

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.

- | | |
|--|--|
| <input checked="" type="checkbox"/> Coloured covers/
Couverture de couleur | <input type="checkbox"/> Coloured pages/
Pages de couleur |
| <input type="checkbox"/> Covers damaged/
Couverture endommagée | <input type="checkbox"/> Pages damaged/
Pages endommagées |
| <input type="checkbox"/> Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée | <input type="checkbox"/> Pages restored and/or laminated/
Pages restaurées et/ou pelliculées |
| <input type="checkbox"/> Cover title missing/
Le titre de couverture manque | <input checked="" type="checkbox"/> Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées |
| <input type="checkbox"/> Coloured maps/
Cartes géographiques en couleur | <input type="checkbox"/> Pages detached/
Pages détachées |
| <input type="checkbox"/> Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire) | <input checked="" type="checkbox"/> Showthrough/
Transparence |
| <input type="checkbox"/> Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur | <input checked="" type="checkbox"/> Quality of print varies/
Qualité inégale de l'impression |
| <input checked="" type="checkbox"/> Bound with other material/
Relié avec d'autres documents | <input checked="" type="checkbox"/> Continuous pagination/
Pagination continue |
| <input checked="" type="checkbox"/> 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 | <input type="checkbox"/> Includes index(es)/
Comprend un (des) index |
| <input type="checkbox"/> 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. | Title on header taken from: /
Le titre de l'en-tête provient: |
| <input type="checkbox"/> Additional comments: /
Commentaires supplémentaires: | <input type="checkbox"/> Title page of issue/
Page de titre de la livraison |
| | <input type="checkbox"/> Caption of issue/
Titre de départ de la livraison |
| | <input type="checkbox"/> 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
								✓			

THE CANADIAN MANUFACTURER

DEVOTED TO
 THE
 MANUFACTURING & MINING INDUSTRIES,
 OF THE
 DOMINION.

AND INDUSTRIAL WORLD.

Vol. 13.

TORONTO, NOVEMBER 4, 1887.

No. 9.

Established
1856.

The J. C. McLAREN BELTING CO.

Successors to the
Late J. C. McLAREN.

OAK-TANNED LEATHER BELTING.

CARD CLOTHING.

LOOM REEDS and HARNESS.

292 & 294 ST. JAMES ST. MONTREAL.

"Old Dyewood Warehouse"

Established 1838.

Theo. H. Eaton & Son,

Windsor, Ont. : Detroit, Mich.

IMPORTERS OF

ANILINE COLORS,

DYE WOODS.

DYEING DRUGS, CHEMICALS, Etc.

MANUFACTURERS OF

GLAUBER SALTS AND EXTRACT INDIGO.

SOLE AGENTS IN THE UNITED STATES AND CANADA
FOR THE "CROWN ANILINE DYES."

THE

Gutta Percha & Rubber

MANUFACTURING COMPANY,
OF TORONTO.

WAREHOUSE

YONGE STREET, TORONTO.

The largest manufacturers in the world of
Vulcanized India Rubber Goods for mechanical
purposes.

Rubber Belting from 1 to 72 inches wide.

Hose, for conducting, suction and steam

Packing, Cloth Insertion and pure.

Tubing, of all kinds.

Rubber, Linen, and Cotton Fire Hose.

Maltese Cross Carbolized Fire Hose.

A full Stock always on hand.

Write for Price Lists and Discounts.

TO MANUFACTURERS!

W. R. BROCK & CO.

Are always open to buy and pay spot cash for
lines "TO CLEAR OUT STOCK" in the
following Canadian productions:

COTTON GOODS—Grey and White Cottons, Grain
Bags, Warps, Yarns, Checked Shirtings, Gingham,
Tickings, Denims and Cottonades.

WOOLLEN GOODS—Tweeds, Blankets, Flannels,
Etoffes, Union Goods.

KNITTED GOODS—Hosiery and Underwear.

WOOLLEN YARNS.

We also keep in stock MANUFACTURERS' TRIMMINGS,
which we supply at special Prices.

Special Drives in above lines now in stock at interest-
ing prices.

W. R. BROCK & CO.

Cor. of Wellington & Bay Streets,

TORONTO.

Imperial Bank of Canada.

Head Office · Toronto.

H. S. HOWLAND, President. | T. R. MERRITT,
D. R. WILKIE, Cashier. | Vice-President.

Capital Paid-up · \$1,500,000
Rest · \$550,000

Purchases Municipal Debentures.
Issues Drafts on its Branches and Agencies in the
North-West.

Transfers Moneys by Telegram to Winnipeg and
Brandon.

Agents in-London,

LLOYD, BARNETT & BOSANQUET'S BANK
(Limited).

62 LOMBARD STREET,

with whom moneys for transmission from Great Britain to
Ontario and the North-West may be deposited.

A general Banking Business transacted.

John Bertram & Sons,

CANADA TOOL WORKS!

Dundas, Ont.

SEE ADVERTISEMENT, PAGE 316.

J. C. DIXON & BROS.

WORSTED SPINNERS, DUNDAS, Ont.

MANUFACTURERS OF
FINGERING, KNITTING,
and all descriptions of
WORSTED YARNS.

PATENTS

PROCURED in Canada, the United States and all foreign countries, Canacts, Trade-Marks, Copyrights, Assignments, and all Documents relating to Patents, prepared on the shortest notice. All information pertaining to Patents cheerfully given on application. ENGINEERS, Patent Attorneys, and Experts in all Patent Cases.

DONALD C. RIDOUT & CO.
ESTABLISHED 1857
22 KING STREET
TORONTO

The Canadian Bank of Commerce.

HEAD OFFICE, . . . TORONTO.

Paid up Capital, \$5,000,000.
Res., 700,000.

DIRECTORS.

HENRY W. DARLINGTON, Esq., *President.*
GEORGE A. COX, Esq., *Vice-President.*
Jas. Crathern, Esq., W. B. Hamilton, Esq.,
Wm. Gooderham, Esq., John I. Davidson, Esq.,
Matthew Leggat, Esq., George Taylor, Esq.,
Hon. Wm. McMaster, Hon. S. C. Wood.

B. E. WALKER, GENERAL MANAGER.
J. H. PLUMMER, ASST. GEN. MANAGER.
WILLIAM GRAY, INSPECTOR.

New York—J. H. Goodby & Alex. Laird, Agents.

BRANCHES.

Ayr,	Guelph,	St. Catharines,
Barrie,	Hamilton,	Sarnia,
Bellefleur,	Jarvis,	Seaforth,
Berlin,	London,	Simcoe,
Blenheim,	Montreal,	Stratford,
Brantford,	Norwich,	Strathroy,
Chatham,	Orangeville,	Thorold,
Collingwood,	Ottawa,	Toronto,
Dundas,	Parkhill,	Walkerton,
Dunnville,	Paris,	Windsor,
Galt,	Peterboro,	Woodstock,
Goderich,		

Commercial credits issued for use in Europe, the East and West Indies, China, Japan and South America.

Sterling and American Exchange bought and sold. Collections made on the most favorable terms. Interest allowed on deposits.

BANKERS.

New York—The American Exchange National Bank.
Chicago—American Exchange National Bank.
London, England—The Bank of Scotland.

Largest Manufacturers of STEEL and BRASS STAMPS in Canada.

PRITCHARD & ANDREWS

OTTAWA, ONTARIO.

Rubber Stamps, Stencils, Seals, &c.

SEND FOR PRICES.

DOMINION DYEWOOD & CHEMICAL CO.

SOLE MANUFACTURERS OF

The Celebrated Yorkshire Scouring and Fulling Soaps,
Neutral Cotton Seed Oil Soaps,
Pure Lard Oils specially adapted for the Woolen Trade.

IMPORTERS OF

Indigo, Cochineal, Cudbear,
Indigo Ext., Cutch, Archil,
Madder, Dyewoods,
Dyewood Extracts and all Dyeing Drugs,

ANILINE DYES, ALL COLORS.

SPECIALTIES ARE

Imperial Blue, Fast Seal Brown,
Fast Acid Brown, Brilliant Scarlets,
Azo. Green, Fast Cardinals,
Fast Acid Garnet.

Office: 77 FRONT ST. E. **TORONTO.** Works: Den. Station.

McARTHUR, CORNEILLE & CO.

(Successors to JOHN McARTHUR & SON)

310 to 316 St. Paul Street,

and

147 to 151 Commissioners Street,

MONTREAL,

offer at closest prices

PURE OLIVE OIL.

WINTER-PRESSED LARD OIL,

EXTRA FINE SPINDLE OIL,

and a full assortment of other

LUBRICATING OILS.

Also

CHEMICALS.

DYESTUFFS,

DYEWOODS,

EXTRACTS,

&c. &c. &c.

Are Sole Agents in Canada for

SOCIETE ANONYME

DES

MATIERES COLORANTES ET

PRODUITS CHIMIQUES,

DE ST. DENIS,

Successors to

A. POIRRIER AND G. D'ALSACE,

PARIS,

Manufacturers of

ANILINE DYES.

ARCHIL

CUDBEAR.

&c. &c. &c.

Prize Medal, London Universal Exhibition, 1862.

Gold Medal, Paris Universal Exhibition, 1867.

Grand Diploma of Honor, Vienna Universal Exhibition, 1873.

Medal and Diploma, with Highest Commendations, Philadelphia Centennial Exhibition, 1876.

Maintain large stock, replete with all the new and improved colors. Will be pleased to furnish quotations with samples and directions for use.

D. MORRICE, SONS & CO.

Manufacturers' Agents,

MONTREAL & TORONTO.

HOCHELAGA COTTONS.

Brown Cottons and Sheetings, Bleached Sheetings, Canton Flannels, Yarns, Bags, Ducks, etc.

ST. OROIX COTTON MILL.

Tickings, Denims, Apron Checks, Fine Fancy Checks, Ginghams, Wide Sheetings, Fine Brown Cottons, etc.

ST. ANNE SPINNING CO. (Hochelaga.)

Heavy Brown Cottons and Sheetings.
Tweeds, Knitted Goods, Flannels, Shawls, Woolen Yarns, Blankets, etc.

The Wholesale Trade only Supplied.

New York Dyewood, Extract and Chemical Co.

MANUFACTURE HIGH GRADE

CURED CHIP LOGWOOD

FOR WOOL DYEING.

OFFICE:

55 BEEKMAN ST., N.Y.

WORKS, BROOKLYN.

MIDDLETON & MEREDITH,

MONTREAL.

CHEMICALS AND DYE STUFFS.

Sal Soda, Soda Ash, Bleaching Powder, Caustic Soda, Bi-Carb. Soda, Chlorate of Potash, etc., etc.

Extracts Indigo, Sumac, Fustic, etc. Gambier, Cutch, Sumac, etc., Acids,

ANILINE DYES,

Brooke, Simpson & Spiller's. Full Assortment on hand.

PHOSPHOR BRONZE, SILICATE CLOTH

PILLOW, HERSEY & CO.,

Manufacturers of every description of Cut Nails, Tacks, Brads, Railway and Pressed Spikes, Horse Shoes, Carriage, Tire and other Belts, Coach Screws, Hot Pressed and Forged Nuts, Felloe Plates, Lining and Saddle Nails, Tufting Buttons, &c., &c.

The Hardware Trade, Shoe and Leather Finding Dealers, and Boot and Shoe Manufacturers, will find the Largest and Best Assortment and Greatest Variety of above Goods always in stock, and can rely on orders being rapidly executed, our facilities for doing so being unequalled.

OFFICE, 51 St. Peter St. Montreal.

DOMINION Card Clothing Works,

York St., Dundas.

W. R. GRAY & SONS,

PROPRIETORS,

MANUFACTURE EVERY DESCRIPTION OF

Card Clothing and

Woolen Mill Supplies.

THE CANADIAN MANUFACTURER

DEVOTED TO
THE MANUFACTURING & MINING INDUSTRIES,
OF THE DOMINION.

AND INDUSTRIAL WORLD.

VOL. XIII.

TORONTO, ONT., NOVEMBER 4, 1887.

No. 9.

A GOOD BUSINESS OPENING - FIRE INSURANCE.

In the last issue of this journal we published the experience of a prominent manufacturing concern in Canada who had proposed going largely into the manufacture of vapor stoves, but were deterred from doing so by a fire insurance company which was carrying risks for them. The ipsedixit of the insurance company was that they would take no risks where vapor stoves were in use. that they would cancel all existing risks where vapor stoves were introduced, and that the manufacturer to whom the threats were being addressed, who had recently introduced a vapor stove into his own residence, must immediately remove the same, or have his fire insurance policy cancelled.

That this was a most tyrannical proceeding we shall show. The construction of a vapor stove is such that a suitable reservoir is used, holding perhaps, a half gallon of gasoline. The reservoir is supported on a perpendicular iron pipe or tube, some two or three feet above the top of the stove, the flow being regulated by a stop cock, or valve, the gasoline being admitted in a very fine thread-like stream to a vaporizer, or burner, where its combustion causes a very clear, intense and smokeless flame. When it is desired to use the stove the gasoline is permitted to escape in a small but steady flow from the reservoir through the pipe to the burner, and when the service has been performed the gasoline is shut off by means of the stop cock. In most vapor stoves when it is desired to replenish the reservoir an automatic device extinguishes the flame of the burner if it happens to be lighted, and it is impossible to again light the burner until the reservoir is closed. So that it is impossible for any accident to occur by the gasoline taking fire while the reservoir is being filled, unless it be through or by some agency other than the stove itself. Gasoline is inflammable, but it is no more explosive than coal oil, and when ordinary intelligent care is observed in its use, it is no more dangerous than coal oil or illuminating gas.

That the action of fire insurance companies is tyrannical when they refuse to take risks where vapor stoves are used is evident from the following facts. In statistics of fires occurring in one year in eleven American cities where vapor stoves were in use, it is shown that there were 168 fires arising from defective chimney flues, occasioning losses aggregating \$22,122, overheated stoves and stovepipes, 70 fires and \$6,307 losses, hot ashes, 29 fires and \$20,360 losses; sparks, 83 fires and \$3,565 losses; coal oil lamp explosions, 58 fires and \$14,875 losses, oil stoves, 6 fires and \$356 losses; illuminating gas, 37 fires and \$19,923 losses; and vapor stoves, 11 fires and \$164 losses.

Here we have 462 fires originating from 8 specified causes, involving losses aggregating \$87,672; but out of these but 11 fires were attributed to vapor stoves, the losses from them amounting in all to only \$164. But insurance companies do not refuse to take risks against fires caused by defective chimneys and flues, hot ashes, sparks, overheated stoves and stovepipes, lamp explosions and upsettings, oil stoves nor illuminating gas, although, as shown in the figures above given, out of every 42 fires occurring but one arose from vapor stoves, and for every \$535 lost by such fires, but one dollar is chargeable to vapor stoves. Why, then, do the insurance companies not interdict the use of chimneys, stoves and stove pipes, the use of coal or wood fuel which produce ashes and sparks, coal oil lamps and stoves and illuminating gas, all of which are so much more productive of fires than vapor stoves?

A great many of the fires attributed to vapor stove explosions find their origin in other causes, and the claim is boldly made that gasoline will not explode. It is very inflammable, and is volatile, but it is not explosive, as can be proven by any who will experiment with it. If fire is communicated to the gasoline in the tank of a vapor stove, it will burn, but there will be no explosion, and if fire is communicated to a jugful of gasoline, the fluid may be entirely consumed, but there will be no explosion, and the jug will remain intact. Explosions of coal oil lamps are caused by the ignition of the accumulation of gas generated when the oil is low, the formation of the gas being accelerated by the heat from the burner and other metallic parts; and all who handle such lamps understand the necessity of always keeping them well filled with oil. But the evidence of their dangerousness notwithstanding lies in the fact that coal oil lamps are among the most fruitful causes of fires arising from such sources as are here considered.

Fire insurance companies in the United States are quite as conservative in taking risks as their Canadian brethren; and being in a position to observe the facts as regards the vapor stove as a cause of fires, do not hesitate to take such risks. In some sections of the country where their "conservatism" led them to refuse such risks, or to prohibitory rates, they have been brought to view the matter in a different light when manufacturers of, dealers in and users of vapor stoves made strong invitations to insurance companies who would accept such risks to come in and do the business refused by the others, and if insurance companies doing business in Canada will not take corresponding risks here, an effort should be made to induce those to embark in the insurance business here who will. It would certainly be a good business opening.

[This matter will be further discussed in another issue of this journal.—EDITOR.]

THE BONUSING CRAZE.

THE Peterborough *Review* thinks that this journal has been misled as to the character of the men composing the New York Wagon Building Company who have recently been largely bonused by the Brantford authorities as an inducement to have them establish a branch of their works at that place. It says that the concern have obtained an exceptional share of business prosperity on the other side of the line, and that they will have to expend in Peterborough nearly \$100,000 before they can derive one cent's worth of advantage from the proposed grant. It says further that "prior to negotiations with Brantford they had received very favorable offers from Galt, and in the natural order of things they expected equal inducements in Peterborough."

We disclaim any personality as regards the company in question, and suppose that the gentlemen composing it are all honorable men. In discussing the system of municipalities offering more or less valuable inducements to individuals, companies or corporations to establish industrial enterprises within their limits, alluding to the opposition move against bonusing the company in question by the local manufacturers, we stated that "The proposed grant should be antagonized on the broad ground that if the concern asking it have not got sufficient capital to establish and carry on their business without such help, or if there is not a sufficiently wide and lucrative market in Canada to support such an enterprise, in addition to those already in existence, they had better remain where they are." We have no more objection to the company in question than we would have to any other company under similar circumstances; but our contention is that such inducements should not be offered.

We presume that the words "pauper industrial enterprises" used by us sounds ungraciously to over-sensitive ears, but we cannot but view persons who ask for such donations as the authorities of Brantford have bestowed in the instance under consideration as paupers, even if they have made a million of dollars in the United States and propose spending a hundred thousand of it in Canada. More places than Brantford and more people than the inhabitants of that town are directly and keenly interested in the transaction. There are hundreds of wagon factories scattered all over the Dominion, not one of which, probably, ever asked for or obtained a dollar of assistance from the towns in which they are located, and it is all the worse for them that a foreign concern should come in and become their rivals in business, and be given \$20,000 bonus besides. If it is proper that these foreigners should be given so large a premium, why not vote corresponding premiums to the half-dozen or more wagon factories long since established in Brantford by Canadians? The assistance would be timely and valuable to them, now that they are to encounter such formidable opposition. As it is, it should be borne in mind that the cost of the \$20,000 bonus alluded to must be paid by the city corporation; that the money, or its equivalent, must necessarily be raised by taxation on all the taxable property of the city; that the half-dozen or more wagon makers already doing business in Brantford will have to pay their proportionate shares; and the little that these poor men have must be taken to still further enrich this new foreign pauper industrial enterprise.

The people of Canada, while they desire to buy manufactured goods as cheaply as possible, do not desire to see the thousands of smaller concerns scattered throughout the country squelched and frozen out of existence by imported concerns through and by the mere weight of capital. Much less do they desire to see the anaconda fed, nursed and bonused by Canadian municipal corporations.

THE MELBOURNE, AUSTRALIA, EXHIBITION.

THE Melbourne, Australia, Centennial International Exhibition will be opened on August 1st, 1888, and closed on January 31st, 1889.

We desire to draw the special attention of Canadian manufacturers to this exhibition, for we feel assured that if they avail themselves of the opportunity to make large and varied displays of their products there, the results will be of the most gratifying character. The British Colonies in the South Pacific, in which are included Victoria, New South Wales, Queensland, South Australia, Western Australia, Tasmania, and New Zealand, comprise a continent that is growing in value and importance with much greater rapidity than many imagine. The growth of the Australasian trade has been marvelously rapid. Fifty years ago, at the time of the accession of her Majesty Queen Victoria to the throne, that trade was comparatively insignificant, while at the present day it is much greater than that of any other British possession, excepting India. The substantial and permanent character of the prosperity of Australasia may be inferred from the fact that nearly one fourth of all English capital invested outside of England is invested in Australia, while probably £20,000,000 sterling yearly finds its way back to the mother country as interest thus employed in public or private enterprises. The aggregate value of the commerce of Australasia in 1882 amounted to no less than \$557,000,000. This included not only the foreign but the inter-colonial trade, and this latter amounted to more than \$178,000,000. In 1872 the imports of the principal articles of commerce with Victoria amounted to £12,356,000 sterling, and ten years later, in 1882, they were £16,400,000; but there was a considerable falling off in such goods as were being manufactured there in the mean time, while a large increase occurred in books and stationery, bags and sacks, cotton goods, carpeting, earthenware, furniture, haberdashery, hardware and ironmongery, musical instruments, paper, paints and colors, sugar and timber. The value of the imports at the port of Melbourne for the year 1882 aggregated \$81,360,000, and the exports \$78,800,000. Of this trade \$3,248,000 of imports was from the United States, and that country, was favored in the same time with but \$573,000 of exports. Among the more valuable products sent there from the United States were agricultural implements, books, carriage materials, clocks, doors, fish, fruit, furniture, hardware, musical instruments (chiefly organs), cast, wrought and sheet iron, leather, agricultural and other machinery, corn and corn flour, patent medicines, manufactures of metals, nails, coal oil, plaster, plated ware, sewing machines, roofing slates, sugar and glucose, dressed and undressed timber, laths, pickets, etc, tobacco, tools and utensils, woodenware, etc.

From this it will be observed that Australia presents a re-

markably large and valuable market for a great many of just such manufactured goods as are or may be produced in Canada and it will certainly repay Canadian manufacturers to carefully study the situation. In another page of this JOURNAL we publish a letter received from our correspondent at Adelaide, in which he mentions the names of several of our more enterprising manufacturers who made exhibits at the recent Exhibition there. These exhibits were most favorably received, many of them having been awarded high honors, and carried off first prizes even as against similar goods sent there from Great Britain, Germany and the United States. The Melbourne Exhibition will be a much larger and more comprehensive affair, and will partake more of the character of a World's Exposition, and we sincerely hope that Canadian manufacturers will make a vigorous and concerted strike in the direction of making a display there that will equal or eclipse that which they made at the London exhibition last year.

GRAND CHIEF ENGINEER ARTHUR.

If Grand Chief Engineer Arthur of the Brotherhood of Locomotive Engineers only knew it, he has been badly squelched by the jawsmiths of some of the labor organizations, the cause of his disgrace being his recent address delivered before the recent Chicago convention of the Brotherhood. This Brotherhood has eminently distinguished itself through the ability, wisdom and temperance with which it has dealt with such labor disputes as it may have been interested in, and in keeping aloof from other labor organizations that have been controlled by vain, self-seeking men. As the head of his order Mr. Arthur has practised as he preaches—that generally there are two sides to a question, and that disputes can be settled more quickly and satisfactorily by conservative actions and sensible arguments than by strikes and violence.

The Knights of Labor have never forgiven Mr. Arthur for the refusal of the locomotive engineers on the railroads affected by the great South-Western strike last year, when the infamous Martin Irons, a prominent Knight of Labor, and a number of other conspirators, resorted to many deeds of violence, some of them resulting in bloodshed. It is true that these Knights succeeded in paralyzing business for a long time, and caused a world of trouble to thousands of people who had no connection whatever with the railroads, but, thanks to Mr. Arthur's good sense and management, whenever the railroad people had a train ready to go out it was never delayed for want of an engineer to go in the cab. The engineers had no quarrel with the railroad people, and they never felt themselves under any obligation to go on a strike, or quit their work, merely because the Knights of Labor, under the leadership of Martin Irons and others of his ilk, were sidetracking and ditching trains, destroying property, interfering with the usual routine of business, and causing financial and business distress in all directions. The refusal of the locomotive engineers to participate in these violent and unlawful acts did more probably, than anything else, to bring that great strike to an end, and, as we have said, Mr. Arthur has been the object of contumely and abuse at the hands of the jawsmiths of the Knights of Labor ever since.

