

Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

Coloured covers/
Couverture de couleur

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

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

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Cover title missing/
Le titre de couverture manque

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/
Transparence

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

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

Includes index(es)/
Comprend un (des) index

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

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 page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

Additional comments:/
Commentaires supplémentaires:

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

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

HAMILTON, ONT. Manufacturers of Ceylon Plumbago SUPPLIES also Extra Fine Quality MOUNDING SAND Pipe and Core Sand. WRITE FOR PRICES

REGISTERED J. C. McCLAREN & CO. HESPELBER, ONT. SEND FOR CATALOGUE.

CANADIAN MANUFACTURER
 AND INDUSTRIAL WORLD
 DEVOTED TO THE MANUFACTURING INTEREST OF THE DOMINION

Vol. 41. TORONTO, NOVEMBER 16, 1900. No. 10.

MAGNOLIA METAL

ANTI-FRICTION
 Used by all the Leading Governments

THE BEST ANTI-FRICTION METAL FOR ALL MACHINERY BEARINGS

For Sale by all Dealers
 Beware of Imitations.

MAGNOLIA METAL CO.

Owners and Solo Manufacturers.
 266-267 West St., New York.
 Montreal, Board of Trade Bldg.
 Chicago, 291 Dearborn St.
 London, 49 Queen Victoria St.
 Pittsburgh, 223 Liberty Ave.
 Boston, 191 High St.
 San Francisco, 32 First St.
 Philadelphia, Halo Bldg.

ANILINE LIZARINES

DOMINION DYEWOOD & CHEMICAL CO.
 TORONTO

PRODUCTS OF
 The Farbenfabriken vorm. F. Bayer & Co.

DOMINION DYEWOOD & CHEMICAL CO.
 SOLE AGENTS FOR CANADA TORONTO.

CANADA

THE STANDARD GALVANIZED IRON OF THE WORLD

ASK YOUR JOBBER FOR IT.

JOHN LYSAGHT, Limited
 BRISTOL, ENG., and MONTREAL

"Every Factory in Canada should use the best Belting." Our "EXTRA" brand.

THE J. C. McLAREN BELTING CO.

Factory : MONTREAL. TORONTO. VANCOUVER.

Fensom's

ELECTRIC HYDRAULIC STEAM HAND-POWER

All made of the best material and finest workmanship.

Elevators

The Fensom Elevator Works...
 42, 54, 56
 DuLoe Street,
 Toronto, Ont.

RUBBER GOODS OF ALL KINDS.

61 and 63 FRONT ST. WEST, TORONTO.

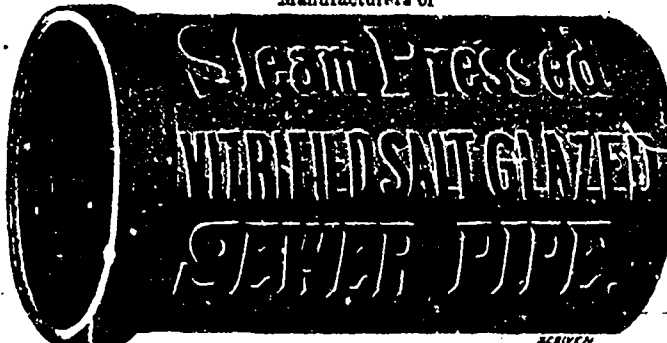
THE...
Walkerville Malleable Iron Co., (Limited)
 Manufacturers of.
REFINED AIR FURNACE
Malleable Castings

ALSO LIGHT GREY IRON CASTINGS.

WALKERVILLE, ONTARIO.

THE CANADIAN SEWER PIPE CO.

Manufacturers of



ST. JOHNS
P.Q.

HAMILTON
ONT.

TORONTO
ONT.

ANILINES

St. Denis Dyestuff and Chemical Co.,

(A. POIRRIER), of Paris, France.

Manufacturers of

Aniline Colors, Aniline Oil and Selt, Archil Extracts
Cudbear, Cachou de Laval, Thiocatechines, etc.

A Complete Assorted Stock of the above always on hand.

W. T. Benson & Co.,

Sole Agents for Canada.

164 St. James St., MONTREAL

PORTLAND CEMENT SAMSON BRAND MAGNET BRAND

Made at SHALLOW LAKE, ONT.

Our Celebrated **SAMSON BRAND** has been before the Public for many years, and has made hosts of friends among Contractors and Municipal Corporations until it has become one of the leading Cements on the market to-day, being excelled by none. This year we have decided to place the **MAGNET** on the market, and respectfully ask consumers to give it a trial. It will, we think, do its own advertising.

The OWEN SOUND PORTLAND CEMENT CO., Limited

Correspondence invited.

GEO. S. KILBOURN, Sec'y-Treas.

Works, SHALLOW LAKE, Ont.

Head Office, OWEN SOUND, Ont.

New Black for Cotton

Colonial Black

Double Strength. Unequalled for Depth of Shade.

Users of Black should investigate

Fastest Black on the Market.

F. E. ATTEAUX & CO.,

BOSTON, MASS., U.S.A.

CANADIAN BRANCHES:—63 Colborne Street, TORONTO.
13 Lemoine Street, MONTREAL.

CANADA CHEMICAL MANUFACTURING CO.

— MANUFACTURERS OF —

Sulphuric, Nitric, and Muriatic Acids—Commercial and Chemically Pure.

Mixed Acids for Explosives.

Liquid Ammonia, Glauber Salts, Copperas, Muriate Tin
Tin Crystals, Acetic Acid, Nitrate Iron, Bisulphite
Soda, Acid Phosphate for Baking Powders
and General Chemicals, Fertilizers, etc.

LONDON, - ONTARIO.

HAMILTON COTTON CO.,

HAMILTON, ONTARIO.

Yarn Manufacturers, DYERS AND BLEACHERS.

Warp Yarns of all descriptions, in Skein, Chain or on Beams.
Hosiery Yarns in single or double, in Cop, Skein or Cone.
Yarns of all kinds for Manufacturers' use.

Twines, Lampwicks, Webbing, Etc.

Dyeing of all Colors, including **GENUINE FAST BLACK.**

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER

CANADA IRON FURNACE CO., LIMITED

Montreal, Radnor and Three Rivers

Manufacturers of the well-known

"C.I.F." Three Rivers Charcoal Pig Iron

Suitable for Car Wheels, Cylinders and Fine Castings,
where the utmost strength is required.

UNSURPASSED IN STRENGTH BY SWEDISH, RUSSIAN
OR AMERICAN CHARCOAL IRON.

Offices: Canada Life Insurance Bldg., Montreal.

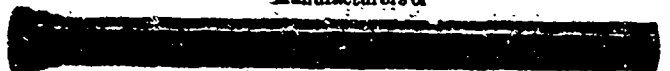
MONTREAL PIPE FOUNDRY CO.,

SUCCESSORS TO

(Limited)

DRUMMOND-McCALL PIPE FOUNDRY CO.

Manufacturers of



"Specials," Hydrants, Valves, Etc.

Offices: - - - Canada Life Building,

MONTREAL

THE sale of **55 New Wheelock and Ideal Steam Engines** in 8½ months this year is abundant evidence that the power users of Canada have great confidence in the efficiency of these engines. Add to this the sale of **64 Model Gas and Gasoline Engines** in the same period and you have a most convincing argument in favor of the popularity of these types of power. Send for Catalogue.

The Goldie & McCulloch Co., Limited, Galt, Ont.

WE ALSO MAKE GAS AND GASOLINE ENGINES, BOILERS, PUMPS, WATER WHEELS, FLOUR MILL MACHINERY, OATMEAL MILL MACHINERY, OATMEAL STEAM PAN KILNS, WOODWORKING MACHINERY, IRON PULLEYS, WOOD RIG SPLIT PULLEYS, SHAFING, HANGERS, GEARING, FRICTION CLUTCH PULLEYS, Etc., Etc. SAFES, VAULTS and VAULT DOORS.

THE IMPERIAL OIL COMPANY, Limited.

Highest Awards at the World's Fair, Chicago, upon

**Lubricating, Water White Illuminating Oils,
Paraffine Wax, Etc.**

We manufacture all grades of oils, greases, soap stocks, candles, wool stocks, leather and tanners' oils, fuel gas, machinery, cylinder oils, &c. And solicit opportunity to compete against any oil on the market. Write for prices and samples.

Refineries at **SARNIA and PETROLIA, CANADA.** Merchandising Branches at:

HALIFAX, N. B. HAMILTON, ONT. QUEBEC, QUE. LONDON, ONT. TORONTO, ONT. WINNIPEG, MAN. ST. JOHN, N. B. GUELPH, ONT. MONTREAL, QUE. CHATHAM, ONT. PETERBORO, ONT. VANCOUVER, B. C. MONCTON, N. B. STRATFORD, ONT. KINISTON, ONT. WINISOR, ONT.

**Branch
Offices
and
Agencies:**

Vancouver,
B.C.,

Wm. Hamilton
Mfg. Co.

Winnipeg,
Robt. Douglas,
94 Alexander
Avenue.

Montreal,
321 St. James
Street.

John Bertram & Sons

DUNDAS, ONTARIO.

Canada Tool Works

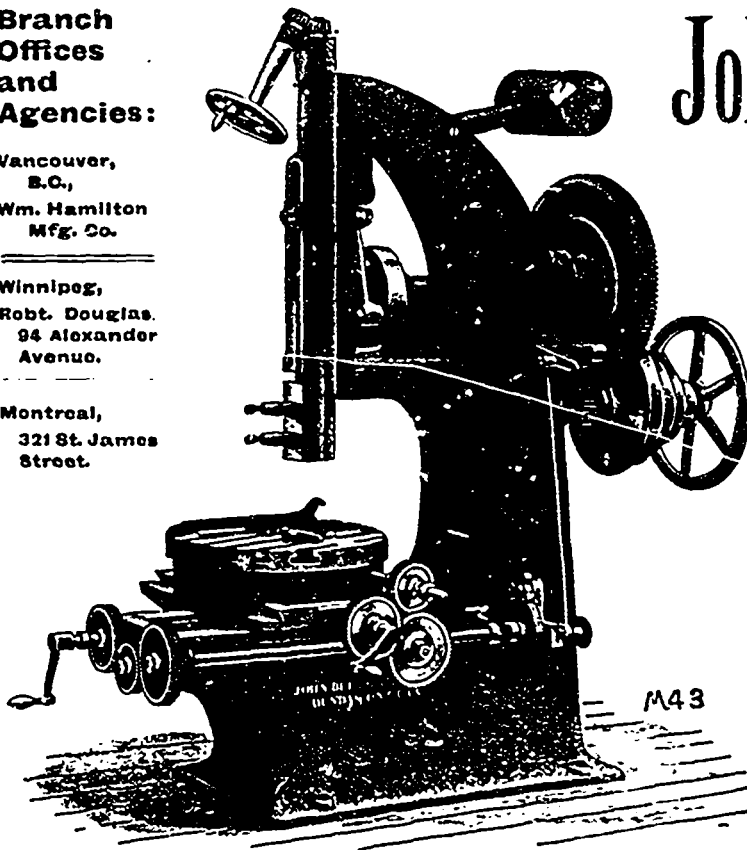
MANUFACTURERS AND BUILDERS OF

**METAL-WORKING
MACHINE TOOLS**

—FOR—

**Machine Shops,
Ship Yards, Boiler Shops
Rolling Mills,
Locomotive and Car Shops,
Brass Shops.**

PAPER MILL MACHINERY.



When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

THE NOVA SCOTIA STEEL CO., LIMITED

MANUFACTURERS OF

BRIGHT COMPRESSED STEEL SHAFTING

FROM 1 TO 6 INCHES IN DIAMETER. GUARANTEED STRAIGHT AND TRUE TO WITHIN $\frac{1}{16}$ OF AN INCH.

Spring, Reeled Machinery, Tire, Toe Caulk, Sleigh Shoe, Angles, Special Sections and all Merchant Bar Steel. Sheet Steel up to 48 inches wide.

RAILWAY AND ELECTRIC RAILWAY CAR AXLES

FISH PLATES, SPIKES AND TRACK BOLTS

Tee Rails, 12, 18, 24 and 28 lbs. per yard

HEAVY FORGINGS a SPECIALTY.

"FERRONA" PIG IRON, For Foundry Use.

Works—NEW GLASGOW, N.S., and FERRONA, N.S.

Head Office—NEW GLASGOW, NOVA SCOTIA

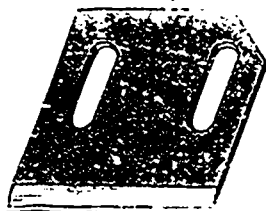
GALT Machine Knife Works

PETER HAY,



GALT, ONT.

Manufacturers of Every
Description of.....



KNIVES,

For Wood-Working, Paper
Cutting and Leather-
Splitting
Machines

BARK
KNIVES
PULP
KNIVES
RAQ
KNIVES
Etc., Etc.



Shear Blades,
Straw Knives,
Paper Knives,
Etc., Etc.



Quality Guaranteed.

Special Knives Made to Order.

Send for Price List

DOMINION BRIDGE CO., Limited,



MONTREAL AND
LACHINE LOCKS, P.Q.

Steel Bridges for Railways and Highways,
Steel Piers and Trestles, Steel Water Towers and Tanks,
Steel Roofs, Girders, Beams, Columns for Buildings.

A large Stock of **ROLLED STEEL BEAMS, JOISTS, GIRDERS, CHANNELS, ANGLES, TEES, Z BARS and PLATES**

Tables, giving Sizes and Strength of Rolled Beams on application.

ALWAYS ON HAND IN LENGTHS TO
THIRTY-FIVE FEET.

Post Office Address,
MONTREAL.

GEORGE E. EVANS, Agent, 38 Canada Life Building
TORONTO, ONT.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

BRUNNER, MOND & CO., Limited,
NORTHWICH, ENGLAND.

PURE ALKALI

48% and 58% (Light and Heavy)

BLEACH^g PWD.

35% to 37% (Hardwood Oaks)

CAUSTIC SODA

60% to 77%



Winn & Holland,
MONTREAL,
Sole Agents for Canada.

SODA CRYSTALS

Lump and Crushed. Brls. and Bags.

CON^{CTD} SAL SODA

DOUBLE STRENGTH

BICARBONATE SODA

ABSOLUTELY PURE

Also for Mineral Water Manufacturers.

Wm. J. MATHESON & CO., LIMITED

NEW YORK

BOSTON

PHILADELPHIA

PROVIDENCE

CHARLOTTE, N.C.

MONTREAL, CANADA

DYE . . .

STUFFS

The Polson Iron Works, TORONTO CANADA.

THE BEST EQUIPPED BOILER AND ENGINE WORKS IN CANADA.

We Manufacture—

STEEL BOILERS

The BROWN AUTOMATIC ENGINE, MARINE ENGINES (SINGLE, COMPOUND AND TRIPLE), Hoisting and Mining Engines

STEEL STEAM VESSELS OF EVERY DESCRIPTION.

STEAM YACHTS AND LAUNCHES.

GET OUR PRICES BEFORE ORDERING.

ESPLANADE EAST, Foot of Sherbourne St., - - Toronto, Canada



If your Dealer Does not Keep Them Send to Us.

CHEAPEST AND BEST
Bicycle Screw Plate

14 PAIRS DIES—22 TAPS

...A Complete Repair Shop in Itself...

BUTTERFIELD & CO.
Rock Island, P.Q.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

ALBERT MANUFACTURING CO.

MANUFACTURERS OF THE
WELL-KNOWN

"HAMMER BRAND"

Calcined Plaster

AND

Patent Rock Wall Plaster

HILLSBOROUGH, N. B.,
CANADA.

KEMP MFG. CO.

TORONTO.

Galvanizing

GONE FOR THE TRADE.

GET OUR PRICES.



For IRON FENCING,
BANK and OFFICE RAIL-
INGS and all kinds
of IRONWORK

Address:

Toronto Fence & Ornamental Iron Works
99 Queen St. East, Toronto.

BROWN & CO.

Manufacturers of

Square and Hexagon
HOT PRESSED NUTS.

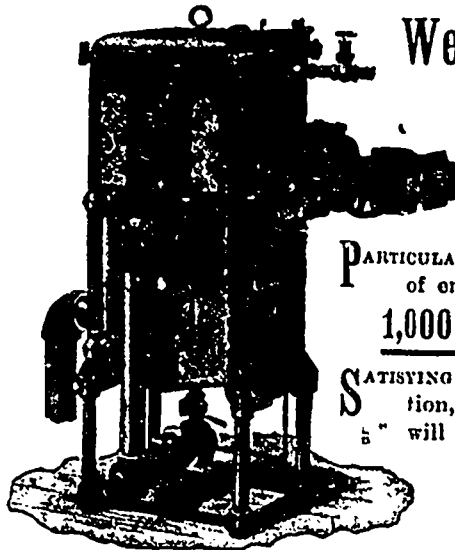
PARIS, - ONT.



Send for Catalogue and Price
List to



Mfrs. of Set, Cap and Special
Screws, Studs, Finished Nuts, etc.



Webster Feed Water Heater AND PURIFIER

BEFORE PURCHASING ELSEWHERE
ENTERTAIN A BID FROM US.

PARTICULAR experience for ten years in this department
of engineering, and the fact that over
1,000 WEBSTER HEATERS are in use, is
self-explanatory.

SATISFYING particulars, embracing details of construc-
tion, materials, operation and exclusive results,
will be sent on application.

DARLING BROTHERS,
Reliance Works, MONTREAL.

A. KLIPSTEIN & CO. 122 Pearl St. New York

Anilines, Dyestuffs & Chemicals

DELIVERY MADE AT NEW YORK, MONTREAL OR HAMILTON.

WRIGHT & DALLYN, AGENTS,
HAMILTON, ONT.

Cheaper Steam

The cost of steam depends upon the cost of
the coal necessary to produce it.

You have no control over the price of coal
per ton, so if you want cheaper steam you must
use less coal.

The MUMFORD STANDARD BOILER will burn
10 to 25 per cent. less coal to the horse power
than a return tubular boiler.

At the present high price of coal the saving
will soon pay for a new boiler.

Robb Engineering Co. Limited,

AMHERST, N.S.

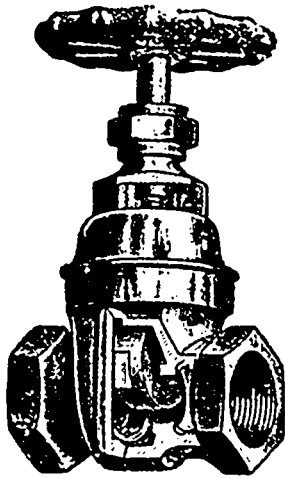
AGENTS:

WILLIAM McKAY, - - - 19 McKenzie Crescent, Toronto.

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

It Pays to Buy GOOD VALVES

KERR'S GLOBE AND WEBBER
STRAIGHTWAY
VALVES



ARE THE
VALVES
TO
...BUY...
—
ASK YOUR
DEALER
FOR THEM.

Catalogue Sent
on
Application.

THE KERR ENGINE CO., Limited,
WALKERVILLE, ONT.

WILSON & BURNIE,
FLOUR, OATMEAL,
and COMMISSION AGENTS.
Also at GLASGOW, SCOTLAND. LEITH.
Advances on Consignments.

RUBBER BELTING

"Your 'Para' is most satisfactory and economical."

THE E. B. EDDY CO.

THE
CANADIAN RUBBER CO

MONTREAL * TORONTO
WINNIPEG

ABSOLUTELY ACCURATE

From Less than 5 c.p. to Full Capacity. Guaranteed for Three Years.

Current
Completely
Registered

No
Current
Lost

Entire
Revenue
Secured

No Friction

METERS

MADE BY... **STANLEY INSTRUMENT CO.,** GREAT BARRINGTON, MASS., U.S.A.

FOR SALE IN CANADA EXCLUSIVELY BY

Air Tight

Moisture
Proof

Dust Proof

Insect
Proof

Magnetic
Suspension

No Wear

The Royal Electric Co'y

MONTREAL, QUE.

TORONTO, ONT.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

Pumps

"FOR ALL DUTIES"

We invite enquiries from engineers in need of any description of Pumping Machinery. We manufacture over five hundred varieties and sizes of Steam and Power Pumps for stationary and marine purposes. We will be pleased to furnish plans and specifications for any special types. Our Catalogue, giving a good idea of our standard patterns, sent free to all enquirers.

Northey Gas and Gasoline Engines

To anyone requiring a compact, thoroughly reliable engine, especially suited for users of intermittent power, we recommend our Gas and Gasoline Engine. We shall be glad to furnish estimates for Gas or Gasoline operated pumps, electric light plants, etc., etc. Explanatory Booklet free on request.

Northey Mfg. Co., Limited, 1000 KING ST. SUBWAY, **Toronto, Ont.**

THE ATLANTIC REFINING CO.

TORONTO, ONTARIO

MANUFACTURERS
AND IMPORTERS
OF ILLUMINATING
AND LUBRICATING

OILS, GREASES
and SPECIALTIES

SEE THIS SPACE NEXT ISSUE.

RODERICK J. PARKE,

CONSULTING ENGINEER TO
Temple Bldg., - TORONTO.
Long Distance Telephone.

MANUFACTURERS:—Competent and impartial advice on
Industrial Electrical Systems of Lighting, Power Distribu-
tion, Heating and Welding, Etc. Plans, Specifica-
tions, Tests, Reports, Valuations.



Reflectors, Shades, Lamps

We Stock a Large Variety of SHADES
and REFLECTORS in

ALUMINUM, MIRROR, CELLULOID, PAPER, PORCELAIN,
FOR FACTORY AND OFFICE.

Imperial Lamps and Helios Upton Enclosed Arcs Give **BEST LIGHT** with **LEAST CURRENT**

ELBRIDGE Sparking Dynamos, SAMSON Batteries and IMPERIAL Salts, for Gas or Oil Engines.

Write us about Lighting
your Factory or Office.

JOHN FORMAN, 708 and 710 Craig St., MONTREAL

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



ESTABLISHED IN 1880.

PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

SUBSCRIPTIONS:

CANADA AND UNITED STATES, - - - \$1.00 PER YEAR.
ALL OTHER COUNTRIES IN POSTAL UNION, EIGHT SHILLINGS
STERLING PER YEAR, INCLUDING POSTAGE.

The Canadian Manufacturer Publishing Co., Limited.

McKinnon Building, Cor. Meliada and Jordan Sts., Toronto.
Cable address: "CANAMAN." Western Union Telegraphic Code used.

J. J. CASSIDY, . . . Editor and Manager

FRANK B. WHITE COMPANY.

The Fisher Building, CHICAGO. 150 NASSAU ST., NEW YORK.
Represent the Advertising Department of THE CANADIAN
MANUFACTURER in the United States.

DOMINION BOARD OF TRADE.

At the recent banquet given by the Toronto Board of Trade in compliment to Lord Strathcona, replying to a toast, discussing the general welfare and interests of Canada, having suggested the desirability of the reviving of the Dominion Board of Trade, once a most important and influential organization, his Lordship said. "By this means you would be able to bring to the notice of the Government many things of which they themselves would have very little knowledge, because being of the business, the commercial and the professional men, you must necessarily have more intimate and practical knowledge of what is required than any body of men sitting at Ottawa, or, for that matter, at Westminster."

