Canada



English Sales Attended.

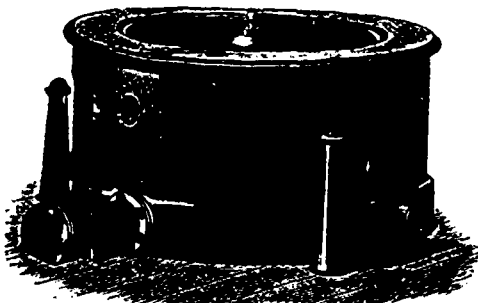
Condenser Aprons **Buffed Surfaces**  
Plain & Grooved

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.

# 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.**

BUY OUR  
**CARD CLOTHING**  
 BECAUSE IT IS  
**ENGLISH**  
 LEATHER & CLOTH BACKINGS  
 HARD & TEMPERED WIRE  
 MACHINERY  
**ALL WORKMANSHIP**  
 MADE HERE AT HOME  
 ASK FOR SAMPLES & QUOTATIONS  
 THE **J. C. McLAREN BELTING COY.**  
 TORONTO FACTORY 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**

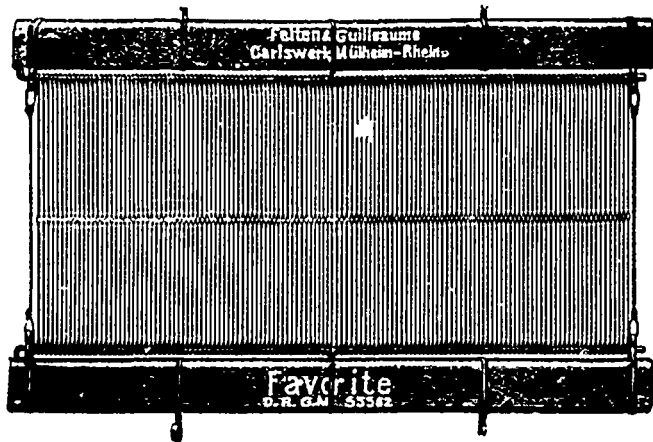
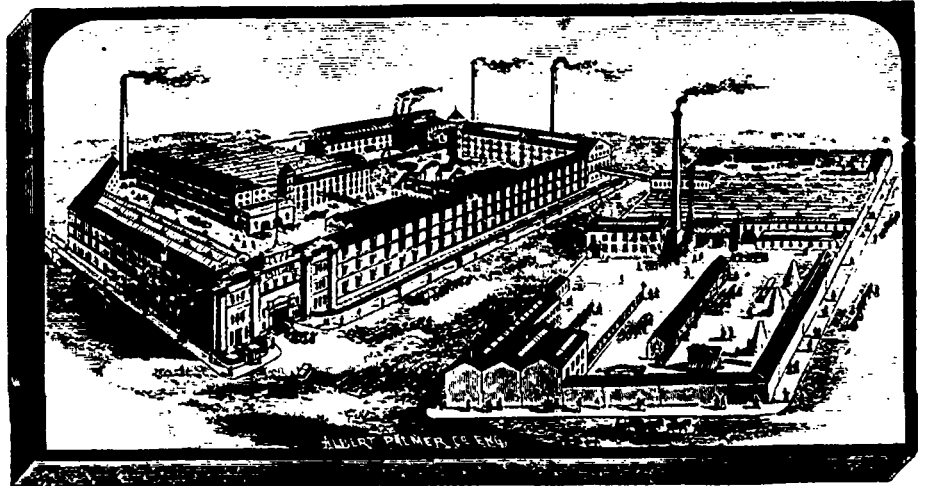
**Patent Automatic Spinning Frames  
 Improved Laying Machines**

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, 1873, Highest  
 Award (Medal), Melbourne, 1850.



*Fellen & Guillaume, Carlswerk  
 Actien-Gesellschaft, Mülheim-on-Rhine*

Manufacturers of

**Tinned Cast Steel Wire Heddles**

*made on Patent Automatic Machines and consequently perfectly uniform in every respect. The Lightest, Exactest and most Uniform Wire Heddles ever made, not 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*

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

**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

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