But Mr. Arthur added new fuel to the fire in his Chicago address, in that he warned his brethren against being carried

away by the spirit of discontent "which walks unchallenged from ocean to ocean," and deprecated strikes, the abuse of property and of persons, that, he says, "has brought the word 'strike' into disrepute, and the massing into one indiscriminate body labor of all kinds, skilled and unskilled." One sentence that rankles and galls the Knights most annoyingly, because they but too keenly feel the truth of it, is that in which Mr. Arthur says. "The methods used to bring about a successful termination to strikes, the abuse of property and even of persons, has brought the very name into disrepute, while the troubles of the laboring man are rapidly becoming mere cant, and sympathy for him is dying out." The eloquent and elegant reply to these indictments is "fool, or something worse," "Judas-like conduct," "stool pigeon," "toad-eater," and other similar epithets ad-nauseam.

Mr. Arthur, however, is a gentleman and the associate of gentlemen, and is not in the least disturbed by the eruptions of venomous but impotent hatred of the Knights of Labor jawsmiths.

MARINE SUBSIDIES.

THE St. John, N.B. *Globe*, speaking of the recent convention in Boston of persons interested in shipping, at which, it says, the fact was revealed that by legislation of some kind it was hoped that American shipping could be restored to its former prestige, says:

Apparently, the coastwise and interior shipping is in good condition, but the sea-going part of the business is in a bad way. A great many persons in St. John will be interested to know what measures can be devised for the purpose indicated, for Canadian ocean going shipping appears, under a protective tariff, to be suffering quite as badly as that of the United States.

The "interior shipping" of the United States, by which is meant all traffic on inland waters and between all domestic ports, is and has always been under a protective policy which excludes any participation in by vessels of any other nationality whatever. No foreign vessel is permitted to take a pound of freight or a passenger from any port in the United States to any other port in that country. This law gives absolute protection to American vessels, and such traffic as is here alluded to is prohibited to vessels of any other nationality. Under this law the United States fosters fleets of "interior shipping," which aggregate a much larger tonnage than even that of Great Britain. If this prohibitory law was modified so as to admit foreign vessels to participate in the interior and coastwise trade, no doubt but that in a very few years American vessels would be almost entirely driven out of business by foreign vessels, even as they have been almost entirely driven from the ocean by competition of the same sort.

One of the chief objects of the Boston convention was to bring influences to bear upon the American Congress to induce it to do what about every other maritime nation does—grant subsidies to its vessels employed in foreign trade. Great Britain pays hundreds of thousands of pounds every year to British ships, and that system has resulted in almost every ocean going steamer that is now built in the kingdom being specially arranged for immediate conversion into gun boats or transports for war purposes, while they are also school ships from which able and thoroughly skilled seamen could be drawn whenever necessity might require. Circumstances with which we are all fa-

miliar deprived the American merchant service of the high prestige and renown to which it had attained twenty-five years ago. Other circumstances now prevail by which that service is kept in the position it now occupies, and the only escape from the predicament visible is through methods similar to those that have made the British merchant service what it now is.

The Canadian service labors under many disadvantages similar to those of the American, and the remedy lies in the same direction.

ARE CANADIAN "LADIES" HABITUAL SMUGGLERS!

In the last issue of this journal occasion was taken to criticize a paragraph printed in the *Toronto Globe* to the effect that Canadian "ladies" smuggle goods across the line from the United States, and that "It is not an unusual thing for ladies to possess bags made and used only for smuggling." We protested against this slander upon Canadian women, and also against the distortion of the generally accepted definition of the word "lady," and intimated that what the *Globe* said was nothing more than a canard intended in a weak way to bring the tariff laws into disfavor.

The *Essex Review* reprinted our article and proceeds to say that the statements of the *Globe* are but too true, notwithstanding our emphatic protest. It says:—

"The amount of smuggling done along the entire border of this peninsula, and at this point in particular, is simply enormous. Many ladies—or women, if the MANUFACTURER prefers the term—make it their boast that they do not spend a single dollar in Canada, but for rent and such necessities as they cannot wait to cross over to Detroit for. The smuggling bag is in the large majority of houses along the frontier. We might say it is part of the bride's trousseau. The ferry boats are sometimes crowded with ladies, and the chances are that nine out of ten will have a smuggling bag filled with dutiable purchases concealed beneath their skirts. It is not, we are constrained to admit, a method which has been adopted since the advent of Messrs. Wiman and Butterworth as commercial unionists. It has been a crying evil for years, every person in Windsor knows, to the disheartenment and injury of merchants all along the border, some of whom, it is alleged with too much truth, are no better than the women. In short, smuggling is apparently almost inseparable from existence on the frontier. If not, can the CANADIAN MANUFACTURER tell us why there are but two dry goods stores of any importance in Windsor, with a population of ten thousand within a radius of two miles and the most important town in a county of fifty thousand? The people, unfortunately do not appear to look upon smuggling as immoral, and the suggestion of dishonesty could be dangerous, while the mildest insinuation that the ladies are not ladies would cause a scene in many of the best families of Windsor and vicinity. If there were no truth in the *Globe's* statements, or if smuggling in this peninsula were not as old as the tariff itself, Messrs. Butterworth and Wiman could not turn the practice to account in support of either commercial union or annexation. But facts are stubborn things. They will not down. And if the MANUFACTURER argue from false premises it will arrive at an erroneous conclusion. It cannot deceive the people. Don't let it fool itself. We don't defend this smuggling. We condemn it now as we have condemned it on several occasions in the strongest possible terms. We state simply the truth, and are not responsible for its existence or its consequences. It is for those who have the government

in their hands to say whether or not the gigantic evil can be suppressed."

It is a deplorable fact, if it is as stated by the *Review*, that the people of that part of Canada do not look upon smuggling as immoral. It is not for them to say that there is no immorality in cheating and defrauding the revenue of the country by such practices, merely because the laws are not in accordance with their views. The *Review* says that Windsor, with a population of ten thousand, and the most important town in a county of fifty thousand, has but two dry goods stores, and intimates that that is due to the fact that Canadians cross over into Detroit and make their purchases, smuggling them across the line, and paying no duties. The moral obliquity of people who indulge in this nefarious practice is terrible, but that "ladies" so-called should be the chief offenders, is simply astounding. Why should the suggestions of dishonesty in such doings incur personal risk and danger, and why should it cause "scenes in many of the best families of Windsor" when it might be amplified into direct charges of misdemeanor, which verges closely upon felony? Does that portion of Canada support a community of freebooters, who habitually set the laws at defiance, and threaten personal injury and chastisement to any who might suggest that they were adventurers? Does patriotism dwell in breasts where the whole Dominion is systematically cheated, wronged and defrauded by those who know better, and Canada impoverished at the expense of a neighboring foreign country? Away with such patriotism and down with such moral obloquy.

The remedy for this state of things lies in a vigorous enforcement of the law. Do these Canadian lawbreakers suppose for a moment that they could systematically smuggle light and valuable articles across the line into the United States without quick detection? If they do, let them try it a few times, and whether they be of Windsor's highest aristocracy—"ladies" as they are denominated, or merely ordinary "women" or "females," they would soon find themselves where their acts would consign them, wearing striped clothes and doing the Yankee Government some service in the penitentiary. We suppose that smuggling will be carried on between different countries as long as tariff laws exist, and cupidity offers the inducement to make unlawful gains. At the Atlantic seaports in the United States where large numbers of passengers are constantly arriving from abroad, the Customs Officers quickly detect adventuresses who ply their avocation of smuggling goods, and when any of them are thus detected, notwithstanding their claim to be "ladies," their persons are quickly and thoroughly searched. Similar vigorous enforcement of the law in Canada, particularly in the vicinity of Windsor, and neighboring cities, would probably deter some of the "ladies" there from their unlawful procedures.

TRANS-CONTINENTAL traffic over the Canadian Pacific Railroad is rapidly increasing. Within the past three months the increase has been about ten per cent., a noticeable feature being that it is not confined to a few staple commodities essential only to local business, but includes nearly the entire list of items that go to make up the freight traffic over the American lines. A large part of the tea trade from China and Japan is now carried over this road.

◇ THE ◇
Canadian Manufacturer.

Published on the first and third Friday of each month, by the
 CANADIAN MANUFACTURER PUBLISHING Co., (Limited).
 6 WELLINGTON STREET WEST, - - TORONTO.

ANNUAL SUBSCRIPTION, in Advance \$2.00

CARD OF ADVERTISING RATES SENT ON APPLICATION.

FREDERIC NICHOLLS, *Editor.*

J. J. CASSIDEY, *Managing Editor.*

ED. D. McCORMICK, *Secretary.*

This Journal has won for itself an acknowledged position amongst Trade Journals and is recognized as the representative industrial paper of Canada. All the various industries of the country are represented in its columns, and it has been for years the fearless and consistent advocate of those reforms which were indispensable to the success of the Manufacturers. It now reaches nearly every mill and factory in the Dominion, and its influence is constantly increasing.

As a medium for advertisements of machinery, steam appliances, mill and factory supplies, etc., it is unequalled, and our rates will be furnished on application. Communications from Manufacturers, Exporters, and others, are respectfully invited.

OFFICERS OF CANADIAN MANUFACTURERS' ASSOCIATION.

President:

THOS. COWAN, Galt.

First Vice-President:

W. H. STOREY, Acton.

Second Vice-President:

SAMUEL MAY, Toronto.

Treasurer:

GEORGE BOOTH, Toronto.

General Secretary:

FREDERIC NICHOLLS (6 Wellington Street West), Toronto.

Executive Committee:

R. W. Elliott, Toronto.
 E. Gurney, Jr., Toronto.
 James Watson, Hamilton.
 Wm. Bell, Guelph.
 Joseph Simpson, Toronto.
 J. A. Piilow, Montreal.
 A. Warnock, Galt.
 W. Millichamp, Toronto.
 B. Rosamond, Almonte.
 Geo. Patinson, Preston.
 Daniel Lamb, Toronto.
 Isaac Waterman, London.
 C. Shurley, Galt.
 John Taylor, Toronto.
 M. B. Perine, Doon.
 Thomas McDonald, Toronto.
 B. Greening, Hamilton.
 Geo. W. Sadler, Montreal.
 J. F. Ellis, Toronto.
 J. R. Barber, Georgetown.
 John Fensom, Toronto.
 Robert Mitchell, Montreal.
 H. N. Baird, Toronto.
 H. Bickford, Dundas.

Frank J. Phillips, Toronto.
 John Elliott, Almonte.
 Wm. Christie, Toronto.
 J. B. Armstrong, Guelph.
 C. Raymond, Guelph.
 W. F. Cowan, Oshawa.
 J. S. Larke, Oshawa.
 H. Heintzman, Toronto.
 George Lang, Berlin.
 D. R. Wilkie, Toronto.
 P. Freyseng, Toronto.
 F. Crompton, Toronto.
 Carl Zeidler, Toronto.
 C. A. Birge, Dundas.
 Wm. Harty, Kingston.
 W. G. A. Henning, Toronto.
 W. K. McNaught, Toronto.
 Charles Boeckh, Toronto.
 T. D. Craig, M.P.P., Port Hope.
 Wm. Chaplin, St. Catharines.
 H. E. Clark, M.P.P., Toronto.
 L. Côté, St. Hyacinthe.
 W. H. Cross, Barrie.
 E. J. Davis, King.

Representatives to Industrial Exhibition Association.

R. W. Elliott, George Booth, Daniel Lamb, Samuel May,
 Frederic Nicholls.

Editorial Notes.

MR. FREDERIC NICHOLLS is Secretary of
 The Canadian Manufacturers' Association,
 The Woolen Manufacturers' Association, and
 The Tanners' Association.

His Office is at the Publication Office of
 THE CANADIAN MANUFACTURER,
 6 Wellington Street West, Toronto.

Any association of manufacturers who may desire to hold meetings for organization or other purposes, are invited to avail themselves of the meeting room adjoining the office of the CANADIAN MANUFACTURER.

A GOOD designer wanted for a Tweed Mill. A good salary will be paid to a first-class man. Apply immediately to J. E. Lancaster & Co., 57 Bay Street, Toronto.

We again take occasion to remark that those who pretend to be journalists, or who aspire to attain the proud distinction of being editors of respectable journals, should bear in mind that abuse is not argument, and also that no man can be a blackguard and a gentleman at the same time.

THE Supreme Court of the United States have refused to interfere with the decisions of the Illinois courts regarding the seven bomb-throwing Anarchists, and those wretched men will certainly be hung on next Friday, Nov. 11. Their crime was a fearful one, and they will expiate it on the gallows.

We are under obligations to Mr. Daniel Stern, proprietor of the *American Artizan*, Chicago, for valuable information concerning the vapor-stove question. The *Artizan* has accomplished a great deal of good in overcoming the prejudices that once existed in the United States against the use of this valuable household utensil.

A PAPER on "Trade Relations with Canada, in view of the Proposed Direct Mail Service," was recently read before the Sydney, Australia, Chamber of Commerce by Mr. Woods, Agent-General of Canada. Sugar, wool, wine and fruit were indicated as possible staples of trade, but the proposed mail service of 28½ days direct from London to Brisbane formed one of the chief inducements brought forward.

WHILE standing in the cemetery our attention was directed to a marble slab, which indicated that the deceased in whose memory it was erected, was born, January 1st, 1880, or on the first day of the 19th century. Where is there another?—*Lachute Watchman*. Go to, thou encyclopedia of ignorance, you are wrong in your statement just one year. How many years be there in a century in a Lachute graveyard?

A HAMILTON, Ont., hoodlum was recently fined \$15 on a complaint laid against him that he had called a non-union man a "scab." The bright star of hope looms up on the horizon, proclaiming that the tyranny of organized labor as recently exemplified in Hamilton is giving way to a better condition of things, even if the strong arm of the law has to be intervened to protect non-union men from insult. But we are still anxious to know what Buscombe's fate will be.

THE CANADIAN MANUFACTURER mildly censures local papers for not being more explicit when reporting anything referring to the establishment of new industries, and says that local pa-

pers would be of greater value if they would give fuller details. But, in the first place, it is not always possible to do so, and in the next place, it is not always expedient. Giving these full details prematurely sometimes loses a town a valuable industry which it otherwise would have secured.—*Peterborough Review*.

INFORMATION from various parts of the country is to the effect that immense areas of valuable farming lands were cleared by the recent bush fires. Thousands of acres of beaver meadows and alder bushes were burnt over so that they are entirely cleared, and people are commencing to plough them just as if they were prairies. Thousands of acres of fine swamp land, too, are laid flat that will undoubtedly ere long make the finest valley farming land. The fires have not proved an unmitigated evil.

A MEETING of the directors of the Oatmeal Miller's Association was held in this city last week, and the proceedings were supposed to be entirely secret. The association is said to embrace every oatmeal miller in Ontario except three. This is the first official meeting of the directors since the organization of the association, which occurred in Toronto, October 13 and 14; an account of which has already been published in this JOURNAL. The meeting held last week was for the purpose of putting the combination in working order and effectively controlling output and prices.

IN connection with the fisheries protection service of the season just terminated, it is not generally known that the Dominion cruiser *Vigilant* is none other than the quondam United States fishing vessel *Highland Light*. That vessel was seized in September, 1886, for fishing within the three mile limit. No defence was entered and she was condemned and ordered to be sold by the Vice-Admiralty court at Charlotte-town. At the sale she was bought by the Dominion Government, and this year, has done effective service in preventing that for which she was condemned a year ago.

THE *Paris Review* is the only newspaper in Canada that keeps standing at the head of its editorial columns a brief description of the geography and business history of the town; its social advantages, and a more or less complete list of the leading manufacturing industries of the place. With a copy of the *Review* in hand any one can, at a glance, learn who the leading manufacturers there are and their respective lines of business. We wish that other local newspapers would adopt the same or similar methods of imparting such information concerning Canadian industrial establishments.

Two young men who were convicted of setting fire to buildings in Kingston have been sentenced, in one case to imprisonment for life in the penitentiary, and to twenty one years in the other. We will await further developments and see if the Hamilton Bricklayers' Union conspirators, who are interfering with the work being done in that city, and are trying to have the labouring man Buscombe forced away from his work because he will not suffer himself to be blackmailed by them, will meet with similar justice. There is plenty of work within the Kingston penitentiary walls awaiting just such fellows, and they ought to be put at it without delay.

MR. GOLDWIN SMITH issued a circular notice last week calling a meeting of those who are favorable to Commercial Union, to be held in this city on the evening of Nov. 3, for the purpose of organizing. Vigorous efforts are being made to keep some show of life in the movement, but it is up-hill work. The next session of the United States Congress assembles just a month hence—on December 7—when Mr. Butterworth promises to do wonders in the direction indicated. But Commercial Union has received quite a number of staggering blows recently, and the prospect is, so far as the United States Congress is concerned, that it will "die a bornin'."

DURING the year 1886 there were distributed from the office of the *Bulletin* of the American Iron and Steel Association, Philadelphia, 364,500 tariff tracts and 40,000 tariff cards, and thus far in this year there has been distributed 173,282 tariff tracts. The *Bulletin* is prepared to respond promptly to a still larger demand for this sort of literature, and invites Protectionists to avail themselves of the facilities it possesses for educating the people correctly on the tariff question. The tracts are sent free of cost to clubs and individual applicants. This is the way American Protectionists are protecting their National Policy from the assaults of the Evil One, but what are Canadian Protectionists doing in this direction?

ANENT the relative merits of Canadian and American illuminating and lubricating oils, in a certain community in Canada where two years ago but 2,500 barrels of one and 50 barrels of the other of Canadian make were consumed, this year, we are informed, the consumption has reached 8,000 barrels of illuminating and 2,000 barrels of lubricating. It is confidently asserted by many who are in a position to know that the best quality of Canadian illuminating oil is fully equal to any made in the United States. The prejudice against the domestic article is fast wearing away, and consumers who are wise do not pay several cents a gallon more for Yankee oil than they are charged for an equally good article of home production.

The State of Illinois will soon be called upon to legislate against the use of water gas. The number of "accidents"—rather murders—that occur in Chicago from the escape of this vile poison is awful. The Dominion, or the Provinces, or both, should take up the subject in Canada. The forbidding of the use of water-gas would merely reduce illegitimate profits a little.—*Toronto Globe*.

THE *Globe* is constantly berating monopolies and crying out for greater freedom for the people, but this little editorial squib is a dead give-away. Water gas, so-called, is no more dangerous in any respect than any other illuminating gas, but is much cheaper than that commonly used made from coal, and the *Globe's* call for legislation forbidding its use is clearly in the interest of the old gas companies.

AT a meeting held in the Mayor's office in this city on October 27, of which Mr. James Worthington was chairman, and Mr. J. M. Loeser secretary, and which was adjourned pursuant to call of chairman, a committee was appointed to investigate and report on matters pertaining to the establishment of iron rolling mills in Toronto. That committee have announced that they were ready to report, and the presence of interested

parties was requested at a meeting appointed to be held at the Queen's Hotel, this city, on yesterday afternoon, Nov. 3, to receive the committee's report and to take further action. At the hour at which these pages go to press it is impossible to give a report of the meeting, but it may safely be taken for granted that the result will be that an extensive rolling mill will soon be added to the industries of Toronto.

Think of it, farmers of Westmoreland! A vessel load of spent char is being sent from the Moncton sugar refinery to Massachusetts to be used for fertilising purposes. How many of our farmers who complain of hard times are cultivating ten acres of land for what five acres could be easily made to produce?—*Moncton N.B. Times.*

No doubt the farming community of Westmoreland are of those hopeless and helpless ones who see nothing before them but ruin unless they can be saved by annexation to the United States. Intelligent farmers utilize all available substances for fertilizing their lands, thereby increasing their productiveness, and it is nothing less than suicide to allow such a valuable agent as spent charcoal to be taken from their very doors and made to enrich the lands of their Yankee competitors.

In October, in Boston, Mass., two prominent industrial associations held meetings with special view to promote the national protective policy. One of these, the Home Market Club, has for its object the preservation of the home market to home producers, and to promote the cause of protection in every proper way; and the other, the North Atlantic Coast Department of the American Shipping and Industrial League, is organized to promote the distribution of the products of American labor by an extension of the merchant marine of the United States, establishing more intimate commercial intercourse with other countries by frequent and direct American mail service. Our "protection" friends to the south of us are as active and determined as ever in maintaining their National Policy by and through which their country has attained its marvellous wealth, prestige and power.

THE town council of Peterborough, Ont., have appointed a "Manufacturer's Committee" whose duties are to investigate and report on the best means of securing the location of new industrial enterprises in that town. Anent this matter it is suggested that Peterborough is eminently well located for an iron rolling mill, which, according to the *Review*, would not interfere with any local interest already in existence. The suggestion that the advantages of the town and the inducements that would be offered to influence the location of such an establishment, there by advertising the same in American and British trade papers, is good, but does not go far enough. People who are looking about for openings for profitable investments in manufacturing enterprises usually scan the columns of the trade papers of the country towards which their attention is attracted, and if Peterborough intends to move in the direction indicated, Canadian trade papers should not be given the go by.

WE are informed that Messrs. Nicholls and Howland, of the Toronto Permanent Exhibition of Manufactures, are in correspondence with Messrs. A. S. Manders & Co., Adelaide, Australia, with a view to facilitating the forwarding of such exhibits

as manufacturers may desire to make at the Melbourne Exhibition next year. This exhibition will undoubtedly be the most important of any ever held in the Southern Hemisphere, and we would impress upon intending exhibitors the necessity of taking action in the matter at an early day in order to ensure good positions. To those who cannot make it convenient to attend the Exhibition, but would like to make displays there, we would say that the charges for care and attention are quite moderate, and that the interests of exhibitors will be most carefully looked after. Probably the most economical way to send goods to Melbourne is via the North German Lloyd Steamers from New York. There are also sailing vessels from Boston, and the American steamers from San Francisco. Messrs. Nicholls & Howland, Toronto, or Messrs. A. S. Manders & Co., Melbourne, Australia, will take pleasure in giving further information.

A MEETING was held in Toronto last week for the purpose of organizing a company and providing facilities for enlarging trade between Canada and the West Indies. There is a spontaneity of movement in this direction in all of the larger cities of the Dominion that is rather remarkable as a simultaneous awakening to the importance of the movement, and which we hope is a guarantee of its success. The general idea seems to be that a fleet of light draught, swift steamers be put on a line running between Halifax or St. John and West India ports, the route to be subsequently extended to South and Central American ports. At present a very large proportion of the traffic between Canada and the West Indies is via United States ports, and there is no reason why this business should not be done through Canadian ports, by Canadians, in Canadian ships. Much of the fish and lumber now sent from Canada to the United States is forwarded to the West Indies, and in the nature of things these Islands are, or should be more profitable to us as customers than the United States, which produce the same things, and sell them in the markets that we now reach so indirectly. Although hundreds of thousands of dollars worth of tropical fruits are consumed in Canada every year, nearly every dollar's worth of it is brought through the United States.