The causes that led to the disintegration of the old Dominion Board of Trade need not now be discussed, but it may be said that whatever the conditions which called it into existence long years ago, and they were certainly of an imperative character, they are at this time more poignant and forcible than then; and now that Lord Strathcona has in so emphatic a manner brought the matter to the attention of the business community, it should be taken up and pushed to its legitimate and natural conclusion. There is no business man in Toronto, or in Ontario, who does not recognize the good and lasting effect of the work done and being done by the Toronto Board of Trade, and these influences are not bounded by provincial lines, and the same may be said regarding the Board of Trade of Montreal, and in fact the boards of all the other cities and commercial centres of the Dominion. But these organizations are isolated each from the others, and whatever good they may exert within their respective spheres of influence, they are incapable of accomplishing as much as affecting the interests of the whole country as would be possible were they merged into and forming important units of a great central body—a Dominion Board of Trade such as that suggested by Lord Strathcona.

It is quite remarkable that the old organization should have ever been permitted to fall to pieces—it is even more

remarkable that it has not before this been revived by the earnest business men of Canada. Local Boards of Trade and similar organizations are all well enough in their way; in fact they are indispensable, but their influence is but local at best, and, as we have often observed, petty jealousies which should never exist prevent the general adoption of ideas and suggestions which, if carried out, would be of much value to the community. This would not be the case in the presence of an organization covering the whole Dominion. It would be entirely within the province of local organizations, and their duty, to look after local interests, but such larger matters as the regulation of railway freights, the establishment of routes of transportation towards which public moneys are appropriated, all matters affecting tariffs, patent laws, banking insolvency, copyright, the adoption of uniform systems of weights, measures and values, etc., should be for the consideration of the Dominion Board of Trade.

OVER REPRESENTATION vs. UNDER REPRESENTATION.

The argument has been advanced by some of the directors of the Toronto Industrial Exhibition Association to the effect that the numerical strength of that Association, and the different bodies and societies constituting it, is quite as large as it should be, and that there should be no increase in the number of directors, for the reason that any such increase would tend to unweildiness.

The answer to this is that while admitting the correctness of the argument, considering the composition of the Association, there are certain general interests, all very meritorious of themselves, which have undue representation, while other interests, equally meritorious, have insufficient representation or no representation at all. Times and circumstances change, and conditions that might have been entirely favorable to the success of the Association twenty years ago are found not so propitious at this time. We quite agree with the argument that a hundred business men selected from the several leading interests of the community are quite sufficient numerically to constitute the Association, and we also think that a board of directors not exceeding twenty in number, (fifteen would be better) sufficiently large to attend to all the details of it.

But we find, unfortunately for the Association we think, that there is unnecessarily large representation of some industries, as the Toronto Electoral District Society has instance, whose only excuse for existence is to cultivate a taste for chrysanthemums, and the Toronto Gardeners' and the Florists' Association, with like esthetic excuse, with a combined representation of fourteen members and six directors; the Beekeepers' Association; the Ontario Poultry Association and the Toronto Poultry Association, with four members and one director, Toronto Horticultural Society and the Ontario Fruit Growers' Association, with four members and two directors, (Toronto is a great fruit producing region); Ontario Veterinary Association, with two members one of whom is president, and two directors, representing these horse doctors of the province, Butter and Cheese Association of East Ontario and Butter and Cheese Association of West Ontario, with three members, Educational Department of Ontario, Toronto Natural History Society, Canadian In-

stitute, Ontario College of Pharmacy, and Toronto Educational Association with ten members; Clydesdale Association, Shire Horse Association, Hackney Horse Association, Canadian Horse Breeders' Association, and Dominion Draft Horse Breeders' Association, in all five different associations representing the breeding of horses, with eight members; Dominion Short Horn Breeders' Association, Dominion Holstein Breeders' Association, Dominion Ayreshire Breeders' Association, Canadian Jersey Breeders' Association, Hereford Breeders' Association and Dominion Cattle Breeders' Association, in all six different associations representing the cattle breeding industry, with eleven members, and Dominion Sheep Breeders' Association and Dominion Swine Breeders' Association, each with two members. These twenty-eight associations with sixty-one members, twelve of whom are directors, represent the farming and agricultural industries, and the educational interests. The Toronto City Council and the York County Council, with seventeen members and five directors represent their respective municipalities; the Ontario Society of Artists has two members; the Lumbermen's Association, which represents the saw mill interests of Georgian Bay and the Ottawa river, two members; the Commercial Travellers' Association, three members; the Dominion Millers' Association with one member represents the flour milling industry of the country; the Toronto Board of Trade, with three members and two directors represent all the financial, mercantile and other interests of a city of more than 200,000 inhabitants, and the Canadian Manufacturers' Association, with five members and two directors represent, according to a statement recently made to Sir Wilfrid Laurier by Mr. P. W. Ellis, president of the Association, an aggregate value of some \$100,000,000 invested in our manufacturing industries. Only one association with five members representing all the manufacturers of the country, while chrysanthemums, bees, chickens, fruits, horse doctors butter and cheese, pill mixers, horses, cows, sheep, and hogs are represented by twenty-eight associations with sixty-one members out of a total of ninety-four, and twelve directors out of a total of eighteen. There can be no possible objection raised to the representation in the Industrial Association of any or all of the leading industries of the country, but in the absence of adequate representation of the manufacturing industries, and in view of the argument that the membership of the Association and of its directorate is already large enough, we fail to see why there should be five different associations of horse breeders, and six of cattle breeders, besides the bee keepers, sheep and hog breeders, and, also, the Toronto Electoral District Society. If the Agricultural Implement Association had had representation the exhibitors included in it would not have been driven from the Fair, and the same may be said of the Iron Founders' Association, the Furniture Manufacturers' Association, the Carriage Manufacturers' Association, and several other similar associations of manufacturers. There is a screw loose in the management of the Industrial that ought to be tightened up.

THE INDUSTRIAL EXHIBITION AND THE MANUFACTURERS' ASSOCIATION.

In the editorial pages of this journal of March 16 attention was directed to the fact that widespread dissatisfaction

existed with the management of the Toronto Industrial Exhibition, and that it was well within the power of the Canadian Manufacturers' Association to save it from the collapse that seemed inevitable, and to again place it upon a plane as high as it had ever occupied. The question now is, has the Association risen to the occasion and met the opportunity that had been presented to it.

At the annual meeting of the Association held February 6 last, a series of whereases and resolves were passed in which reference was made to the Pan-American Exhibition to be held at Buffalo next year, to the advantage to Canada resulting therefrom, and that this advantage could be attained in no better way than by inducing visitors to come to the Toronto Fair, the conclusions being that there was great necessity for "securing the co operation and financial assistance of the Corporation of the City of Toronto, and the Governments of the Province of Ontario and the Dominion of Canada"; and it was further resolved that the Association pledge its hearty co-operation and assistance to the Toronto Industrial Exhibition Association in regard to this matter.

At the time this solemn pledge was made much dissatisfaction existed with the management of the Fair. At the exhibition of the previous year the friction was accentuated by the protest of the exhibitors of agricultural implements against the persistent disregard of their wishes in certain directions, which resulted in their refusal to appear at the Fair of this year; and there were equally vigorous protests on the part of other manufacturing exhibitors for similar reasons, all of which were disregarded, it being told to some of the protestors that if they declined to exhibit their space could readily be filled by their American competitors. Whatever else might have been said regarding the management of the Fair it was evident that the directors showed no disposition whatever to conciliate the discontented exhibitors, and this was the condition which prevailed at the time the Manufacturers' Association pledged its hearty co-operation and assistance. What has the Association done in this direction? It recognized "the imperative necessity of large modern buildings," but what was done to secure them? The Exhibition Board had procured the passage of a by-law by the Toronto City Council appropriating the sum of \$180,000 for the purpose, but before the by-law came to be voted on by the tax-payers it was withdrawn, evidently because of the bad odor that resulted from the mismanagement of the Fair. The tax-payers had soured on the management, and, not possessing enough perspicacity to observe the positive necessity for a change of methods, the management, clinging blindly to their old ideas, turned to the Manufacturers' Association for help. And what has the Association done? Resolutions have been passed declaring the importance of the Fair, speeches have been made at banquets and free luncheons, numerous interviews have been had with Dominion and Ontario officials, but never yet has the Association demanded that the Exhibition directors should lop away some of its mouldering branches and introduce new blood into its system. Why? Who and what is the Toronto Electoral District Society which is represented by twelve members in the Exhibition Association, five of whom are directors, while the Manufacturers' Association are allowed but five members and two directors, that the Manufacturers' Association should refrain from a

protest against such an anomalous condition? Perhaps the Toronto Electoral District Society is not the only mouldering branch.

Having become the backer of and voucher for the Industrial Exhibition, it is incumbent upon the Manufacturers' Association to do something more than speechify, resolute, interview and talk. It is evident that the future success of the Toronto Fair depends primarily upon the bestowment upon it of probably \$200,000 by the City of Toronto—and a change of management. No change of management no money—no money no Fair. Will the Manufacturers' Association demand a change of management?

SOUTH AFRICAN TRADE.

The British and South African Export Gazette publishes an exceedingly interesting article regarding the imports of merchandise into South Africa during the years 1898 and 1899. There are two pages of tables which form a detailed list of what that country actually bought in 1899, the various items to the number of 164 being alphabetically arranged and classified under convenient headings, the figures for 1898 being given for sake of comparison. The ports of entry through which these imports were made were the Colonial ports of Cape Colony and Natal, and the Portuguese port of Beira, for the whole of 1899, and by Delagoa Bay for seven months only, the Portuguese returns for Lorenzo Marques for the whole year not being sufficiently trustworthy for reception. The following table gives a summary of the imports for the two years:

Class of Article.	Total, 1898.	Total, 1899.
Articles of food and drink	£5,274,677	£4,879,893
Articles of personal use	4,140,698	3,771,687
Animals, live	28,119	38,320
Builders' materials	1,197,672	1,203,996
Drugs and chemicals	571,114	534,734
Explosives and weapons	350,134	251,564
Goods (unenumerated) by parcel post	236,515	234,142
Hardware, cutlery and ironmongery	1,320,437	1,191,796
Household requisites	1,076,674	1,571,321
Iron and steel	674,192	695,207
Leather manufactures (not boots and shoes, except in Natal figures)	425,773	410,593
Machinery	1,543,464	1,527,095
Paper, books, etc.	616,913	564,541
Stores for Government	1,687,032	1,281,781
Textile manufactures	1,826,558	1,558,986
Vehicles and vehicular materials	903,296	661,745
Other articles	1,255,642	1,565,884
Totals	£23,728,910	£21,943,005

The increases spread over the following divisions represent percentages as under.—Live animals, 14.9; builders' materials, 0.5; iron and steel, 3.1; and other articles, 24.7. The divisions confessing decreases and the rates of decrease were:—Articles of food and drink, 7.4; articles of personal use, 8.9; drugs and chemicals, 6.3; explosives and weapons, 26.5; goods, unenumerated, by parcels post, 1.0; hardware, cutlery and ironmongery, 9.7; household requisites, 6.2; leather and manufactures, 3.5; machinery, 1.0; paper, books, etc., 8.4; stores for Government, 24.0; textile manufactures, 14.6, and vehicles and vehicular materials, 26.5.

EDITORIAL NOTES.

A letter from a Mexican correspondent of The British Trade Journal says. "English shippers to Mexico must be careful regarding the shipping of goods and in sending the

proper number of invoices. Each package should be carefully marked, and the mark on the package shown on the invoice. I have been often told here that the English are very careless regarding certain laws in connection with the customs tariff. The slightest infringement may mean a detention of a package for six months and endless correspondence. Those who trade with Mexico must study the customs regulations.' This is a matter that commends itself with equal force to Canadian shippers.

We again, and with additional emphasis, dedicate the following expressive verse to the Toronto Industrial Exhibition Association:

We don't believe in kicking,
It is not apt to bring us peace,
But the wheel that squeaks the loudest
Is the one that gets the grease.

Commercial travellers have to pay duties or taxes varying in value in the different Mexican states. It is impossible to get a free run of the entire Republic by means of one single payment, each state having its own financial administration. A specially heavy tax is levied upon travellers in the state of Mazatlan. It amounts from 50 frs. to 300 frs., according to the class of goods.

Export firms are pleased with the decision of the Canadian Manufacturers' Association to cooperate with the Montreal Board of Trade in regard to discrimination against the St. Lawrence route in the matter of marine insurance rates. It is felt that if the Government can be persuaded to order an investigation in order to ascertain whether the discrimination is due to poorly lighted channels or to other reasons, some remedy will be discovered. Canadian shippers are naturally much interested in this matter as the discrimination against our water route to the sea will mean increased cost of shipments, not only on account of the higher insurance rates, but because in time, it is felt, some vessels would avoid the St. Lawrence route and patronize ports where there is no discrimination in rates.—Bradstreet's.

The London Iron and Coal Trades Review, in speaking of the remarkable fall in domestic prices of American iron and steel, says:

The rapid and large reduction should cause serious alarm in this country, as, indeed, it has done. When British prices of to-day are compared with the prices quoted on the other side of the Atlantic, the marvel appears to be that the British manufacturers can do any business at all. Here are a few items based on present prices:

	Great Britain.			United States.			Difference.
	£	s.	d.	£	s.	d.	
Foundry iron	3	10	0	2	0	0	1 10 0
Rails	7	0	0	4	12	0	2 8 0
Ship plates	8	0	0	5	10	0	2 10 0
Merchant bars	10	0	0	6	0	0	4 0 0

As matters are at present American manufacturers can undersell us on the basis of quoted prices by at least 20s. per ton in every one of the items enumerated above, and these represent the bulk of the ordinary trade.

The New York Journal of Commerce declares that without waiting for the results of the Carnegie shipment of steel from Conneaut to Liverpool fifteen steamers adapted to the same

service are in process of construction. Twelve steamers of dimensions suitable to the Canadian canals and strong enough for ocean voyages are already on the lakes, besides the four to leave Conneaut in November, which are not expected to return. Next spring there will be on the lakes twenty-seven steamers suitable for voyages between lake and European ports. Some, or all, of the new steamers will carry 3,600 tons in deep water and 2,400 on less than fourteen feet draft, but the four to sail in November will carry only 1,000 tons each through the canal, another 1,500 tons of cargo being put on board at Montreal. Of the fifteen new steamers the American Steel & Wire Co., is having four built, and it already has two steamers of the same class. Another four are building for a grain shipping firm in Chicago. Billets and sheet bars will make up the cargoes of the four steamers to sail this month, and the fact that a part of the cargo is to be unloaded at Cardiff and Swansea indicates that Welsh tin plate will be made from American steel.

Our definite good thing we conclude from Lord Robert's cable on the South African Contract question. Whatever may have been in contemplation, whatever may have been already done, whatever chances were on foot to divert orders to America, will be promptly discountenanced, and we may be sure that, as a result of the present agitation, if vigilance be not relaxed, the British manufacturer will in future have a fair chance in South Africa. It is unlikely that a duplicate of the Athara Bridge will be planted on South African soil. So far as the military authorities are concerned, indeed, it is pretty safe to say that the utmost care will be taken to avoid any appearance of favoring foreign firms. We may expect the most punctilious observance of the etiquette of inviting tenders and placing contracts. Even were they so disposed, they can scarcely afford to quarrel with the industrial community just now. What we feel a good deal less sure about is the action of private firms. It is all very well for the attitude of Lord Robert's staff to be absolutely correct, but if private firms are going to order abroad the goods that they know full well the military authorities require with the sure and certain hope of having them commandeered on arrival, we fail to see where British firms will benefit from the scrupulous punctiliousness of the military authorities. Let us hope that this will not prove to be the case.—Commercial Intelligence.

Canada can hardly find consolation in the facts and figures furnished by the trade returns, as given by her own as well as by our statistical bureaus. She put her twenty-five per cent. preferential tariff, in favor of Great Britain, up to 33½ per cent. Our answer was to increase sales from \$61,649,741, in 1896 to \$101,642,950 in 1899. Of course, all things being equal, Canada can count on finding British favor. Her exports to Great Britain went up to \$99,000,000 in 1899 from \$66,000,000 in 1896.—The Manufacturer, Philadelphia.

Although England was the birthplace of the portland cement industry, that country no longer has a monopoly of it. The annual production of portland cement in England is now between 7,000,000 and 8,000,000 barrels; that of France barely 3,500,000 barrels; while Germany's output is from

18,000,000 to 20,000,000 barrels. The United States produced 5,200,000 barrels, and imported 2,300,000 last year.

P. T. Barnum is quoted as having said: "If you have \$10,000 to put to good use, put \$1,000 aside for the article you wish to sell and use the other nine for advertising it. I can out talk any man but a printer. The man that can stick type and in the morning talk to 10,000 people whilst I am talking to one is the man I am afraid of, and I want to be his friend."

The official announcement of the total population of the United States for 1900 is 76,295,220, of which 74,627,907 are contained in the forty-five States representing approximately the population to be used for apportionment purposes. The total population in 1890, with which the aggregate population of the present census should be compared, was 63,069,756. Taking the 1890 population as a basis, there has been a gain in population of 13,225,464 during the past ten years, representing an increase of nearly twenty-one per cent. The tabulated statement shows that the population of New York is 7,268,009 against 5,997,853 in 1890.

In the issue of THE CANADIAN MANUFACTURER of October 5, was an editorial having reference to the imports of manufactures of gutta percha and India rubber into Canada from Great Britain and United States respectively, during the year 1899, compiled with care in this office from the Canadian Trade and Navigation Returns, and it is a coincidence that our esteemed contemporary, Commercial Intelligence, of London, in its issue of October 27 published an editorial on the same subject in large part identical with ours. Canadian mails are nowadays carried with great celerity to London.

Mr. R. Fergus Ritchie, of Messrs. Ritchie Bros., general engineers and proprietors of the Auburn Works, Auburn, New South Wales, bringing kind messages from friends in Australia, made a brief visit to THE CANADIAN MANUFACTURER last week. Mr. Ritchie, accompanied by Mrs. Ritchie, has been making an extended tour of Europe and the British Kingdom, and having seen the sights at the Paris Exposition and many of the American cities and centres of trade, after a brief visit to Toronto are now on their return to their antipodean home via Vancouver. Mr. Ritchie says that in the more or less distant future Australia will be a more populous and important country than even the United States.

Discussing the recent Congress of Chambers of Commerce of the British Empire held in London, and the remark of Hon. Joseph Chamberlain to the effect that the only form of Imperial Zollverein which would receive favor in Great Britain would be free trade within the Empire with differential duties against strangers, the British and South African Export Gazette, of London, speaking of what it calls a "Free Trade Counterblast," says:

On the opposite side, the Manchester Chamber of Commerce, by its speciously worded resolution, expends the whole force of its restricted construction of Free Trade principles against this view. Its resolution runs—"This Congress, rejoicing in the growing evidences of unity between the

Colonies and the Mother Country, and recognizing the material and political advantages of the largest possible exchange of commodities between the various portions of the Empire, is of opinion that all measures for the promotion of this end should respect the liberty of each portion to purchase in the cheapest market wherever it may exist." The effect of this resolution, if carried, would be the preservation of the status quo, with all its disabilities to British trade, and its favoring of bounty-fed foreign competition, in its fullest vigor, despite the recent enunciations of the Cobden Club that an inter-Imperial preferential rate is not contrary to the principles of free trade. The subject is so vital—not only to our future trade prosperity, but to that of the Empire, for "as in the corporal body, when one member suffers all suffer with it"—that it calls for the most earnest consideration of all beforehand, in order that no snatched adverse victory may be secured, or the subject allowed to be strangled and buried beneath the forms of procedure, as so many other projects have previously been.

The Mercantile Gazette, of Brisbane, Queensland, says :

We are in receipt of the tariff edition of THE CANADIAN MANUFACTURER, dated July 6, 1900, which includes the tariffs of Canada, the United States, Great Britain, and Newfoundland. These tariffs are carefully indexed, and form a most ready and convenient reference. There can be no doubt of the immense advantage of this compilation to merchants exchanging products with either or all of the countries represented in the work. We compliment the enterprising proprietors of THE CANADIAN MANUFACTURER on the contribution of such a work to the literature of commerce. The index adds largely to the value of the production, and renders it the most complete tariff reference on record.

Under the editorial head "Canada's Pettifogging Bid For Trade" the British and South African Export Gazette, published in London, making reference to a matter which appeared in Industrial Canada, the official organ of the Canadian Manufacturers' Association, says:—

The success of any new scheme largely depends upon its being well launched, and therefore we view with unmingled regret the acceptance by the Canadian Manufacturers' Association of Toronto of the programme of Mr. Thomas Moffat, the Canadian Government Agent at Capetown. Our objections are fully set out elsewhere in this issue, so that it is unnecessary to further refer to them except to remark that if Canadian manufacturers believe that South African trade is worth having, no portion of it is likely to fall to their share by adopting the pettifogging measures advocated by Mr. Moffat. As regards the wisdom of entrusting their business to commission houses, the cogency of our objections is reinforced by a quotation from a report dated January 7, 1899, by Mr. C. E. Macrum, the then United States Consul at Pretoria. Writing for the behoof of his countrymen, and answering the enquiry, Why does the foreign dealer give the preference to the European manufacturer? he says: "The English and German manufacturers canvass for trade through the medium of clever commercial travellers, who visit the dealer personally, and none of whom carry more than five or six different lines. Above all they are thoroughly acquainted with every line they carry. Contrast this with our American manufacturer. He makes a contract with an export commission house and sends the house a line of expensive samples, besides inserting a costly advertisement in the columns of a monthly or weekly journal. What is the result? The commission house has on hand from 75 to 150 different lines of goods, not five per cent. of which it knows anything about. Is it possible to handle needles, sideboards, traction engines, firearms, stores, tacks, railroad cars, hooks and eyes, bicycles, etc., and make a

commercial success of it? When I say a commercial success, I mean a commercial success to the manufacturer, not the commission house, which, it goes without saying, has a very comfortable profit out of the advertising alone. It seems to me a perfectly logical proposition that the sooner our American manufacturer goes directly after the foreign trade with the vim and energy he displays in seeking trade at home the faster will be his progress." The pertinence of this to our arguments and the Canadian case is obvious.

The "objections" which our London contemporary urges in the matter would cover more space than we can conveniently spare in this journal at this time, but they are certainly very interesting; and if either Mr. Moffat or the Association desire to discuss the matter we offer them sufficient space in THE CANADIAN MANUFACTURER to do so.

It has frequently been remarked that among the goods classed as "British exports" leaving the United Kingdom there is an appreciable percentage of foreign products, which pass through British ports in bond, or which are wrongly classified in the shipping returns which every exporter is supposed to fill up (accurately, of course) for the Board of Trade Returns. When an assorted case of lamps and lamp fittings, made partly here and partly on the Continent, leaves the Thames for the Colonies, it is, however, very difficult, if not impossible, to specify on the invoices the countries of origin of the various parts. This fact is, perhaps, not of much practical moment, but it may affect injuriously the two Colonies, Canada and Barbadoes, which have been struck off the list of countries enjoying most-favored-nation treatment by Germany. Mr. Ralph Williams, the Secretary for Barbadoes, complains of this in his latest report, and there is reason to believe that his complaint could to a large extent be remedied. "It would be advantageous," he says, "to us as well as other Colonies of British exporters were compelled to invoice their goods with their country of origin. We should then be able to collect a duty which is impossible now. Germany would not derive the advantage of the most-favored-nation treatment without giving us anything in return, and the British manufacturer and workmen would be protected from an unjust competition. The same remarks would, in a far lesser degree, apply to France, but in this respect the class of goods is more easily identified and traceable." The Customs officials of the Colony could, however, act much more effectively in obtaining such correct invoices than the Board of Trade authorities at home.—British Trade Journal.

The inauguration of the Australian Commonwealth is a civil, not a military, affair, and we see no reason why it should be accompanied by military displays of any kind. Our own Confederation was ushered in very quietly, and we do not think it has prospered any the less on that account. Of course it is Australia's own affair, but so far as Canada is concerned it seems to us that the sending of men that enormous distance would be a needless source of expense. We can assure Australia without any such action that she has the best wishes of this country for the success of the new commonwealth. Our militia is for work, not for show.—Toronto Globe.

The Globe should occasionally visit Ottawa on occasions when the Dominion Parliament is being prorogued. What fuss and feathers, what a glorious civic affair with military trappings. So, too, with dispersion of our Ontario Legislature, supposed to be a civic affair also—it cannot be dispersed without the accompaniment of soldiers in uniform with rifles in their hand, and officers in bedazzling array of swords and gold lace.

THE CANADIAN MANUFACTURER

ESTABLISHED IN 1880.

Devoted to the Development of Canadian Trade,
Foreign and Domestic.

THE INTERNATIONAL BUREAU OF COMMERCE

.. OF CANADA ..

In connection with The Canadian Manufacturer, works to attain this end.

Any inquiry addressed to THE CANADIAN MANUFACTURER will result in placing the writer, if he so desires, in communication with Manufacturers, Buyers or Sellers of any sort of merchandise in Canada or any other country.

Merchants, Importers, Exporters, Boards of Trade, Chambers of Commerce and Commercial Organizations in any part of the world are invited to make full use of the facilities afforded by THE CANADIAN MANUFACTURER whenever they may desire information about any article produced in Canada, Tariff Law, Customs Regulations, Routes of Transportation, etc.

We especially request Canadian manufacturers to send us lists of the different lines of goods produced by them so that we may address to them special letters of inquiry as soon as information is received by us.

AUSTRALIA.

Shoe and Leather Machinery.
Shoe and Leather Findings
Boots and Shoes.
Sole and Upper Leather.
Patent and Enameled Leather.
Morocco and Glazed Kid.

Silverware.
Pianos and Organs.
Saddle-Making Machinery.
Machinists' Tools.
Automatic Weighing and other
Automatic Machinery.

BELGIUM.

Chaffing Dishes, with and without
Wick Assortments.
Chaffing Dishes, to be used with Gas.
Oil Stoves.
Lighting Apparatus.
Meat Choppers.
Practical Novelties of all kinds.

Bicycles and Accessories.
Baby Carriages.
Stoves and Ranges.
Office Safes.
Toys and Games.
Camping Outfits.
Phonographs.

CUBA.

Paints, Varnishes and Oils.
Printers Machinery.
B Lining.
Wrought-iron Pipe.
Valves, Pipe Fittings, etc.
Plows and Cultivators.
Corrugated Iron.
Bottles.
Water Closets.
Groceries.
Hams, Bacon, Pork and Lard.
Flour.
Butter and Cheese.
Canned and Bottled Goods.
Wines and Spirits.
Confectionery.
Lavatories.
Sinks.
Water Heaters for Bathrooms.
Water Filters.
Enameled Hollow Ware.

Terra Cotta Pipe.
Harness.
Pianos.
Writing Ink.
Oilcloth.
Military Goods.
Wrapping Twine.
Toilet Waters and Perfumes.
Toilet Powders and Preparations.
Toilet Soaps.
Wine Bottles.
Wicker
Bentwood } Furniture.
Bedroom
Canopy Frames for Brass and Wood-
en Bedsteads.
Show Cases.
Fire Arms.
Preserves, etc.
Cutlery and Pocket Knives.

DENMARK.

Roofing Slate.
Water Closet Hoppers. }

Plumbers' Supplies.

FRANCE.

Builders' Hardware.
Carpenters' } Tools.
Machinists' }
Metal-working } Machinery.
Wood-working }
Shoe and Leather }
Window Glass.

Stoves and Ranges.
Corrugated Iron.
Carpets and Rugs.
Hardwood Furniture.
Lamps.
China and Glassware.

GERMANY.

Corn and Grain.
Cotton.
Lumber and Logs.
Lard and Provisions.
General Food Products.
Twisted Wire for strapping shipping
cases.
Machinery for making above.
Machinery for making Spiral Bed
and Upholstery Springs.
Machinery for Horseshoe Spacks,
square points.

Rivet-making Machine.
Machines for making Wire Staples.
Machines for making Screw Wire.
Wire for Steel Nails.
Scythes.
Sowers.
Metal-working Machines.
Tool Boxes, etc.
Check Punches.
Fountain Pens.
Roll Top and Ladies Desks.

GREAT BRITAIN.

Raw Hide Blanks for Gear Pinions.
Stoves, Wood.
Paper { Print.
 { Enameled.
 { Cardboards.
Doors and Window Sashes.

Hair Plaster Lashes for Builders' use.
Enameled Slates for Chimney Pieces
and Fireplaces.
Belting.
General Factory Supplies.

HOLLAND.

Lumber.

| Hickory Wood Handles and Helves.

MEXICO.

Blue and White Enameled Ware,
for kitchen use.
Agate Ware.
Kitchen Utensils.
China and Glassware.
Tinware.
Roofing Slate.
Sulphuric Acid.
Muriatic Acid.
Drugs.
Patent Medicines.
Bottles, Vials, etc.
Heavy Chemicals and Acids.

Druggists' Sundries.
Household (2) } Furniture.
Kitchen }
Office (2) }
Paints, Varnishes and Oils.
Wagon and Carriage Parts.
Axles and Springs.
Bar Iron and Steel.
Harness and Saddlery.
Harness Leather.
Carriage { Material.
 { Hardware.
Lumber.

NORWAY.

Cheap Organs.
Office Desks, fitted with small Fire-
proof Safes.

| Refrigerators.

PORTO RICO.

Cotton Prints.

| Sheetings, Shirtings, etc.

RUSSIA.

Machinists' } Tools.
Blacksmiths' }
Wagon and Carriage Parts.
Engines and Boilers.
Pumping } Machinery.
Metal-working }
Wood-working }

Milling } Machinery.
Textile }
General Factory Supplies.
Valves, Pipe Fittings, etc.
Portable Forges.
Belting.
Photographic Material.

WEST AFRICA.

Cheap Cotton Prints.

Preserve this Bulletin for Reference—it will not be Duplicated.

If You want Information, Ask for It.

Address,

THE CANADIAN MANUFACTURER, Toronto, Canada.

CAPTAINS OF INDUSTRY.

The following items of information, which are classified under the title "Captains of Industry," relate to matters that are of special interest to every advertiser on these pages, and to every concern in Canada interested in any manufacturing industry whatever, this interest extending to supply houses also.

If a new manufacturing enterprise of any kind is being started, or an electric lighting plant instituted, or an electric railroad, or a telephone, or a telegraph line is being constructed; or a saw mill, a woolen, cotton, or knitting mill; or if any industrial establishment has been destroyed by fire with a probability of its being rebuilt, our friends should understand that possibly there may be something in the event for them. Do you catch on to the idea?

The starting of any such concern means a demand for some sort of machines, machinery, or supplies, such as steam engines and boilers, shafting, pulleys, belt-ing, lubricants, machinery supplies, wood or iron working machinery, ventilating and drying apparatus; pumps, valves, packing, dynamos, motors, wire, arc and incandescent lamps, and an infinite variety of electrical supplies, chemicals, acids, alkalis, etc. It is well worth the while of every reader of the Canadian Manufacturer to closely inspect all items under the head of Captains of Industry.

The output of pig-iron from Canadian furnaces during the first half of 1900 was 45,234 gross tons. This indicates no increase in the rate of production over 1899, the total output for that year being 94,077 tons. Of the pig iron turned out in the current year about one-sixth was with charcoal as fuel. One-third of the product was Bessemer pig.

The Toronto Street Railway receipts for the month of October, according to returns made to the City Treasurer, show an increase over those of October, 1899, of \$13,380.25. The city's share is increased \$1,090.42. The following table shows an interesting increase during the past six years:

	Receipts.	City's Percent'g
October, 1900....	\$124,866.00	\$9,989.28
October, 1899....	111,485.75	8,918.86
October, 1898....	99,885.05	7,990.80
October, 1897....	87,964.37	7,037.15
October, 1896....	78,343.49	6,267.47
October, 1895....	78,216.98	6,257.35

Dr. S. Ritter Ickes, president and general manager of the Von Echa Co. (railway builders), Woodstock, Ont., is visiting at his old home in Pennsylvania.

Mr. Charles Lionais, Montreal, has lately made a sale of an iron pyrites mine at Garthby, on the Quebec Central Railway, to a New York syndicate, who will erect a sulphur factory at Levis, Que. The sulphur which it is proposed to manufacture will be used in the pulp mills in that section. The company have already begun operations at the mine. The property in question consists of 2,800 acres of land, and the deposits of iron pyrites carry from fifty-five to sixty per cent. of sulphur.

Messrs. Rider & Kitchener, Lindsay, Ont., manufacturers of veneer and excelsiors, and of stock for drawer bottoms, lacing, bellows, baskets, etc., inform us that they are now putting in a plant to manufacture three-ply panels, veneered on both sides with fine woods such as walnut, oak, gum, etc. There is a good demand in Great Britain for this line of goods.

A recent development in electrical engineering in this country is the employment of 250-volt systems for lighting and power, the advantage being that both lights and power are taken from the same circuit. A good example of this system is found in the new building of Messrs. Norlich & Co., opposite the Union Station, Toronto. In this building, which when completed will be one of the finest warehouses in the city, the electrical construction work is being installed by Messrs. R. A. L. Gray & Co., Toronto, the well-known electrical contractors.

The Imperial Starch Co. has awarded to E. A. Wallberg, C.E., Montreal, Toronto and Buffalo, the contract for the complete equipment of machinery and plant for its new starch and glucose factory in Prescott, Ont., the contract price being \$60,000. He will let sub-contracts at once from his Toronto office, Temple Building, for many parts of the equipment.

Mr. John S. Moore, proprietor of the Dominion Gas Meter Works, London, Ont., manufacturers of gas meters, meter provers, station meter drums, etc., informs us that extensive alterations are now being made in his present premises prior to building larger works. These changes will enable the employment of an additional number of

workmen to the present staff, necessary to keep up with orders, the pressure of late requiring working overtime. New tools and machinery are being introduced, including a large power press for stamping. Mr. Moore has recently installed in his works a Goldie & McCulloch well known "Model" gas engine, with which he is well pleased. He reports business as being exceedingly good throughout the country. Mr. Moore established this business in Canada in 1879. In addition to making the complete meter, he supplies the trade with the various parts and movements, etc.

The Legislation Committee of the Toronto City Council have under consideration a bill to incorporate the Toronto & Central Ontario Railway Co., to carry out Ald. Lamb's radial railway scheme. The bill provides for the incorporation of a company with \$5,000,000 capital stock, the directors to have power to issue the bonds of the company for the purpose of raising money for prosecuting the undertaking, the amount of the issue not to exceed \$20,000 per mile. The St. Lawrence market shall be the terminal, and if the Toronto Railway Co. will not grant running rights, the city may authorize streets to be set apart for the use of the radial railways, providing they do not carry passengers. The railways shall be commenced within a year from the passing of the Act, and at least 100 miles of railway shall be constructed annually until the system is finished.

Mr. W. A. Mackinnon, agent of the Dominion Department of Agriculture at the Paris Exhibition, describing the mineral exhibit there, says: The Canadian mineral exhibit is quite the largest, both in quantity and number of varieties, that is shown this year in Paris. It may be added that besides being extensive the collection is an excellent one; witness the fact that the international jury of experts has accorded it no less than fifty-two awards of merit, among which are six grand prizes. Capitalists are continually asking information with regard to the commercial possibilities of the mines, particularly those of copper, coal and gold: there is no lack of students who note the nature and extent of the various deposits, with the help of well-marked charts of Canada, which are conspicuous in the section. In addition there are several volumes of excellent mining and other photographs, illustrating the development of every part of Canada, open to the inspection of the public. And perhaps most effective of all for thoughtful visitors is the pamphlet prepared by Dr. Dawson, and

INGERSOLL-SERGEANT Rock Drills

FOR MINES, TUNNELS AND QUARRIES

PISTON INLET **Air Compressors** STRAIGHT LINE
 DUPLEX and
 COMPOUND.

FOR ALL DUTIES.

... COMPLETE MINE EQUIPMENT ...

JAMES COOPER MANUF'G CO., Limited, - 299 St. James St., Montreal.

Other Offices - - - ROSSLAND, B.C. RAT PORTAGE, ONT. HALIFAX, N.S.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

printed in both English and French, dealing with the economic minerals of Canada.

The shareholders of the Hamilton, Grimsby, and Beamsville Railway hold a meeting in Hamilton a few days ago, and decided to apply to the Legislature to amend the special act of the company by giving it power to continue its line of railway to St. Catharines, Niagara, and Niagara-on-the-Lake.

The American Tin Plate Co., Chicago, Ill., have repeatedly duplicated their orders for Cross Oil Filters and are now using nineteen filters in their plant. This speaks well for the popularity of the Cross.

The stove and heading mill of George McAllister, at Guelph, Ont., was destroyed by fire November 1, loss about \$5,000.

Rider & Kitchener, Lindsay, Ont., have purchased a new 100 light incandescent dynamo from The Jones & Moore Electric Co., Toronto.

"Papa," said the boy, "when you say in your advertisements that your goods are acknowledged by connoisseurs to be the best, what do you mean by connoisseurs?" "A connoisseur, my boy," answered the great manufacturer, "is an eminent authority—an authority, in short, who admits that our goods are the best."

Ontario promises soon to show a large increase in its copper production. In addition to the old works at Copper Cliff, the Victoria mine, owned by Dr. Ludwig Mond, will soon be producing ore which will be smelted and blown in converters to high grade copper nickel matte for exportation to England. Large mining operations are also projected at Massey, where a promising deposit of ore carrying over four per cent. of copper is now being developed. The future of the Parry Sound mines is still uncertain, though development is being actively prosecuted. The copper district at Bruce Mines, however, is soon to be energetically exploited. A concentrator of 400 tons daily capacity, with a smelting and converting plant, is being erected at Bruce Mines, where the old workings are being equipped with a modern plant, contemplating deep mining. The Rock Lake copper mines have also been extensively developed, showing a large vein of good ore, and a 200 ton concentrator is nearly finished, which will pro-

duce high-grade concentrates for shipment.—Mining Review.

The American Steel & Wire Co. have ordered from time to time eighteen Cross Oil Filters for use in their plant at Chicago, Ill.

The Jones & Moore Electric Co., Toronto, have sold one of their new type incandescent dynamos to The Empire Carpet Co., St. Catharines, Ont.

The equipment of machinery for the new pulp mill being erected at Thorold, Ont., by the Thorold Pulp Co., will include five horizontal water wheels, two Dilt grinding machines, two wet machines, form screens and all necessary wood-preparing machinery. The grinders will be located in the basement, from whence the stock will be pumped to a tank in the second storey and then flow by gravity to the screens and wet-machines, necessitating only one stock-pump for the entire plant. The wheel pit and bulkhead will be of solid stone laid in Portland cement, and the flume will be of heavy

timber, lined with three-inch plank. The first storey of the building will be of stone, and the second of frame, sheathed with iron. The mill will be built on the old Welland Canal, just above Lock 22, and power will be furnished by the canal which has a head of fourteen feet at that point.

An interested spectator of the opening of the Woodstock, Thames Valley & Ingersoll Electric Railway last week, allusion to which is made in another page, was Mr. Donald Reid, who went to Woodstock, Ont., from Scotland in 1842 to construct the macadamized road between that place and Ingersoll for the contractors, Messrs. Reid & Campbell, one of whom was his father and the other his uncle.

The Jones & Moore Electric Co., Toronto, report among others the following motor sales: J. Dubois, Hull, Que.; J. M. Loose, Toronto; John Flynn, Quebec; York Machinery Co., Toronto; W. E. Massey, Toronto.

F. N. PHILLIPS, President.

GEO. H. OLNEY 2nd, Sec.-Treas.

EUGENE F. PHILLIPS ELECTRICAL WORKS

(LIMITED)

MONTREAL, - CANADA.

BARE AND INSULATED ELECTRIC WIRE



RAILWAY FEEDER and TROLLEY WIRE

Electric Light Line Wire, Incandescent and Flexible Cords,

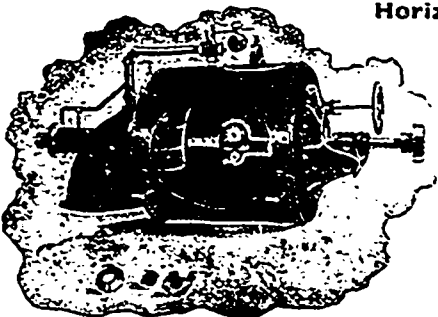
Rubber-Covered, Magnet, Office and Annunciator Wires.

Cables for Aerial and Underground Use.

United States Factory—AMERICAN ELECTRICAL WORKS, Providence, R.I.
New York Store—W. J. WATSON, Agent, 26 Cortlandt Street.
Chicago Store—F. E. DONOHUE, 241 Madison Street.

THE CROCKER Patent Turbine

Horizontal Setting, with Quarter Turn Elbow.



Where the nature of the location will permit its use this type has many advantages. It is very suitable for direct connection to dynamos, and many are in operation in this class of service.

Notice how complete and compact this arrangement is, and how easily it may be installed. Can you use anything of this kind? Your inquiries will receive prompt attention.

WATER POWERS examined and Reports made. Estimates submitted for Complete Equipments. - - - -

The JENCKES MACHINE CO.,
42 Lansdowne St., Sherbrooke, Que.

Messrs. R. A. I. Gray & Co., electrical contractors, Toronto, have just placed a motor in the Toronto works of the Diamond Glass Co.

The R. & T. Watson Co., Toronto, have placed an order with The Jones & Moore Electric Co., for a complete telephone system for their factory.

The Canada Iron Furnace Co. will soon have its new works at Midland in operation, smelting ore from the Helen mine at Michipicoton, with small quantities of Calabogie magnetite. This will be the first instance of an Ontario furnace running entirely on Canadian ores. The Helen ores contain about 58.7 per cent. of iron, with 0.114 per cent. of phosphorus, and 0.046 per cent. of sulphur. The new furnace is sixty four feet high, thirteen feet in diameter at the boshes, and eight feet in diameter at the crucible. The regenerative plant consists of three Gordon stoves, sixty feet by sixteen feet. The blast will be supplied by two blowing engines of 400 h.p. each. It was originally intended to use charcoal as fuel, and plans had been drawn for a large by-product plant. But it has been decided, for the present at least, to employ Cornellsville coke, which can be cheaply laid down at Midland from Lake Erie ports.—Mining Review.

The Williams Box Co., Toronto, have installed two electric motors in their new factory of The Jones & Moore Electric Co's manufacture.

The National Steel Co., have in their plant in Chicago, twenty Cross Oil Filters, made by The Burt Mfg. Co., Akron, Ohio.

The Hinds Paper Box Co., Niagara Falls, N.Y., is about to establish a branch factory on the Canadian side of the river in

Niagara Falls, Ont. The building it will occupy is adjoining the Dominion Suspender Co's plant. The Hinds Co. has been supplying a large number of boxes to manufacturing establishments on the Canadian side, and as there is a duty of thirty-five per cent. on this class of imports the expenditure for duty can be saved by the branch establishment. The new factory will be in operation during the present month.

Messrs. Marion & Marion, patent attorneys, Montreal, furnish us with a list of patents recently granted to inventors by the Canadian Government, as follows. Alfred McCloy, Hessen, Ont., vehicle gear; Herbert William Ross, Toronto, car fender; George Blackburn Jones, Toronto, peat drier; John Christopher Nichol, Montreal, boat; J. Baptiste Bailey, Contrecoeur, Que., clothes line; Elzear Doro, Laprairie, Que., cultivator; Dorvin Wesley Valloau, Ameliasburg, Ont., hay cocking machine; John Baptiste Girous, St. Esprit, Que.; acetylene gas generator.

A NEW ELECTRIC RAILWAY.

The Woodstock, Thames Valley & Ingersoll Electric Railway was opened, by starting the first car, "Estelle" over the finished portion of the road connecting Woodstock and Beachville, Ont., on November 8. The road to Ingersoll is being pushed, and will be finished this fall if the weather will permit. Duplicate machinery will be put into the power-house, and more cars will rapidly follow the "star."

The opening of this road to the public was a great day for the people of Oxford County, and they were not backward in showing their appreciation of it. Woodstock's City Fathers, society and the press vied with one

another in making pretty speeches in praise of the active members of the construction company, Messrs. Ickes & Armstrong.

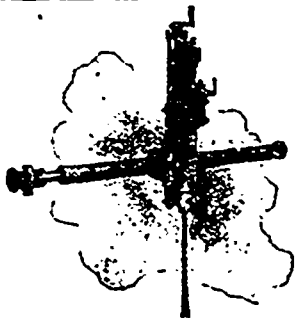
The road was projected and is being built by the Von Echa Co., which was incorporated under the laws of the State of West Virginia, with a capital stock of \$250,000. Dr. S. Ritter Ickes, the president and general manager has built many roads in his native state, Pennsylvania, all of which have been unusually successful. His particular talent seems to be in truthfully prognosticating the financial returns of a street railway. Many months before the last road built by him, the L. & W. V. St. R. R., was finished the bonds were changing hands at par over the counters of local banks—a before unheard of transaction in the States.

Mr. J. H. Armstrong, the secretary and treasurer of the company, is well and widely known as for many years treasurer of the H. F. Watson Paper Mill Co., where his ability as a keen reliable business man was demonstrated, and although this is his first experience in electric railway building, he has shown himself possessed of qualities that make him a master hand.

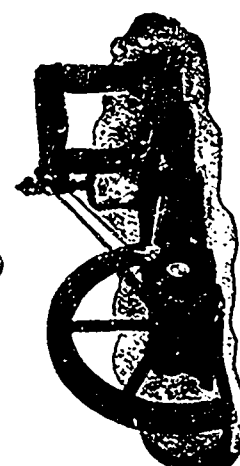
The Von Echa Co. is much pleased with the spirit displayed by the people as regards this road, and predict better business for it than has heretofore been hoped for. But the manner in which the company has acted has been proof of its confidence in the venture. All the rights of way have been bought and paid for, the entire road-bed from Woodstock to Beachville is owned in fee simple by the company, it constructed its own bridge instead of using the county bridge, its machinery and equipment are the best to be obtained in Canada, and it has paid cash for everything. The first car is much handsomer than those usually seen in

W. A. FLEMING & CO.

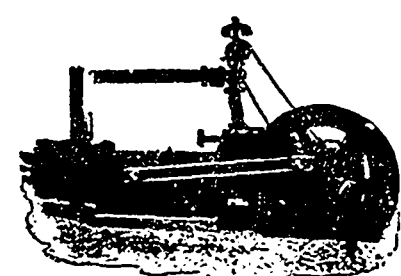
MILL SUPPLIES CAMEL BRAND BELTING
 HOSE of all kinds
 DRIVING ROPE
 BELTING of all kinds
 771 CRAIG STREET, MONTREAL.