MESSRS. NICHOLLS & HOWLAND, proprietors of the Permanent Exhibition of Manufactures, Toronto, exhibit a number of letters which they have received from prominent and influential business men in which their Permanent Exhibition enterprise is most highly spoken of and recommended. Hon. W. H. Howland, Mayor of Toronto, says, "I think it will supply a great need in the city, and will result in making it more a center of trade than it is to-day." Mr. G. W. Yarker, of the Imperial Bank, Toronto. "Canadian industries of nearly all kinds are passing from the incipient and uncertain stage to durable and profitable growth, and a well managed sales and display centre, such as you contemplate, would be a considerable and an interesting factor in creating business." Mr. D. R. Wilkie, Cashier, Imperial Bank. "I have much pleasure in congratulating you upon the energy and enterprise exhibited in the establishment of a Permanent Exhibition of Manufactures. The venture is one deserving of every encouragement, and will, I have no doubt, prove of the greatest service to the

manufacturing interests of the Dominion." Mr. H. A. Massey, President of the Massey Manufacturing Co., Toronto: "We consider that your Permanent Exhibition of Manufactures will be of great benefit to many, and, we trust, remunerative to yourselves. There is no doubt a fine opening for an exhibition of that description in this city, and it will, no doubt, prove a very great advantage to the exhibitors and the public in general." Mr. E. Galley, an Alderman of this city, and vice-president of the Toronto Land Security Co.: "I think your Permanent Exhibition will result in extending the business connections of those who may secure space in the building. It should be a benefit to the city because of its centralizing influence; to the exhibitor because of the opportunity it affords him of placing his goods before the general public, and to the general public because of the facilities offered for inspecting a varied range of manufactures under one and the same roof." Mr. R. W. Elliott, Toronto, a large manufacturer of drugs, and ex-President of Canadian Manufacturer's Association: "It has my entire approval. It cannot fail to be a great benefit, (especially to those in outside localities), to have so central and accessible a site as the one you have secured, where actual goods may be seen, and full information given." Mr. Wm. Grindlay, Manager, Bank of British North America, Toronto: "I think the idea of a Permanent Exhibition of Manufactures in Toronto a good one, both for the city and for the manufacturers and merchants. Profits are so small now-a-days that anything which tends to lessen the cost of handling goods must be a benefit to all concerned."

It is estimated that Grand Manan puts up annually over a million boxes of herring and is able to control the New York market or glut it at any time.

At the Fruit Growers' meeting lately held at Grimsby, Ont., President Allan said that he was going to try the experiment of shipping apples to India via Canadian Pacific Railroad. The future possibilities of this trade were a demonstrated success. He hoped to see fruits shipped in cold blasts to aid their keeping qualities, and with this process apples would carry to India as well as to Liverpool.

THE BOLSTON (Eng) engineers, who have been out on strike for several months, are still firm in their demand for 2s. a week advance. The employers, in a statement recently issued, say that since the strike began work has actually gone to foreigners which would otherwise have gone to Bolston, bringing £30,000 in wages alone to Bolston workpeople.

WORKINGMEN held an anti-sugar bounty meeting in Hyde Park, London, Eng., a few days ago, over ten thousand persons being present. On the banners were displayed such mottoes as "Down with Bounties," "Foreign Bounties Starve British Workmen," "We Demand Fair Trade," etc.

A LARGE number of theatres now being built in the United States are to have asbestos drop curtains, with a view of protecting the auditorium from destruction in case of a conflagration occurring on the stage. It is well known that asbestos is practically non-combustible, and a curtain made of it, that can be instantly dropped, will secure absolute safety in such cases.

THE prestige of Canada is secured by the completion of the Pacific Railway exercising a powerful effect on the mind of the Russian Government and people. One result is the virtual abandonment of the policy adopted at the beginning of the present year to build no more railways. A line from Siberia to the Pacific is to be constructed, and another is contemplated from Tiflis to Kars.—*Engineer, London, Eng.*

THAT Mr. George is getting his bank account into a good healthy condition is generally known. His books are having a wide sale, and his paper is now on a good paying basis. In addition to this he is in great demand as a lecturer. On a recent lecture tour that he made out West he cleared over \$1,500 in two weeks. Major Pond,

his manager, says that he could keep this up right along if Mr. George would only consent to leave his work here and travel. But he won't. At present Mr. George is considered worth from \$50,000 to \$75,000.—*New York Tribune.*

THE process of welding invented by Mr. De Banardoz, of Russia, is now applied industrially by the society for the electrical working of metals. The pieces to be welded are placed upon a cast iron plate supported by an insulated table and connected with the negative pole of a source of electricity. The positive pole communicates with an electric carbon inserted in an insulating handle. On drawing the point of the carbon along the edge of the metal to be welded the operator closes the circuit. He has then merely to raise the point slightly to produce a voltaic arc whose high temperature melts the two pieces of metal and causes them to unite.

It is rumored in Ottawa that the E. B. Eddy Mfg. Co. are about to purchase the extensive timber limits of Messrs. McLachlin Bros. on the Upper Ottawa. The price mentioned is in the neighborhood of \$2,000,000. For a number of years back the Eddy Co. have suffered from an insufficient supply of saw logs and have been compelled to purchase from jobbers and other lumbermen. This season the company ran short of logs and were somewhat hampered in their operations. In consequence of this the firm have, it is said, decided to purchase the extensive limits mentioned. It is estimated that the lumber out of this district during the coming winter will reach 680,000,000 feet.

It is a popular fallacy that in consequence of inventions wages decrease. The facts do not prove the suggestion or statement. In the annual report of the Illinois Central Railroad there is a very interesting and instructive table, showing the cost of locomotive service for each year during the past thirty years. From this we glean the following facts that bear directly on the present subject, and constitute important and uncontradictable evidence in favor of the increase of wages, in some directions at least, in these latter days:—The cost per mile run has fallen from 26.52 cents in 1857 to 13.93 cents in 1886. This reduction has been effected wholly by inventions and improvements in machinery. But the figures show that the progress of invention has been even more remarkable than these figures simply, because the wages of engineers and firemen have risen in the same period from 4.51 cents to 5.52 cents per mile run. In 1857 the engineers and firemen received 17.201 per cent. of total cost. In 1865 the engineers and firemen received 15.091 per cent. of total cost. In 1867 the engineers and firemen received 20.885 per cent. of total cost. In 1886 the engineers and firemen received 39.627 per cent. of total cost.

VOLUME I. of "Alden's Manifold Cyclopedia" abundantly fulfils the promises of the publisher's prospectus. It is a really handsome volume of 640 pages, half morocco binding, large type, profusely illustrated, and yet sold for the price of 65 cents; cloth binding only 50 cents—postage 11 cents extra. Large discounts even from these prices are allowed to early subscribers. It is to be issued in about thirty volumes. The "Manifold Cyclopedia" is, in many ways, unlike any other Cyclopedia. It undertakes to present a survey of the entire circle of knowledge, whether of words or of things, thus combining the characteristics of a cyclopedia and a dictionary, including in its vocabulary every word which has any claim to a place in the English language. Its form of publication is as unique as its plan—the "Ideal Edition," its publisher calls it, and the popular verdict seems to establish his claim. It certainly is delightfully convenient. It will not be strange if this proves to be the great popular cyclopedia. It certainly is worthy of examination by all searchers after knowledge. The publisher sends specimen pages free to any applicant. John B. Alden, Publisher, 393 Pearl St., New York, or Lakeside Building, Chicago.

THE injustice of prison competition with free labor is being well illustrated just now in Buffalo. A few weeks ago one hundred convicts in the Erie County penitentiary were set to work at making apple barrels. These are sold by the penitentiary authorities at cost price—twenty-five cents a barrel—and the daily product is about 500 barrels. One result is that the Buffalo Barrel Manufacturing Company, which cannot compete with the above price, has just had an order for 4,000 barrels cancelled. Another large firm of coopers which expected to sell from 20,000 to 30,000 barrels on Grand Island, estimates that it will not be able to sell more than 5,000. It is said also, that it is the intention of the prison authorities, after the fruit season is over, to put the convicts to work on flour and cement barrels, which will have the effect of driving forty or fifty coopers away from Buffalo. It is true that these men form a very small portion of the army of free laborers in the United States, but even if they were the only ones so treated the matter would still be one of great injustice. No one denies that prisoners

F. E. DIXON & Co.

MANUFACTURERS OF

Patent Lap-Joint, Star Rivet

Leather Belting

SOLE AGENTS FOR

PHOENIX BELT OIL

The Only Perfect Belt Dressing.



IT will make the leather more durable.
 It will effectually prevent the slipping of the belt.
 It does not affect the cement which holds the laps together.
 It does not increase the stretching of the belt and thus render it narrower.
 It makes the leather perfectly water-proof. Belts dressed with this oil can be and are run in places where the temperature reaches 160 to 175 degrees, while in the other extreme, we have endorsements from owners who run their belts in ice houses. Indoors or out, in any kind of weather, wet or dry, hot or cold; belts thoroughly dressed with Phoenix Oil will always run satisfactorily.

SEND FOR PRICE LIST AND CIRCULARS,
 And our Latest Pamphlet on Belting.

F. E. DIXON & CO.

70 KING STREET EAST,
 TORONTO.

should be kept employed, but there is no justification for allowing the product of their labor to compete unfairly with that of free labor.

Messrs. J. & J. Taylor, Toronto, are in receipt of quite a number of appreciatory letters from parties whose places of business were destroyed by the conflagration that almost totally destroyed the town of Gravenhurst, Ont., in September, but whose books, papers and other valuables were preserved by having been encased in fire-proof safes manufactured by the Messrs. Taylor. Mr. J. E. Cliphsham states that his books and papers were brought out to his entire satisfaction, Messrs. Allan Bros. writes that the contents of their safe were preserved to their entire satisfaction, notwithstanding it stood within three feet of a tank of coal oil; Mr. Joseph Gaylor says that his books and papers were saved all right, there being no sign of fire whatever inside the safe; Messrs. B. R. Mowry & Son say that their safe saved their books and papers to their entire satisfaction; and Mr. Philip Bartholomew says identically the same thing. Messrs. A. S. Manders & Co., writing from Adelaide, Australia, to Messrs. Taylor regarding their exhibit of safes at the Exhibition in that city, say: "Long before this reaches you, you will have received the cable of your having received the highest award for safes over all makers, beating the great Chubb, of England; Phillips, of Birmingham; Simpson, of this city; and others. The jury in awarding gave you Special First Award, and recommended the commission to give an extra special prize. I will send you the official papers when they are out, which will not be for a week or more yet. They are 'J. & J. Taylor, Special First Highest Award.'"

A new coal cutting machine is thus described:—"It will do work which no other coal cutter will do. For instance, it cuts the floor perfectly smooth. It will cut up hill or down. It is self-acting. It does all the work instead of the man. It stands on its own truck while it works, and needs no lumber or planks or tracks to run on, so the operator is not hindered by carrying around a lot of useless stuff. The machine weighs from 1,000 to 1,400 pounds. It cuts very rapidly, fully a lineal yard in one minute. At one setting and one starting it will cut 7 feet along the face of the coal and 4 to 5 feet under. It cuts and cleans off coal a space about 3 to 4 inches perfectly level next to the floor, thus breaking up the least possible part of the coal, and leaves the body of it to be blasted down in large pieces. One man and a boy can handle the machine easily, it being simple, and any intelligent miner can run it. It will cut any kind of coal, and glides through anthracite as readily as bituminous. It will also cut fire clay, slate, or anything it will come in contact with in a mine. It will drive entres and turn the rooms. It will cut twice the amount of coal with the same power that any other machine will. It cuts right and left, both ways from the center, having a reciprocating motion, thus all the power (compressed air) that is applied to it is utilized. The operator sits down on the footboard while the machine is working. It will do the work of twenty men, and will work in the lowest of coal. It will greatly reduce the cost of mining, and it is safe to say it will be the mining machine of the future."

Mr. A. C. Lawson, of the Dominion Geological Survey, has recently returned to Ottawa from the districts about Rainy River, Rainy Lake and Lake of the Woods, where he has been conducting a geological examination and topographical survey of the country. This district, which lies in the extreme western part of Ontario—that part lying between Manitoba and Lake Superior—he describes as enormously rich in mineral wealth. Mr. Lawson says that on Manitoulin Lake, and what is known as the Lake Route, there is abundance of evidence of gold. The gold is found in quartz veins, carried by a green slate formation. Very little has been done towards mining, as up to a very recent date the Ontario Government refused to grant patents for the land, but from the examination of the country he made he is of the opinion that, when once worked, these quartz veins will yield a large percentage of gold. At Hunter's Island, Lake of the Woods, an immense iron bed has been struck, and from all appearances it is a continuation of the extensive bed now being worked in Minnesota, at the Vermillion mines. If such be the case the iron is of the best in America, and as for quantity, it is almost impossible to estimate it. Already thousands of dollars of American and Canadian capital (mostly American, however,) are being invested in this district in the purchase of claims, and big iron works are talked of. Adjoining this iron formation, and extending from Gunflint Lake to Thunder Bay, is the well-known silver region, which is perhaps the best known mining region in the country, not because it is the most valuable, but because it is the most extensively worked. The formation is made up of flat bedded slates and trap rock, which is cut by veins carrying silver, both

native and argentite. The principal places where these mining operations are carried on are at Silver Mountain, Beaver Mine and Rabbit Mountain, at each of which large quantities of ore are taken out every year.

Mr. SANFORD H. STEELE read a paper before the Oxford Club in Brooklyn last night upon "What Shall We Do With Our Convicts?" Heretofore, he held, the question has been "What form of labor shall be required of convicts?" but now, as if to illustrate the whimsical extremes to which popular opinion may go, it is seriously questioned whether convicts shall work at all. This startling proposition is advanced by the labor unions upon the pretence that free labor cannot endure the competition of convict labor. In 1884 convict labor was abolished in New York by law. There are now 1,300 convicts unemployed, and soon the existing contracts will expire, when all will be idle. There are legislators and newspapers found to openly approve of this condition of affairs. New York has a prison population of 12,800 people, of whom there are available for productive labor about 6,000, whose industry, if availed of, would come in competition with the wage-earning classes. In manufacturing alone there are 700,000 free workers engaged in this state. The proposition then is that 6,000 convicts should be kept idle for fear that their labor would reduce the average wages of 700,000 who are free, supposing that all the convicts even are engaged in manufacturing. These 6,000 convicts were engaged in actual competition before, and will be again, after their incarceration, with those who object to their employment under confinement. The cost of maintaining these 12,800 convicts is over a million and a quarter of dollars a year; and it is a grave emergency that would justify a state in wasting so much a year. But the cost in dollars and cents is the least serious feature of the problem. These convicts are nearly all destined to be returned to society. Their average age is under 25. The average term of imprisonment is five years, which is about the age and term of study of a college graduate. The speaker advocated the employment of part of the convicts upon public works outside the prison walls. The number to be employed in any industry should bear a fixed proportion to the number engaged in that industry outside the prison walls, and that proposition should be so low as to preclude any genuine complaint of competition.—*New York Times*.

FAIR-TRADE IN GREAT BRITAIN.

THE average wayfaring free trader, although he may not be possessed of a superfluous amount of brains, ought to be able to comprehend the following. It is a letter printed in the London (Eng.) *Fair-Trade*, in its issue of Sept. 30. It reads:—

"Sir,—My name is John Bull. I have a brother nicknamed Forger. His trade is that of an engineer, and makes all kinds of machinery. I plow and sow and gather into barns, etc. We have some half-brothers called Jonathan. We call them 'brothers.' They don't own us though. They are in our trades and live over the water, and they go ahead 'slick.'

"If my brother tries to sell an engine or other machine to go over the water they charge him 50 per cent. or 60 per cent. for landing it, making it so dear that either he sells at a loss or the customer pays more than the value; and if I offer some of my farm produce, I am served just the same. The consequence is, that my half-brothers keep all the trade on that side of the water to themselves and charge their customers their own price. But, unfortunately, an ancestor of mine (one Cobden) made a law that, if our half-brothers wished, they should at any time land machinery, corn, goods, etc., free on our side of the water, and he called the law Free Trade. Now, see how it acts. Jonathan makes two machines that cost him £90 each in labor, the material costing £40, total £130; profit, say, £20 on sale at £150. He sends one over the water to our customers and takes £150 back to him (good-bye to that), and has the other to sell over his side, which he can charge £160 for, as there is no one to compete with him on account of duty. Forger has consequently to close his works or lower the wages of his workmen, to compete with such one-sided trading. My corn suffers exactly the same, and my men have less wages and little work—all because the men are allowed to work for our market free of toll, while we have to pay 50 per cent. to 60 per cent. for theirs. As it is a matter as much for my men's advantage as my own (indeed, more so) I will bring the case home plainly. Suppose here in England I make 1,000 wheelbarrows at a labor cost of 10s. each. that will spend £500 in labor here. If I sell 500 of them here at 15s. each, £375 remain in England, and if I export 500 I shall have to pay 50 per cent. duty, which is equal to 7s. 6d. each barrow, so that I get back only £187 10s. for the 500 barrows, which has cost me £250 in labor alone—a loss of 2s. 6d. each. But if Jonathan makes 1,000

and pays 10s. each for labor and sells 500 in America, he gets and keeps at home £375; and if he exports 500 to England and sells at 15s. each, he gets and takes back to his country £375 profit, so that the American side of this transaction gets and keeps £750, while the same transaction here gives to the English maker £375 for those sold at home, and only £187 10s. for those sent to America, or a total of £562 10s. for the outlay. Now, supposing that both transactions were carried out—America will net the price of her 1,000 (part sold here and part in America), £750, and also the duty on our 500, which is £187 10s., or a total of £937 10s.; while we get £375 for the 500 kept at home and £187 10s. for those sent to America, total of £562 10s. as our share of the double trading, against £937 10s. for Americans, a balance in favor of America of £375.

JOHN BULL."

The contrast is as between the British and the American manufacturer, but the application is as appropriate to the Canadian manufacturer as to his Yankee neighbor.

AUSTRALIA AND THE ADELAIDE EXHIBITION.

(From our Special Correspondent.)

ADELAIDE, Aug. 5th, 1887.

ACCORDING to promise when leaving Canada, with its frozen lakes and snow-covered roads, in the winter of this year, I send you my first Australian letter with notes on Australian commerce and the Adelaide Exhibition in particular.

Business in Australia is in a most flourishing condition. One or two of the capitals may be complaining of a slight depression, but that we can take as only natural after so many years of prosperity in business matters. Sydney in particular has been calling out that things are dull. Surely that cannot be the case when we find gigantic buildings going up at almost every corner and workmen in great demand. Business is not so bad as people make out. In Melbourne business is in a progressive state. For some years past the Province of Victoria has had an enormous surplus over expenditures, and perhaps that colony, which occupies the smallest portion of the continent, has the greatest population and the greatest wealth. In Adelaide also we find a large number of Canadian manufacturers introducing their goods. From your own city we have Messrs. J. & J. Taylor, one of the largest manufacturers of fire and burglar proof safes, some of which have arrived for the Exhibition. This firm will undoubtedly work up an enormous trade in Australia for their goods, for their first-class articles are unequalled by English makers.

Now is the time for all Canadian manufacturers who wish to introduce their goods into Australia to do so, and from my experience of trade and of Canadian manufactures there could be no better opportunity. It will be foolish for any one who wishes to cultivate an Australian trade to lose the opportunity now offered.

In the coming year the largest exhibition ever held in the world will be opened on August 1, in Melbourne. This Centennial Exhibition is to be opened for six months night and day. The money that has been spent on the erection of the buildings is almost fabulous, and the support by the Government and from all parts of the world is astounding. When exhibits to the value of £22,000 for a single exhibit are entered, it will give an idea that the Exhibition will be no small affair. I would therefore advise and beg the Canadian manufacturers not to lose this opportunity of showing their goods. Their manufactures are as good in quality and workmanship as those made in any part of the world, and I feel justified in saying that, knowing how the goods are sold here, and whence they come, Canada has as good a field here as any other country. Should any of your people feel inclined to exhibit, I should certainly advise them to forward their goods through Messrs. A. S. Manders & Co., care of the Exhibition, Melbourne. They represent the larger part of the Canadian manufacturers making displays at the Adelaide Exhibition. With this mail I post you some fuller printed information with reference to this Exhibition.

The year 1887 has every prospect of being one of the best years Australia has ever had. Last year was a miserable one. There were poor harvests in nearly every colony, severe droughts prevailed throughout the length and breadth of the continent, and to increase the depressor financial disturbances occurred on nearly every hand. At any rate the three principal colonies—Victoria, New South Wales and South Wales—suffered from numerous commercial failures.

Since the beginning of May heavy and copious rains have almost continually fallen over the agricultural areas of the southern hemisphere, and as far as this colony is concerned the country is most beautifully grassed, and the supply of water stored in tanks and

dams is amply sufficient to carry the farmers through the summer months. There is every prospect of a good harvest. Sheep shearing will soon be general in the river districts, and the clip is bound to be good.

The prospects of the coming harvest in the adjoining colonies are excellent. Seed is in plenty everywhere. If everything goes well, and no great change takes place, the 1887-8 season will be a fat one throughout Australasia.

Although wool is looking up, copper is looking down, and the market is inanimate. Silver is keeping up well, the mines in New South Wales, on the border of South Australia, giving grand returns. Gold is coming in from Teetulpa, a field discovered about twelve months ago, and from Woodside in the Mount Lofty Ranges at the rear of the metropolis.

Now in regard to the exhibits at the Adelaide Exhibition. The following Canadian firms are represented:—Messrs. J. & J. Taylor, of Toronto; the Burn & Robinson Manufacturing Company, of Hamilton; Mr. E. M. Eastey, of Moncton, represented by Messrs. A. S. Manders & Co.; Messrs. W. Bell & Co., of Guelph, Ont.; and Messrs. James Pender & Co., of St. John, N.B. There may be others, but these are all that I have as yet come across.

One of the most prominent exhibits in the Canadian Court, which is near the American Court, in the western annex, is the fire and burglar proof safes shown by Messrs. Taylor. Several of these well known, elaborate, substantial, costly, and at the same time inexpensive safes, are exhibited in three different parts of the Court, so that the visitor cannot help seeing them. They are much admired, and will be an attraction as long as they remain in the Exhibition.

The Bell organs shown by Messrs. Bell & Co., of Guelph, occupy a beautifully canopied enclosure opposite the White Sewing Machine Company's goods, in the United States section. These handsome instruments attract a great deal of attention.

The Burn & Robinson Manufacturing Company, if they could glance at their exhibit, would, I am sure, have no reason to complain of the site and the excellent arrangement of their general assortment of lamps, wire bird-cages and domestic labor-saving appliances.

Messrs. Pender & Co. have a large collection of horse shoe nails. They are placed next to a large perfumery stall, which acts as a guide or pointer to them. The nails are arranged in boxes and are well displayed.

Mr. E. M. Eastey shows a lot of cod liver oil and pharmaceutical preparations, of which I will have more to say in another letter.

The Exhibition since the opening has been a regular rendezvous. The attendance for seven weeks runs over 180,000. Visitors from all the colonies have come over, as well as a large number from Great Britain and the continent. The attendance has been well maintained. It certainly is a much larger exhibition than many people expected. The arrangement of the buildings is also very satisfactory. It would have been better, however, if the exhibits were not so extraordinarily scattered. No country except Austria and a few tropical countries—the State of Johore, British North Borneo, Algeria, and the Seychelles islands—have all their exhibits together. Some countries have their exhibits in three or four different buildings and in different parts of the same building. These include the Australian colonies, Great Britain and Ireland, Germany and the United States. Machinery and agricultural implements, for which separate annexes are provided, are distributed in various buildings. This is, as you will see, a very poor arrangement. The visitor interested in a particular country has therefore to roam over the whole Exhibition to find what he is looking for.

This arrangement would not be so annoying if the official catalogue indicated the locality of the exhibits. The catalogue gives no index of any sort, either of the names of the exhibitors, of the pages on which the classes of exhibits are mentioned, or even of the countries represented. I cannot hesitate in saying that the catalogue has been prepared in the most "slipshod" manner. The Exhibition officials made a mistake in letting it to a private contractor. And yet the private contractor, who was once a good pressman, ought to have edited the book better. The New South Wales and Victoria commissions have since prepared their own catalogues, which are much better productions, and have been gratuitously distributed in thousands. The official catalogue has been sold at 1s. Let us hope that there will be no slipshod catalogues at the forthcoming Melbourne Centennial Exhibition.