R
A
N
D



R
A
N
D



MINING
MACHINERY

The Canadian
Rand Drill Co.

MONTREAL
SHERBROOKE,
HALIFAX, N.S.
TORONTO, ONT.
RAT PORTAGE, ONT.
ROSSLAND, B.C.
GREENWOOD, B.C.
NELSON, B.C.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

CRUSHERS-ROLLS

Roll Jaw Fine Crushers Reduce Large Rocks at once to Gravel and Sand. Centrifugal Rolls. Cost half and do three times as much as Common Rolls of equal dimensions, and do finer work.

SEND FOR CIRCULAR.

STURTEVANT MILL CO., 104 Clayton St., BOSTON, MASS.

this country, and is one of the few things not purchased on this side, being made by the J. G. Brill Co., of Philadelphia. The boiler and engine were furnished by the E. Leonard & Sons Co., London, Ont., the motors by the Canadian Electrical Engineering Co., the generator by the United Electric Co., and wire by Dominion Wire Co.

Speaking of the construction and equipment of this road the Woodstock Times says.

The work on the railway has been rapid; the construction and equipment of it thoroughly practical and solid; beauty has not been overlooked, and great regard has been given to the comfort of the patrons of the road. Perhaps, the most singular thing about it is that the road-bed, and some little distance on each side of it, is owned in fee simple by the company.

The power plant is about one mile from Woodstock, but on account of the steep grade at the Woodstock end, is at about the centre of the line. There are six acres of land, a large spring of pure water which supplies the boilers, a brick power house, containing 300 h.p. boilers of the latest and best design, turned out by E. Leonard & Sons, of London, also a 225 h.p. Peerless engine by the same manufacturer. The generator was furnished by the United

Electric Co., of Toronto, and the well known "Jimmie" Johnson, of the Dominion Wire Co., filled the order for the long-drawn-out copper conductor. Across the road from the power house is the frame car barn sufficiently large for present needs, and planned for additions which will be made an additional equipment is put on. The company is pushing the work as rapidly as possible, in the hope to reach Ingersoll before cold weather stops operations, and will at once place orders for duplicate machinery for the power house.

The handsome car, "Estelle," which name is supposed to have an esoteric meaning, and will no doubt prove a star, a guiding star, to its owners, is a double truck, thirty foot Brill, stronger than the average street railway car, and beautifully decorated. Other cars will follow the "star" as soon as the track is completed.

HUMBER RIVER WATER POWER.

Toronto City Engineer Rust has made a report to the City Council regarding the available power of the Humber river near this city. In it he says that the cost of a rubble concrete dam at Baby's Point, faced with ashlar 925 feet long at top and 510 feet

at bottom, 134 feet high, would be \$1,060,200. The cost of installing an hydraulic electric plant of 6,000 h.p. gross (480 h.p. net), and transmitting the same seven miles to the centre of the City of Toronto, would be \$191,900, or a total of \$1,252,100. To this would have to be added for engineering, legal and other expenses, \$187,900.

The Engineer does not state land damages or the cost of the reconstruction of railway and highway bridges or roads.

The cost of the Weston dam, he says, would be \$360,000, in addition to the dam at Baby's Point. This dam also would be rubble concrete, faced with ashlar, 650 feet long at top, 430 feet at bottom, and 80 feet high, including tail race, valve house, valves, pipes, etc., \$360,000.

This dam could either be used as a feeder to the Baby's Point power house during dry periods, or as a special power, or both.

The Engineer adds: Taking it as a feeder only we have the following estimate based on assumption that this reservoir is so extensive as to afford complete storage to the Humber River watershed, which may be drawn upon during dry periods. This assumption is made merely from a general view of the Humber River valley at this point, but this reservoir appears to be fully as extensive as Baby's Point reservoir.

Adding to the cost of the dams the hydraulic electric plant, engineering and light expenses, etc., the Engineer figures out a bill of \$2,054,800.

He says, however, in addition to the Weston dam, in view of the problem of dry seasons, there should be established a small plant of 1,000 gross horse-power, costing, say, \$40,000, or additional smaller reservoirs could be built farther up the Humber River, so as to conserve the water at points up stream, and in this way develop 66 feet head at Weston and 140 feet at Baby's Point, or, say, 205 feet total head. With such supplemental reservoirs the gross horse power during three dry seasons should be, say, 20,500 to ten-hour horse-power gross, or, say, 16,000 ten-hour horse-power net.

The cost of installing the necessary machinery to develop this power and place it on

BLACK IS BLACK

Extra C is our best grade. We cannot make anything better than the best. You cannot buy anything better, try where you will. When you buy, see that our Trade Mark and grade are stamped on it and quality will be there.

D. K. McLAREN

Mfr. "GENUINE OAK" BELTING

88 Bay St., TORONTO

Factory, MONTREAL

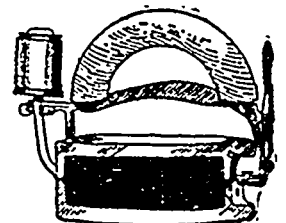
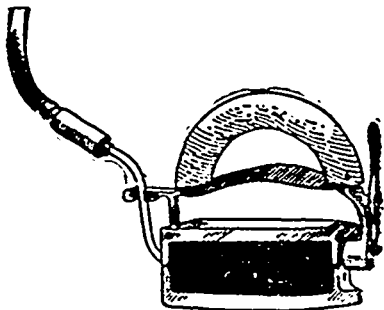
ONE AGENT ONLY IN EACH TOWN WANTED

WRITE US FOR PARTICULARS ABOUT

"PERFECTION"

Self-Heating Sad Iron

Something New. Sells Well.



The EDWARDS SAD IRON CO., Confederation Life Building, Toronto, Canada.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

the Toronto market could easily be estimated, but as the information needed for estimating the cost of the necessary supplement of dams and consequential damages is not at hand this phase cannot be entered upon. Additional water from the Credit River can also be carried to the basin of the Humber near Ingwood, by constructing a dam on the Credit and an open cut to the watershed of the Humber, but there is not sufficient information at hand to determine whether the cost of this work would be justified by the addition of about 100 square miles of watershed to that of the Humber River. The opening of a channel from Lake Simcoe which has 1,200 square miles of drainage area, would render an enormous power available at these two dams and at other dams which would be built higher up the Humber.

A rough estimate of the cost of cutting a canal, say, 50 feet wide, at the bottom and carrying in it 10 feet depth of water from Lake Simcoe at a speed of, say, 1½ feet per second, would be 48,000,000 cubic yards at twenty-five cents per cubic yard, equal to \$12,000,000. This water would develop under head of 205 feet at these two dams, 24,410 gross horse-power for 24 hours, or 19,200 net horse-power for 24 hours.

HYDRAULIC PRESSES.

Messrs. Wm. R. Perrin & Co., press manufacturers, whose Toronto works are at 59 Richmond street east and office at 122 Church street, have sent us their Press Catalogue No. 7 in which many of the hydraulic, screw and other presses made by them are illustrated and described. Some of these are: Hydraulic press with belt power pump; knuckle-joint press; hand power, for pressing tankage, apples, etc., where a light pressure only is required; knuckle-joint press with power attachment; knuckle-joint scrap press with curb; knuckle-joint oleo and tallow press; lever hand presses; box presses; the Cushman box press, a press that travels on an overhead track; combination platform press on wheels, etc; also belt and steam hydraulic pumps. Other presses shown include sugar filter press; square press for filtering oils, syrups, dry colors, etc.; linseed oil presses; press for varnish filtering, chlorination plants, etc.; presses for experimental work in which paper or cloth may be used; also direct acting blowing engines, duplex pumps, rotary pumps, etc.

Messrs. Perrin & Co. build all sizes and constructions of filter presses, hydraulic presses, screw presses, knuckle-joint presses, steam and air presses, etc., and are prepared to give full information at any time regarding them, and will make experiments on different products without charge. Address as above.

MAN, MUSCLE, AND COAL.

The fact that the new steamer Deutschland developed power at the rate of one horse-power hour (one horse-power exerted for the space of one hour) for each one and one-half pounds of coal consumed, is commented on as a remarkable thing for marine boilers and engines. A better showing has often been made in steam vessels, says Iron and Steel, but not of the Deutschland's kind. Static power producers have done considerably better than this. At the Edison power plant, power has been developed at the rate of one horse-power hour for each pound of coal consumed. Here is an achievement worthy of driving a stake or

planting a monument in the highway of civilization. A few easy equations from this starting-point will lead us to:

One pound of coal equals one horse-power hour.

Two thousand pounds coal equals 2,000 horse-power hours.

Two thousand pounds equals 200 horse-power days of ten hours each.

One horse-power hour equals fourteen man-power hours.

Two thousand pounds of coal equals 2,800 man-power days of ten hours each.

Two thousand pounds coal equals nine man-power years of 311 days each.

Value of 2,000 pounds coal, excluding transportation, \$1

Annual production of coal in the United States, 240,000,000 net tons.

Potentiality in man power years of 240,000,000 tons of coal, 2,160,000,000 years.

Ratio between 20,000,000 male workers and the potentiality of 240,000,000 tons of coal, 1 to 108.

That is to say, 20,000,000 workers, without the aid of coal, would have to labor 108 years to develop a force equal to the potential energy of the present annual production of coal in the United States.

A NEW CANADIAN IRON CENTRE.

A Buffalo correspondent who seems to know what he writes about says—

With the completion of the improvement to the St Lawrence canals this season, the district bordering on the waterway from Port Colborne to Montreal has become the most advantageous on this continent, or possibly in the world, for the iron and steel manufacturing industry. To prove this here are the facts.—

1 The most available supply of the best

"Capitol" Cylinder

"RENOWN" ENGINE

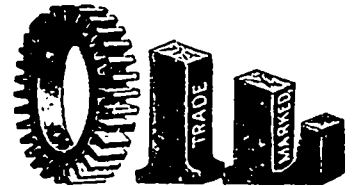
"ATLANTIC" RED

RELIABLE WELL-KNOWN BRANDS

ALL ORDERS PROMPTLY FILLED

THE QUEEN CITY OIL CO. LIMITED

SAMUEL ROGERS, Pres. TORONTO, Canada.



YOU ONLY GET
BRILLIANT MOUNTINGS

—BY THE USE OF—

TRIPLE EXTRACT

Sutton Polishing Compound

FOR SALE BY ALL THE LEADING GROCERS, HARDWARE
AND HARNESS SHOPS OR THE
MANUFACTURERS

The Wm. Sutton Compound Co.
of Toronto, Limited.

WM. R. PERRIN & CO., 122 CHURCH ST.,
TORONTO.

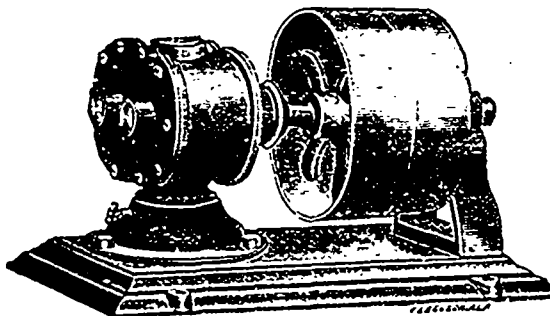
WE BUILD

**Rotary
Pumps**

POWER
OR
HAND.

MANUFACTURERS

**PACKING HOUSE MACHINERY
AND PRESSES.**



oro is at the head of the lakes, is in vast quantities, and can be carried to Port Colborne as cheaply as to any other assembling point.

2. Coke can be delivered at Port Colborne almost as cheaply as at any other assembling point.

3. An unlimited supply of limestone is at Port Colborne.

4. Port Colborne is at the head of the 14 foot waterway to the seaboard, and has the best distributing facilities of any assembling point.

5. The Dominion Government gives a bounty on every ton of iron and steel produced in Canada.

These five facts prove that Port Colborne has extraordinary advantages over every other point on this continent for the production of pig-iron and steel billets, and for iron and steel manufacturing. Comparison with the advantages of other assembling points but strengthens the proof. Pittsburg, now the centre of the iron and steel industry, is handicapped by a short rail haul of raw material, and a long and expensive rail haul over a mountain range to the seaboard for export trade. Even if the St. Lawrence route is used for export trade—and the experiment is to be made this fall—there is a short rail haul in conjunction. Cleveland and Buffalo have, as an advantage over Pittsburg, a less expensive rail haul to the seaboard, because no high mountain range intervenes, the use of the Erie Canal—rapidly becoming useless—and the use of the St. Lawrence route without a rail haul. Over these three points Port Colborne still has the advantage of the bounty on raw product, and, furthermore, the extraordinary advantage of drawing the

manufacturing industry to the district between Port Colborne and Montreal because the pig-iron and steel billets from the furnaces at Port Colborne could be distributed cheaply at all points along the 14-foot waterway to the seaboard, and supply manufacturing material to innumerable industries in that district at a lower price than the distributing facilities for home trade at Pittsburg, Cleveland or Buffalo would permit. In brief, the transportation of iron, either as a raw or manufactured product, is not desired by railways owing to its bulk. It classes with ore, coal, grain and other articles of bulk, and the traffic goes to the waterways wherever possible. Canada has equal advantages for an assembling point in the iron and steel industry, and extraordinary advantages through the 14-foot waterway to the seaboard to distribute raw material for manufacturing. Therefore it remains with the business men of Canada to avail themselves of the opportunity to centralize the iron and steel industry of the world along the Canadian shore of Lake Ontario and the banks of the Welland and St. Lawrence canal system. The country that controls the iron and steel industry of the world is bound to lead in commercial strength.

Frank B. Baird, President of the Union Iron Works in Buffalo, said to your correspondent that unless the Erie Canal is transformed into a barge canal the iron and steel industry will go to Canada. He explained this by stating that if the Erie Canal is enlarged innumerable furnaces will be established at Buffalo, and their output of pig-iron and steel billets distributed along the canal so cheaply that manufacturing industries will increase, until the district between Buffalo and Albany would

become the Birmingham of America. He takes the ground that England, Germany and Belgium are short of raw material, and must get it from America or lose their manufacturing trade, and America has only to hold the raw material for home manufacture to capture the trade of the world. But for the United States to accomplish this, the improvement of the Erie Canal is essential, so that the raw product can be cheaply distributed to manufacturers; otherwise Canada, having already the facilities for distributing the raw product cheaply to manufacturers in her country, and also having equal advantages in producing the raw product, is bound to capture the iron and steel trade of the world.

Canada's position and opportunity is established. That of the United States is not, for the Erie Canal is not likely to be improved. Indifference over the improvement of the Erie Canal was never more marked. New York City shrugs its shoulders and declares that its export and import trade is increasing without the aid of the canal. Buffalo refuses to warm up, declares that she has now the St. Lawrence waterway to maintain low rates, and that she has enough to do to build up her own industries without helping towns in the interior. Farmers in New York State have little interest in the canal, and a lively memory of millions being squandered through it by political parties. The fleet of canal boats has decreased to a small number, and canal men make too little money to build more boats, and capitalists refuse to invest in canal business because they know that the railroad companies are hostile to the waterway and in time will make it a dry ditch. The result is that no one believes that a

COWAN & CO., - GALT, ONT.

Manufacturers of

WOOD-WORKING MACHINERY

Engines and Boilers,

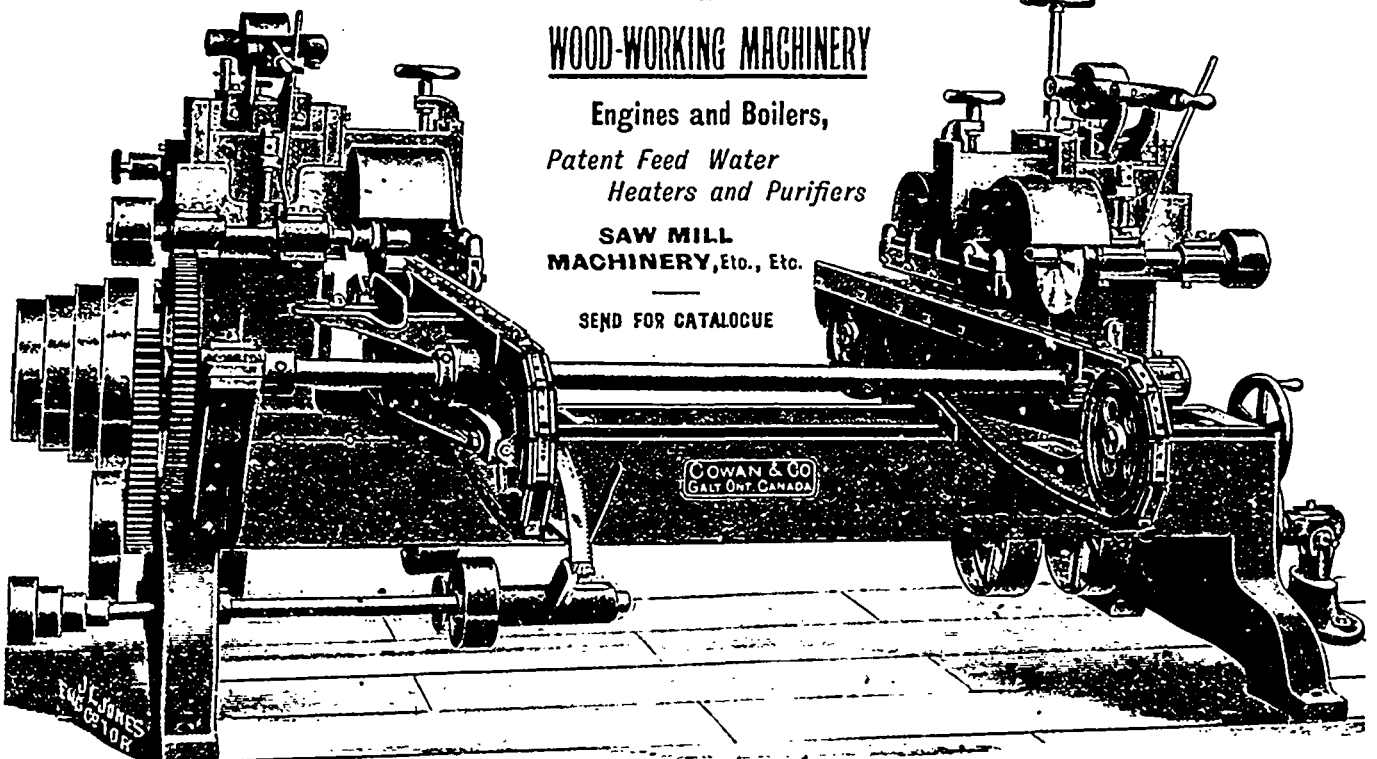
Patent Feed Water

Heaters and Purifiers

SAW MILL

MACHINERY, Etc., Etc.

SEND FOR CATALOGUE



IMPROVED DOUBLE TENONING MACHINE.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

majority vote for the improvement of the Erie Canal is possible, and therefore indifference in the matter is general.

Pittsburg, in becoming the centre of the iron and steel industry, commenced with a limited ore deposit amidst unlimited coal fields. The limit of the ore deposit was reached and supplies had to be brought from the head of the lakes. Fuel cheapened and commenced to move towards the ore, with the result that Lake Erie ports became better assembling points, and Buffalo the best of all in the United States. Then it was that local capitalists in Buffalo went down to Scranton, showed Buffalo's advantages to the Lackawanna people, and offered to invest heavily if the Lackawanna iron and steel works would be moved to Buffalo. The offer was accepted and to-day a \$25,000,000 plant is being established in this city. Other manufacturing ports on Lake Erie have progressed in a similar way. It is evident that Canadian capitalists have only to show as much enterprise in order to develop the extraordinary advantages the district between Port Colborne and Montreal enjoys for centralizing the iron and steel industry of this continent.

WAGES FOR A DECADE.

An interesting summary of the results of an investigation into the rates of wages during the last decade has just been published by the United States Commissioner of Labor. The investigation covers the years from 1891 to 1900, inclusive. The particulars upon which the summary is based were secured directly from the pay-rolls of establishments in all sections of the country. Information was secured from 148 establishments, representing 26 industries and 192 occupations. The data included relate to manufacturing industries almost exclusively. Facts were gathered in relation to steam railroads and street railways, but those have been excluded. It is admitted by Commissioner Wright that the data from which the statistics as to wages were prepared do not afford the basis for a strictly scientific calculation of relative wages, but a careful examination of the figures leads him to believe that they are fairly representative and approximate closely the actual conditions of the country.

In the presentation of the data the Commissioner has selected the year 1891 as a basis or standard, and has assigned to it a percentage of 100. The next year, 1892, is given a percentage of 100.30, showing a slight increase over the figure for the preceding year. In 1893 there was a decrease,

the percentage being given as 99.32. In the year following there was a further decline to 98.06 per cent. The year 1895 saw a decrease to 97.88 per cent, which was the lowest point reached in the period. In 1896 there was a slight increase to 97.93 per cent., which was followed by a gain in 1897, when the percentage was 98.96 per cent.

A slight reaction in 1898 lowered the percentage to 98.79 per cent., but in 1899 there was an increase to 101.54 per cent., and in the current year the high-water mark for the period was reached, with a percentage of 103.43 per cent. It will be seen, therefore, that the wages were highest at the extremes of the period and that the lowest point was reached about the middle of it.

In commenting upon the figures Commissioner Wright points out that during the years in which the rate of wages declined the rates of 1891 and 1892 remained in many instances unchanged. So during the last few years, during which the general course of wages has been upward, the wages in certain particular industries have not corresponded to the general rise. In other instances the percentage of decrease was notably large during the period of depression, while during the last two years of the period the reverse was true, and a much larger increase really took place than that indicated by the figures given. In short, wages in some instances showed little fluctuation, while in others they were more sensitive, responding quickly to general conditions of depression or activity. One thing indicated by a comparison of the rates of wages is that the fluctuations have not been very great—not so marked, indeed, as current opinion would lead one to expect. The gratifying fact is brought out, however, that the rate of wages shows an increase as compared with 1891 and 1892, when wages, as measured in gold, were higher than at any preceding period in the history of the country.—Bradstreets'.

PEAT FUEL.

A recent issue of Stahl und Eisen, contains an article in which the author, Dr. Frank, proposes to utilize the great peat beds of North Germany for the production of electricity on a large scale, says a London publication. He estimates that a hectare of turf, three metres thick, gives 2,500 tons of dry turf, equivalent to 1,200 tons of coke, or in English measure an acre of turf, ten feet thick, gives 1,000 tons of dry turf, equivalent to 480 tons of coke. The mosses of the Evus Valley, which cover an area of 1,000 square miles, might furnish the equivalent

of 300,000,000 tons of pit coal; that is to say, more than the total production of Germany for three years. The turf would be burnt at central stations of 10,000 horsepower capacity, consuming annually 200,000 tons of turf, the product of 200 acres of the beds. One application of the power produced would be to the service of the canal connecting Dortmund to the Evus, which will soon be finished, but the author thinks the most interesting will be the manufacture of acetylene, the materials for which can be obtained easily and cheaply in the neighborhood. With 10,000 horse-power a quantity

**THE BOURNE-FULLER CO.
IRON, STEEL
AND
PIG IRON
CLEVELAND, OHIO, U.S.A.**

YOU TAKE NO CHANCES.
When over fifty representative concerns have recently repeated their orders for



Cross Oil Filters
You take no chances. It's the Oil Filter you want. Let us send one on approval at our expense. Catalogue 26

The BURT MFG CO.
Akron, Ohio, U.S.A.
Largest Mfrs of Oil Filters in the World, also Burt Exhaust Head.



TO EXPORTERS AND IMPORTERS

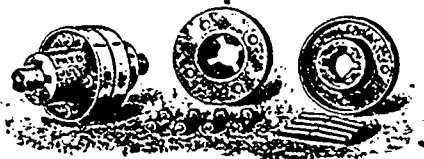
The Publishers beg to draw attention to the preparation of the 15th edition of the "MERCHANTS' MANUFACTURERS' & SHIPPERS' DIRECTORY OF THE WORLD," containing classified lists of Trades and Tariffs for all countries. Highest award—Gold Medal—Paris, 1900. For further particulars, charges for advertisements, etc., apply

Dominion Branch, Kelly's Directories Ltd.
71 Victoria St., Toronto, Ont.

Lists of addresses furnished for all trades—all countries.
W. P. Dent, Manager. Head Office, London, W.C. Eng.

Nicholson Patent Flanged Face Compression Shaft Coupling

- Is easily and quickly attached to or detached from shafting.
- Will adjust to a somewhat larger or smaller than standard size shaft.
- Has **DOUBLE** the grip of other **COMPRESSION COUPLINGS** and is the most perfect-fitting coupling made.



- Saves cost of key-seating shafts, fitting keys, and refacing couplings after being keyed on shaft.
- Holds the shafts in accurate alignment with each other, the jaws being full length of coupling and extending over both shafts.
- Has a very powerful grip equally exerted from four sides (not on two sides as with the majority of couplings).

PRICE LIST AND DISCOUNT ON APPLICATION.

Our New Supply Catalogue (Desk or Pocket Size), will be mailed free to anyone on application.

WE CARRY WOOD SPLIT PULLEYS, STEEL GRAFTING, LEATHER AND RUBBER BELTING, COUPLINGS AND SAFETY COLLARS IN STOCK

THE FAIRBANKS COMPANY, 749 CRAIG STREET, MONTREAL

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

of acetylene can be produced daily, equivalent for lighting purposes to 150,000 gallons of petroleum, or annually in value to 20,000 tons of foreign imported petroleum.

There are millions of acres of peat in Canada that are available for fuel that are waiting to be utilized.

Woodstock, Ont., is the home of John Henry, father of the inventor of the electric car motor.

THEIR GROWING TIME.

The Electrical Construction Co., London, Ont., find their business so expanding and growing that they have deemed it advisable to enlarge their premises and equip their factory with the latest modern improvements for facilitating the economical and convenient handling of their machinery. They have recently purchased five lots on Dundas street, opposite the Court House,

having a depth of 200 feet on which they propose to erect their three story factory. This company have recently extended their business to include fixtures, house wiring, and general electric supply trade, together with several specialities of foreign manufacture. They will in their new factory be prepared to handle light and power generators of all sizes and for all requirements. Their factory is being built according to the plans of the so termed modern machine shop, having a travelling crane extending the entire length of the shop, with galleries on each side for lighter work, the main floor being used for the heavy tools and handling of heavy work. As soon as these new works are in operation the company will be in position to turn out the very best high grade machinery at a minimum of cost.

The Diamond Machine Screw Co. Limited, Toronto

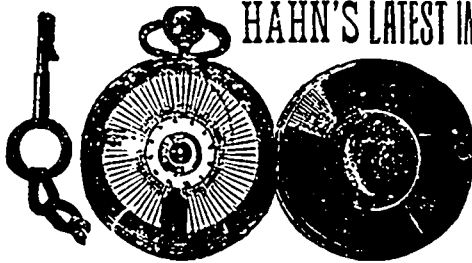
MANUFACTURERS OF

MACHINE SCREWS and MILLED WORK

OF EVERY DESCRIPTION

COLD PRESSED NUTS

SEND FOR CATALOGUE AND PRICE L



HAHN'S LATEST IMPROVED WATCHMAN'S TIME DETECTOR

This Clock is adapted for six or twelve stations, and the keys are all different, ranging from 1 to 6, and 1 to 12, instead of as in the old style Time Detectors, which mark either by holes or an impression on the dial, being the same for all stations.

For circulars, prices and further information address

A. NANS & CO., Room No. 45, Graham Building, 127 Duane St. NEW YORK

This Clock received the First Prize at World's Fair

CANADIAN LUMBER.

In compelling all holders of stumpage concessions to saw their logs in Canada, the province of Ontario has acted well within its rights, and its action can be defended on moral as well as on commercial grounds. Secretary Gago has been requested by Senators McMillan and Burrows and by Reps. Cramp and Fordney to apply the retaliatory clause of the Dingley law to Canadian lumber, and open up the way to a general war of tariffs between the two countries. The secretary is said to have refused to comply with the demand and to have informed the gentlemen they must apply to Congress for relief. If this is the position that Secretary Gago has taken, the secretary is right.

Many of the men who are demanding that all trade between the United States and Canada shall be disturbed for their benefit favored the \$2 tariff. Senator Burrows himself, who is more responsible for the \$2 schedule than any other member of Congress, is reported to have declared that "the action of the Ontario Government in this manner is an infernal outrage, and that it is just as much matter for diplomatic action as the seizure of American flour in South Africa." If American lumbermen had succeeded in establishing a tariff of \$2 a thousand on lumber, the Government of Ontario issued an order providing that owners of Ontario stumpage rights must saw the logs in that province. That made it impossible for certain Michigan mill owners who had cut all their own pine to raft logs from Canada, saw them in the Michigan mills and reap, at the expense of one of the natural resources of Canada, the benefit of a tariff that shut Canadian lumber out of the American market. The action of the Ontario Government was rational and reasonable. If Canadian lumbermen were to be deprived of an American market, it was obviously unfair to allow certain Americans who held stumpage rights to raft their logs to the United States, and have free access to a market for their product which was denied to Canadians themselves.—Marino Record.

GARFIELD OIL COMPANY

BRANCH:

WINDSOR, ONT.

GENERAL OFFICES:

CLEVELAND, O.

SOLE MANUFACTURERS

U. S. A.

Zanzibar Anti-Rust Paint

NEVER BLISTERS. NEVER CRACKS. NEVER PEELS-OFF.

Some who use it:

- CONSUMERS' GAS COMPANY Toronto.
- TORONTO STREET RAILWAY CO. " "
- TORONTO INDUSTRIAL EXPOSITION " "
- GRAND TRUNK RAILWAY SYSTEM Montreal.
- MICHIGAN CENTRAL R. R. CO. Detroit.
- HAMILTON COTTON CO. Hamilton.
- OWEN SOUND GAS, LIGHT and FUEL CO. Owen Sound.
- PARKER & CO. " "
- WINDSOR SCHOOL BOARD Windsor.
- RIDDLE & SON St. Thomas.

Write for Prices and Booklet, "A STUDY IN BLACK."

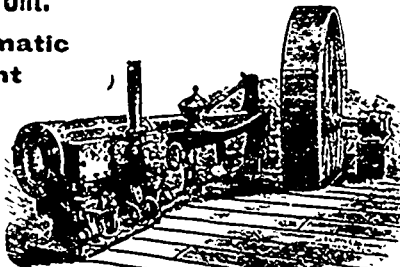
THE SMART-EBY MACHINE CO.

191 Barton Street East, Hamilton, Ont.

LIMITED,

High Speed Engines, Brown Automatic Engines, Boilers, Rogers' Patent Shaking and Dumping Grate Bars, Pumping Machinery, Electric and Hand Power Travelling Cranes, Shafting, Pulleys, General Machinery, Etc.

Western Office—435 Ross Av., Winnipeg.



CANADIAN IRON ORE.

In estimating the amount of lake business for next year and the probable rates for ore and other commodities, says the Chicago Journal, both the vesselmen and shippers are taking into account the effect on the market of the brown hematite ore from the Michipicoten district in Canada.

It has been practically demonstrated that Canada can not possibly use all the ore in

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

this region, or as much of it as can be mined in a season. The pig iron industry across the border is still in its infancy, and the steel trade is little better. With nine furnaces in existence the greater part of last year was spent with four and five of them out of blast. The supply of ore in Canada has been more than enough to keep the furnaces going, so that unless the furnace capacity is greatly increased, and the demand for finished material grows apace, the ore from the Michipicoten district must seek a market in this country, or else lower the prices in Canada to a ruinous notch. According to reports the ore will be shipped here. Mr. Clergue, who is developing the new mines, was educated in the ore business in Ohio, and it is said, he is favorably impressed with the chances of the Canada mineral having a ready sale here. The new mining territory is being developed very rapidly, and the output will probably be increased two-fold next season. Shipments to Ohio ports will likely cause a flurry in the market, especially so if the Algoma railroad is in operation in time to handle the product with the least possible cost and the greatest dispatch.

It is reported from the mining districts in Ontario that the Canadians will demand lower freight rates so as to overcome the tariff on ore. By this means it is figured

that the product will be put on equal terms with the ore produced in the North-West. The real chance for the success of the new mines, however, lies in the fact that the cost of mining is considerably lower than in this country.—Marino Record.

THE ALGOMA CENTRAL RAILWAY.

Rapid progress is being made by the Algoma Central Co., in its railway line towards Hudson Bay.

There are now some forty-five miles of road completed, on which trains are running, and this is being added to at the rate of half a mile daily. The contracting firm of Foley Bros. has the work in hand, and it is to be built 100 miles more under the present contract. This will be finished during the coming year. Enough will be built to reach the Canadian Pacific main line at Mississauga, and from there north there is no sign of habitation or of civilization until Hudson Bay is reached. It will be some years before the latter part of the line is completed, but the company is under agreement to build it, and the scheme is no more chimerical than any other railway line projected into new and untried territory.

The public knows nothing of the resources of the vast region lying between Lake Superior and Hudson Bay. F. H. Clergue,

the head of the great syndicate developing the resources of this region, has had 100 prospectors and mineral and timber experts out all summer through the region to be penetrated by the road. These men are now acquainting him with the possibilities, and no man is more enthusiastic than he over the future of the region. They tell him that vast forests of spruce, pine, hardwoods, tamarack and cedar lie all along the route. The trees are large and of fine clear grain. There are vast beds of kaolin and china clay, iron ores, carbonate of iron, copper, gypsum and other minerals. There are millions of acres of land timbered with maple, beech and oak—fine farming lands once cleared. These lands it is the company's intention to settle with farmers from the north of Europe, as largely as possible from the British Isles. It is under contract with the Ontario Government to locate on these lands at least 1,000 families per annum for the next ten years, and it is establishing an immigration office in England, which is already arranging to bring out a large number of persons next spring.

The spruce forests continue northward of the hardwood clear to the shores of Hudson Bay. They form a source of raw material for paper making for an unlimited period. There is enough spruce along the line of this road to make the paper of the world, it is

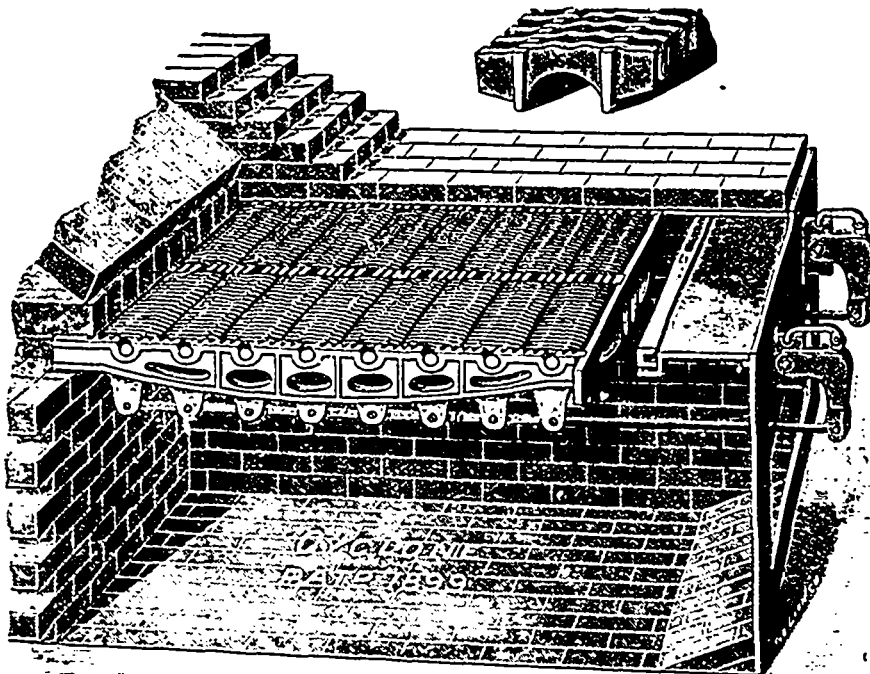
FOR
THE CUMMER DRYERS. **Mechanically Drying Everything**
THE F. D. CUMMER & SON CO.,
HUNDREDS IN OPERATION. **CLEVELAND, OHIO.**

John R. Barber, President.

Geo. E. Challes, Sec.-Treas.

Henry Truesdell, Bus. Man.

THE CYCLONE GRATE BAR



Simplicity, Durability, Economy.

FIRST TEST at Hamilton Asylum was reported as follows: Was taken with the Grate Bars put in by Waterous Engine Co. of Brantford.

People's Coal used.....	1,950 lbs.
Water Evaporated.....	18,100 "
Weight of ash remaining	552 "
Test commenced.....	at 9 a.m. April 17th.
Ended.....	at 5 p.m.

SECOND TEST was made with Cyclone Grate Bar of Toronto, with the following results:

People's Coal used	1,850 lbs.
Water Evaporated.....	20,608 "
Weight of ash remaining.....	315 "
Test was made	April 21th.
Test commenced	at 9 a.m.
Ended.....	at 5 p.m.

These tests were made under 75 horse power Boiler in west boiler house main building.

(Sgd.) J. W. MARTER,

Chief Engineer.

TESTIMONIAL.

MESSRS. THE CYCLONE GRATE BAR CO.,
 Limited, Toronto.

GENTLEMEN. Replying to yours of recent date, we are pleased to state that the Grate Bars put in some months ago are giving splendid satisfaction. Would not do without them.

Yours truly,

SCHAEFER, KILLER & CO.

August 10th, 1900.

Representative for Ontario and Quebec:

W. G. BLACKGROVE,

Cyclone Grate Bar Co. **E. J. PHILIP,** Office: 404 Temple Building,
 Manager. Telephone. **TORONTO**

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

estimated, for 1,000 years. The company is using this spruce for its mills at the Sault. One of these is running steadily, and the second will be completed and in operation this year. Together, these mills will make a product of wood pulp valued at \$2,400,000 and they will return a profit sufficient to pay interest on the entire vast investments of the company and its subsidiary concerns.

THE BUFFALO FORGE CO.

One of the features of the power plant to be provided for the approaching Pan-American Exposition at Buffalo is a complete duplex induced draft apparatus. This will comprise two mammoth full housing up-blast steel-plate fans, standing about seventeen feet high, with overhung wheels and water-cooled bearings. These fans are directly connected each to a 14x12 horizontal centre-crank engine with automatic governor, and are designed to serve seventeen Manning boilers of about 3,000 horsepower capacity, discharging the gaseous products of combustion into two short stacks of sheet steel. The fans, engines and broaching connections for the boilers, together with the steel-plate stacks themselves, are constructed complete by the Buffalo Forge Co., Buffalo, N. Y.

The same company is also building for the Exposition, a horizontal centre-crank class A tandem compound engine of 300 horse-power. The cylinders of this engine are seventeen and twenty-eight inches in diameter, with a common stroke of eighteen inches. This machine will be applied to electric lighting purposes.

In addition it may be mentioned that the heating and ventilating plant for the permanent New York State building, of which Mr. George Cary is the architect, will also be constructed by the above mentioned company. The apparatus will consist primarily of a heater and a large centrifugal fan, the latter driven by a direct connected 15x10 class A Buffalo Forge Co. engine.

BARBED WIRE FENCE TELEPHONES.

A cheap system of telephone is in operation by farmers between three cities in the State of Indiana. The line is not an experiment, but an actual daily service, and comparing favorably with the system of the regular companies. One line is fourteen miles long, connecting five stations; the conductor is the top wire of a barb wire fence treated to a thick coat of rubber paint. Common galvanized wire is used at the fence sections to continue the circuit to a connection with the next fence, the same arrangement being carried out at the railway crossings. The line works somewhat faintly when covered with morning dew or very wet weather, but even then it is useable. When the number of subscribers is not heavy the service is satisfactory, and farmers converse audibly with one another eight to ten miles distant. It is said that the line has been such a practical success that settlers are co-operating for the purpose of extending the system throughout the whole district. As further evidence of the serviceability of the barb wire telephone, a commercial company connects its office with the works, thirteen

miles distant, by such means. Thus it possesses, practically, its own private telephone at a minimum of cost.

A CANADIAN GOLD INGOT.

The New York Herald of a few days ago says:—

Gold imports to this city were swelled in a novel manner yesterday. The biggest lump of the precious metal that ever came across this continent was received by the Bank of Montreal, and will soon be scattered through many hands in the form of United States double eagles. It is worth \$154,765.

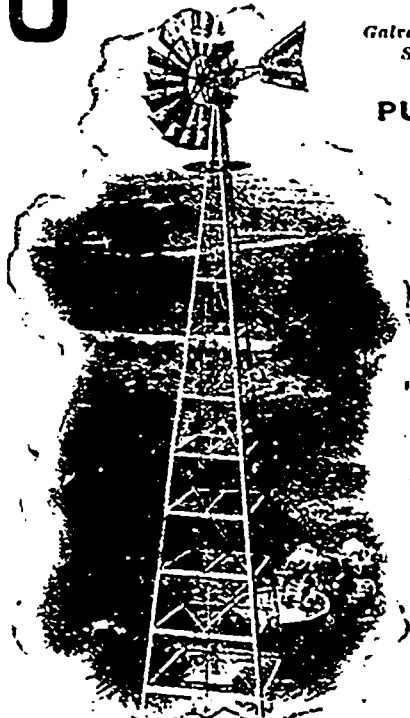
The value of this latest import looks pretty small in comparison with big shipments which financial houses have recently been engaging for this country, but it comes in much more interesting shape. To the Cariboo Consolidated Hydraulic Mining Co., belongs the honor of having mined this gold. It was taken out of its mines in the Cariboo Ridge, in British Columbia, in various lumps of ore, which were all smelted there. The gold was put into the form of a big coin, weighing 9,040 ounces, and is virtually devoid of alloy.

As a rule, when gold mined near the Pacific Coast is used to swell the volume of money in this market, it is not shipped right across the country by express. The expense is too important an item. It is simply deposited in the Government mint at San Francisco or assay office at Seattle, and the owners of the metal get their money through a cheque on the United States sub-Treasury here.

This particular shipment came by ex-

STAR WIND MILLS

FOR PUMPING OR POWER PURPOSES



Galvanized Steel or Wood, all Sizes, 4 to 26 feet in Diameter.

PUMPING MILLS

FURNISHED WITH OR WITHOUT TANK ELEVATED IN TOWER.

GALVANIZED

Steel Towers

Any height, either Three or four post, with substantial ladder.

TANKS

Any Capacity, Any Purpose Made in Pine, Cypress, Fir or Galvanized Steel.

Our windmills are self-regulating and self-governing, and with our Hoosier Automatic Anti-Freezing Force Pump the windmill outfit takes care of itself, night or day, in calm or storm.

"Hoosier" IRON AND "Fast Mail" PUMPS

Designs and Prices Furnished. Write for Catalogue.

Address **FLINT & WALLING MFG. CO.**

"STATION A"

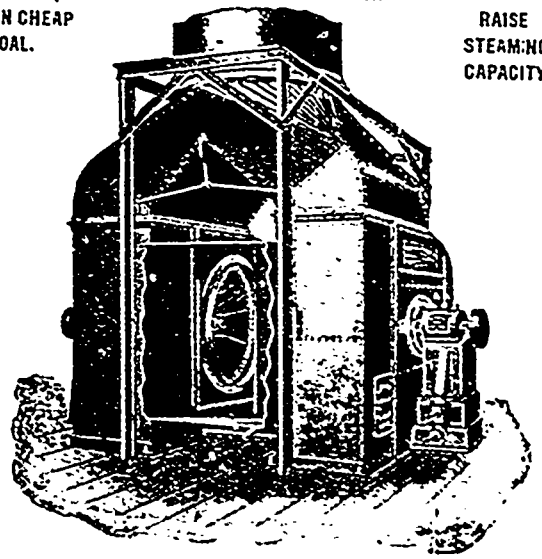
KENDALLVILLE, IND.

BUFFALO FANS FOR

MECHANICAL DRAFT

REDUCE HEAT LOSSES. BURN CHEAP COAL.

INCREASE EFFICIENCY. RAISE STEAMING CAPACITY.



Buffalo Duplex Induced Draft Apparatus.

BUFFALO FORGE CO., - Buffalo, N. Y.

E. A. WALLBERG, Canadian Representative, 410 Temple Bldg., TORONTO

press, however, it arrived in a strongly made box, standing almost eighteen inches high. From the Bank of Montreal it was taken over to the assay office, and will soon be transferred into twenty-dollar gold pieces.

Mr. Hebdon of the Bank of Montreal said yesterday that this was the biggest lump of gold ever smelted at any time in the New World. It was to have been much bigger, for the mining corporation originally intended to put \$210,000 of value into it, but it had to stop work for twenty-four days, because of a delay in getting explosives, and, as a result, the lump did not reach the bodily proportions designed for it. It is a giant among gold lumps, nevertheless. To produce it required sixty-eight days' washings and 2,750 miners' inches of water.

Last August, it will be remembered, a nugget valued at \$175,000 was shipped by the same company to New York, and was then called by The Evening Post the "King Nugget," being up to that time the largest lump of gold ever received at the United States assay office. It was on exhibition in Toronto.

CANADIAN MINES.

Nature seems to be no less kind in providing fresh supplies of valuable products of the mine when new demands arise for them than in raising up new men to meet great national emergencies. There have been those who foresaw the exhaustion of coal and iron and gold by the increasing demands of commerce, but the concern has passed, for many generations at least, even while the

alarmists have been doing their calculating. Amazing deposits of the useful and precious minerals have been found in untouched regions of North America, waiting communication and development to make them of immediate industrial service.

It is particularly interesting to notice the advance in mining discoveries and enterprises in the northern half of the continent. From Cape Nome to Newfoundland the prospectors have been at work winning the usual proportion of rewards and opening new mineral fields to the world. The Alaskan gold deposits are more spectacular but no more valuable than the iron and coal of Newfoundland, which are now in a fair way to be developed in all their magnitude by the colonial magnate, Reid, who makes and mars governments, in what threatened to become virtually his pocket borough. The whole of the Labrador peninsula between Hudson's Bay and the ocean promises great mineral wealth when it shall be explored thoroughly. On the other side of Hudson's Bay, between its shores and the Canadian Rocky Mountains, lie the great cattle ranges and the alluvial plains of the North-West Territories fertile everywhere and habitable far north of the region now settled. In the more northerly portion of the region, in the "great lone land" of Canada, lie lakes and river systems draining into the Arctic Ocean, which are known to few travellers except the men of the Hudson's Bay Company. From their shores begin to come accounts of the discovery of copper, iron and even gold in ample quantities to repay exploration. Around Great Slave Lake, for instance, a body of water as large as Lake Erie, the copper deposits are said to be of immense wealth. Close to our own boundaries, the

gold of British Columbia and the Rainy Lake fields, the coal of Alberta, the iron of Algoma and the nickel of Sudbury are all increasing in importance.