Despite several instances of fault-finding, the promoters have every reason to be satisfied with their outlay. They have endeavored to provide as much entertainment as possible. Music of some kind is arranged for daily, and the public have no occasion to grumble at a scarcity of attractions.

In my next letter I will deal with the American Court, and also have a few words to write in reference to the British exhibits.

Manufacturing.

THE CANADIAN MANUFACTURER.

Send \$2.00 and receive it twice a month, postage paid, for one year.

LARGE numbers of Belgian coal cutters are settling in Nov Scotia.

THERE are 64,098 registered factories in Great Britain, and 69,990 workshops.

FIFTY freight cars are building at Portland, Me., for the Canadian Pacific Railway.

THE cotton and jute mills of Bombay pay their operatives from 10 to 12 cents a day.

MR. J. T. SMITH, of Amherst, N.S., will immediately rebuild his woolen mill at Southampton, N.S.

MESSRS. J. D. SIRBALD & Co., grain dealers of Regina, are erecting a grain elevator at that point.

It is proposed to start either a woolen mill or a paper mill in the Ward property at Smith's Falls, Ont.

THE E. & C. Gurney Company has given up the manufacture of agricultural implements in Dundas, Ont.

THE agricultural implement factory of Alex. Gilles at Harriston, Ont., was destroyed by fire October 26.

MR. E. T. AINSON has assumed the superintendency of the Hawthorne Woolen Mills, Carleton Place, Ont.

MR. JOHN OTT's tannery, on the canal bank, at Brantford, Ont., was partly destroyed by fire a few days ago.

MESSRS. PLANT & McVITT, Paris, Ont., have bought out the Norwood, Ont., foundry and are now operating it.

THE woolen mill at St. Hyacinthe, Que., recently burnt, is being rapidly rebuilt. The main building is 165x70 feet.

MR. G. F. JOHNSON, late of Marmora, Ont., has assumed charge of and will operate the woolen mill at Bloomfield, Ont.

MR. PETER BERTRAM, of Orillia, has bought the axo factory of Mr. R. T. Wilson, Dundas, and will operate the same.

MR. JAMES BUTLER, Strathroy, Ont., has recently added new machinery and a steam engine to his woolen mill at that place.

THE Canada Glove Works, Acton, Ont., up to October first had manufactured over \$18,000 worth more of goods than they did last year.

MR. JAMES JERMYN, Minnedosa, Man., will erect a large grain warehouse, to be operated in connection with his roller mill at that place.

MESSRS. SAVAGE & McCANNA, Granby, Que., have 80 hands employed in their cigar factory, and still find it difficult to keep up with orders.

THE Kingston, Ont., Locomotive Works Co. have secured a contract for the construction of eleven locomotives for the Intercolonial Railroad.

THE Hamilton Vinegar Company, Hamilton, Ont., of which Mr. B. E. Charlton is president, have built a distillery in connection with their works.

THE Alabastine Works at Paris, Ont., are being run to their full capacity in anticipation of large demands for alabastine, plaster, etc., next season.

MR. JOHN McCONNELL, Guelph, Ont., manufacturer of fine carriages, shipped a fine double seat top phaeton to Sydney, Australia, a few days ago.

MESSRS. J. & J. LIVINGSTONE, Baden, Ont., have recently added an extra set of presses to their flax mill, and have erected a 60,000 bushel flax seed elevator.

MESSRS. Hindman & Co., of Hull, Que., are putting the machinery of their new lumber mill in place, and expect to have it in operation within ten days.

MR. F. A. HUMPHREY, of Dutton, Ont., is putting a circular saw in his stave factory, which he will use for cutting stave bolts. He is also preparing to cut staves.

A FIRE a few days ago in the shops of the Canada Cutlery Company at St. Henri, Que., destroyed some machinery, the damage amounting to about \$3,000.

THE Oshawa Malleable Iron Company, Oshawa, Ont., were never so busy as they are at the present time. About three hundred men are at work in the establishment.

A WOOLEN goods factory, specially intended for the manufacture of blankets, has recently been established at Cape Town, Africa. The operatives are mostly Kafir girls.

THE rumor that Mr. J. Messenger would move his woolen mill from Hanover to Durham, Ont., in consideration of a bonus of \$10,000, is said to be without foundation.

THE Napanee Cement Works, Napanee, Ont., have sold 10,000 apple barrels this season. Their cooperage department has become an important branch of their business.

THE St. Thomas Featherbone Co., St. Thomas, Ont., propose to increase its capital stock from \$20,000 to \$150,000, and expand its business by manufacturing featherbone whips.

THE Canada Hosiery Company, Beeton, Ont., are running their factory day and night with forty-seven hands. Fifteen new knitting machines have recently been added to their plant.

MR. S. H. LONGARD, of the late Howard Waterproof Manufacturing Company, of Halifax, will, it is reported, soon open a factory in Montreal for the manufacture of waterproof fabrics.

THE report of the Kaiping colliery in North China, made by Kwong Yung Wang, gives 20 cents as the daily pay of engine men, 15 cents for miners, and 13 cents for door and switch boys.

MR. JAMES RANDALL, Meaford, Ont., who recently became the proprietor of the Meaford Woolen Mills, has made extensive improvements therein and added considerable new machinery.

THE Stormont Cotton Manufacturing Company, Cornwall, Ont., are placing sixteen new carding machines in their mills. They have recently finished building a 112x50 foot storehouse.

THE Central Lake Mining Co. is opening up a new phosphate mine near the Union mines, Buckingham district. The field is promising, and twenty men will be employed all winter.

MR. S. F. HAMPTON, of the *Spectator*, Rapid City, Man., says that the consumption of binding twine in that district during the harvesting season this year amounted to 2,000,000 pounds.

THE Hespeler Woolen Mills will be offered for sale immediately by the Bank of Montreal, and it is expected that their claim, amounting to \$140,000, will be realized from the proceeds.

MR. W. E. H. MASSEY, Secretary and Treasurer of the Massey Manufacturing Co., Toronto, has been ill in California, and was consequently prevented from sailing for Australia as intended.

THE Hamilton Bridge Co., Hamilton, Ont., are building a \$2,600 iron bridge to span Allan's dam on the line of the Guelph Junction Railway. This is said to be the only iron bridge to be on the road.

THE Magog Textile and Print Company, Magog, Que., are now preparing to weave their own cloth for their print works. This cloth has previously been supplied by the Coaticook Cotton Company.

THE Oxford Manufacturing Co., Oxford, N.S., have recently made a first shipment of cloth—thirty-five varieties to British Columbia over the C.P.R., and further trade in that direction is anticipated.

THE proprietors of the Star woolen mill at Hespeler, Ont., paid their employes for the time lost in the recent accident at the new mill, as well as the insurance money accruing from their own benefit association.

MR. CAMPBELL, of South River, has a mill in full operation under the superintendence of Mr. Fred. Thomson, which next season when in full blast will have an output of 3,500,000 feet.—*Ottawa Journal*.

THE hosiery factory lately started at Streetsville, Ont., will give employment to about fifty hands. The new factory is in the premises formerly occupied by Messrs. Beaty & Henderson, who have removed to Merriton.

THE Hamilton, Ont., Street Railway Company, are now running cars with stoves in them. This is a feature of winter car service asked for by the public in many cities, but it is believed these are the first in Canada.

THE CROSSEN CAR COMPANY, of Cobourg, Ont., are at present constructing five elegant first-class passenger coaches for the Canadian Pacific Railway. The new cars will be added to the service between Montreal and Winnipeg.

MR. B. ROBERTS, traveler for Messrs. Charles Boeckh & Sons, Toronto, and Secretary of the Saint David's Society of Canada, is recovering from a serious attack of gastric fever, from which he was prostrated for several weeks.

MESSRS. GOLDIE & McCULLOUGH, Galt, Ont., have been awarded the contract for one of their 60 horse-power patent cut-off Wheelock engines and a 70 horse steel steam boiler for the plant of the electric light service now being built in that place.

TRURO is a busy hive of industry just now. Some of the factories are working overtime. In the wood working factory and hat factory some 70 or 80 hands are employed that would be idle but for the National Policy.—*Colchester (N.S.) Sun.*

MR. BECHTEL, for several years of the carriage manufacturing firm of Cober & Bechtel, Hespeler, Ont., has rented the wood-working department of the Moore Carriage Works, Galt, and purposes engaging in the manufacture of buggy bodies, etc.

THE Canada Hair Cloth Company, of St. Catharines, runs twenty-four looms on the manufacture of grey horse hair cloth for coat paddings and ladies' wear. It is said these goods are displacing the foreign goods, which are chiefly English and German.

MESSRS. JAMES O'BRIEN & Co., Montreal, have been awarded the contract by the Department of Militia for furnishing overcoats for the Canadian volunteers. This is understood to be a part of a five years' arrangement with Messrs. O'Brien & Co.

THE cooper shop at Petrolea, Ont., belonging to the Imperial Oil Company, was totally destroyed by fire Oct. 29. Loss about \$23,000; fully covered by insurance. About forty coopers were employed in this shop, all of whom lost all their tools.

THE big swing bridge across the Welland canal at Thorold, Ont., on the line of the Niagara Central Railway, was adjusted in place a few days ago and works satisfactorily. It is 307 feet long, and was built by the Hamilton Bridge Company, Hamilton, Ont.

THE average girl is now engaged in the manufacture of slipper patterns and whisk-broom holders, which she will exchange on December 25 for tortoise-shell fans, diamond earrings and the like. The average girl has a good head for business, after all.

A NEW smoke consuming apparatus attached to one of the large boilers of the workshops of the Canadian Pacific Railroad, in Montreal, is on exhibition. It is an invention of one of the employes of the company, and is said to work with much satisfaction.

THE Hastings Saw Mill Co. have been incorporated at Victoria, B.C., with \$150,000 capital. The incorporators were Messrs. W. C. Ward, R. H. Alexander, C. J. Dupont, F. S. Barnard, J. C. Nicholson and J. L. Raymur, with head offices at Victoria.

A RICH find of anthracite coal has just been made in Crow's Nest Pass, on the line of the Canadian Pacific Railroad, just beyond the summit of the Rocky Mountains. The coal is said to be equal to the Banff anthracite, and there are unlimited quantities of it.

MANUFACTURERS in Great Britain are gradually adopting liquid fuel in place of raw fuel. A London shipbuilder has just built a steam launch of 120 tons burden to be run by petroleum, which is injected into the furnace by means of steam taken from the boiler.

At the Penman Manufacturing Co.'s mill, a new and enlarged flume is being built, and an enormous new water wheel put in. The power in the mill will thereby be largely increased and in all respects prove more satisfactory and efficient.—*Paris, Ont., Aerie.*

THE new flour and grain mills at Keewatin, which are owned by Sir George Stephen, Mr. Alexander Mitchell and other wealthy capitalists, will shortly be in running order. Mr. Mitchell has gone to the North-West to make large purchases of grain for the new mills.

MR. PHELPS, of the Canadian Wheel Works, Merritton, Ont., is endeavoring to form a company for the purpose of boring for natural gas at that place. If gas is discovered in paying quantity it will be used as fuel in the various industrial establishments of Merritton.

MESSRS. O. CLARKE & Co., of the wire picket fence works, Guelph, Ont., are in receipt of a large order for their fencing from

a gentleman in Toronto, and will fence several properties for him in the north part of this city. One carload of the fencing material has been shipped.

The Ottawa City Passenger Railroad Company have just received a handsome street car for their road which was built in New York and cost \$1,200. Are there no car works in Canada capable of manufacturing such cars that they have to be imported from the United States?

THE Elderslie woollen mills, situated a mile and a half from Westville, N.S., were burned Oct. 28. They were purchased over a year ago by Mr. Peter Graham, of New Glasgow, N. S., and put in thorough repair, and were doing a good business. The loss is about \$15,000.

THE building for the new electric light station at Smith's Falls, Ont., will be of stone, 40x30 feet, one story high. For the present it will be used for supplying the incandescent system of lighting, and will have a water-power capable of running all the machinery the building can hold.

WORK at the Grand Trunk workshops in Brantford, Ont., is booming, in common with all the industrial establishments in that city. The men are principally engaged on the construction of coal cars, which are being put into service as fast as they are turned out. Many of the men are working extra time.

MESSRS. HOEGG & Co., Sheffield, N.B., packed 104,000 cans of green corn at their works in that town during the past season. Their expenses in doing this amounted to \$10,000, of which \$3,000 was paid for corn in the husk. But for an unfavorable season they would have packed 20,000 cans more.

MR. C. H. WATEROUS, senior, of the Waterous Engine Works Company, Brantford, Ont., was presented with a congratulatory address, a few days ago, by about fifty of the oldest employes of the works, the occasion being the fortieth anniversary of Mr. Waterous' establishment of his business in Brantford.

THE Ontario Car Works, London, Ont., under the management of Mr. Muir, are kept running to their fullest capacity. A contract has been secured for the construction of 100 coal cars for the Inter-Colonial Railroad, which, with other work already in hand, will keep the works on full time into next year.

THE Moncton Cotton Manufacturing Company, Moncton, N.B., have in operation in their mills there 240 looms and 11,000 spindles, and give employment to 200 hands. The majority of the operatives are English, many of them having previously been employed in Mr. John Bright's cotton mills at Manchester, Eng.

MR. FRANK ROUNDS, Welland, Ont., has his new saw and planing mill well under way, and expects to have in full operation next month. Its dimensions are 80x44 feet, two stories high. The machinery will be of the best and most substantial character, and it will have capacity to cut the largest and heaviest timber.

MR. D. C. CAWLEY, Pittsburgh, Pa., large manufacturer of bricks and drain tiles, states that since the introduction of natural gas into Pittsburgh for manufacturing purposes so successful had the experiments been with natural gas in burning brick that the majority of the brick makers in the Smoky City are now using that fuel.

MR. ARCH. PENMAN of Watson's Corners, Reeve of Dalhousie, & Co., whose mills were recently destroyed by fire, is contemplating the removal of his business to Middleville, and has agreed with Mr. Alex. Lawson for the purchase of a site for buildings adjoining the grounds of the Agricultural Society.—*Perth, Ont., Expositor.*

THE twenty five or thirty new buildings erected in Oxford this summer are nearing completion, among which is Messrs. Ross & King's new flour mill, now in operation. The machinery was brought from Ontario, and is of the best quality. They are now turning out flour equal to any Canadian.—*Amherst (N. S.) Gazette.*

THE "Shuniah Company," of Port Arthur, Ont., have applied for incorporation with \$25,000 capital. The objects of the company are mining, milling, manufacturing, farming, stock-raising, ranching, forwarding, smelting, heating ores and mineral substances, and generally all kinds of business arising out of or connected therewith.

THERE is considerable speculation as to the officers and directors for the ensuing year for the Dominion Commercial Travelers' Association, and the name of Mr. Fred. Birks, of the firm of Messrs. Belding, Paul & Co., of Montreal, is mentioned for the important position of president. The elections take place on Saturday, November 12.

INFORMATION from the Port Arthur district is to the effect that great excitement prevails in and around Sudbury over the gold developments recently brought to light there. An unexpected and exceedingly rich find had occurred while blasting was being conducted for other metals, and some very fine specimens had been taken out.

Mr. W. H. LAW, Peterborough, Ont., has his works full of bridge building work. The new bridge at Thamesville, built by him, consisting of one span of 164 feet, two of 64 feet and a 16-foot roadway is being put up. The bridge at Galt, consisting of two 70 feet spans, one 73 feet span, 16 feet roadway and 5 feet sidewalk, is now ready for use.

MESSRS. GEORGE FLEMING & Co., St. John, N.B., are building two powerful locomotives for the Cumberland Railway & Coal Company. They are of the "Mogul" type, having cylinders of 18 inches diameter, 24 inches stroke, with three pairs of driving wheels coupled. These engines are to have extensive smoke boxes, and all the latest improvements.

Mr. J. E. FITZGERALD, St. John, N.B., has just invented a hot water and steam radiator which is described as being built in loops, which can be multiplied or diminished as may be required. If a loop gets out of order it can be removed for repairs, or replaced, without disturbing the other loops. The article has been tested and gives great satisfaction.

THE Lincoln Pulp and Paper Company's mill and other property at Lincoln was sold at auction in that place, October 20, by Mr. F. H. Appleton, the assignee. The purchaser was F. H. Clergue, Esq., of Bangor, Maine, whose bid was \$1,100. This, it is understood, is the price paid above an indebtedness of \$50,000, which would make the real cost \$51,100.

Mr. L. T. WHITEHEAD, of the Cortland Carriage Works Co., has returned from Washington, D.C. So far the company has not selected any site for their works, nor has the first step been taken in the matter. However, Messrs. Duffy and Fitzgerald are expected in the city in the course of a few days, when the location will be decided upon. *Brantford Courier*.

As soon as the new premises at the old brick factory are ready for Mr. W. H. Law, he will move his bridge works thither. The Peterborough Lock Manufacturing Company will step into the vacated bridge works and occupy the two entire buildings. The lock company will put fifty more men at work as soon as the required machinery can be put in. — *Peterboro Review*.

MESSRS. BROPHY, WRIGHT & GOODWIN'S silver, plumbago, lead, etc., mine, on Lake Temiscamingue, is booming, and great quantities of stuff are being taken ready for smelting operations during the winter. The owners of the mine are negotiating with the Temiscamingue Railway and Steamboat Company for the transfer of the ore from the mine eastward. They expect next summer to be able to ship four tons of ore eastward every week.

THE traveller for a leading industrial establishment in town, who has traversed the entire country between Moncton and the Quebec border, reports times booming in all the northern counties. The managers of the establishment consider the outlook for the future very good, better in fact than for a long time. They find great difficulty in filling their orders. *Moncton (N.B.) Times*.

THE Brantford Natural Gas Company, Brantford, has been incorporated with a capital stock of \$100,000 to bore for natural gas in and adjacent to that city. The incorporators are Messrs. C. H. Waterous, sr., C. H. Waterous, jr., J. E. Waterous, F. T. Wilkes and D. J. Waterous. These gentlemen compose what is known as the Waterous Engine Works Company of Brantford, Ont.

Mr. SEWALL says his company will have the Sewall car heater in operation the coming winter in an unbroken line from St. John, N. B., to St. Louis, Mo., besides which many roads are equipping trams with it, some of whom have adopted it, while others are making a test with a view to its adoption. The Maine Central are now busy equipping cars with it at the Waterville shops. — *Pittsford Press*.

THE men will all be moved from the Midland shops here the 1st of November. After the 31st of October no more work will be done here, and the machinery will be moved to Lindsay. The men have been ordered to secure boarding houses or dwellings in Lindsay, but they experience considerable difficulty in doing so. There will be employed in the Lindsay shops fifty-five men. *Port Hope Times*.

NOT the least of the important minerals to be found in the northern townships of this county are the extensive deposits of asbestos.

This mineral is only found in Italy and Canada. The Italian asbestos is not, however, equal to the Canadian, and this fact places our asbestos at a premium. The inference is that the men who hold asbestos mines in Canada are going to make money, for as an article of commerce it is coming into more general use every day. *Napinee Bearer*.

Mr. C. O. PERRAULT, ex-French Vice-Consul, who has recently returned to Montreal from France, where he has been in connection with the Kamper syndicate, says negotiations had again been opened with the Dominion Government, that Kamper was on his way to Canada, and he had no doubt the enterprises, involving the outlay of at least 10,000,000 francs, would shortly be commenced in Nova Scotia. The purchase of the Intercolonial Railway is not embraced in the proposal.

THE timber for the new cotton factory at Magog is being laid on the ground, and people are rejoicing, as it will give employment to so many. The print works are still in a prosperous condition. — *Sherbrooke Examiner*. We suppose reference is had in this notice to the enlargement of the works of the Magog Textile and Print Company, but why don't the *Examiner* say so if such is the fact? The big world outside of Magog would like to know who the proprietors of "the new cotton factory" are.

MESSRS. G. G. & W. C. KING have begun the erection of a building at Chipman, Queen's County, N.B., intended to be used as a wood working establishment. It will be supplied with machinery suitable for box making and other descriptions of wooden ware. Steam power will be used. An engine and a portion of the machinery required have already been shipped, and the remainder is being got ready to send forward before the closing of navigation. They hope to be able to begin work on the completion of the Central Railway.

Mr. A. ROBINSON, Buckingham, Que., reports the phosphate mining industry in that district as rapidly growing in importance. He says that hundreds of tons of phosphate are every year shipped to Germany, England and the United States. The supply is unlimited, and phosphates of a very fine grade are lying almost on the surface in all parts of the district, but the claims upon which those phosphates exist are held by parties who want an exorbitant price for the property and will not work the mines themselves, but hold on to them as a speculation.

THE Moncton Sugar Refining Company, Moncton, N.B., whose capital is \$200,000, employ about eighty hand and manufacture about 400 barrels of granulated and other sugar per day. Connected with the refinery is a barrel factory, which is said to be one of the most complete and thoroughly equipped in the Dominion. About 500 carloads of charcoal per year are required for refining purposes, and in the course of a year the company give the railroad about 5,000 carloads of freight, in which is included raw materials, fuel, the product of the works, etc.

Mr. WM. BARBER, of Streetsville, Ont., ex-M.P. for Halton, who died last month, was one of the oldest woolen manufacturers in Ontario. He was born in Ireland, and came to Canada when a young man. He learned the woolen business from Hon. James Crooks, of West Flamboro', father of the late Hon. Adam Crooks. In 1837 he settled in Georgetown, where he established the firm of Barber Bros., which subsequently became widely known in Canada. Deceased leaves a widow and three grown sons, one of whom, Mr. Robert Barber, is an Ontario Factory Act Inspector.

THE reeve has received a letter from the authorities of a large manufacturing company offering to start their business in Port Perry provided they receive a suitable bonus. They propose to employ fifty men, principally heads of families, with the prospect of further increasing the number employed. — *Oshawa Pictorial*. Will our respected contemporaries ever abandon such vagueness in giving items of this sort. This is valueless as an item of news, except, perhaps, to the reeve of Port Perry. We would like to learn the name of the "large manufacturing company" alluded to.

THE new mills of the Westminster Woolen Manufacturing Company, New Westminster, B.C., are described as follows: On the first floor are five looms, 400 spindles, warping machine, press and beaming machine, shears, dressers and ruler. On the second floor one set of cards, two operators or dusters, jack and grinder. Third floor, picker, drying apparatus, etc., and storeroom. The basement contains the fulling mill, dye vats and washing vats. The engine is 35 horse-power. Hydrants and hose are on each floor. The mill will give employment to twenty hands. The products of the factory will be tweeds, flannels, blankets, and yarns.

MESSRS. CHAS. BOECKH & SONS, Toronto, have just received and stored their stock of this year's growth of broom corn, consisting of about 225,000 pounds considerable more than 100 tons. This material is of choice, fine green bush, personally selected in the best broom corn districts in the West, and the firm are prepared to supply the trade with a line of brooms of superior quality and finish. They manufacture wholly by steam power with capacity to produce over 300 dozen brooms per week. The manufacture of brooms is only one of quite a number of specialties produced by Messrs. Boeckh. They make all kinds of machine and other brushes, and make a specialty of refilling old rollers and blocks, etc.