Stimulated by the northern discoveries and the prospect of industrial development, Canadians are working toward the improvement of communication with the remoter regions. Already a railway is under construction from the north shore of Lake Huron north to Moose Factory, on James Bay, the southern extension of Hudson's Bay—which will tap valuable iron and timber lands and find an ocean port for the product, with return cargoes from Europe to interior Canada. The long-discussed plan of subsidizing a railway from Winnipeg to Hudson's Bay is developing into the idea of improving the direct water communication by way of Lake Winnipeg and the Nelson River to York Factory, which would permit cheap and convenient transport for several months each year. Steamers on the Saskatchewan and the Mackenzie rivers and Lake Athabasca and Great Slave Lake are multiplying rapidly. It is evident that the industrial development of Canada is to show remarkable results before many years.—Albany, N. Y., Times-Union.

USE OF MACHINE TOOLS.

A recent report to the Foreign Office from the British Commercial Agent in Chicago gives some interesting statements as to the use of machine tools. In order to so rapidly turn out such large quantities of goods, only machine tools of the very latest pattern are used, every labor and time-saving improvement being at once availed of so as to reduce

THE BEST PIPE THREADING and CUTTING-OFF MACHINES

Are Made by the **ARMSTRONG MFG. CO., BRIDGEPORT, CONN.**

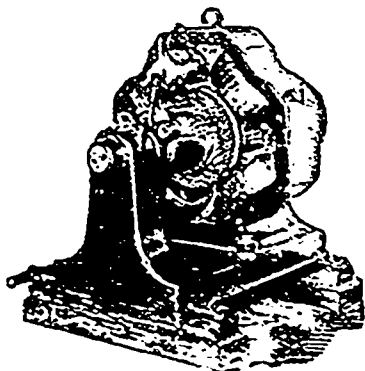
Also Manufacturers of a FULL LINE of **ADJUSTABLE STOCKS and DIES** and Water, Gas and Steam Fitters' Tools.

Send for Catalogue 27.

Factory: BRIDGEPORT, CONN.

New York Office: 139 CENTRE STREET.

Electrical Construction Co. of London, Limited.



MULTIPOLAR MOTORS & DYNAMOS
And Direct Connected Plants for Isolated Lighting.
Repair Work a Specialty
HEAD OFFICE AND FACTORY:
90 YORK STREET, London, Canada.
760 Main St., Winnipeg.
21 York St., Toronto. 131 Granville St., Halifax.

RICE LEWIS & SON, LIMITED

HARDWARE and METAL

Bar Iron, Steel,
Boiler Plate Tubes.

**MACHINIST TOOLS,
PIPE FITTINGS.**

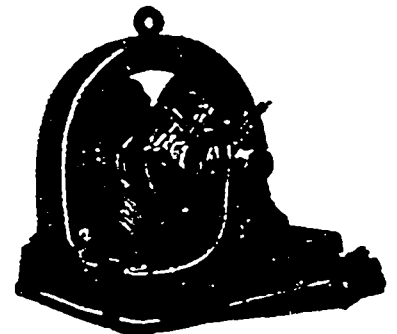
A COMPLETE STOCK OF
STOCKS and DIES. PIPE VICES.

STILLSON & TRIMO
WRENCHES.

STEAM PIPE.

Cor. King and Victoria, **TORONTO**

**TORONTO and HAMILTON
ELECTRIC CO.**



**MOTORS and DYNAMOS
COMMUTATORS REFILLED**

99-103 McNAB ST. N., HAMILTON
'Phone 958

Our Guarantee on Electric Plants.

We guarantee our work—what's more, we live up to our guarantee.

We use only best materials, and attend so carefully to every detail of construction that we can readily agree to make good any fault that might show up in a reasonable time after completion.

Our aim is to make our work so perfect in the first place that no after trouble will occur.

Always pleased to quote prices.

R. A. L. GRAY & CO.
Electrical Contractors,
83 YORK ST., . TORONTO.

Dominion Oil Cloth Co.

(LIMITED)

Manufacturers of....

OIL-CLOTHS of Every Description

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

Office and Works

Cor. St. Catherine and Parthonsals Ste
MONTREAL, Que.



Manufacturers of

Cotton, Jute, Hemp and Flax,
Twines and Cordage,
Mill Banding and Driving Ropes,
Chalk and Fishing Lines,
Seine Twine, Hammocks, Tonnals,
Cricket and Fly Nets,
Cotton Rops and Clothes Lines,
Plough Lines, etc.

HUTCHISON, SHURLY & DERRETT,
1078 Bloor St. West, TORONTO.

the cost of manufacture. The one great object seems to be to save unnecessary labor wherever possible, and to get through with the work as expeditiously as possible. In one large works, he says, I found one man in charge of ten automatic machines, all working at the same time. Some were lathes turning small pieces, others were putting the thread on nuts and bolts, and many others. In this one shop there were fifty machine tools working, and in charge of only five men. It is not unusual to see one man in charge of three or four, of the ordinary small lathes, which are placed in such a position as to make this possible. Drilling machines with batteries of four to six drills are not uncommon, also machines cutting key ways in eight small axles at one time. Consequently, though wages are high, the actual cost per piece is very low, on account of one man being able, thanks to these labor-saving machines, to turn out so much work. In some works ordinary laborers are employed in place of skilled mechanics to take charge of some of the lathes and drilling machines, so as to avoid paying the higher wages of the more skilled men. Owing to the perfection in the construction of the machines the work is almost automatic. As a rule, the American manufacturers do not lay themselves out for making a large variety of articles. They prefer to confine themselves to a few specialties, and make large quantities as perfectly as possible. In alluding to one of the largest agricultural machinery establishments, employing about 9,000 hands, he points out that labor-saving machines and appliances are to be seen everywhere. In the forge, for instance, there is not a hand hammer to be seen. Nothing but tilt hammers, worked from pulleys, and a few steam hammers for the heavier pieces are used. The iron is heated in gas and oil furnaces. Electricity is used throughout, not only for lighting, but also for driving the machinery. Compressed air is also used as an accessory for working the cranes and hoists, and also for operating the pneumatic tools for chipping, caulking, etc. In addition to the tools mentioned there are many other instances where the appliances used for the saving of labor are striking. I noticed a machine for punching sixty holes in iron plates at one stroke, another for riveting at one stroke twenty teeth on to the knife plates of grass mowers. Cart-loads of timber were unloaded in a very few seconds by means of rollers placed lengthwise on the carts, and the pieces of machinery were dipped into paint instead of using brushes. At the works I have seen malleable iron castings play a very important part. They are largely used in place of forged iron. Machine tools of British manufacture do not seem to be in favor in this country. They are not considered suitable for the work to be done, and are generally dearer than those of native make. There are consequently comparatively very few to be seen. The designs of

some of the American tools are certainly very ingenious, and the work they do is exceedingly accurate. They also appear to run at a greater speed than the English ones.

NOISE AS WASTE ENERGY.

Sound is a form of energy, and noisy sound is generally indicative of waste energy. We are so accustomed, says Cassier's Magazine, to regard sound as the natural accompaniment of mechanical motion that the fact that it is a monitorial voice, over telling us of energy wasted, generally escapes attention. The noise of running wheels, of moving water, the crackling of a belt, the hum of a dynamo, the rattle of a motor car or a railway train, are as sure indications of energy resolved into a useless form as the crash of broken crockery and the lamentations of a careless servant. . . . Does one grasp that every puff of exhaust (in a locomotive) means that gases still full of energy are allowed to expend it valuelessly in disturbing the atmosphere; that every jar and rumble and shake means expenditure of power which the engine has to provide? A mile on the bone-shaker of thirty years ago was harder work than ten on a modern bicycle, and it proclaimed the fact that it was an inefficient and extravagant machine in a sufficiently noisy manner. Even with typewriters and sewing machines, the less noise they make the less power is absorbed in working them. Generally speaking . . . the less noise machinery makes the more efficient it is likely to be. Even the interposition of some non-resonant material, as, for example, the use of wooden or hide teeth in wheels, while reducing sound, if we may so put it in a more or less fictitious manner, adds to the efficiency, because it introduces a resilience which minimizes shocks, just as the springs of a coach make it not only more comfortable for the passenger, but easier going for the horses. The question of friction and the noise produced by rubbing surfaces is of very considerable and much more frequently recognized importance, but materially it differs but little either in expression or in effect from the noise of shock. A rod or wire can as readily be caused to produce a note by rubbing it with a resinous glove as by striking it with a hammer. How close the connection is a moment's consideration will show, and will give us the hint that we cure only half the complaint in oiling machinery if we still allow knock, and jump from one evil to another if in order to reduce friction we leave excessive play.

The American Steel Sheet Co., New York, have ordered at different times eleven Cross Oil Filters from The Burt Mfg. Co., Akron, Ohio.

The B. GREENING WIRE CO., Limited



MANUFACTURERS OF



Lang's Patent Wire Ropes
For Colliery and Mining Use.

WIRE ROPE

of every Description
and for all purposes.

HAMILTON, ONT.
and MONTREAL, QUE.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

OPPORTUNITIES FOR TRADE.

The following enquiries have been received at the offices of the High Commissioner of Canada in London, and of the Canadian Section of the Imperial Institute, London, England.

NOTE.—Those who may wish to correspond with any of these enquirers can obtain the names and addresses by applying to THE CANADIAN MANUFACTURER, Toronto. No charge for giving information. When writing refer to the numerals opposite the enquiries.

355. A Glasgow firm of timber importers desire to be placed in communication with Canadian firms able to supply quantities of boxwood.

356. A commission agent in Scotland is open to represent Canadian firms manufacturing household woodware, hardware, etc.

357. An enquiry has been received from a person who desires to correspond with British firms anxious to open up an export business with Canada, his object being to take up the agencies for the sale of goods in the Dominion.

358. A Belgian (Antwerp) firm asks for names of exporters in St. John, Halifax, or elsewhere, of seal oil.

359. Another Antwerp house desires to correspond with Canadian exporters of lard, grease and oils.

360. Enquiry is made by a Manchester firm concerning the opening for a trade in hard and soft felt hats in Canada, and for suitable agents to take up these lines.

361. A manufacturers' agent in Glasgow would be glad to hear of Canadian firms in the furniture trade who require an agent with good connection among cabinet-makers, ironmongers, etc. He is of the opinion that there are many novelties in the shape of Canadian made furniture and woodware that would find a ready sale in Great Britain.

362. A resident in Vancouver, British Columbia, who claims to be posted in mining matters in the province is open to take up agencies for English firms desiring representation.

363. A firm of commission agents at Rat Portage, Ont., would be glad to hear from British firms who desire to push the sale of their goods in that district.

364. An enquiry has been received respecting Canadian asbestos and the companies engaged in working it.

THE CANADIAN MANUFACTURER is in receipt of a request from a large manufacturing and importing house in New South Wales who desire correspondence with Canadian manufacturers of rolling stock of all kinds for railways, tramways and collieries; agricultural implements and machinery of all sorts, wool and hay presses, windmills, horse-powers, pumps, etc., ironwork of every description for bridges, culverts, girders, roofs, tanks, contractors' and builders' supplies, etc. They desire catalogues, price lists, etc. For further information enquire of THE CANADIAN MANUFACTURER.

THE CANADIAN MANUFACTURER is in receipt of an enquiry from a large importing concern in England for names and addresses of Canadian manufacturers of three ply veneer panels. The concern are purchasers of panels 48x18 inches, 3/16 inches thick, veneered on both sides with walnut, oak, gum, sycamore, birch, elm, etc.

THE CANADIAN MANUFACTURER is in receipt of an enquiry from a large lubricating oil manufacturing concern in England for

names and addresses of Canadian refiners of dark and pale cylinder stock oils.

THE CANADIAN MANUFACTURER is in receipt of a request from a large and reliable commercial concern in New South Wales for the addresses of manufacturers of the following articles:

- Linen and cotton goods, all descriptions.
- Brass trimmings for furniture and upholstery.
- Furniture, desks, chairs, etc.
- Leather for furniture and similar purposes.
- Webbing and twines of all kinds.
- Cocoa mats and matting.
- Oil cloths and holeums.
- Bed ticking.
- Lace and muslin curtains and novelties.
- Chamois and buffalo leather for carriages, trimmings, etc.
- Spiral and other steel springs for chairs, furniture, etc.

GREATER BRITAIN.—The District Council of Hornsley is to spend £73,500 in electric installation.

The corporation of Sheffield will soon be in the market for new machinery and equipment for their electric lighting plant to the value of £41,895. Of this sum £3,500 will be for additions to steam plant, £22,000 for new electric machinery, and £5,000 for new feeders, etc., the balance being for contingencies.

Work in the Charing Cross, Euston and Hamstead Railway will be begun early next year. The greater part of the electric equipment will be manufactured in the United States.

The city of Portsmouth is to expend £320,000 on its new electric tramway system, including about twenty miles of track.

The District Council of New Swindon is soon to expend £31,000 for a new electric plant. The steam dynamos are to be three in number, and will cost about £6,000. Tenders for these and other machinery will soon be called for.

A new electric light station is to be erected in Sunderland at a cost, including machinery, of about £73,000.

The Corporation of Oldham, London, is to borrow £157,000 for the purpose of erecting a station at Greenhill for the supply of electrical energy for lighting, power and tramway purposes. Swindon is to borrow £31,000 for the same object, and Newport is to expend £25,000 in extensions to its lighting plant. Other towns where immediate extensions to electric lighting plants are contemplated are Canterbury, Watford, Dudley and Islington. Manufacturers interested in securing a share of the vast business that these orders represent will do well to secure immediately such information as will enable them to tender promptly and effectively when tenders are called for. These undertakings, together with the large number of new tramways also under way, will call for a far larger quantity of machinery and material than English factories can possibly supply.

Toronto Woolen Machinery Co.

We now offer as a going concern the property known as

The Vienna Woolen Mills

Consisting of the following machinery:—

- One set 48 in. Flat Cards, all clothed.
- One 261 Spindle Bancroft Mule.
- One 21 in. G. & M. Picker. One Cone Duster.
- One Fraser's Card Grinder. One Yarn Spooler.
- One 60 Spindle Fly Twister.
- One 108 in. Crompton (one Loom, 4x1 box, 1 harness.
- Two 22 in. Fuboy " " 4x1 " 24 " "
- One 48 in. Gilbert " " 3x1 " 4 " "
- One 48 in. " " " 1x1 " 4 " "
- One Broad Warper and Benmer.
- One Bobbin Winder.
- Two Broad Up and Down Gigs.
- One Rotary Filling Mill. One Cloth Washer.
- One Yarn Washer.
- With Spools, Bobbins, Tools, etc., etc.

BUILDING No. 1.

Two and a-half Storey Frame, with stone foundation, 30x60 feet.

BUILDING No. 2.

Boiler and Picker House One Storey Brick, 24x61.

A never-failing Water Power, all heat by steam and in first-class order. Good local trade has always been done.

The above can be bought cheap and on easy terms. Apply

TORONTO WOOLEN MACHINERY CO.
118 DUKE ST., TORONTO.

The Wm. Hamilton Mfg. Co.

Peterboro, Ont., Can.

Acting as the Patentee's Licensee,

Are prepared to manufacture and supply

SAVERY'S PATENT SHAKE FRAMES

FOR

FOURDRINIER PAPER MACHINES,

As Described in

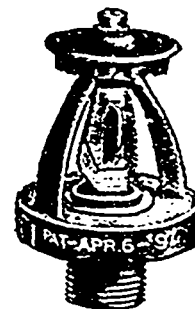
CANADIAN PATENT No. 57,819.

Protection Against Fire

Apart from the protection it affords, it pays as an investment to use an

AUTOMATIC SPRINKLER SYSTEM

From 1/3 to 70 per cent. of cost of insurance saved by putting in an



AUTOMATIC SPRINKLER EQUIPMENT

No charge for estimating

Endorsed by Insurance Companies

The General Fire Equipment Co.

72 Queen Street East,
TORONTO.

Occasionally I receive inquiries from those who desire to supply the large thread and cotton firms in this country with spools and spool wood. Generally speaking, these people purchase spool wood direct, although some of the business is done through agents. Several of the most important, like J. & P. Coates, Ltd., Paisley; Clark & Co., Paisley, and Jonas Brookes & Co., Huddersfield, have purchased largely from Canadian sources in the past, but owing to various causes

(principally perhaps the careless selection of the wood), they have been more inclined to purchase from American shippers.—Lord Strathcona's Report.

The amount of provisions imported direct into Cardiff from Canada gives no idea of the importance of the district as a consumer of Canadian cheese, butter, bacon, etc. I am informed by one of the brokers in this town that Cardiff ranks high as a consumer of "Canadian pea-fed bacon." This gentleman informs me that whereas about eight years ago some ninety per cent. of the bacon imported here was from the States, now some sixty per cent. of such imports are of "Canadian pea-fed," and this notwithstanding the latter is much the higher priced article. The demand for this bacon is not confined to Cardiff, the large mining population in the vicinity prefer "Canadian pea-fed" and are willing to pay the extra price. It appears that not only is the miner somewhat fastidious, but the coarser grades of bacon when taken underground develop objectionable features, while the Canadian product does not. So long as the superiority is retained, so long will Canadian bacon command an enhanced price and an increasing demand. Pea-fed (as Canadian bacon is now known) is going ahead every day, and there is no bacon more in favor with the consumer, as is shown by the higher price invariably paid for it than for the American article; indeed, in many quarters, the lead-

ing brands of pea-fed are now recognized as practically best bacon, and its superior quality is everywhere admitted. As far as one can judge from past experience and from what has always happened when the British public has been supplied with a first-class article, there is a great future for this Canadian pea-fed bacon trade. The quantity of provisions imported into Cardiff is increasing every year. The direct shipments give no idea of the amount of goods received here, as merchants often import on through bills of lading via Liverpool or Bristol, the ocean freights to the former port being at times very favorable in this respect.—Canadian Commercial Agent at Cardiff.

English shop owners are realizing that if they are to hold their own against American and German competition they must have improved tools and machinery, and are in the market for improved labor-saving machinery, machine tools and appliances of all kinds.

A Montreal firm having written to me to inquire what opening existed here for evaporated apples in one-pound boxes, and jams and jellies in glass packages, the opinion of an eminent wholesale firm doing business in such lines was taken, and is contained in the following extract.—In reply to your enquiry respecting a high grade of evaporated apples, to be put up in one-pound cardboard boxes, we may say that we have for some time been importing these goods

SOUTH AFRICA.

Messrs. Kelly's Directories Limited, (London, Eng.) beg to announce that a new edition of the **General Directory of South Africa** is now in course of preparation and desire to draw the attention of Canadian Manufacturers to the importance of the work as an advertising medium for making their goods known to buyers in South Africa. Being the Standard Work it reaches the very people whom manufacturers desirous of opening up or extending their export trade with South Africa, would desire to get in touch with, **THE ACTUAL BUYERS THEMSELVES.**

For further particulars, charges for advertisements, etc., apply to

Dominion Branch, Kelly's Directories Ltd.

71 Victoria St. Toronto, Ont.

W. P. DENT, Manager.

Highest award—Gold Medal—Paris, 1900.

THE BEST IS NONE TOO GOOD

**SYRACUSE
BABBITT**

**BEATS
THEM
ALL**

The largest machinery builders in Canada and United States use our Babbitt Metal.

Is this not sufficient proof of its superiority over other anti-friction metals?

If the largest users are satisfied with our Babbitt Metals, why should it not suit you?

We can furnish you with numbers of testimonials.

Importers and Dealers in

PIG TIN
ANTIMONY
INGOT COPPER
ALUMINUM

NICKEL
BISMUTH
IRON AND STEEL
SCRAP



Manufacturers of

BABBITT METALS
SOLDER
TYPE METALS

COLUMBIA
PHOSPHOR TIN
AND ALL OTHER
WHITE METALS

SYRACUSE SMELTING WORKS,

WILLIAM and ST. THOMAS STREETS,

MONTREAL

Shafting—Hangers—Pulleys

FRICION CLUTCH PULLEYS AND COUPLINGS

Rope Transmission of Power.

HANDSOME ILLUSTRATED CATALOGUE ON APPLICATION.

DODGE MANUFACTURING CO. OF TORONTO, Limited, - - TORONTO.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

from the United States and have sold them under American brands. Our buyers report that the packages are an improvement on the old custom of weighing the apples from the bulk package, as it preserves the color and keeps the fruit free from dust. The trade is undoubtedly increasing in this direction, and if your Canadian friends can compete in price and quality, there is no doubt that their efforts will be attended with success. The difference between the bulk package and the one-pound cartons is from 2s. to 3s. per cwt., which, as you will see, barely covers the expense of packing and package. The advantage obtained by the American packers is that their brands get a firm hold in this market. They are ultimately preferred by the buyers and the trade is in this way assured. We should be glad to handle, on account of your packers, goods of this description, and we would quote them terms on application to us. As to the jellies, the prospects of success with this article entirely depend on the price and how it would compare and compete with the jams and jellies manufactured here. We are of opinion that the American product is made from much cheaper material than what is used by the English manufacturers, but the freight, breakages, and the price of jams being higher in Canada than in England, we are afraid that these disadvantages would be difficult to overcome, and would militate against competing with British packers. The trade in jellies is comparatively smaller in this country than in the States, probably owing to the cheapness of jams. However, the possibilities of introducing a business of this kind are entirely

dependent on the price and the suitability of the article for this market, and before we could give you a reliable opinion we should require to be favored with samples and prices.—Lord Strathcona's Report.

I have continued during the past year to impress upon the War Office the ability of Canadian firms to furnish supplies of compressed vegetables. At the present time the principle source of supply is Germany; but I was able to obtain and forward to you forms of tender for the use of any house in the trade who might like to share these orders. The time was insufficient, however, to enable them to take advantage of the opportunity on that occasion, although I understand that more than one Canadian house have succeeded in securing orders for large supplies of these goods. A representative of the firm in question has since

visited this country, and has no doubt in this way made himself acquainted with the conditions governing the business. The efforts I have made to procure samples of the evaporated vegetables which are supplied by foreign houses, and which generally appear to give every satisfaction, have not been successful up to the present. In addition to the large order given by the War Office, I believe a contract was placed with a maritime province firm by the Admiralty for a quantity of these goods for use in the navy.—Lord Strathcona's Report.

SPAIN.—La Sociedad de Altos Rornos y Fabrica de Hierro y Acero de Bilbao, a prominent Spanish iron and steel works, is soon to make extensive improvements to its plant. New machinery and tools will be added to the value of \$25,000.

The Underwood Typewriter



Visible Writing from start to finish.

The descriptive pamphlet, or any stenographer using the Underwood Typewriter, will explain why 1,000 of these machines have been sold in Canada in one year—more than all others put together.—Visible writing and the tabulator are winners.

SOLE CANADIAN AGENTS.

Creelman Bros. Typewriter Co.,

15 Adelaide St. East, TORONTO, ONT.

CHARLES F. CLARK, President. JARED CHITTENDEN, Treasurer.

Established 1849.

BRADSTREET'S

Capital and Surplus, \$1,500,000

Offices Throughout the Civilized World.

EXECUTIVE OFFICES,

346 & 348 Broadway, New York City, U.S.A.

Correspondence Invited.

OFFICES IN CANADA:

Halifax, N.S. Hamilton, Ont.
 London, Ont. Montreal, Que.
 Ottawa, Ont. Quebec, Que.
 St. John, N.B. Toronto, Ont.
 Vancouver, B.C. Victoria, B.C.
 Winnipeg, Man.

THOMAS C. IRVING, Gen'l Manager Western Canada, TORONTO.

JOHN A. FULTON, Gen'l Manager Eastern Canada, TORONTO.

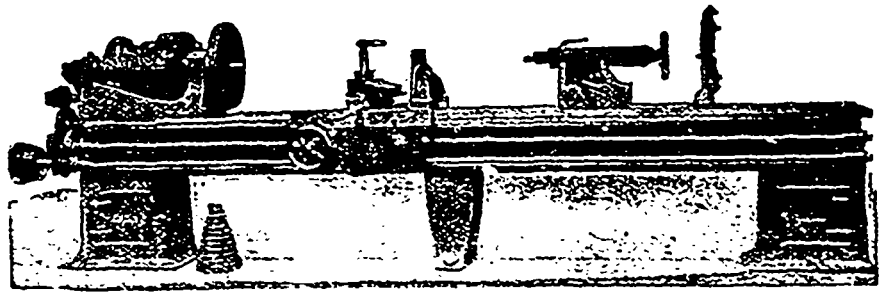
The London Machine Tool Co., LONDON, ONT.

LATHES,
 PLANERS,
 DRILLS,
 SHAPERS,

MANUFACTURERS OF

HAMMERS,
 BULL DOZERS
 PUNCHES,
 PRESSES.

General Machinery



There is only one Profitable Plan—BUY NORTHROP LOOMS

With them the Future is Assured.

They are no Experiment.

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

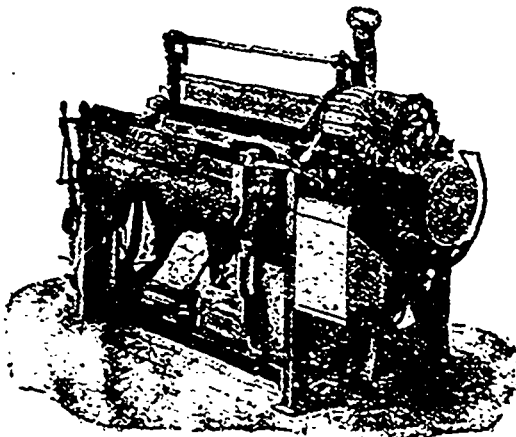
“The Mills that refuse their opportunities will find their future utility serving as picturesque ruins in the landscape.”

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

Write for particulars and quotations. Address:

The NORTHROP LOOM CO. OF CANADA, Ltd.

VALLEYFIELD, P.Q.



THE NORTHROP LOOM.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

OUR BELTS ARE WINNERS

PROVED TO MEET EVERY REQUIREMENT

THE CANADIAN NIAGARA FALLS POWER CO.

Niagara Falls, Oct. 26.—The big Westinghouse electric generators at the power house on the Canadian side were set in motion a few days ago. Their capacity of transmission is 30,000 horsepower. This extraordinary development of Niagara Falls power is going to be the means of bringing a number of manufacturers to this place.

All the immense, wide, heavy, leather belts are of Canadian manufacture, and were furnished by Sadler & Haworth, of Montreal and Toronto. They are the largest of the kind in use in this part of the country. There are several 44 inches wide, some 24 inches wide, and a number of smaller belts, each about 100 feet long. Thousands of horsepower are now waiting for sale to all those who will come and locate here and take advantage of cheap power.—Toronto Globe.

REMEMBER THE NAME

SADLER & HAWORTH,

MANUFACTURERS,

MONTREAL

TORONTO

OUR BELTING HAS BEEN TRIED AND

ON THE LONG RUN

INDIA.—Several new lines of railway recently started in India with a view to affording work for famine sufferers are now in process of construction. These number twenty-eight in all, and the government offers the earthwork, such as cuts, embankments, etc., and the work of surveying, etc., free to companies undertaking to complete and operate the lines. Copies of this report may be obtained of the Superintendent of the Government Central Press, Calcutta, for two rupees (about forty-two cents.)

SALVADOR.—A decree has recently been promulgated relative to the certification of consular invoices. The more important provisions are: Each package shown in an invoice must bear its separate serial number, and the repetition of the same number on two or more packages is prohibited. The consignment of goods to two or more parties on the same invoice is prohibited. Consular officers are required to use care in seeing that the signatures to all invoices are genuine, and are prohibited from certifying invoices not dispatched from the district under their jurisdiction.

NEW ZEALAND.—Owing to the existence of a surplus of nearly \$3,000,000 in the Colonial Treasury a revision of the tariff duties on imports into that country has been agreed to by the House of Representatives. Following in the schedule of duties now in force: Tea, 2d. (4 cents) the pound; currants and raisins, 1d. (2 cents) the pound; candies, 1d. (2 cents) the pound; cocoa, 3d. (6 cents) the pound; coffee, roasted, 3d. (6 cents) the pound; stearin, for match making, 0 3/4d. (1 1/2 cents) the pound; paraffin wax, 1d. (2 cents) the pound; matches, wax, 1s. (24 cents), 1s. 4d. (32 cents), and 4s. 6d. (\$1.09) the gross of boxes, for certain designated brands, according to the number of matches in each box, and for other kinds, for every 100 matches or fraction thereof contained in one box, 2s. 3d. (54 cents) the gross of boxes; patent medicines, 15 per cent.; proprietary medicines and medicaments, 15 per cent.; sarsaparilla, 15 per cent.; drugs and druggists' sundries and apothecaries' wares, not otherwise enumerated, 15 per cent.; chemicals not otherwise enumerated, including photographic chemicals and glacial acetic acid, 15 per cent.; tinctures and medical spirits of any recognized pharmacopoeia, containing 50 per cent. proof spirit or less, 15 per cent.; steam engines and parts thereof, including the boiler or boilers therefore imported specially for mining or gold-saving purposes and processes, or for dairying purposes, 5 per cent. It was resolved that on and after September 29 the duties of customs previously charged on the under-mentioned goods, wares and merchandise should cease: Kerosene, rice, salt, raw coffee, all machinery for agricultural purposes, including chaff cutters, corn crushers, corn shellers, also articles used in manufacturing the same, viz., chaff-cutter knives, tilt rakes, fittings for threshing mills, forgings for plows, machinery for dairying purposes, machinery of every description for mining purposes, including machinery for dredging; portable engines on four or any greater number of wheels, with boiler of locomotive type, also traction engines, liquid chlorine, cyanide of sodium, engine governors, all bolts and nuts, black or screw nuts, black or finished nuts, blowers (welded and flanged), boiler furnaces (plain or corrugated), chain pulleys, blocks of all descrip-

tions and chains for same, engineers', boiler-makers', brass finishers', smiths' and all metal and wood-workers' machine and hand tools, and steel rams for hydraulic cranes or jiggers.

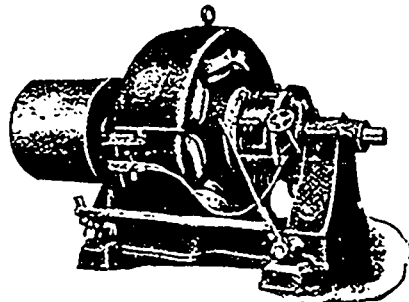
QUEENSLAND.—Mr. B. Dunstan, Assistant Queensland Government Geologist, in his annual report, recently published, has the following reference to the occurrence of Oriental ruby in Northern Queensland, and to the localities of other gem-stones in the colony: During my visit to Mount Garnet I was shown a number of gemstones from the Herberton district, and since then have been making inquiries concerning their occurrence in other places. One specimen given to me by Mr. Maund, of Herberton, said to come from Jordan Creek on the road between Atherton and Geraldton, has been carefully tested by Mr. Henderson, the Government Analyst, and by myself, and we have no doubt about it being a true ruby. It was found associated with yellowish and red zircones, colorless topaz, red garnet, dull-blue sapphires, quartz pebbles and stream tin, but the exact spot on Jordan Creek was not divulged. That rubies occur in this part of Queensland is beyond doubt, as they also have been found in the neigh-

borhood of Croydon, and some of the stones shown to me from this place are over a carat in weight. There is evidence that for some time past these stones have been known to exist in alluvial deposits in the northern districts, but they have, in some cases at least, been mistaken for a variety of garnet, the garnets with which they occur somewhat resembling them in color. The specimen in my possession weighs a little under a carat, is of rather a darker color than the pigeon-blood color of the Burmah stones, and it distinctly pleochroic. Mr. Hyde, the lapidary, informs me that in polishing a face is presented several peculiarities inseparable from corundum. One in particular is the parallel lines developed when the facet was being polished in the wrong direction—against the grain, as it were—and which were obliterated when the polishing was done correctly. Microscopically examined, these lines were seen to be folds along the basal plane, and are not grooves, and they appear to be a minute contortion of the crystal. Microscopically the same peculiarity is noticeable in the sapphires from Anakie, in Central Queensland.

A surveyor who has recently returned to Brisbane from the neighborhood of the Dawson and Mackenzie Rivers reports a

The Jones & Moore ELECTRIC CO.

ELECTRICAL CONTRACTORS



DYNAMOS, TELEPHONES, SLOW SPEED MOTORS, MOTORS, SUPPLIES, DIRECT CONNECTED DYNAMOS.

We manufacture Direct Current Machinery in all sizes and for any purpose.

20 and 22 ADELAIDE W., TORONTO.

ROBERTS & CO., PATENT SOLICITORS

PROV. BANK BUILDING, MONTREAL.
Twelve Years' Examiner in U. S. —NO PATENT Patent Office. Write for Red Book. —NO PAY.

TALISMANIC BELT DRESSINGS WILL INCREASE YOUR POWER



"What We're On We'll Cling To."

TALISMANIC BELT CLINCH—For Leather Belts
TALISMANIC RUBBER FACING—For Rubber Belts
TALISMANIC ROPE PRESERVER

JOHN W. BOWDEN & CO.
67 Adelaide St. E. Toronto, Ont.

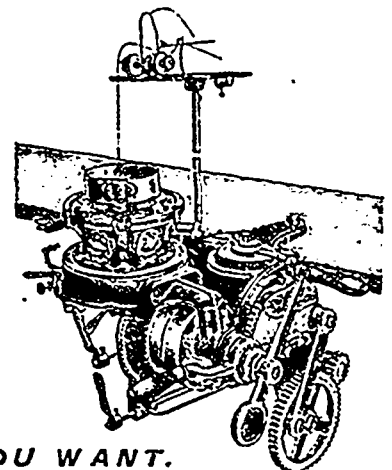
RICHARD SCHOFIELD, TORONTO

Sells "BRANSON THREE-QUARTER
AUTOMATIC"

KNITTING MACHINES

AND ALL OTHER KINDS OF
Hosiery and Underwear MACHINERY

ASK US FOR WHAT YOU WANT.



When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

very large anthracite coal field there. Should this prove to be correct companies will at once be formed to exploit the region, and much coal mining and coal handling machinery will doubtless be imported.

MEXICO.—The Journal des Transports announces that the contract for the construction of the railway from Coahuila has been signed, and the work already commenced. The line between Torreon and Saltillo will be 350 kilometres (217 miles) in length, and will be finished in 1902. By virtue of a contract with the Minister of Communications and Public Works, Mr. A. E. Silwell is authorized to construct and work for a period of ninety-nine years a

railway connecting Presidio del Norte with Chihuahua.

ORANGE COLONY.—The African Review says that the following firms have opened their business premises at Johannesburg:—Sherry, Stewart, Rolles, Nobel & Co., Gariand Bros., Amm & Sons, Jagger & Co., Garlick & Holderoft, Hanson & Schrader, Lennon Stuttaford, Muirhead & Gowie, Store Bros., Paddon & Brock, Thorne & Co., Markham & Co., Holt & Holt, and Tarry & Co. Stocks have not been replenished since the commencement of the war, and when it is remembered that considerable quantities of goods have been commandeered by the Boers, it will not be hard to understand

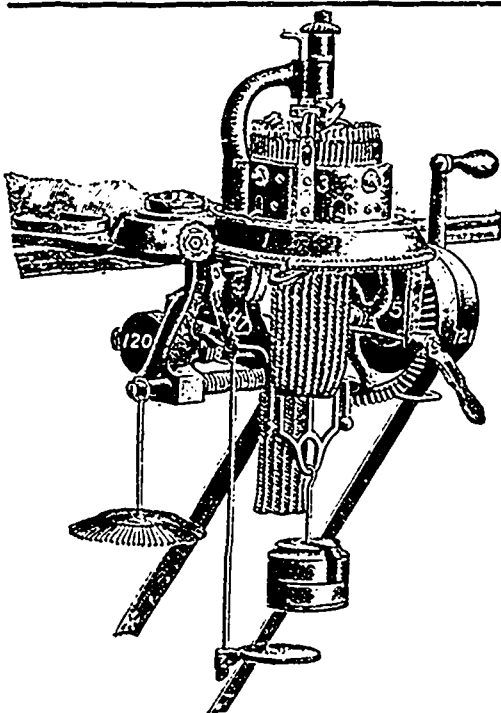
that ordinary merchandise is exceedingly scarce. Indeed, the scarcity of flour and meat necessitates the closing of several bakers' and butchers' shops. Beef is two shillings per lb., and thirteen shilling six pence has been offered on the market for a pound of fresh butter. Potatoes are seventy-five shillings per bag, but other vegetables are plentiful. Paraffin is unobtainable, and matches are eighteen shillings per gross. Whiskey is eighty shillings per case, but the best qualities cannot be bought. Poultry is also very scarce and dear. The smallness of the food supplies in Johannesburg is undoubtedly an important factor influencing the authorities in their attitude on the question of the return of the refugees.

McLachlan Electric & Gasoline Motor Co., LIMITED.
94 ADELAIDE ST. WEST. TORONTO
MAKE Gas or Gasoline Engines from 1 h.p. to 6 h.p.
 Stationary or Marine and Electric Motors from ½ h.p. up.
 Motor Carriages for Pleasure or Business. One cent spent for a postal will bring you any information you wish.

The Packard Electric Co., Limited.
ST. CATHARINES, CANADA,

Makers of Lamps, Transformers

Sole Agents for Canada for SCHEEFFER RECORDING WATT METERS, D. & W. ENCLOSED FUSES, and DIAMOND C.P. ELECTRICAL SUPPLIES.



Seamless Hosiery
KNITTING MACHINES

WE have been hard at it for nearly 1/3 of a Century.

We have had Success.

Our Customers have had Success.

Why? MERIT and SUPERIORITY in our Machines tells the story.

CATALOGUE FREE.

CREELMAN BROS.,

Manufacturers,

GEORGETOWN, ONTARIO, Canada.

NEW SOUTH WALES.—In 1895 the imports into New South Wales from the United States formed less than 4 per cent. of the total import trade of the colony, but in 1899 this proportion had risen to over 8½ per cent. The exports from New South Wales to the United States were only about 3 per cent. of the whole exports in 1895, but in 1898 they had reached 21½ per cent. This, however, appears to have been a phenomenal year, as in 1899 the proportion was about 8 per cent. As regards Victoria, the imports from the United States rose from 2.9 per cent. in 1895 to 7.3 per cent. of the total import trade in 1899. The exports from Victoria also showed a slight increase in 1899.

Since the existing New South Wales Government came into office the construction of the following tramways has been authorized in that colony: Spit Road, cost estimated at £15,940; Kensington and Rifle Range, £13,000; Rose Bay to Dover Road, £7,345; St. Peter to Cook's River, £16,850; George St. to Dawes Point, £18,000; Balmain to Drummoynne, £12,000; Enfield to Mortlake, £17,000; Newcastle to Adamstown, £6,000; Newcastle to Waratah, £5,700; Broken Hill, £18,000.

SOUTH AFRICA.—With regard to the orders recently placed in the United States for trucks for South African railways, it appears that it would have taken a year to have had the orders filled in Great Britain, if sent through the usual official channels. Consequently the Rand corporations were told to purchase for themselves, with the result that Messrs. Wernher, Beit & Co., Park Lane, London, W., and Cape Town, invited tenders from both British and American firms. The latter offered to supply everything in three months, while the English firms could only furnish a portion of the equipment required in seven months, and at prices thirty per cent. greater. Anxious to encourage home industries the firm placed about one-third of its orders with them, and two-thirds with Americans.

It is reported in Philadelphia that orders for steel viaduct work, amounting to £100,000 for the Uganda railways, have been placed in the United States by the British Government recently.

The restoration of peace in South Africa will result in a very heavy demand for paint, not only for structures that have become dilapidated during the recent hostilities, but for the many new buildings certain to be erected. White and stone colored paints form the bulk of South African consignments, as they are especially suited to the climate there, but gayer colors are also used to some extent. Stocks are said to be depleted at present. Practically no paint is

COAL JAS. H. MILNES & CO. COKE

WHOLESALE DEALERS IN
 Best Grades of STEAM COALS.
 Best Grades of BLACKSMITHS COALS.
 Best Grades of FOUNDRY COKES.
 Shipments made direct from Mines to any point in
 Canada. Write for quotations.

Head Office: 78 QUEEN ST. EAST, TORONTO. Docks: Esplanade, Foot of Yonge.

at present manufactured in South Africa, all being imported, and the United States has, during recent years, been securing an increasing share of this trade. The same situation is true of varnishes and oils, especially all kinds of lubricating oils.

Exporters of flour to South Africa are advised not to pack it in 200 pound bags, as these are too heavy for native carriers to handle and are not adapted to transport by mules and pack horses. 50 to 100 pound weights are preferred, and the clean, white, tastefully-branded bags at present arriving in this market from the United States are much appreciated.

During my recent trip through the Orange River Colony and the South African Republic, my attention was called to the destruction of wire fencing. For hundreds of miles the fences are down and twisted so badly that they cannot be used again. The wooden posts have all been burned for cooking purposes and warmth, and, as there is but little wood in this country, iron posts must be substituted. The Government must fence anew along the lines of railways, and the farmers in the interior must fence also.—U. S. Consul-General at Cape Town.

The South African market is now calling for large quantities of machinery, especially electrical and mining machinery, agricultural implements and hardware, wagons, carriages, harness and saddles, household goods and utensils, drugs, medicines, tobacco, matches, ready-made clothing, hats and caps. In all of these lines German and Belgian competition is likely to be active. Buyers are of two distinct classes with respect to taste, the Uitlander population being progressive and disposed to favor novelties, while the Boers are extremely conservative and inclined to buy articles resembling as nearly as possible what they had before.

The Imperial Government is building railways from Pretoria and Johannesburg to the Orange River Colony border, and engines and cars will be needed. Over one thousand freight cars have been recently ordered by the Cape colonial railways. A new railway is being built from Harrismith,

to connect with the Orange River Colony Railway, so that there will be two competing lines from the seaports in Cape Colony and Natal to Johannesburg, breaking the monopoly of the Netherlands Railway in the South African Republic, with its 200 per cent. profit per year. The new railways will provide sidings for all the mines in Johannesburg, these being very much needed. The bridges over streams and culverts have been destroyed, with few exceptions, and temporary structures erected, and deviations of tracks to reach the lower level were made. As a result a demand for bridge material, such as girders, etc., may be expected. Electric and telegraphic materials and supplies will also be wanted. Coal machinery and household and house-building supplies will be needed.—United States Consul-General at Cape Town.

The usual tour of commercial travellers in South Africa is as follows:—Cape Town, Port Elizabeth, Graaff-Reinet, Middelburg (Cape Colony), Graham's Town, East London, King William's Town, Queenstown, Durban, Pietermaritzburg, Johannesburg, Pretoria, Potoschefstroom, Kimberley, Bloemfontein, Beaufort West, Cape Town, or in the inverse direction, direct from Cape Town to the north and back by the east route. Many commercial travellers start from Delagoa Bay and visit the Transvaal before going south. Expenses amount to from £2 10s. to £3 per day along the lines of railway, and correspondingly more on other routes.

Commercial travellers and representatives should be furnished with complete assortments of patterns and samples. The more familiar types meet with ready sale. The establishment of sample depots is said to answer. The Americans especially attach much importance to exhibiting their samples to advantage; for example, machines and agricultural appliances are shown at work whenever practicable. Although the outlay in establishing such depots is often very considerable, their establishment is as a rule remunerative if they are intelligently and energetically managed. In this respect, as well as in the selection of agents and representatives, economy is a mistake.

Great attention should be paid to advertising, which plays a great part in commerce in South Africa, as well as in other English-speaking countries. Poorly got up placards and catalogues say little for the goods they refer to and their manufacture. Exporters should, like those of other countries, send suitable circulars or cards with each consignment of goods, when the nature of the goods allows of this course. Advertisement for exhibition outside buildings, etc., should be weather-proof and made of sheet-iron or similar material. Catalogues and price lists should be well printed and on good paper, and if provided with illustrations, they should be printed in the best style. An importer will not throw aside a well-got-up catalogue, he will keep it for frequent reference, so that a durable binding should be provided.

Price lists, catalogues, etc., of whatever kinds, should be drawn up in English and German. If they are intended to reach the Boer population, the "taal" (Dutch-African dialect) should be used. All these points, on which local representatives, knowing the country well in each particular case, would be able to give the best information, should be scrupulously observed by manufacturers and exporters, or else their interests will suffer and the work of their agents be rendered difficult or impossible.

Complaints are frequently heard of careless and faulty packing of goods ordered. The following rules should be observed:—Packing should never be left to inexperienced hands, and should be effected in exact accordance with the wishes of the customer; and only such material as he specifies should be used to fill the interstices between the articles in the package. If, for example, an importer requests that bottles of acid should be packed in carbonate of lime, it will not do to pack them in shavings. Only good, strong boxes should be used for packing, about forty-nine or fifty inches square, and under no circumstances should boxes be selected which are too large for the goods they are to contain, and empty spaces should always be avoided. Several smaller boxes are preferable to one large one. At port towns there are facilities for

PITT & SCOTT

ESTABLISHED 1876.

Foreign Freight Brokers and Express Carriers TO ALL PARTS OF THE WORLD.

THROUGH BILLS OF LADING ISSUED AND RATES QUOTED TO ALL PARTS OF EUROPE, ASIA AND OCEANICA.

SENDERS INVOICES COLLECTED AGAINST DELIVERY OF GOODS ANYWHERE ABROAD.

PITT & SCOTT, - - 39 Broadway, NEW YORK.—121 Water Street, BOSTON.

ALSO AT..... LONDON, LIVERPOOL, PARIS, HAMBURG.

AND AGENCIES EVERYWHERE ABROAD.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

unloading, etc., but packages have often to be sent long distances in the interior by wagon, when they are subjected to rough handling. The external covering of the goods in the boxes should be, as far as possible, waterproof, and each separate package should be wrapped in good packing paper. The articles themselves should, whenever practicable, be packed in cardboard boxes and the like; for example, knives and scissors should be fastened on cards instead of being wrapped in untidy-looking brown paper. Articles got up in this way are more attractive to buyers, and remain presentable, even though subjected to frequent handling. Breakable articles should be very carefully packed. Broken parts of bronze hanging lamps, articles of cast metal, etc., can only be replaced after considerable loss of time.