THAT was a pleasant affair that transpired at "Rosehurst" the other evening, when the employes of the People's Mills welcomed back Mr. James Goldie from his extended continental trip. In the hearts and affections of his workmen a very large space is sacred to Mr. Goldie. Some of the old men who have been in his employ since he operated a small grist mill look upon him with fatherly veneration and affection. And he deserves it all, for in few breasts there beats a warmer or truer heart than James Goldie's. Were his example followed by all employers the strike and the boycott would be things of the past, and the labor jawsmith would again have to agitate the bucksaw for a living. *Guelph Herald.*

THE woolen mills of Messrs. Harvey & McQuesten, at Hespeler, Ont., were taken possession of by the sheriff last week under the provisions of a chattel mortgage for \$140,000 made to the Bank of Montreal. It is claimed that the income from the sale of the products of the mill for some months past has been deficient to pay current obligations. The incident throws some 250 hands out of employment. Mr. John Harvey and Mr. J. B. McQuesten, who comprise the firm, are prominent citizens of Hamilton, and it is believed that they will not be seriously embarrassed by the stoppage of their mill. Hopes are expressed that a settlement of the trouble will be effected very soon, and that work will be resumed within a few days.

MESSRS. SCHLEICHER, SCHUMM & Co., Philadelphia, Pa., American makers of the Otto gas engine, have imported a forty horse-power Otto from the shops of Messrs. Crossley Brothers, England. This engine takes the place of the twenty-five horse-power which has hitherto been employed for power purposes in the Otto shops in West Philadelphia. The forty horse-power is the largest single cylinder Otto made, and is said to be the largest of the sizes made by the Messrs. Crossley. In Germany, however, the Otto is made up to 100 horse power. Some idea of the relative size of the forty horse-power as compared with the other Otto sizes, and with other engines in general, may be gleaned from the fact that the engine brought over from England weighs eight tons. The John Doty Engine Company, Toronto, manufacture the Otto gas engines.

MAYOR HEAD, of Rapid City, Man., recently took to Winnipeg a number of samples of woolen yarn, manufactured at the woolen mills there, in which he is interested. The samples are of fine texture. Mr. Head is quite confident that plenty of wool will be available to keep the mills busy. A year ago last Christmas he and two other gentlemen, constituting the Manitoba Live Stock Company, brought a thousand sheep from Ontario, and distributed them among the farmers on shares. The sheep have done very well. Besides these there are considerable numbers in the Birtle district and around Minnedosa. Mr. Head finds that sheep do exceedingly well in that country; they had lambs this year weighing 113 lbs. live weight in the third week of July. It is his intention this year to manufacture yarns only, next year he expects to put in looms and to make blankets.

SOME of the industrial enterprises carried on and improvements being made at and about Nashwaak, N.B., are described in the *St. Stephen Courier*. The Alex. Gibson, jr., saw mill, containing five gangs, is running at its full capacity, giving employment to sixty men, and with a fair head of water cuts about 150,000 feet a day. It is carried to St. John, from whence it is shipped to all parts of the world. Further down the river is a three gang steam lath mill, which is said to be the largest of the kind in America. Over fifty men are employed, and the average daily output is 120,000 laths. On the opposite side of the St. Croix river is the Gibson cotton mills, in which there are about 300 hands employed, which will be increased to over 500 when new looms and other machinery, which is being introduced, is put in running order. The motive power is two 600 horse-power Corliss engines.

THE J. A. Converse Cordage and Plaster Works, Montreal, of which Messrs. A. W. Morris & Bro. are proprietors, are calling the attention of the trade to some of the specialties manufactured by

them. The new bag works of this concern, which they claim will be the largest and most complete in the Dominion, will be in thorough working order within the next two months, and which will be under the management of Mr. W. Baxter, late of the Canada Jute Company. Every description of jute and cotton bags will be made, and buyers will undoubtedly find it to their advantage to investigate in this direction. In their cordage works they manufacture manilla, sisal, Russian and jute cordage, bed cords, etc., and the celebrated "Red Cap" brand of manilla binding twine. They also manufacture calcined and land plaster, and they are agents for the Albert Manufacturing Co. of Hillsborough, N.B.

At the last session of the Dominion Parliament a large amount of money was appropriated with which to provide new rolling stock and make necessary repairs and improvements to the present equipment of the Inter Colonial Railroad. Among the improvements being made are the heating of the cars by steam and the lighting of them by electricity. Another device to be practically tested is an electric signal by which, when occasion requires to stop the train, a button, on the inside or end of the car, is touched and the driver notified, instead of, as at present, by pulling a cord. The present system of signalling is occasionally found too slow, especially if the cord is not pulled strong enough, and in such an instance valuable time is lost in stopping. All these equipments will be practically tested during the winter. The road is in need of locomotive power and tenders are out for the supply of fifteen new freight engines to be delivered and ready for service in February next.

LA Campagnie Manufacturiere du Chambly have applied to the Quebec authorities for incorporation with \$100,000 capital, the object being to construct dams across and along the rapids of the Richelieu river, in the municipality of Chambly Canton, the parish of Saint Joseph de Chambly, and the parish of Richelieu, in the counties of Rouville and Chambly, to create water powers to be owned by said company, which it will work or have worked by others, or other companies, for its own benefit and the following objects:—To produce and furnish electricity for the lighting of streets or buildings, public or private, in the different municipalities that may need it, to pump water by hydraulic process or otherwise, in order to furnish it to public institutions or private parties who might want it; for manufacturing purposes generally, and to construct and put in operation railways which might be necessary for the advantageous working of all industries established by said company.

THE *Ottawa Journal* has a carefully prepared estimate of the timber production of the season of 1887-88, in which are included the Ottawa river and its tributaries section, French river, Parry Sound, South river and Whanapitac, and Sturgeon river, the probable lumber cut being estimated at 680,000,000 feet. We are told that this quantity does not represent all the cutting that is to be done in the Ottawa district, the estimates relating to only some thirty two logging camps, and that there are many smaller concerns which will probably cut from ten to twenty million feet each. During the present year, owing to the extreme lowness of the water, many improvements have been made on creeks and other small tributaries, in order to facilitate driving, and the lowness of the water gave the lumbermen an abundance of opportunity to make the improvements thorough and permanent. These improvements will be a great aid in getting the seasons cut of logs safely out to the main streams. With the exception of what will be cut on the Whanapitac, all this vast quantity of lumber will come down the Ottawa, the Whanapitac cut taking the waterway of the French river, Lakes and St. Lawrence river to market.

THE *Waterville Mail* claims that Captain William Kendall, who went to that place in 1826 and erected a sawmill, subsequently invented and put in operation the first circular saw for the manufacture of lumber. The *Mail* must be assuming airs when it makes that claim for Waterville. The circular saw was in operation for sawing lumber on our falls some years previous to 1820. The inventors of the circular saw were Messrs. Jacquith & Eastman, who carried on the manufacture of lumber in the Cove, their mill occupying the site where the pulp mill now stands. I well remember seeing this saw in operation previous to 1820, cutting out clapboards. The logs were sawed into four feet lengths and placed on a machine propelled by water power and somewhat similar to a turning lathe, where the bark and sap wood were taken off. They were then fastened on the clapboard machine, the log turning on its centre, and a row of clapboards cut off by a circular saw around the log, and if the log was of sufficient dimensions a second row was taken off. The log was propelled back and forward and turned by machinery, giving the thickness of a clapboard by an index without the aid of a millman. The machine was considered a great in-

vention of the time and attracted much attention from strangers visiting the town.—*Brunswick (Me.) Telegraph.*

Mr. J. W. HERMAN, Toronto, manufacturer of the Brauninger patent boiler water purifier, is meeting with great success in introducing this article to the Canadian steam using public. He has shown us a number of letters which he has received from well-known and reliable steam users, which speak in unqualified praise of it. We quote statements from some of them. Messrs. Chas. Boeckh & Sons, Toronto: We have had your purifier in use nearly two years. It keeps our boiler perfectly free from scale. It gives perfect satisfaction, and we would not be without it. Messrs. P. Froyssing & Co., Toronto: We are well satisfied with it, and it gives us perfect satisfaction. We recommend it to all manufacturers. John Doty Engine Co., Toronto: It is very effective in operation and simple in its application. As a preventive against the formation of scale there is nothing better. We can safely recommend it to all users of steam. Mr. J. P. Wagner, Toronto: It is a first-class arrangement for catching the sediment in the water and preventing it from getting to the bottom and from attaching itself around the tubes, which means a saving of fuel as well as saving the boiler. Messrs. Wm. & J. E. Greey, Toronto: We find that your boiler water purifier, which we have in use, does just what you claim for it. As a preventive against the formation of scale we do not think there is anything to equal it. Many parties who began the use of this purifier in only one boiler, having given it thorough trial, are supplying all their boilers with it.



OXFORD AND NEW GLASGOW RAILWAY SECTIONS.

1st.—Birch Hill Road to Pugwash Junction.....	13 miles.
2nd.—Pugwash Junction to Pugwash.....	5 miles.
3rd.—Pugwash Junction to Wallace Station.....	7 miles.
4th.—Wallace Station to Mingo Road.....	17 miles.

Tenders for Grading, Bridge and Culvert Masonry, Fencing, Etc.

SEALED TENDERS, addressed to the undersigned and endorsed "Tender for Oxford and New Glasgow Railway," will be received at this office up to noon on Friday the 18th day of November, 1887, for the grading, bridge and culvert masonry, fencing, etc. Plans and profiles will be open for inspection at the office of the Chief Engineer of Government Railways at Ottawa, and also at the office of the Oxford and New Glasgow Railway at Wallace, Cumberland Co., Nova Scotia, on and after the 10th day of November, 1887, where the general specification and form of tender may be obtained upon application.

No tender will be entertained unless on one of the printed forms, and all conditions are complied with.

This Department does not bind itself to accept the lowest or any tender.

A. P. BRADLEY, Secretary.

Department of Railways and Canals, }
Ottawa, 20th October, 1887. }

GALT FILE WORKS.

F. Parkin, Galt, Ont.

Manufacturer of all kinds of Files and Rasps.

Equal to the Jowitt File.

All Work Guaranteed.

Recutting of all Description.

Send Postal for Terms and Discounts.

Established 1825.

Established 1825.

THE J. A. CONVERSE CORDAGE AND PLASTER WORKS

A. W. MORRIS & BRO., Proprietors,
MONTREAL, QUE.

MANUFACTURERS OF

CORDAGE DEPARTMENT. Manilla, Sisal, Russian and Jute Cordage, Bed Cords, etc.

BINDER TWINE DEPARTMENT. The justly celebrated "Red Cap" brand Manilla Binder Twine.

PLASTER DEPARTMENT. Calcined and Land Plaster. Agents for the Albert Manufacturing Co., Hillsborough, N. B.

BAG DEPARTMENT.

Our new Bag Works, the largest and most complete in the Dominion, will be in thorough working order during the next two months, under the management of Mr. W. Baxter, late of the Canada Jute Company. Every description of Jute and Cotton Bags will be manufactured, and buyers will undoubtedly find it to their advantage not to close large contracts until they obtain our quotations.

Parks' Cotton Manufactures

Awarded the Only "Gold Medal" Given at the Toronto Exhibition of 1885, for Cotton Goods.

Fancy Wove Shirtings.

FAST COLORS, - - FULL WEIGHTS.

Quality always Equal to Samples sent out.

COTTONADES.

Our celebrated line of Lansdowne Tweeds, the best value, for least cost, of any made in Canada.

BALL KNITTING COTTONS.

Better Spur, Twisted, Bleached and Dyed than any other in the Market. For Sale by all Wholesale Houses.

No Goods Genuine Without Our Name Upon Them.

NO PRIVATE BRANDS.

WILLIAM PARKS & SON (Limited),

ST. JOHN, N.B.

AGENTS:

Wm. Hewett, Toronto;

Duncan Bell, Montreal;

Bedard, Girard & Co., Quebec.

THE PERMANENT EXHIBITION

Of Manufactures, and Commercial Exchange,

63, 65, 67, 69 FRONT STREET WEST (OPP. QUEEN'S HOTEL).

NICHOLLS & HOWLAND, TORONTO.

DIRECTORY OF EXHIBITORS:

The following firms are already represented in the Permanent Exhibition. Their manufactures have a deservedly high reputation, and are recommended to the notice of intending purchasers of any of the respective lines in the following list. Prices, terms, discounts, etc., may be obtained from the several firms direct, or from Messrs. Nicholls & Howland, Permanent Exhibition of Manufactures:

- Armstrong, J. B., Manufacturing Co., Guelph, Carriage Materials.
 Armstrong, J. A. & Co., Guelph, Ont., Carpets.
 Automatic Refrigerator Co., Ottawa, Ont., Hanrahan's Patent Automatic Refrigerators.
 Bamum, The Wire and Iron Works, Windsor, Ont., Wire Goods of all descriptions, Railing, Cresting, Fencing, etc., etc.
 Barber & Ellis Co., The, Toronto, Ont., Manufacturing and Wholesale Stationers, Account Books, Office Sundries, etc.
 Bertram, John & Sons, Dundas, Ont., Iron and Wood Working Machinery.
 Blake, George F., Manufacturing Co., Boston, Mass., Steam Power Pumping Machinery.
 Boeckh, Charles & Sons, Toronto, Ont., Brooms, Brushes, Woodenware, etc.
 Breithaupt & Co., Berlin, Ont., Leather.
 Brush, George, Eagle Foundry, Montreal, P.Q., Blake Stone Crusher.
 Bostwick, George F., Manufacturer in Canada of Amberg's Cabinet Letter Files.
 Bines, Geo. W., Montreal, National Water Purifier.
 Batten, John, Pittsburg, Pa., Automatic Fire Escape.
 Clare Bros. & Co., Preston, Ont., Stoves and Furnaces.
 Cowan & Co., Galt, Ont., Wood Working Machinery, Engines and Boilers.
 Creelman Bros., Georgetown, Ont., World's Star Knitting Machinery.
 Crompton Corset Co., Toronto and Berlin, Ont., Corsets.
 Canadian Harness Co., Toronto, Harness and Saddlery.
 Ching, J. Lionel & Co., Sydney, N.S.W., "Dugong" Oil and Ointment, and "Dugong" Ivory Tusks and Hide.
 Daperow Bros. & Co., Toronto, Varnishes, Japans, etc.
 Daley, F. F. & Co., Hamilton, Ont., Extracts, Essences, Blacking, and Grocers' Sundries.
 Dominion Baby Carriage Co., London, Ont., Baby Carriages and Rattan Furniture.
 Donald Produce Co., Norwich, Ont., Evaporated Fruits.
 Doty Engine Co., Toronto, Ont., Engines, Boilers, etc.
 Dominion Barb Wire Co., Montreal, P.Q. (C. A. DeLisle Western representative), Barb Wire, Plain Wires and Wire Rope.
 Dorereourt Twine Mills, Toronto, Ont., Twines and Cordage.
 Dominion Starch Works, Walkerville, Ont., Corn Starch and Laundry Starch.
 Dominion Show Case Co., Toronto, Show Cases.
 Ellis & Kelghley, Toronto, Ont., Coffees, Spices.
 Elliot & Co., Toronto, Ont., Manufacturing and Wholesale Chemists and Druggists.
 Ellis, P. W. & Co., Toronto, Ont., Manufacturing and Wholesale Jewellers.
 Fenwick & Selater, Montreal, Que., Files and Mill Supplies.
 Finch, W. S. Toronto, Wood Filler and Preserver.
 Gate City Stone Filter Co., New York, Water Filters.
 Giles, John & Co., Carleton Place, Ont., "Shipman's" Coal Oil Engines and Steam Launches.
 Globe Tobacco Co., Windsor, Ont., and Detroit, Mich., Tobaccos.
 Goodhue & Co., Danville, Que., Leather Belting and Laced Leather.
 Grand & Toy, Toronto, Ont., Tucker Automatic Letter and Document Files.
 Grand River Knitting Mills Co., Paris, Ont., Snyrna Rugs and Knit Goods.
 Grape Sugar Refining Co., Walkerville, Ont., Syrups and Glucose.
 Gray, Wm. & Sons, Chatham, Ont., Carriages and Sleighs.
 Gillott, E. W., Toronto and Chicago, Yeast and Baking Powder.
 Gardner, W. R., Montreal (successor to H. H. Warren), Manufacturer of every description of Hammers.
 Hudson Bros. (Limited), Sydney, N.S.W., Australian Timber and Cabinet Woods.
 Hamilton Industrial Works Co., Hamilton, Ont., Wringers, Mangles, etc.
 Hart Emery Wheel Co., Hamilton, Ont., Emery Wheels and Emery Wheel Machinery.
 Hay, Peter, Galt, Ont., Machine Knives.
 Hearle, J. G., Montreal, Que., Toilet Soaps and Perfumery.
 Howland, H. S., Sons & Co., Toronto, Ont., Hardware Specialties.
 Howland, H. S., Kleinburg, Ont., Flour.
 Hemming Bros., Toronto, Ont., Fancy Plush Goods and Jewellers' Cases.
 Herman, J. W., Toronto, Boiler Water Purifier.
 Ingersoll Door Guard Co., Ingersoll, Ont., Patent Door Guards.
 Ives, H. R. & Co., Montreal, P.Q., Fencing, Cresting, Stoves and Hardware Novelties.
 Jardine, A. & Co., Toronto, Ont., Coffee, Spices, and Pure Gold Baking Powder.
 Kerr Bros., Walkerville, Ont., Water, Steam and Gas Valves of Improved Pattern.
 King, R. W., & Co., Georgetown, Ont., Power Knitting Machinery.
 Leslie, James, Montreal, Que., Woollen and Cotton Mill Supplies.
 McCaskill, D. A., & Co., Montreal, Que., Varnishes and Japans.
 Miller Bros. & Mitchell, Montreal, Que., Beaudry's Steam Power Hammer.
 Munderloh & Co., Montreal, Que., Watchmen's Clocks.
 Morris, A. W. & Bro., Montreal, Que., Cordage and Binder Twine.
 Morrison James, Toronto, Steamfitters' and Plumbers' Supplies.
 McLaren, Tho. J. C. Belting Co., Montreal, Mill Supplies.
 Montgomery, L. B., Toronto, Mill Supplies.
 North, Wm. & Sons, Leeds, England, Teazels.
 Northey & Co., Toronto, Ont., Steam Pumping Machinery.
 Northumberland Paper Co., Campbellford, Ont., Straw Board and Tarrad Paper.
 Ontario Bolt Co., Toronto, Ont., Bolts, Nuts, Spikes, etc.
 Oshawa, Stove Co., Oshawa, Ont., Cooking and Heating Stoves.
 Pepper, T. & Co., Guelph, Ont., Carriage and Wagon Axles.
 Pillow, Hersey & Co., Montreal, Que. (Geo. A. MacAgy, Western representative), Nails, Tacks, Bolts, etc.
 Ramsay & Son, Montreal, Que., Plate and Stained Glass, Paints, Oils, etc.
 Robin & Sadler, Montreal, Que., and Toronto, Ont., Leather Belting and Laced Leather.
 Rumpel, Geo., Berlin, Ont., Felt Boots and Shoes.
 Simpson & Co., Berlin, Ont., Furniture.
 Smith, R. H. & Co., St. Catharines, Ont., every description of Saws.
 Stalischmidt & Co., Preston, Ont., Office Desks, Chairs, School Furniture, etc.
 Storey, W. H., & Son, Acton, Ont., Gloves.
 Slight, H., Toronto, Florist.
 St. Thomas Featherbone Co., St. Thomas, Ont., Featherbone Corsets, Whips, etc.
 Toronto Rubber Co., Toronto, Belting, Fire Hose, Etc.
 Toronto Novelty Manufacturing Co., Toronto, Ont., Ironing Boards.
 Teller, Rothwell & Co., Montreal, Stove Polish, etc.
 Watts, A. & Co., Brantford, Ont., Household Soaps.
 Warren, H. R., representing The Meriden Britannia Co., Hamilton.

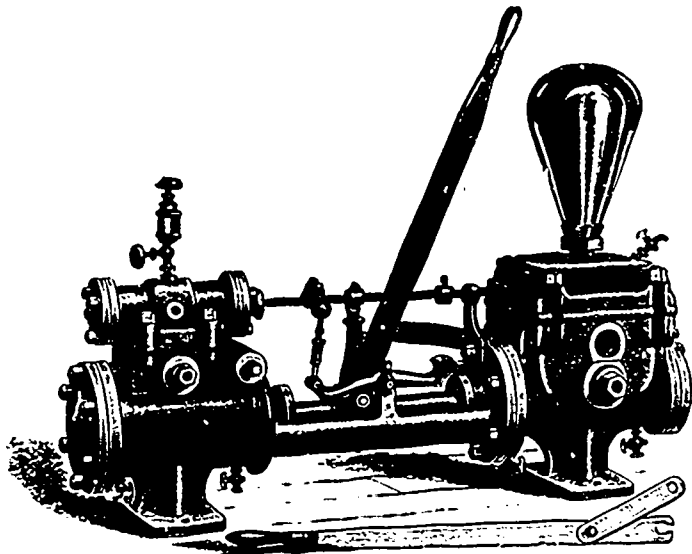
IN CONNECTION WITH OUR PERMANENT EXHIBITION WE HAVE EXCELLENT

STORAGE—LIGHT, DRY, CLEAN.

Our facilities for receiving and shipping are unsurpassed, and we invite inspection or correspondence.

KNOWLES STEAM PUMP WORKS,
 —BUILDERS OF—
STEAM PUMPING MACHINERY IN EVERY VARIETY

**BOILER
 FEED,
 FIRE
 and
 TANK
 PUMPS**



Simple and Duplex
**PUMPING
 ENGINE**
 for
TOWN and CITY
SUPPLY.

For Particulars, Address **44 Washington St., BOSTON.** **93 Liberty St., NEW YORK.**

—SEND FOR ILLUSTRATED CATALOGUE—

To Users of Glue.

WE are manufacturing a reliable **GLUE**, and can supply a limited number of consumers only. We guarantee our glues to be made from selected stock, and to be of the same uniform quality. Glues not as represented, or not proving satisfactory, returnable at our expense.

JAMES HAY & CO.
 WOODSTOCK, ONT.

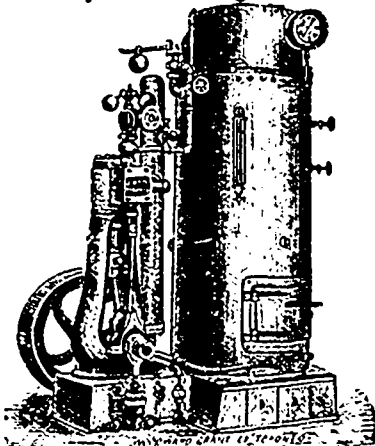
ARMSTRONG'S BUGGY AND CARRIAGE GEAR.

The "Defiance"

THIS GEAR meets the demand of the Driving Public for low-riding Buggies, and combines with this, lightness, durability, and great ease of motion. By the use of improved machinery and manufacturing in large quantities, we are enabled to make prices MODERATE. Send for our descriptive circular.

J. B. ARMSTRONG MFG. CO. (Ltd.), Guelph, Ont.

The Doty Vertical Engine and Boiler.



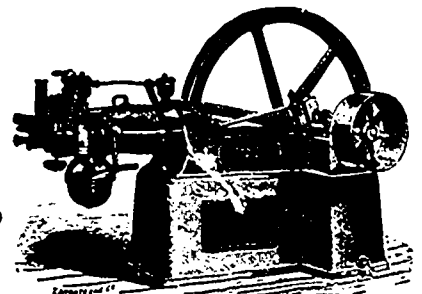
SEND FOR REDUCED PRICE LIST

In sizes from 3 to 10 H.P. Specially adapted to places where 3 to 10 H.P. is required. Simple, safe and durable

**JOHN DOTY
 ENGINE CO.**

No. 2 Bathurst Street.
TORONTO, ONT.

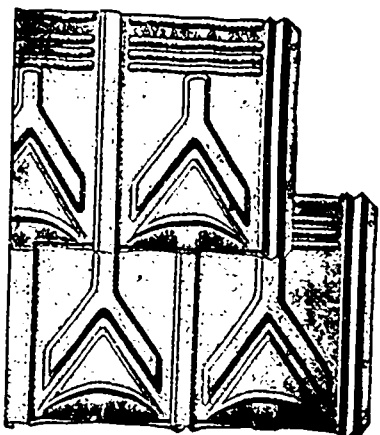
THE
Otto Silent Gas Engine.



In sizes from 2 to 7 H.P. Most convenient power in the market.

SEND FOR CIRCULAR.

WALTERS' PATENT METALLIC SHINGLES



They make the Most Durable Metal Roof known.
 They make the Cheapest Metal Roof known.
 They are Attractive in Appearance.
 They Lesson your Insurance.
 They are one-third the weight of wood.
 They are one-ninth the weight of slate.
 They can be put on by ordinary workmen.
 A good roof is as important as a good foundation.

Send for circulars and references. Sole Manufacturers in Canada.

McDONALD, KEMP & CO.

Cor. RIVER AND GERRARD STREETS, - - TORONTO, ONT.

WM. LAURIE & CO. SPOOLS AND BOBBINS

MANUFACTURERS OF

OF ALL SIZES AND PATTERNS,

FOR COTTON AND LINEN THREAD, MACHINE TWIST, SEWING SILK, AND FOR COTTON, WOOLEN AND SILK MANUFACTURERS.

LOUISEVILLE, P.Q.

We respectfully solicit your patronage and guarantee our work to be first-class.

ST. CATHARINES SAW WORKS.



R. H. SMITH & CO.,

ST. CATHARINES, ONT.

Sole Proprietors, in Canada, of the

"Simonds" Saws

AT GREATLY REDUCED PRICES

All our Goods are manufactured by the "Simonds" process. Our Circular Saws are unequalled. We manufacture the Genuine Haulan, Lance Tooth, Diamond, New Improved Champion, and all other kinds of Cross-Cut Saws. Our Hand Saws are the best in the market, and as cheap as the cheapest. Ask your Hardware Dealer for the St. Catharines make of Saws

THE LARGEST SAW WORKS IN THE DOMINION.

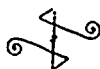
Geo. F. Blake Manufacturing Co.,

BUILDERS OF

SINGLE AND DUPLEX

Steam and Power

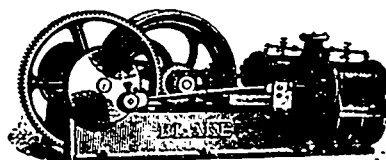
Pumping Machinery



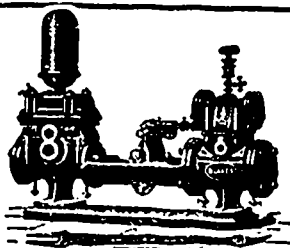
BOSTON,
44 WASHINGTON STREET.

* **NEW YORK,**
93 LIBERTY STREET.

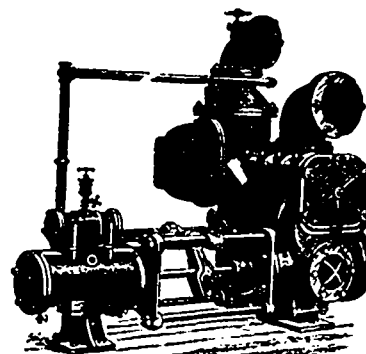
SEND FOR ILLUSTRATED CATALOGUE.



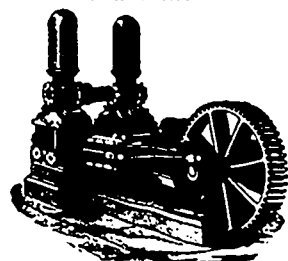
AIR COMPRESSOR.



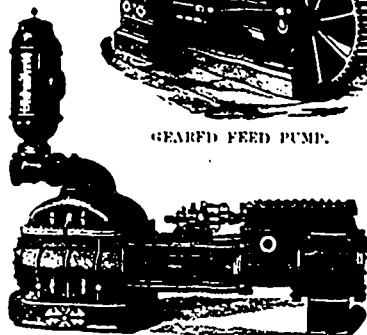
BOILER FEED PUMP.



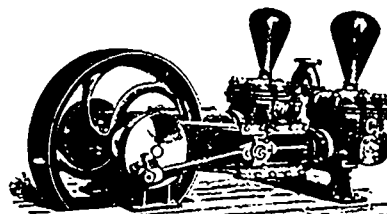
AIR PUMP AND CONDENSOR.



GEARED FEED PUMP.



DUPLEX COMPOUND ENGINE.



BELT PUMP.

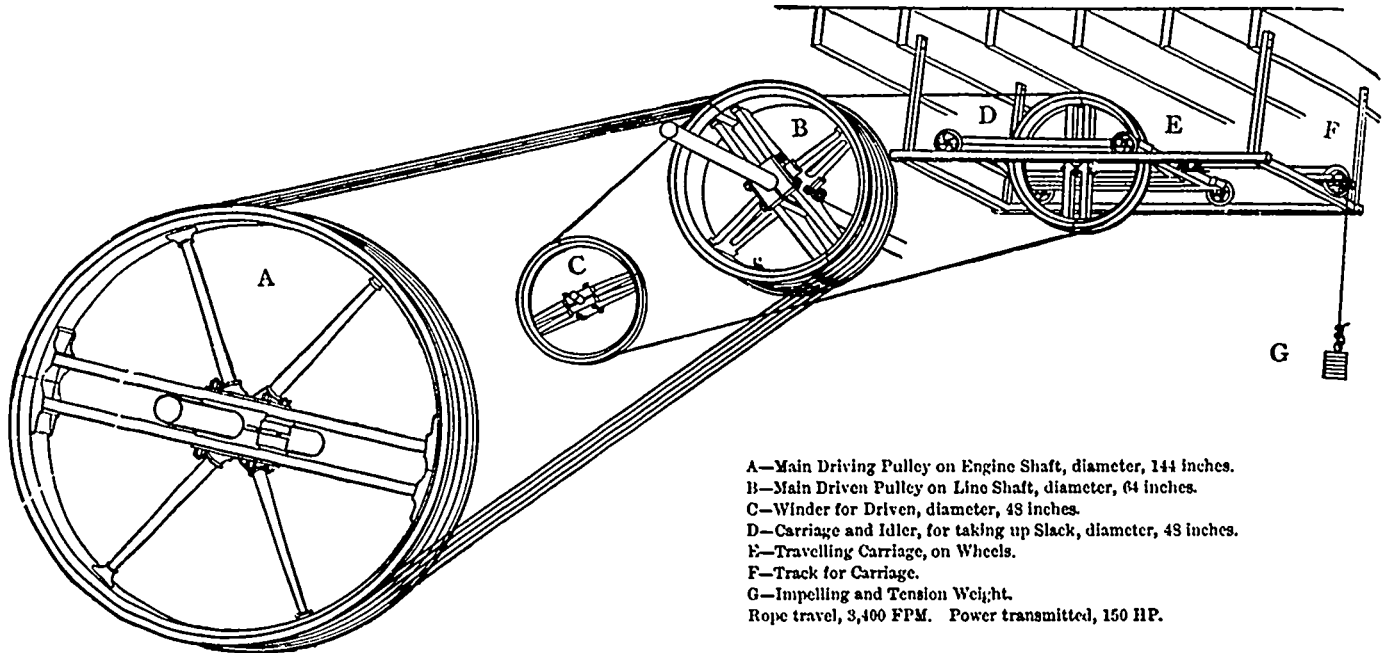
THE TRANSMISSION OF POWER BY ROPES AND THE DODGE PATENT WOOD PULLEYS.

The great advantage of Wood over Iron as a material for belt pulleys (or drums) to transmit power economically, has induced the DODGE WOOD SPLIT PULLEY CO., of Toronto, to introduce grooved hard wood pulleys for the special purpose of transmitting power by ropes (manilla tallow laid), and in this connection Mr. Dodge has taken out Canadian Letters Patent for a system of applying the ropes, adjusting the pulleys, and taking up slack, that is giving the most unqualified satisfaction.

This system of transmitting power by ropes is cheaper and superior to belts in many cases, such as where the driven shaft is at right angles with the driver, also where the drive is perpendicular, particularly when it is quarter twist and perpendicular, also where the driver and driven are close together; also for long drives, such as across a street, or a stream, etc. For transmitting power from an engine to the line shaft this

system is unequalled, steady all the time, not like a heavy belt, which is always more or less flapping, jerking and stretching, then slipping and losing power. It is safe to say that an engine hitched up by the Dodge Rope System will do 25 per cent. more work on the same consumption of fuel than the same engine would do with a belt. We have put up a number of the Dodge Patent Rope transmissions during the past year, all of which are in most successful and satisfactory operation, as certified by the testimonials published in our catalogue of well-known manufacturers who have them in use. Parties who are in want of anything in this line, or who are interested in the efficient and economical transmission of power, are cordially invited to call at our works, 81-89 ADELAIDE STREET WEST, Toronto, and see the ropes and wood pulleys in operation, as we are driving our whole factory by this system.

WITH OUR SYSTEM OF MANILLA ROPE TRANSMISSION is overcome the objection to Wire Rope (because of crystallizing) and gearing, (because of loss of friction) and shafting (because of the liability to get out of alignment, hence loss of power by friction), and a separate engine plant (because of its great expense); on the contrary, with the Manilla Rope System, under the Dodge patents, the power is transmitted with the same efficiency as though the shafts were close together, there being no loss of power by excessive tension, or bad alignment, but simply the friction of the journals to overcome at the carriers, which have a strain of weight of the rope to carry.



A—Main Driving Pulley on Engine Shaft, diameter, 144 inches.
 B—Main Driven Pulley on Line Shaft, diameter, 64 inches.
 C—Winder for Driven, diameter, 48 inches.
 D—Carriage and Idler, for taking up Slack, diameter, 48 inches.
 E—Travelling Carriage, on Wheels.
 F—Track for Carriage.
 G—Impelling and Tension Weight.
 Rope travel, 3,400 FPM. Power transmitted, 150 HP.

The illustration, as shown above, is one of peculiar construction, and represents an engine transmission of power by a manilla rope, under the Dodge system of patents, and is shown as in actual use at the works of the Dodge Mfg. Co., at Mishawaka, Ind.

The system herewith illustrated and described is one of great interest to all consumers of power. Inasmuch as it takes the place of expensive gearing and broad belts, the advantages to be thus derived may be thus summarized:

To transmit the same power with a rope *versus* a like power with a wide belt, first, requires much narrower faced pulleys; consequently, much less expensive; 2nd, the interest on the money invested in a belt will more than supply the rope, saying nothing about the wear and tear; 3rd, better power, from the fact that all sliding of the belt is overcome, and the rope gear becomes as positive as the cog gear.

The transmission consists of a series of wood split pulleys, and ordinary manilla rope (tallow laid).

The engine used is an automatic, and the size of the cylinder is 18x40, making 90 RPM, and transmits 150 HP., the driver, A, and driven, B, have each several grooves, in which are wound the ropes, the number of wraps being used, as in previous cases, to gain surface in contact, for adhesion of the rope. The winder, C, in this case, is simply used to convey the rope to the slack carriage, to prevent obstruction. This, together with the carriage pulley, D, are each single grooved. The

device for taking care of the slack, and giving the proper tension to the rope, is shown at E, with the impelling weight at G. The slack side of the rope is paid directly from the driver to the carriage, E, which, it will be seen, takes in and pays out slack as it occurs, and acts also for a tension on the rope. The weight at G may be increased or decreased with the power.

This apparatus was erected and started December 2, 1884, and has been running constantly since, with same splice, and transmitting an average of 150 HP.

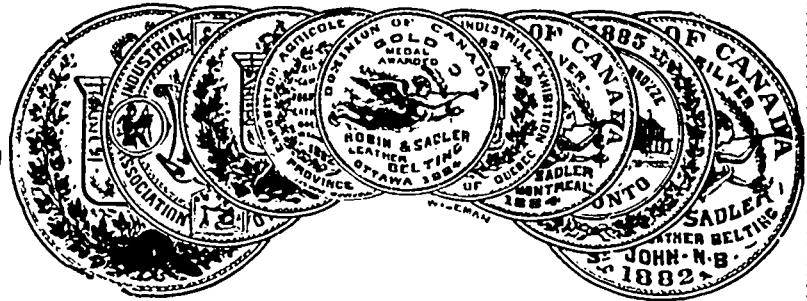
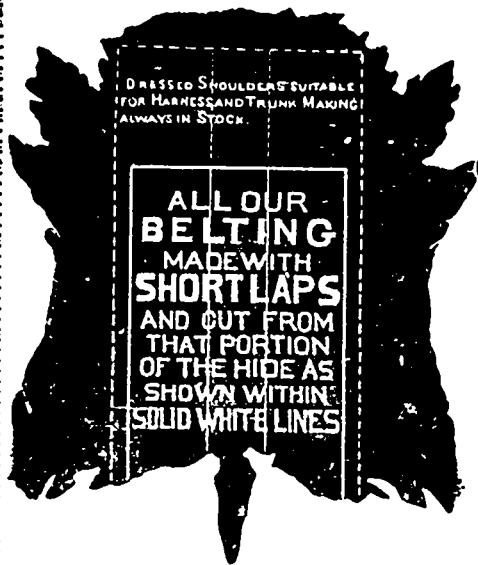
The rope shows no signs of wear, and looks as though it would last for years to come.

The rope is an ordinary one-inch diameter manilla, and travels at a velocity of 3,420 FPM.

We make the following summary:

Velocity of rope, 3,420 FPM. Transmits, as above, 150 HP. (indicated). The tension on the rope is, therefore, $\frac{3,420 \times 150}{32.2} = 1,408 + 106$ pounds (one-half the weight in the weight-box) = 1,608 pounds; which is the strain on the rope. There being five pulling wraps of rope, hence the strain would be divided five times = $\frac{1,608}{5} = 321$ lbs. strain on the rope. 3½ per cent. of the breaking strain of the rope; it being estimated as safe to use 10 per cent. of the breaking strain of the rope.

[The breaking strain of a one-inch manilla rope is 9,000 pounds.]—*Power and Transmission Journal.*



ROBIN & SADLER,
 MANUFACTURERS OF
Leather Belting

SEND FOR PRICE LISTS AND DISCOUNTS.

MONTREAL, 2518, 2520, 2522, Notre Dame St.

TORONTO, 129 Bay St.

TELEPHONE 110 B.

TELEPHONE 1101.

Mill Owners in the West will find it to their advantage to order their BELTING from our Toronto House.

We guarantee their orders well and promptly filled, for we keep on hand all sizes from 2 to 16 inch, **SINGLE AND DOUBLE**; also: Lace Leather, Belt Hooks, Belt Punches, etc., etc.

Nova Scotia Steel Co., Limited,

NEW GLASGOW, NOVA SCOTIA,

(Only Steel Works in Canada),

MANUFACTURERS OF

Hammered and Rolled Steel

MADE BY THE

SIEMENS-MARTIN (OPEN HEARTH) PROCESS.

ROUND MACHINERY STEEL for Shafting, Spindles, etc. MILD STEEL for Rivets, Bolts Thresher Teeth, and many purposes where Norway Iron is now used.

SPECIAL SECTION PLOW BEAMS, MILD STEEL CENTRE AND SOLID MOULD BOARDS, COULTER STEEL HARROW DISCS, AGRICULTURAL STEEL CUT TO PATTERN, SPRING, SLEIGH SHOE, TYKE, TOE CALK AND CROSS BAR STEEL, STEEL NAIL PLATE.

□□ Binder Bars, Z and other Special Sections.

STEEL MOWER BARS.

Particular attention given to the manufacture of Rake, Cultivator and Harrow Teeth, and other Agricultural Spring Steel Forgings.

FOLDING AND EXTENSION

Iron and Steel

Gates and Guards

(PATENTED JUNE 8th, 1882.)

FOR Banks, Vaults, Elevators, Public Buildings, Asylums, Factories, Houses, Driveways, Stores, Theatres, Stables, Baggage Express, Postal and Sleeping Cars, Express and Delivery Wagons, Windows, Doors, &c.

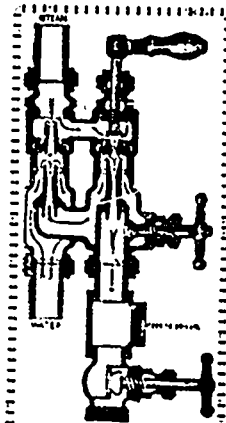
THE Ontario Folding Iron Gate and Guard Co.

OFFICE AND MANUFACTORY:

THE FENSOM ELEVATOR WORKS,

34, 36 AND 38 DUKE ST., TORONTO

Correspondence solicited and Illustrated Catalogues furnished on application.



JAMES MORRISON,

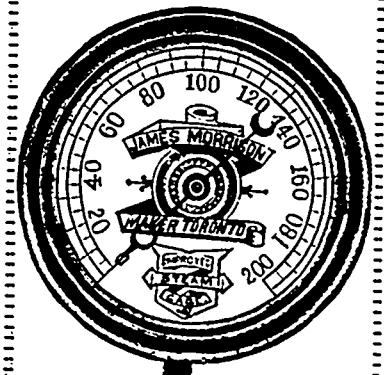
IMPORTER AND MANUFACTURER OF

Steamfitters' and Plumbers' Supplies

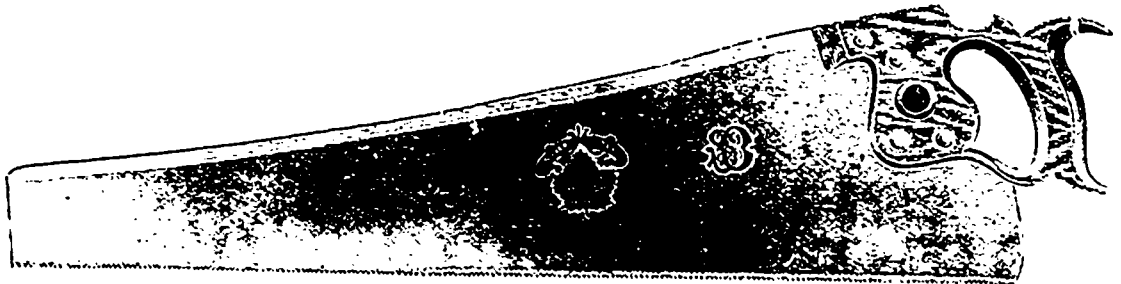
75 & 77 ADELAIDE ST. WEST, TORONTO.

SANITARY EARTHENWARE Now in Stock: Morrison's Washout Hopper National Water Closet.

- Crown Water Closet.
- Inodoro Water Closet.
- Perfect Water Closet.
- Jenning's Valve Closet.
- Demarest Valve Closet.
- Alexander Valve Closet.
- A full stock of Washbasins, Urinals, etc.
- Also, complete stock of Wrought Iron Pipe and Fittings.
- Brass and Iron Valves.
- Plumbers' and Steamfitters Brass Work.
- Rubber Hose, Belting, Packing, etc.
- Sole Canadian representative of the Celebrated Hancock Inspirator.

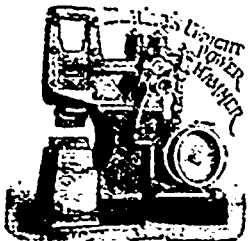


SHURLY & DIETRICH, Galt, Ont.

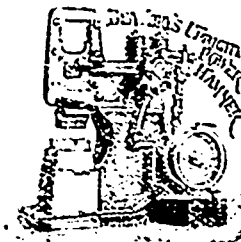


MANUFACTURERS OF SAWS OF ALL KINDS. LARGEST SAW MANUFACTURERS IN CANADA.

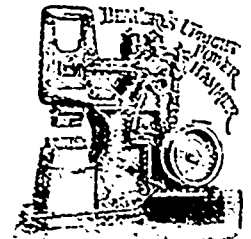
Sole Proprietors of the Secret Chemical Process of Tempering. Our Silver Steel Saws are unequalled.



SIMPLE. PRACTICAL. LOW PRICED.



ENTIRELY NEW DESIGN.



BEADRY UPRIGHT CUSHIONED POWER HAMMER.

Does not vibrate. Requires no helper. Always ready for use. Does not chill the work.

Gives a perfectly square blow. Has open space between the dies. The stroke can be changed easily and quickly.

Will give one blow or more as required, light or heavy. Can be run cheaply and with very little power.

The anvil is entirely separate from the frame. It is the least complicated and most efficient power hammer in the world.

SEND FOR PRICE LIST.

MILLER BROS. & MITCHELL, Sole Makers for Canada, MONTREAL.

AUSTRALIA—IMPORTANT TO MANUFACTURERS.

Established 1878.

ALBERT S. MANDERS & CO.,

THE AUSTRALIAN COMMISSION HOUSE.

Head Office, 30 Collins Street, MELBOURNE, also at King Street, SYDNEY, and King William Street, ADELAIDE.

Agency Wanted for First-Class Goods. Samples should be sent with Lowest Prices to our Head Office.
NOTE.—We are the Only Firm that have a Branch House in the three Leading Colonies.

LONDON, 11 Mansion House, Chambers, 10 Queen Victoria St., E.C. NEW YORK, Mayo & Watson, Australasian Office, 22 & 25 State St. CANADA, Nicholls & Howland, 63 Front St. West, Toronto.

THE INTERCOLONIAL RAILWAY OF CANADA.

*The Royal Mail Passenger and Freight
Route between Canada and
Great Britain,*

AND

Direct Route between the West and all points on the Lower St. Lawrence and Baldo de Chaleur, also New Brunswick, Nova Scotia, Prince Edward's Island, Cape Breton, Newfoundland, Bermuda and Jamaica.

New and elegant Buffet Sleeping and Day Cars run on Through Express Trains.

Passengers for Great Britain or the Continent by leaving Toronto per 8.30 a.m. train Thursday, will join outward Mail Steamer at Halifax a.m. Saturday.

Superior Elevator, Warehouse and Dock accommodation at Halifax for shipment of grain and general merchandise.

Years of experience have proved the Intercolonial, in connection with Steamship lines to and from London, Liverpool and Glasgow to Halifax, to be the quickest Freight route between Canada and Great Britain.

Information as to Passenger and Freight Rates can be had on application to

ROBERT B. MOODIE,

Western Freight and Passenger Agent, 26 Rossiter House Block, York Street, TORONTO.

D. POTTINGER,

Chief Superintendent.

Railway Office,

Moncton, N.B., Nov. 22nd, 1886.

Patent Double Tongue and Groove
Fire-Proof Safes.

STEEL PLATE UNDER LOCK TO PREVENT DRILLING.

SAFES

J. & J. TAYLOR

SAFES

DRY AIR CHAMBER TO PREVENT DAMPENESS.


HEAD OFFICE AND MANUFACTORY
117, 119
FRONT STREET EAST,
TORONTO.

JAMES LESLIE

MANUFACTURER OF

MACHINE CARD CLOTHING AND LOOM REEDS.

LEATHER BELTING
LACE
LEATHER & HOSE



COTTON AND WOLLEN MILL SUPPLIES

COTTON LOOM HARNESS AND WIRE HEDDLES

OFFICE AND FACTORY
JUNCTION OF CRAIG AND ST. ANTOINE STREETS.
MONTREAL.

The Canadian Manufacturer

IS THE OLDEST TRADE JOURNAL PUBLISHED IN CANADA,

And is the only paper in the Dominion published entirely in the

INTERESTS OF CANADIAN MANUFACTURERS.

All the various manufacturing industries of Canada are represented in its columns, and it is and always has been the fearless and consistent advocate of those reforms indispensable to the success of home manufacturing industries.

AS REGARDS THE INTERESTS TO WHICH IT IS DEVOTED, IT IS THE

Best Advertising Medium in Canada.

ITS ADVERTISING RATES ARE REASONABLE.

Specimen Copies, with Rate Card, will be sent Free, on application.

Send \$2 and receive it twice a month, postage paid, for one year.

ADDRESS,

CANADIAN MANUFACTURER,

6 WELLINGTON STREET WEST,

TORONTO, ONTARIO, CANADA.

THOMPSON & CO.,

SHERBROOKE, QUE.,

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.

SUPERINTENDENTS COTTON, WOOL AND WORSTED MILLS.

The Third edition of "THE RED BOOK" is ready. Get a copy of it and save money in buying your supplies. It places you in *direct* communication with *first hands*, thereby securing the advantages to be gained by *competitive prices*. Anything from a Ring Traveler to a Loom, Acetic Acid to Zinc Dust, Yarns of all kinds, Shoddy, Flocks, Cotton Buyers, Wool, New Devices, and Steam Appliances—in fact, everything needed for Cotton, Woolen and Worsted Mills, classified and indexed, compact and reliable. It also contains Yearly Tables, Cotton and Wool Products, and amounts used each year from 1841 to date by Northern and Southern Mills, Exports, Statistics, Receipts and information of considerable value to mill men. Sent post-paid on receipt of price in cash or stamps (U.S. or Canadian).

ONE DOLLAR, Cloth. FIFTY CENTS, Paper.

ADDRESS—

J. E. PALMER, Publisher,

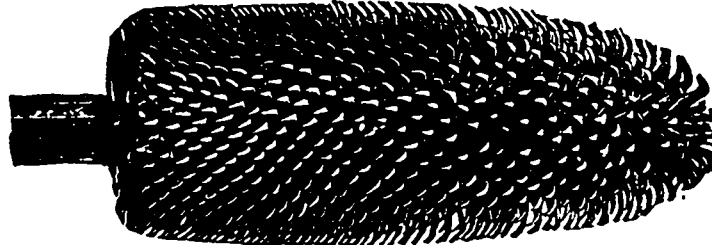
176 BROADWAY, NEW YORK.

THOMAS C. KELLOGG,

SKANEATELES N.Y., U.S.A.,

Teasels are Grown, Cured and Packed on our own Premises.
New York Office,
100 & 102 Beade Street

A. B. KELLOGG, Manager.



DEALER LAST
AND
GROWER OF
AMERICAN TEASELS,
CLIPPED AND PACKED
TO ANY
DESIRED SIZE.

T. H. EATON & SON, Windsor, Ont., and Detroit, Mich., Agents for Ontario.

Correspondence Solicited.

WRITE FOR PRICE LIST NO. 71.

Samples sent by Mail upon Application.

THE CHATHAM MANUFACTURING CO. (Ltd.)

MANUFACTURERS OF



HARDWOOD LUMBER,

SHIP PLANK AND

THE CHATHAM WAGON, of which wagon the above is a faithful cut, and which the Government of the Dominion of Canada has adopted as the STANDARD WAGON

We simply ask intending purchasers, in their own interests, to send to us for particulars of the Chatham Wagon, or if there is one convenient closely examine it before purchasing any other.

We also make Railway Platform Baggage Trucks, Farm and other Dump Carts, the Celebrated Main Bob Sleigh, the Patent Champion Hay Rack, etc., etc.

CORRESPONDENCE SOLICITED.

CHATHAM MANUFACTURING CO. (LIMITED).

**THE BELL
Telephone Co'y**

OF CANADA.

—Manufacturers and Dealers in—

Telegraph & Electrical

INSTRUMENTS,

Electro-Medical Apparatus,

Fire Alarm Apparatus,

Magnets for Mills

Electrical Gas Lighting Apparatus,

Burglar Alarms,

Hotel and House Annunciators,

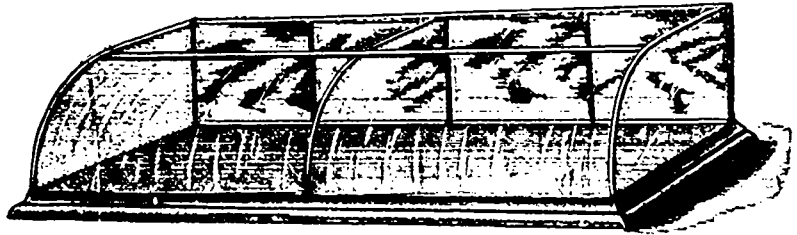
Electric Call Bells, &c., &c.

For further particulars apply to

No. 12 HOSPITAL STREET,

MONTREAL.

**DOMINION SHOW CASE
MANUFACTURING CO'Y**



HIGHEST AWARDS

Received at

TORONTO EXHIBITION

1884, '85, and '86.

SEND FOR CATALOGUE AND
PRICE LIST.

Show Cases, of Every Description in Nickel, Silver
Walnut, Ebonized, Etc.

HARDWOOD STORE FITTINGS, METAL SASH BARS, ETC.

SHOWROOMS AND FACTORY:

59, 61 and 63 Adelaide St. West, TORONTO, Ont.

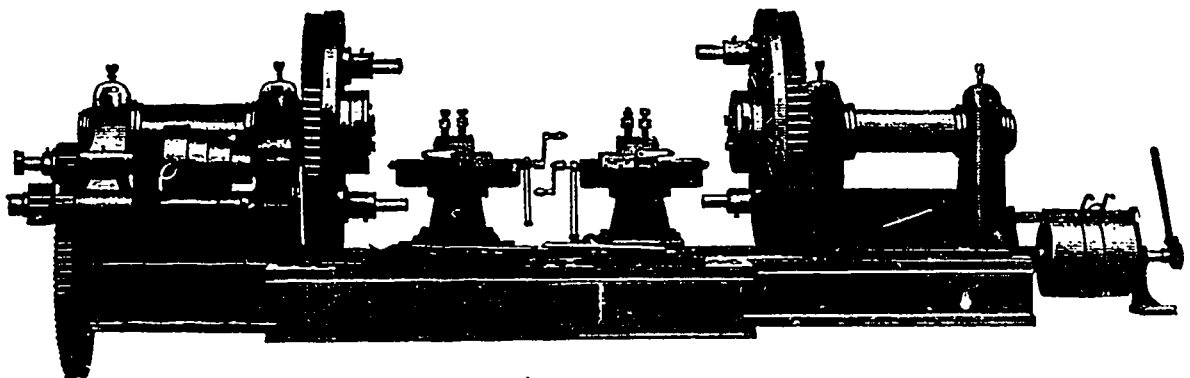
Canada Tool Works, **JOHN BERTRAM & SONS** DUNDAS, ONT.

MANUFACTURERS OF

MACHINE TOOLS AND WOOD-WORKING MACHINERY.

Special attention is directed to our new heavy class of Lathes, with *Inverted V Shears*, large *Bearing Surfaces*, and all the

PARTS INTERCHANGEABLE.



IN OUR LIST WILL BE FOUND THE FOLLOWING :

Lathes, Planers, Drills, Bolt Cutters,
Punches and Shears,
Boiler Makers' Rolls,
Slotting Machines, Milling Machines,
Cutting-off Machines, Shafting Lathes,
Pulley Turning Lathes, Surface Planers,



Wood Planing and Matching Machines,
Moulding Machines,
Mortising Machines,
Tenoning Machines, Band Saws,
Scroll Saws, Wood-Turning Lathes,
Timber Dressers, etc., etc.

Complete Sets of Machinery for Locomotive
Works, Car Works, Implement Works,
Cabinet Factories, Planing Mills,
Machine Shops, Etc., Etc.

OUR Tools are all made from new and improved patterns and
with the latest improvements. A large stock always kept
on hand, and those not in stock made at shortest notice.

Write for Prices and Catalogues.

BUSINESS ESTABLISHED 1862.

BELDING, PAUL & CO.
SILK MANUFACTURERS
MONTREAL.

ORGANZINES, TRAMS,
 SPUN SILK YARNS,
 And all Threads for Manufacturing Pur-
 poses made to order.
 Correspondence Solicited.

THE WELLINGTON MILLS
LONDON
GENUINE EMERY

OAKEY'S Flexible Twilled Emery Cloth.
 OAKEY'S Flint Paper and Glass Paper.
 OAKEY'S Emery Paper, Black Lead, &c., &c.

PRIZE MEDAL AND HIGHEST AWARD, PHILADELPHIA, 1876.
 For Superiority of Quality, Skillful Manufacture, Sharpness,
 Durability, and Uniformity of Grain.

Manufacturers: JOHN OAKEY & SONS, Wellington Mills,
 WESTMINSTER BRIDGE ROAD, LONDON, ENGLAND.

Enquiries should be addressed to
 JOHN FORMAN, 467, ST. PAUL ST., MONTREAL.

CANTLIE, EWAN & CO.

General Merchants and Manufacturers' Agents.

BLEACHED SHIRTINGS,
 GREY SHEETINGS, TICKINGS,
 WHITE, GREY AND COLORED BLANKETS,
 FINE AND MEDIUM TWEEDS, KNITTED GOODS,
 PLAIN AND FANCY FLANNEL,
 LOW TWEEDS, ETOFFES, ETC.

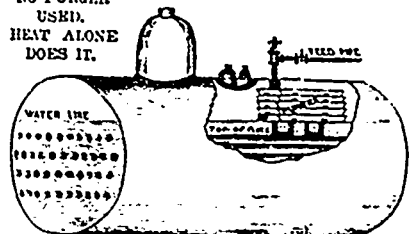
Wholesale Trade Only Supplied.

15 VICTORIA SQUARE,
 MONTREAL.

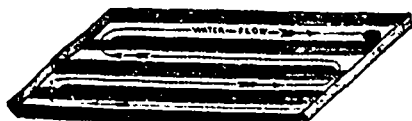
20 WELLINGTON ST. E.
 TORONTO.

PATENT BOILER WATER PURIFIER.

NO PURGER
 USED.
 HEAT ALONE
 DOES IT.



SHOWING POSITION OF PURIFIER IN BOILER.



SHOWING ONE OF THE PANS OF PURIFIER.

THIS PURIFIER ENTIRE-
 LY PREVENTS THE FORMA-
 TION OF SCALE UPON SHELL
 AND FLUES OF ANY BOILER
 IN WHICH IT IS USED. ALL
 IMPURITIES ARE EX-
 TRACTED FROM THE WATER
 BEFORE IT REACHES THE
 WATER LINE, AND ARE
 DEPOSITED IN THE PANS
 OF THE PURIFIER.

THESE PANS CAN BE
 REMOVED, CLEANED AND
 REPLACED WITH VERY
 LITTLE TROUBLE, AND IN A
 VERY SHORT TIME, WITHOUT
 EMPTYING THE BOILER OF
 HOT WATER, WHICH MEANS
 A SAVING OF TIME, LABOR
 AND FUEL.

FOR PARTICULARS AND
 PRICES ADDRESS

J. W. HERMAN, 214 1/2 King St. West, Toronto, Ont.

Authorized Capital and other Assets over
5,000,000.

MANUFACTURERS' LIFE INSURANCE
COMPANY

— AND —

Manufacturers' Accident Insurance Company

ISSUE ALL KINDS OF LIFE AND ACCIDENT POLICIES
 AT THE LOWEST POSSIBLE RATES.

Special advantages are given Manufacturers' to indemnify
 themselves against the

"*Workmen's Compensation for Injuries Act.*"

SIR JOHN A. MACDONALD, P.C., G.C.B. - - PRESIDENT.

SIR ALEX. CAMPBELL, K.C.M.G.

GEORGE GOODERHAM, Esq.

WILLIAM BELL, Esq.

} - VICE-PRESIDENTS.

J. B. CARLISLE,

Managing Director.

38 KING STREET EAST,
TORONTO, ONT.

BUTTERFIELD & CO.

ROCK ISLAND, P.Q.

MANUFACTURERS OF

UPRIGHT DRILLS

FOOT VISES and BOLT HEADERS.

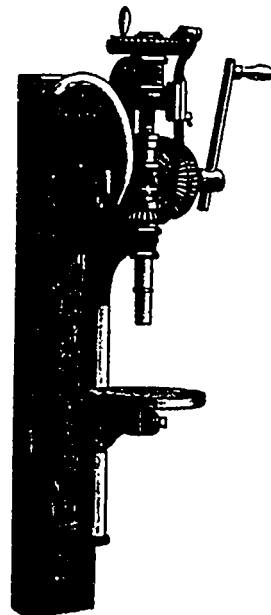
STOCKS, DIES AND TAPS

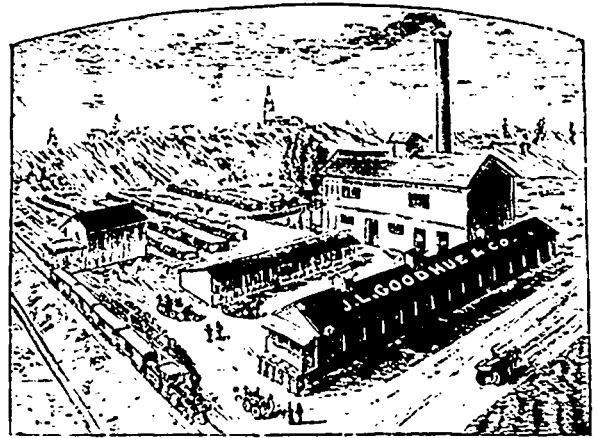
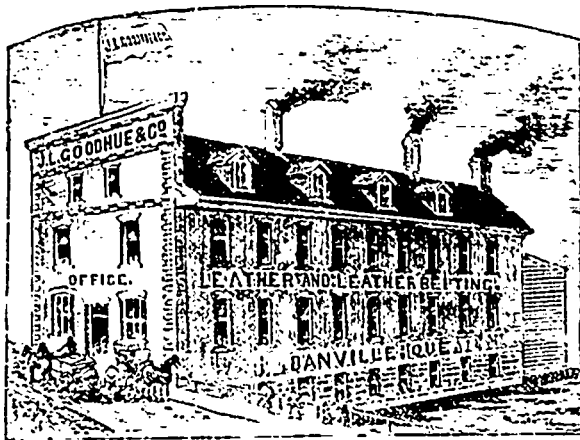
FOR

*Blacksmiths', Machinists', Carriage
 Makers' and Gas-Fitters' Use.*

Send for New Illustrated Catalogue
 And Price List.

NAME THIS PAPER.





J. L. GOODHUE & CO.



ORDERS
PROMPTLY
FILLED.

LEATHER BELTING

WRITE
FOR
PRICES.



✱ DANVILLE, P. QUE. ✱

GALT MACHINE KNIFE WORKS.

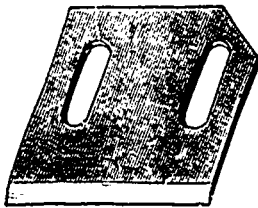
PLANING MACHINE
KNIVES.



STAVE CUTTER KNIVES.



STAVE JOINTER KNIVES.



MOULDING, TENONING,
MITREING,
SHINGLE JOINTER,
And other irregular shapes.

Cheese-box and Vencer, Paper Cutting, Leather Splitting and any special knife made to order. SEND FOR PRICE LIST. ALL WORK WARRANTED.

PETER HAY, - - - GALT ONT.

Millers' and Manufacturers' INSURANCE COMPANY.

STOCK AND MUTUAL.

OBJECTS.

1. To prevent by all possible means the occurrence of avoidable fires.
2. To obviate heavy losses from the fires that are unavoidable by the nature of the work done in mills and factories.
3. To reduce the cost of insurance to the lowest point consistent with the safe conduct of the business.

METHODS.

All risks will be inspected by a competent officer of the company, who will make such suggestions as to improvements required for safety against fires, as may be for the mutual interests of all concerned.

Much dependence will be placed upon the obligation of members to keep up such a system of discipline, order, and cleanliness in the premises insured as will conduce to safety.

As no agents are employed and the company deals only with the principals of the establishments insured by it, conditions and exceptions which are so apt to mislead the insured and promote controversy and litigation in the settlement of losses will thus be avoided.

The most perfect method of insurance must, in the nature of things, be one in which the self-interest of the insured and the underwriters are identical, and this has been the object aimed at by the organizers of this company.

W. H. HOWLAND, Vice-President.
JAMES GOLDIE, President.
HUGH SCOTT, Managing Director.

Applicants for Insurance and other information desired, please address **MILLERS' AND MANUFACTURERS' INSURANCE COMPANY,** No. 24 Church Street, Toronto.

MACHINE BRUSHES

All kinds, Made to Order.

Highest Quality of Work Guaranteed.

Send full particulars of Dimensions and Quality when ordering.

OLD ROLLERS OR BLOCKS RE-FILLED
WITH SPECIAL CARE.

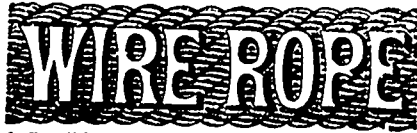
CHAS. BOECKH & SONS,
MANUFACTURERS.

Office and Warerooms:

Factory:

80 YORK STREET. | 142 to 150 Adelaide St. West.
TORONTO, CANADA.

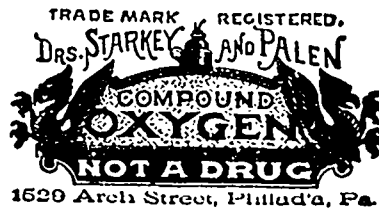
VICTORIA WIRE MILLS.



Best brands of Crucible Cast, Siemen's-Martin, and Bessemer Steel and Charcoal Iron Rope. Cast Iron Wheels for transmitting power. Moulders, Bellows, Brushes and Riddles; Iron and steel Wire Cloth, all grades and strength. Perforated Zinc, Iron and Steel, all sizes. Bank and Office Counter Railings. Wire Guards, all kinds. Sand and Coal Screens; Sofa and Chair Springs. Blind, Furniture and Fence Staples. Dildine's Adjustable Wire Sieve. Ornamental Wire Work, &c.

Send for Circulars, mentioning your requirements.

B. GREENING & CO.,
HAMILTON, Canada.



A Well Tried Treatment

FOR
Consumption, Asthma, Bronchitis, Dyspepsia, Catarrh, Hay Fever, Headache, Debility, Rheumatism, Neuralgia and all Chronic and Nervous Disorders.

"The Compound Oxygen Treatment," Drs. Starkey & Palen, No. 1529 Arch Street, Philadelphia, have been using for the last seventeen years, is a scientific adjustment of the elements of Oxygen and Nitrogen *magnetized*, and the compound is so condensed and made portable that it is sent all over the world.

DRS. STARKEY & PALEN have the liberty to refer to the following named well-known persons who have tried their Treatment:

Hon. Wm. D. Kelley, Member of Congress, Philadelphia; Rev. Vieter L. Conrad, Editor "Lutheran Observer," Philadelphia; Rev. Charles W. Cushing, D. D., Rochester, N. Y.; Hon. Wm. Penn Nixon, Editor "Inter-Ocean," Chicago, Ill.; Rev. A. W. Moore, Editor "The Centenary," Lancaster, S. C.; W. H. Worthington, Editor "New South," Birmingham, Ala.; Judge H. P. Vrooman, Quenemo, Kan.; Mrs. Mary A. Livermore, Melrose, Mass.; Judge R. S. Voorhees, New York City; Mr. F. C. Knight, Philadelphia; Mr. Frank Siddall, Merchant, Philadelphia; Hon. W. W. Schuyler, Easton, Pa.; Edward L. Wilson, 531 Broadway, N. Y.; Editor Philadelphia "Photographer"; Fidelity M. Lyon, Waimea, Hawaii, Sandwich Islands; Alexander Ritchie, Inverness, Scotland; Mrs. Manuel V. Ortega, Fresnillo, Zacatecas, Mexico; Mrs. Emma Cooper, Uvilla, Spanish Honduras, Central America; J. C. Ibb, U.S. Vice-Consul, Casablanca, Morocco; M. V. Ashbrook, Red Bluff, Cal.; Eric St. Turner, Nottingham, England; Jacob Ward, Bowral, New South Wales, and thousands of others in every part of the world.

"Compound Oxygen—its Mode of Action and Results," is the title of a new brochure of two hundred pages, published by Drs. Starkey & Palen No. 1529 Arch St., Philadelphia, Pa., which gives to all inquirers full information as to this remarkable curative agent, and a record of several hundred surprising cures in a wide range of chronic cases—many of them after being abandoned to die by other physicians. Will be mailed free to any address on application by addressing

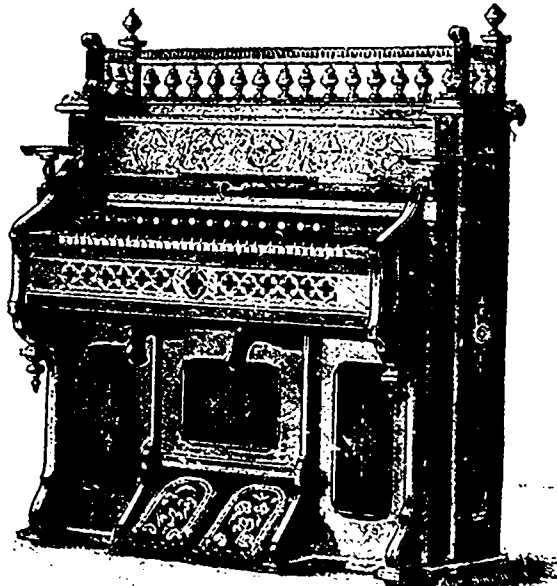
E. W. D. KING,

58 Church St., Toronto, Ont.

BELL ORGANS

FOR
Chapel,
Church,
Dodge,
Parlor.

ARE THE BEST



OUR Large Double and Single Manual Organs are the best in the Market, and Musicians should see them before buying elsewhere.

CATALOGUES
SENT ON APPLICATION

W. BELL & CO.,

GUELPH, CANADA.

Industrial and Trade DIRECTORY.

Acids and Aniline Dyes.

THEO. H. EATON & SON, Windsor, Ont.; Detroit, U.S.A.—Importers. Every Description **Pure Aniline Dyes** for Cotton and Woollen Manufacturers. Dyed Samples furnished on application. Address all correspondence to Head Office, Detroit, Mich.

Agricultural Implements.

A. S. WHITING MANUFACTURING CO., Cedar Dale, Ont.—Manufacturers of scythes, forks, hoes, etc.

WELLAND VALE MANUFACTURING CO.—Lock No. 2, St. Catharines, Ont., Canada—Manufacturers of axes, scythes, forks, hoes, rakes and edge tools.

Bobbins and Spools

THOMPSON & CO., Sherbrooke, P. Q.—Manufacturers of all kinds of Bobbins and Spools for Cotton and Woollen Mills—Special patterns made to order from sample.

Bridge Builders.

DOMINION BRIDGE CO. (Limited).—Shops at Toronto, Ontario, and Lachine, Quebec. Builders of Steel and Iron Railway and Highway Bridges.

Chemicals.

DOMINION DYEWOOD AND CHEMICAL CO., Toronto.—Importers and Manufacturers. Chemicals for Cotton, Woollen, Paper and Leather Manufacturers.

MCCARTHUR, CORNEILLE & CO. (successors to John McArthur & Son), Montreal.—Offer at closest figures chemicals required by soap-boilers, oil refiners, paper-makers, and by manufacturers of woollens, cottons, leather, &c.

Cotton Mills.

HAMILTON COTTON MILLS CO., Hamilton.—Denims, tickings and yarns.

Dyes, Dyeing Drugs and Extracts.

THEO. H. EATON & SON, Windsor, Ont.; Detroit, U. S. A.—Carry full line of Pure Dyeing Drugs, Dye Woods and Extracts adapted for the requirements of Woollen and Cotton Manufacturers. **Paper Makers' Anilines** and Chemicals. Address the Detroit Office.

Dye Stuffs.

MCCARTHUR, CORNEILLE & CO. (successors to John McArthur & Son), Montreal.—Supply of best quality at lowest prices. Every description of coloring materials required by manufacturers of woollens, cottons, silks, paper, leather, &c. Are sole agents in Canada for the celebrated aniline dyes of A. Perrier, Paris.

LYMAN BROTHERS & CO., Nos. 71 and 73 Front Street East, Toronto—Dye Stuffs of all kinds for Woollen and Cotton Manufacturers; Warps, Shuttles, Bobbins, Card Clothing, etc., etc.

Dyewood and Dye Stuffs, Aniline Dyes.

DOMINION DYEWOOD AND CHEMICAL CO., Manufacturers.—Pure Dyewoods, Dyeing Drugs. Sole Agents. English, German, and French Aniline Dyes, for Woollen, Silk Paper, and Leather manufactures.

Edge Tools.

WELLAND VALE MANUFACTURING CO.—Lock No. 2, St. Catharines, Ontario, Canada.—Manufacturers of axes, scythes, forks, hoes, rakes and edge tools.

Emery Wheels.

HART EMERY WHEEL CO., Hamilton.—Manufacturers of every description of Emery Wheels and Emery Wheel machinery.

Gas Engines.

JOHN DOTY, Toronto.—Manufacturer in Canada of the new "Otto" silent gas engine, two, four, and seven horse power and larger.

Glove Manufacturers.

W. H. STOREY & SON, Acton, Ont.—Manufacturers of fine gloves and mitts in every variety and style.

Hoist and Elevator Manufacturers.

LEITCH & TURNBULL, Canada Elevator Works, cor. Queen and Peter Streets, Hamilton, Ont.—Patent Safety Hydraulic, Hand, and Power Elevators. Telephone connection.

Hubs, Spokes and Bent Goods.

F. W. HORE & SON, Hamilton, Ont.—Manufacturers of wheels, wheel material, shafts, poles, etc.

COWAN & CO., Galt.—Manufacturers of every description of wood working machinery.

H. R. IVES & CO., Montreal.—Hardware manufacturers and founders; iron railing and ornamental iron work a speciality.

JOHN BERTRAM & SONS, Dundas.—Machine tools and wood working machinery. Toronto wareroom, 58 Yonge St. Agents—The Polson Iron Works Co.

Montreal wareroom, Craig St. Agents for Quebec—The Machinery Supply Association, Montreal.

THE OSHAWA MALLEABLE IRON CO., Oshawa, Ont.—Manufacturers of malleable iron castings, to order, for all kinds of Agricultural Implements and miscellaneous purposes.

SMITH'S FALLS MALLEABLE IRON WORKS, Smith's Falls, Ont.—Manufacturers to order of refined malleable iron castings from air furnace. Agricultural and other heavy castings a speciality. Carriage castings in stock.

Engines and Boilers.

JOHN DOTY, Toronto.—Engines and boilers of every description and capacity, also shafting, pulleys, and hangers for factories.

Knife Works.

THE WHITMAN & BARNES MANUFACTURING CO., St. Catharines, Ont.—Manufacturers of mowing and reaping machine knives, sections, guard plates, cutting apparatus complete, spring keys and cutters, etc.

Knitting Mills.

S. LENNARD & SONS, Dundas.—Manufacturers of plain and fancy hosiery.

Manufacturers' Supplies.

E. JENCKES MANUFACTURING CO., Pawtucket, R. I.—Sole manufacturers of Hicks Improved U. S. Standard Ring Travellers. Belt hooks, gimlet pointed wire goods, spinning rings, cotton banding, twine, &c. Manufacturers' supplies. Leather belting and lace leather. Special agents for Jos. Noone's sons cloths.

Oils.

MCCARTHUR, CORNEILLE & Co (successors to John McArthur & Son), Montreal.—Afford best value in pure olive and lard oils, also in all other leading lines of vegetable, animal, and mineral oils for factory use. Invite special attention to their celebrated crown diamond "engine" and "machinery" oils.

Paper Manufacturers.

WM. BARBER & BROS., Georgetown—Manufacturer of book and fine papers.

THE TORONTO PAPER MANUFACTURING CO., Cornwall, Ont.—Manufacturers of engine sized superfine papers, white and tinted book papers, blue and cream laid and wove foolscaps, account book, envelope and lithographic papers, etc., etc.

Saw Manufacturers.

R. H. SMITH & CO., St. Catharines.—Manufacturers of all kinds of saws, plastering trowels, straw knives, etc. Sole manufacturers for the Dominion of Canada of the celebrated "Simond's Saw."

Scythe Snaths.

THE DOMINION SNATH COMPANY, Sherbrooke, Que.—Manufacturers of Patent Swing Socket, and every variety of Scythe snath.

Tanners' and Wool Pullers' Supplies.

THEO. H. EATON & SON, Windsor, Ont.; Detroit, U.S.A.—Supply at lowest prices all Chemicals used by Tanners and Wool Pullers. Special Anilines for Sheep Skin Dyers, Wool Mat Manufacturers, etc., etc. Address correspondence to Head Office, Detroit, Mich.

Taps and Dies.

BUTTERFIELD & CO., Rock Island, P. Q.—Manufacturers of Taps, Dies, and all Screw Cutting Tools.—Telegraph Office, Derby Line, Vt.

Wire Works.

B. GREENING & CO., Hamilton, Ont.—Manufacturers of wire ropes, cloth and general wire workers.

TIMOTHY GREENING & SONS, Dundas, Ont.—Manufacturers of the strongest description of steel wire cloth, malt kiln floors and general wire weavers. Telephone connection.

PATENTS

MUNN & CO., of the **SCIENTIFIC AMERICAN**, continue to act as Solicitors for Patents, Caveats, Trade Marks, Copyrights, for the United States, Canada, England, France, Germany, etc. Hand Book about Patents sent free. Thirty-seven years experience.

Patents obtained through **MUNN & CO.** are noticed in the **SCIENTIFIC AMERICAN**, the largest, best and most widely circulated scientific paper. \$3 00 a year Weekly Splendid engravings and interesting information. Specimen copy of the **Scientific American** sent free. Address **MUNN & CO.**, **SCIENTIFIC AMERICAN** Office, 361 Broadway, New York.

TO ADVERTISERS!

For a check for \$20 we will print a ten-line advertisement in One Million Issues of leading American Newspapers and complete the work within ten days. This is at the rate of only one fifth of a cent a line, for 1,000,000 Circulation! The advertisement will appear in but a single issue of any paper, and consequently will be placed before One Million different newspaper purchasers—OF FIVE MILLION READERS, if it is true, as is sometimes stated, that every newspaper is looked at by five persons on an average. Ten lines will accommodate about 75 words. Address with copy of Ad and check, or send 20 cents for Book of 272 pages. **GEO. P. ROWELL & CO.**, 10 SPRUCE ST., NEW YORK.

We have just issued a new edition (the 16th) of our Book called "Newspaper Advertising." It has 222 pages, and among its contents may be named the following Lists and Catalogues of Newspapers—

DAILY NEWSPAPERS IN NEW YORK CITY, with their Advertising Rates.

DAILY NEWSPAPERS IN CITIES HAVING more than 150,000 population, omitting all but the best.

DAILY NEWSPAPERS IN CITIES HAVING more than 25,000 population, omitting all but the best.

A SMALL LIST OF NEWSPAPERS in which to advertise every section of the country, being a choice selection made up with great care, guided by long experience.

ONE NEWSPAPER IN A STATE. The best one for an advertiser to use if he will use but one.

BARGAINS IN ADVERTISING IN DAILY Newspapers in many principal cities and towns, a list which offers peculiar inducements to some advertisers.

LARGEST CIRCULATIONS. A complete list of all American papers issuing regularly more than 25,000 copies.

THE BEST LIST OF LOCAL NEWSPAPERS, covering every town of over 5,000 population and every important county seat.

SELECT LIST OF LOCAL NEWSPAPERS, in which advertisements are inserted at half price.

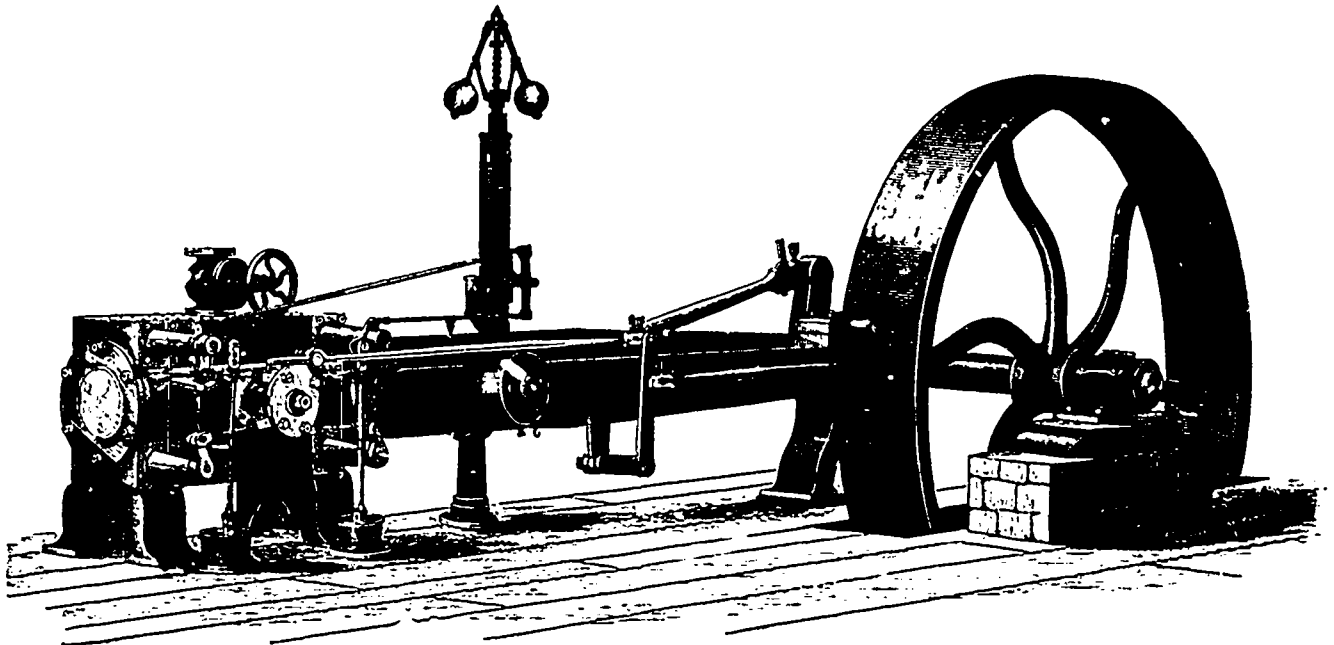
5,000 VILLAGE NEWSPAPERS in which advertisements are inserted for \$11 40 a line and appear in the whole lot—one half of all the American Weeklies.

Sent to any address for **THIRTY CENTS**.



THE GALT FOUNDRY,

Engine and Machine Works.



THE HARRIS-CORLISS STEAM ENGINE

Is the most perfect Cut-off Engine made. For Economy of Fuel, Regulating of Speed, Accessibility of all its Parts, it has many Imitators, but no Equals, and is Unsurpassed.

While many Engines of the same class have been invented, built, tried and abandoned, the Harris-Corliss has steadily gained in public favor, and is now

Without a Successful Rival.

PLEASE NOTICE SOME OF THE ADVANTAGES OF THE HARRIS-CORLISS ENGINE:

- 1st—**The Steam is admitted at Boiler pressure** to the piston by the main valve and is cut off at the same point, the load determining through the regulator, when the supply of steam shall be cut off. This is the only Engine that thus admits steam at full boiler pressure.
- 2nd—**The success of the Harris-Corliss Engine** lies in the simplicity and precise action of the governing elements, **the Governor** is an independent mechanism, with no extraneous load, and free to instantly respond to all variations in the angular velocity of rotating parts.
- 3rd—**No parts of the regulating medium enter the steam chest** and thereby be out of sight of the engineer, and subject to the corrosive action of steam and the oil used for lubricating the valves and piston.
- 4th—**Regularity of Speed** under varying loads of steam pressure.
- 5th—**Recessed Valve Seats** which avoid the liability of wearing shoulders on them.
- 6th—**Stop Motion on Regulator** of Engine which effectually stops the Engine whenever the regulator by any means fails to perform its work, thus preventing the Engine from running away.
- 7th—**Having four Valves** either can be adjusted independently of the other with the greatest ease.
- 8th—**The increased amount** of power it develops.

We would draw special attention to our new and improved Adjustable Pillow Block, which is pronounced by all practical men who have seen it, to be the very best in Canada.

COWAN & CO.,
Galt, Ont., Canada.

Manufacturers of Engines, Boilers and Wood-Working Machinery—all kinds, new Patterns, highly finished.



Notice to Contractors.
SAULT SAINTE MARIE CANAL.

CONTRACTORS intending to tender for works of construction of the canal proposed to be formed on the Canadian side of the Sainte Mary's River, are hereby informed that tenders will be received about **January next**, and that the most favorable time to examine the locality will be between the present time and the early part of November next.

When plans, specifications and other documents are prepared, due notice will be given. Contractors will then have an opportunity of examining them and be furnished with blank forms of tender, etc.

By order,
A. P. BRADLEY,
Secretary.

Department of Railways and Canals, }
Ottawa, 24th August, 1887. }

Maw & McFarlane
DUNDAS, ONT.

IRON FOUNDERS, ENGINEERS AND MACHINISTS,
MANUFACTURERS OF

Drop Hammers,
LIFTERS, DIE SINKERS AND PRESSES.

✉ CORRESPONDENCE SOLICITED.

TORONTO LITHOGRAPHING CO.
Globe Building, Toronto
MAKE A SPECIALTY OF
Fine Color Work
CHROMO ADVERTISING
CARDS and NOVELTIES
also do a Superior Class of Wood Engraving

TORONTO BAG WORKS

DICK, RIDOUT & CO., Proprietors.

MANUFACTURERS OF

LINEN,
COTTON
AND
JUTE

BAGS

FOR ALL
PURPOSES.
★
ALSO

BAG PRINTING EQUAL TO THE BEST AMERICAN WORK.

HESSIANS FOR MATTRESSES AND BALES,
COAT CANVASES, TWINES, Etc.

11 & 13 FRONT STREET EAST, - TORONTO.

Storage Accommodation. Bonded or Free. Warehouse Receipts Issued.

HAMILTON
COTTON COMPANY,

MANUFACTURERS OF

THE STAR BRAND

COTTONADES, DENIMS, TICKINGS.

- Star Brand—BEAM WARP.**
" **HOSIERY YARN**
" **BUNDLE YARN.**
" **CARPET WARP.**
" **BALLED KNITTING YARN.**

First Prize, Silver Medals, for Beam Warps and Denims
Toronto, 1881.

General Agents,—

F. McELDERY & CO.,
204 MCGILL STREET, MONTREAL.
22 & 24 COLBORNE ST., TORONTO.

BEAVER LINE.

The Canada Shipping Co.'s Line of Steamers,

BETWEEN

MONTREAL AND LIVERPOOL.

Comprising the following First-Class Clyde-built, Full powered Iron Steamships

Ship Name	Tons
LAKE ONTARIO, Capt. Wm. Bernson	5,200
LAKE SUPERIOR, Capt. Wm. Stewart	5,000
LAKE HURON, Capt. H. Campbell	4,100
LAKE WINNIPEG, Capt. M. L. Trautman	3,300
LAKE NEPIGON, Capt. P. D. Murray	2,300

SUMMER SAILINGS, 1887, WILL BE AS FOLLOWS:

FROM LIVERPOOL:	
*Thanemore	Wednesday, Oct. 5
Lake Winnipeg	" " 12
Lake Superior	Friday, " 21
Lake Ontario	" " 28
Lake Huron	Wednesday, Nov. 2
FROM MONTREAL:	
Lake Superior	Wednesday, Oct. 5
Lake Ontario	Tuesday, " 11
Lake Huron	" " 18
*Thanemore	Saturday, " 25
Lake Winnipeg	" " 1
Lake Superior	Tuesday, Nov. 8
Lake Ontario	" " 15
Lake Huron	Saturday, Nov. 19

*SS. Thanemore does not carry passengers.

The steamers connect at Montreal by direct rail for all points in Canada, Manitoba, North-West Territories and United States, to which through tickets are issued. These steamers are built in water-tight compartments, and of special strength for the North Atlantic trade.

In the passenger departments the most perfect provision has been made to ensure the comfort and convenience of all. In the Cabin the State-rooms are large and airy. The Steerage is fitted with the most approved Patent Canvas Berths, and is fully ventilated and heated by steam.

An experienced Surgeon is carried by each steamer, also Stewardesses to attend to the wants of females and children.

RATES OF PASSAGE:

Montreal to Liverpool—Saloon, \$40, \$30 and \$20. Round Trip Tickets, \$80, \$60 and \$40, according to steamers. Intermediate, \$30, Steerage, \$20.

For Freight and other particulars, apply: In Belfast, to A. A. WATT, a Custom House Square; in Queenstown, to N. G. SHERWOOD & Co., in Liverpool, to R. W. ROBERTS, 21 Water St.; in Quebec, to H. H. SWEET, 125 Peter St.

H. E. MURRAY,
General Manager,
1 Custom House Square, Montreal.

Cobban Manufacturing Co. Factory & Head Office: Toronto.



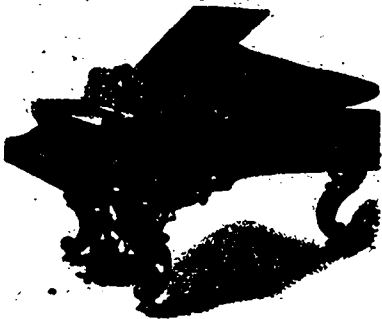
Branch: 455 St. Paul Street, Montreal.

MANUFACTURERS OF
Mantles, Over Mantles and Mirrors in Finest Hardwoods. Mouldings, Picture
Frames and Looking Glasses. Mirror Plates: British, French, German,
Shocks. Plate Glass Beveling and Silvering a Speciality.

TORONTO.
MONTREAL.

HEINTZMAN & CO.

MANUFACTURERS OF



**GRAND,
SQUARE,
AND UPRIGHT
PIANOFORTES.**

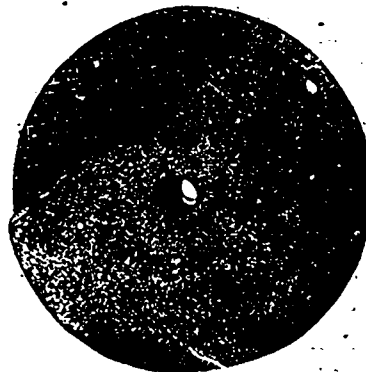
SEND FOR ILLUSTRATED CATALOGUE.

Warerooms, 117 King St. West,
TORONTO.

ONTARIO BOLT CO., TORONTO,

MANUFACTURE

Threshing Machine Teeth,
Machine Bolts,
Bolt Ends and Blank Bolts,
Bridge Rods and Bridge Rivets,
Coach Screws and Skein Bolts,
The Superb Carriage Bolt,
The Prize Carriage Bolt,
The Eclipse Carriage Bolt,
The Prize Tire Bolt,
The Eclipse Sleigh Shoe Bolt,
The Prize Plough Bolt,
Best Whiffletree Bolts,
Best Shaft and Step Bolts,
Best Eccentric Head Spring Bolts,
Best Elevator Bolts,
Best Norway Shackle Bolts,
Best Railway Track Bolts,
Black Iron Rivets,
Boiler Rivets,
Railway Spikes,
Pressed Spikes,
Hot Pressed Nuts,
Bridge Bolts and Rag Bolts.



**HART
Emery Wheel
COMPANY
(LIMITED),
Hamilton, Canada.**

MANUFACTURERS OF

EMERY WHEELS

FOR

**FOUNDRIES, MACHINE SHOPS,
SAW MILLS, & PLANING MILLS.**
SEND FOR CIRCULAR.

Also
MANUFACTURERS
OF—

**EMERY WHEEL
MACHINERY.**



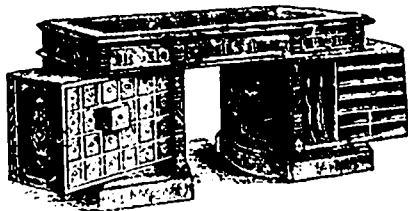
Illustrated Price List sent on Application.

W. STAHLSCHMIDT & CO.

PRESTON, ONT.

MANUFACTURERS OF

School, Office, Church and Lodge Furniture.



ROTARY DESK.

No. 50.

Send for Circulars and Price List. Name this paper.

S. Lennard, Sons, & Bickford,

DUNDAS, ONT.

PATENTEES OF THE "ELYSIAN" SEAMLESS HOSIERY,

Manufacturers of Plain and Fancy Hosiery, Caps, Tuques, Sashes, etc., etc., etc.

To the Wholesale Trade only.

Represented in Eastern Ontario, Quebec, Nova Scotia and New Brunswick by

F. W. NEWMAN & CO.,
21 Lemoine St., Montreal.

In Manitoba by

PEDDIE & CO.,
WINNIPEG, MANITOBA.

In Western Ontario by

S. LENNARD,
Senior Member of the Firm.

ESTABLISHED 1820.

EAGLE FOUNDRY.

GEORGE BRUSH,

14 TO 34 KING AND QUEEN STREETS, MONTREAL,

Maker of

STEAM ENGINES,
STEAM BOILERS,
HOISTING ENGINES,
STEAM PUMPS,
CIRCULAR SAW MILLS,
BARK MILLS,
SHINGLE MILLS,
ORE CRUSHERS,
MILL GEARING,
SHAFING,
HANGERS AND
PULLEYS,
HAND AND POWER HOISTS FOR
WAREHOUSES, &c., &c.

and Agent for

"Water's" Perfect Steam Engine Governor, and
"Heald & Sisco's" Centrifugal Pumps.

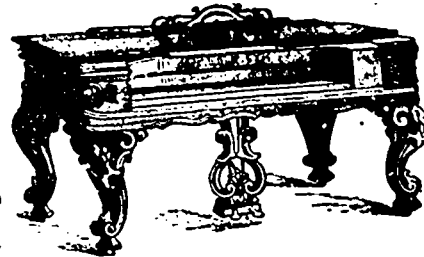


EVERY REPUTABLE DEALER KEEPS THEM.

Insist on having the Genuine, and see that they bear our name.

LANSDOWNE PIANO CO.

UPRIGHTS
AND
SQUARES



The Leading Canadian Pianos

STRICTLY FIRST-CLASS. Correspondence Solicited

86 York St., Toronto.

Established 1872.

THE ACCIDENT

INSURANCE CO. OF NORTH AMERICA.

NEW FEATURE,

JOINT INSURANCE

FOR PARTNERSHIPS

IMPORTANT TO MANUFACTURING FIRMS.

MEDLAND & JONES,

GENERAL AGENTS,

Corner Adelaide and Victoria Streets,

TORONTO.

J. M. LAUGHLIN'S SONS,

GROWERS
MERCHANTS,
AND EXPORTERS OF

SHINEATELES FALLS
N.Y.

AMERICAN TEASELS.