Terms on which business is done vary in South Africa as in other countries. Credit of from three to six months is as a rule, accorded to firms of good reputation. Some houses settle against bills of lading at thirty, sixty, ninety and a hundred and twenty days' sight, others again pay cash through German or English houses on sale of the goods. The

amount of credit to be given should of course be regulated according to the circumstances of each case, and manufacturers who have never before done a direct export trade to South Africa, should make a thorough study of the market and all relative circumstances, or else leave direct trade to experienced exporters. The chief point is, and always will be, to supply the customers punctually and rapidly with the exact articles he requires and in the exact way he prescribes.

Ploughing has been in progress, but the area is limited as compared with former years, and therefore no great demand for agricultural implements may be expected, although many have been allowed to rust and go to ruin. The market for cereals and products of the soil will continue to be large. By March, 1901, a renewal of the demand for farming machinery may be looked for. Meat and live stock will continue to be imported. There was only three days' supply of fresh meat in Johannesburg when I left there. Although the reoccupation of Johannesburg by the mining and business population can hardly be expected for at least three months, preparations are being

made at the seaports, much machinery and goods are stored, awaiting the time of shipment, and orders are being placed abroad. The Boers who have returned to their homes are desirous of getting to work, but several months must elapse before things settle down to a normal basis.—United States Consul-General at Cape Town.

SOUTH AFRICAN TRADE PROSPECTS.—United States Consul General Stowe, at Cape Town, in discussing the immediate effects of the war, remarks that the year ended December 31, 1899, was an anomalous one. The disappearance, to a large extent, of the various plagues and pests with which South Africa has been afflicted in the three immediate past years was hailed with joy by the farmer, and while the agricultural resources of the country are limited on account of the aridity of the soil and the small amount of land tilled, owing to the lassitude of the occupants, still good crops were anticipated, and the indications were most satisfactory. With the advent of war came opposite conditions. The crops, particularly in the Boer States, were to a large extent unharvested. War closed the ports of the British colonies to importations for these States, entailing depression of business in general both in Boer and English territory. The exports of gold, coal, copper, diamonds and ostrich feathers—the principal articles of export—fell off materially in October, November and December. The only bright side to the picture, if bright side it may be called, is the necessity that the war has created for imports of food stuffs, etc. In those lines, not only the United States, but Australasia and the Argentine Republic have benefited; Australasia more particularly in frozen meats and butter, and the Argentine Republic in cereals, horses and slaughter cattle on the hoof. In December the duty was taken off frozen meat and cattle and sheep for slaughter, but at the time of writing (June 1) no decrease in price was apparent. The consul regrets that the United States could not provide saddles of the desired quality and in the desired numbers. Canada furnished 1,000 and England many thousands. He also

D. CAMPBELL DAVIES & CO.,

—REPRESENTING—

The Largest European and American

MANUFACTURERS OF

MILLS, MINES AND SMELTING MACHINERY SUPPLIES

EXPORT TRADE A SPECIALTY.

Apartado No. 83, - - DURANGO, MEXICO.

JOHN J. KELLER & CO.

104 and 106 MURRAY ST.
NEW YORK

220 Church St., Philadelphia.

135 Pearl St., Boston.

18 Pryor St., Atlanta, Ga.

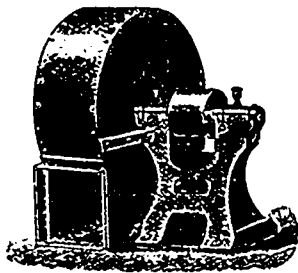
**Aniline Colors,
Dyewood Extracts,
Sumac and
Nutmeg Extracts.**

FAST COLORS for Wool Dyeing,
One Dip Cotton Colors, Novelties
and Specialties for Calico
Printing.

MANUFACTURED BY

JOHN R. GEIGY & CO.

BASLE, SWITZERLAND



PLANING MILL STEEL PLATE EXHAUST FANS

For removal of refuse from Wood-Working Machinery.

CYCLONE DUST SEPARATORS

Made of Galvanized Steel. All Sizes for Fans
from 30 inches and up.

Estimates cheerfully given for Complete Installations of Fans,
Piping, Gates, Hoods and Separators, with or without
Shavings Feed Attachment to Boiler Fires.

McEACHREN HEATING AND VENTILATING CO.,

GALT, - ONT.

WE MAKE

Forge, Cupola and Disc Fans, Electric Fans, Heaters and Fans for
Lumber and Wool Drying, etc., and for Heating of Factories.

STEAM TRAPS, OIL SEPARATORS, ETC.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER

regrets that in the line of canned meats the demand was so large that the United States packers were not in a position to fill all orders that came to them. I am informed that over 4,000,000 lb. of tinned meats were shipped from the United States to England, and there rebranded Shamrock and shipped to this colony.

When all questions for the future guidance of affairs are settled, when many of those who have left the country return, when the gold and diamond mines are again in full operation, yielding more largely than ever, and when the agricultural resources are better developed, the outlook will be bright and the country will witness an advance in business never before experienced. There will be an impetus given to the importation of goods of all kinds, not only in order to restore stocks to their original quantities, but also by reason of the increase of capital. For that time Mr. Stowe advises the manufacturers and producers of the United States to prepare, not by flooding the country with circulars and price lists, but by sending men, or by working through the export commission houses of the United States, which have men constantly on the spot, and are subject only to the criticism that they perhaps represent too many lines of goods to do justice to all, or that they are unable, in justice to older clients, to represent similar lines of goods produced by different manufacturers.

That the Dutch element will, for a time at least, endeavor to boycott English trade, goes without saying. The consul receives many inquiries from proposed co-operative associations, asking information as to where

they can buy United States products, and to whom they can sell South African productions. These requests cover catalogues, price lists, lists of manufacturers, etc. Although these will be cash customers their wants will be limited as compared with those of the large jobbers at the coast ports, who have the capital, the credit, the storage capacity, and the methods and machinery to dispose of their wares. To sell to these co-operative associations, composed principally of Dutch agriculturalists and a few non-tradesmen in the towns, thereby ignoring the large jobbers in the large cities, would be suicidal to American business interests. On the other hand much pressure is being brought to bear in the British colonies in favor of reciprocal trade with the mother country, a sentiment which may be mentioned a recent action of the municipality of Pietermaritzburg. The city council concluded to increase its water supply by 1,000,000 gallons daily. Tenders for pipes, etc., were to be asked from Belgium, America, England and Germany, but it was finally decided that, as the city went to London when it wanted a loan, it would invite tenders from England only. It must also be borne in mind that the Uitlanders in the Transvaal have been America's best customers, and require more lines of United States products than the agricultural Boers ever will. At present goods entering via Delagoa Bay for the Transvaal pay two duties; through same port to Orange Free States three duties; and through British ports two or three duties. As the late Boer States will possibly for some time be what is known as Crown Colonies, the open door

will doubtless prevail. The customs union that existed between the British colonies and the Orange Free State, and which the Transvaal would not enter, is now a thing of the past, and a new customs union will possibly be framed.

As an indication of the goods that will be required, the Consul-General points out that the colony of Natal (north) has suffered much destruction, and it will be necessary to rebuild and re-equip the coal mines with new machinery, and the present high prices for imported coal will be an incentive for Natal to increase production. The docks at Durban show a wharfage of 5,000 ft., and more will be constructed. Pietermaritzburg, the capital, proposes to borrow about \$375,000 for the installation of an electric street railway, while throughout the whole colony the telephone lines will be improved. Expressions of a desire to substitute subconducts for overhead trolleys are noted. In Cape Colony, after the war, many of the cities will build new waterworks and cold storage plants, and municipal improvements of various kinds may be expected. New lines of railway, ordered by Parliament before the war, will be completed. Johannesburg, built as were some of the "boom cities" of the United States, will be largely re-constructed. The old single-horse railways will disappear, a better system of telephones must be instituted, the water supply and sewerage system will be modernized, the electric light service extended, and there will be extensive development of mining.

RHODESIA.—There is every prospect that

Manufacturers of
**Phosphor
Bronze**
FITTINGS
FOR
PULP MILLS

Y VALVES,
DIGESTER
COCKS, Etc.

THE JAMES
MORRISON
BRASS MFG.
CO., Limited
TORONTO.

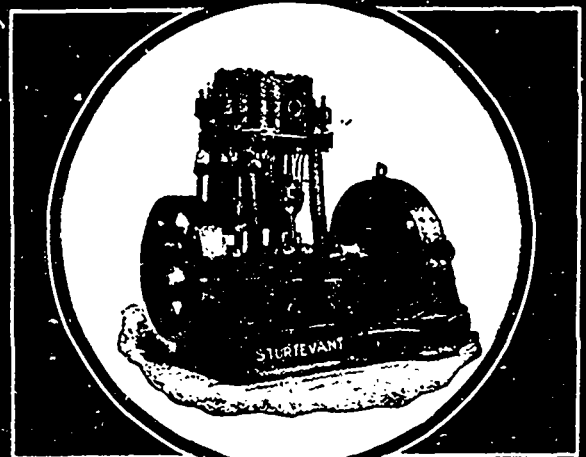


ADVERTISE IN

THE
CANADIAN
MANUFACTURER

SEND FOR RATES

STURTEVANT GENERATING SETS



In 100 types and sizes.
High speed, and high grade.
We build both engine & generator.
Send for Bulletin G.

B. F. STURTEVANT CO. BOSTON.
NEW YORK · PHILADELPHIA · CHICAGO · LONDON.

the mining industries of Rhodesia will receive a considerable impetus as soon as the country has settled down after the disturbing element of war, now so happily nearly over. Glowing accounts are given of the valuable deposits of copper contained north of the Zambesi. Indeed the whole of this as yet undeveloped country is full of remains of ancient workings, where in far-off times the natives appear to have obtained both iron and copper. Rich deposits of copper and tin also are to be found in the Leashimbenka country, and the mines near Bulawayo yield a plentiful supply of silver and copper. South Africa is full of mineral deposits, and under British rule British capital will be safely and profitably invested, not only in Rhodesia but in the Transvaal. There is undoubtedly a brilliant future before the African colonies of this great empire of ours.—Ironmongers' Chronicle.

TURKEY.—The United States Charge at Constantinople, Mr. Griscom, writes under date of September 1, 1900, that about two months ago a United States firm made a shipment of electrical appliances to Constantinople. Upon arrival there the merchandise was seized in the custom house and refused admittance to the Empire, the introduction of electrical appliances of any description being prohibited. Mr. Griscom thereupon caused some samples of the goods—small reading lamps, toys with storage batteries attached, etc.—to be taken to the palace and brought to the attention of the Sultan. The latter was much attracted by the novelty of the articles and bought the whole consignment for his personal use. He also issued an irade authorizing the introduction of similar articles into the country. It is to be hoped, adds Mr. Griscom,

that a permanent trade with Turkey may be established in this class of goods, though it should be understood that the irade does not refer to electrical appliances of all kinds. The general interdiction against dynamos, electrical plants, telephones, etc., still exists.

The importation of the following articles is prohibited, or restricted by special tariff exactions: All products for the manufacture of which a domestic monopoly has been granted, also salt and tobacco, all of which are prohibited except table salt, chewing tobacco and snuff, on which the duty is seventy-five per cent. All munitions of war are prohibited, fire-arms, hunting powder, revolvers, pistols, rifles and ammunition, etc. On other articles the usual uniform duty of eight per cent. ad valorem is levied.

CHILE.—H.M. Consul at Valparaiso reports that the Government of Chile has set aside the sum of \$20,000 for the President of the National Society of Agriculture, in order that he may purchase in foreign markets agricultural machinery and sell it at cost price to the members of the Society. British manufacturers of agricultural machinery would do well to send at once catalogues and prices in Spanish to the "Presidente de la Sociedad Nacional de Agricultura," Santiago, Chile.

HAYTI.—A German business man warns his countrymen in the Frankfurter Zeitung against giving credit to firms in Hayti, there being a most pernicious law in practice there—the "Liquidation judiciaire"—by means of which fraudulent debtors are able to obtain a concordat with only one-half to five per cent. payment. Numerous firms, he says, have availed themselves of this law within the last few years, thereby causing a loss of many millions to American and European shippers.

SYRIA.—Iron bedsteads are being successfully introduced in North Syria. In 1899,

about 3,750 iron bedsteads were imported at Beirut from Birmingham. The selling price was about £2 10s. for each bedstead.

At Haifa, North Palestine, industrial development is to be noted, which is largely due to the building of the railroad from Haifa to Damascus. There is a growing demand for carpenters' tools, locks, and other builders' hardware. These articles are at present only to be had in inferior quality and are disproportionately high in price. To meet with a ready sale they must be simple and strong in construction.

FRANCE.—A company has been organized at Paris with a capital of 500,000 francs, styled La Societe de Chantiers et Construction Navales de Saint Malo, that will shortly be in the market for considerable quantities of machinery and factory equipment.

The Dominion Government has paid the subsidy of \$50,000 allowed to the company that has established a line of steamers between Canada and France. The French Government, on its part, will allow a sum approximately equal to the amount stipulated in the treaty. Strengthened by the successful showing of the present season, the company is now organizing a regular fortnightly service for next season by two boats of its own, and, further, by additional chartered boats as the service demands.

Operations are actively in progress converting the extensive horse tramway system of Lille (Nord) to electricity. It will require about two years to complete the entire system, which comprises an extensive series of suburban lines. Overhead trolleys are to be employed throughout.

The following have been awarded important contracts for railway construction work in Madagascar or Indo-China, and may be in the market for contractors' tools and machinery; Frederic Son, 45, rue Vivienne, Paris; M.M. Boyant, Boyer & Bozzolo, 83, Boulevard de Courcelles, Paris; M.M.

THE PITTSBURG VISIBLE TYPEWRITER

\$85.00 INCLUDING COVER.

Everything open—everything handy—all parts interchangeable—nothing complicated. Universal Keyboard.

The PITTSBURG VISIBLE will invoice, make out detailed reports, headings, card indexes and tabular work of all kinds, with an ease that is surprising.

Machines sent on approval.

Canadian Typewriter Exchange,
45 Adelaide St. East,
TORONTO.

FREE—The services of our trained staff are free to our customers. We prepare plans and advertising copy without charge. Correspondence with intending advertisers solicited. The E. DESBARATS ADVERTISING AGENCY, MONTREAL.

F. W. Hore's Sons, HAMILTON, ONT.
Manufacturers of
Wheels, Wheel Materials, Shafts, etc.

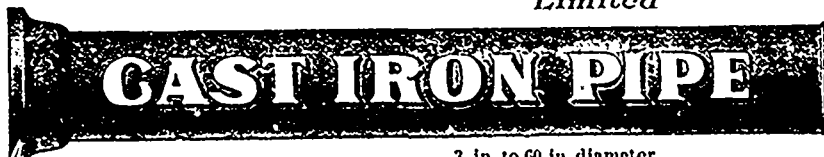
PATENTS, TRADE MARKS, CAVEATS, ETC.
EGERTON R. CASE,
Registered Solicitor of Patents. Notary Public.
TEMPLE BUILDING, TORONTO, ONT.

GALVANIZING
We are prepared to attend to all orders Promptly and Economically.
WINDMILLS, PUMPS, TANKS, Etc.
ONTARIO WIND ENGINE and PUMP CO.
LIMITED,
95 ATLANTIC AVE., TORONTO.



ALEX. GARTSHORE, President. J. G. ALLAN, Sec.-Treas. JAS. THOMSON, Vico-Pres. and Gen. Mngr.

THE GARTSHORE-THOMSON PIPE & FOUNDRY CO. Limited



3 in. to 60 in. diameter.
For Water, Gas, Culverts and Sewers
Special Castings and all kinds of FLEXIBLE AND FLANGE PIPE.
WATER WORKS SUPPLIES HAMILTON, ONT.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

Manard & Chiezo, 19, rue Neuve Popincourt, Paris, M. M. Lydo & Fille, 29, rue de Chateaudun, Paris, have been awarded the contract for the small metallic bridges for the Indo-Chinese railways at 350,000 francs, and Schneider & Co., Creusot, that for the large metallic bridges at 3,700,000 francs.

It is stated that the shortage in the domestic coal supply this year will be fully 10,000,000 tons, a quantity which under existing conditions, Great Britain, Belgium and Germany, from which France draws her usual foreign supplies, are not in a position to furnish except at exorbitant prices. The prices for Cardiff steam coal at Rouen were at last reports from 36 to 42 francs per 600 kilograms (about \$11 to \$13 per ton of 2,240 pounds), and it is expected that prices will go still higher. With respect to answering French inquiries, producers and exporters are advised to write invariably in French and to make all statements as to prices, steam-raising quality of coal furnished, etc., in terms of the metric system.

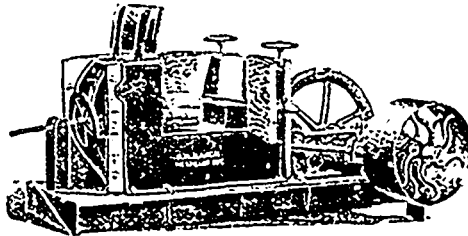
GERMANY.—The market for American machinery and machine tools is reported to be much restricted owing to the competition of German manufacturers who are offering similar articles of American design at greatly reduced prices. There continues a strong demand, however, for new machines of American design, but manufacturers having articles that they desire to push in the German market should be sure that they are fully protected by patents.

A conference with German tradesmen who have lived for years in the United States and England sustains my own opinion that folding beds at low prices, simply made, would find a ready market here. There would probably be a larger call for single than for double beds. They would be devoid of expensive ornamentation, and care should be taken to have the designs free from carving, as there is a heavy duty thereon, the Government refusing to make any distinction between hand and machine work. The mirrors should be supplied here, as

well as castors, weights, etc., that make expensive freights, and can be furnished here as advantageously as at home. So far as this office knows, the only folding beds in use here are iron frames, folding into small settees and beds, and ordinary iron bedsteads for servants. With such articles I cannot hope to see American goods compete successfully, but the luxurious American folding bed needs only to be shown to be appreciated. There ought to be a ready market for folding beds combined with book-

cases or wardrobes, especially the latter, as German homes are not supplied with closets, but are wholly dependent on wardrobes. The introduction of the simpler sorts might ultimately open up a market for our expensive styles.—United States Consul at Munich.

Russia.—The question of the scarcity of fuel in Russia has long occupied the attention of scientists. Coal is found only in



H. W. KARCH

HESPELER, ONT.

IRON FOUNDER and MACHINIST

Manufacturer of

WOOLEN MACHINERY,

Rotary Fulling Mills, Kicker Fulling Mills, Soaping Machines, Cloth Washers, Wool and Waste Dusters, Rag Dusters, Drum Spool Winders Reels, Spooling and Doubling Machines, Ring Twisters, Card Creels, Lead Spindle Spooler for Warp or Dresser Spools, Patent Double-Acting Gig Dyeing Machines.

The Yeakley Vacuum Hammer.

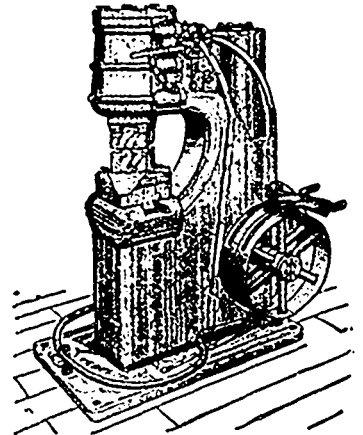
Canadian Patent November 9, 1897.

is now Manufactured and for Sale by the undersigned Sole Proprietors of the Canadian Patent:

George Brush

EAGLE FOUNDRY,

MONTREAL.



THE CANADIAN COLORED COTTON MILLS COMPANY.

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

Only Wholesale Trade Supplied.

D. MORRICE, SONS & CO.

AGENTS

MONTREAL and TORONTO.

Lighting, Heating and Motive Power . . BY GAS . .

GAS FROM WOOD—A rich permanent Gas almost equal to that of Coal Gas, can be made by using the

RICHE GAS GENERATOR

at a mere nominal cost per thousand cubic feet. The Generator is simple in construction, and does not require skilled labor to work it. No Purifiers required. Products being a Rich Permanent Gas and Charcoal.

These Generators are extensively used in Europe, and are on exhibit at the Paris Exposition. Particulars by applying to

JAMES MILLAR NEIL

GAS EXPERT

Room 415 Carlaw Building

30 WELLINGTON ST. WEST, - TORONTO

OUR

PHOSPHOR-BRONZE CASTINGS

Will give you good satisfaction in every particular.

GIVE THEM A TRIAL THEY WILL PAY YOU

J. N. TALLMAN & SONS

BRASS FOUNDERS

HAMILTON, - - ONTARIO

A. C. NEFF
CHARTERED ACCOUNTANT
 Room 500 McKinnon Bldg.,
 Tel. 1330. — TORONTO.
 Audits and Investigations a Specialty.

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, Envelope and Lithographic Papers, etc.

PATENTS
 TRADE MARKS, Etc.
HANBURY A. BUDDEN
 NEW YORK LIFE BUILDING,
 MONTREAL.

W. F. SCOTT,
Architect - Engineer.

Domestic, Devotional, Civil and Memorial Architecture.

Specialty: STEEL & FIRE-PROOF CONSTRUCTION
 410 MCKINNON BUILDING,
 MELINDA STREET, - TORONTO, ONT.

Chemistry of the Arts and
Manufacturers.

DR. GEO. ARCHBOLD,
 A.M., Ph.D.,
CONSULTING CHEMIST,

(Formerly Chief Chemist, Oranance Dept.,
 U.S. Navy Yard, Washington, D.C.)

Gives expert technical advice in all matters relating to chemical arts and manufactures. Thirty years practical experience in Great Britain, Europe and the United States.

409 Temple Building, Toronto, Ont.
 TELEPHONE 5017.

JOHN J. GARTSHORE,
 51 Front St. West, Toronto.

RAILWAY, TRAMWAY, and

...Contractors' Supplies
 METALS and SCRAP IRON
 Bought and Sold.

CANADIAN OFFICE & SCHOOL FURNITURE CO. LIMITED
 PRESTON ONT.
 FINE BANK OFFICE, COURT HOUSE & DRUG STORE FITTINGS.
 OFFICE, SCHOOL, CHURCH & HOUSE FURNITURE.
 SEND FOR CATALOGUE.

G. H. Adams & Co.

MANUFACTURERS'
AGENTS AND
COMMISSION
MERCHANTS.

Flinders Lane, MELBOURNE,
 Clarence Street, SYDNEY,
 and at FREMANTLE, ADELAIDE,
 BRISBANE and N.Z.

Will be pleased to correspond with Canadian Manufacturers and Exporters desirous of opening up direct relations with Australasia.

small quantities, while wood is by no means sufficiently abundant to warrant extensive consumption. It is proposed to surmount the difficulty by turning the enormous quantities of peat to account. In many districts, the turf almost represents the staple fuel. Its calorific power is said to be double that of wood. The turf is compressed into small briquettes and sent off to the market. It is estimated that the cost of manufacturing it for commercial purposes is about \$5.84 per ton, which at present compares very favorably with the price of coal.—United States Consular Report.

This market affords a profitable opening for the sale of such articles as lubricants, driving belts, enamelled metal utensils, dye stuff extracts, pressed leather for furniture, talc, cement, asphalt, graphite, etched sheets of glass, hats, toilet articles, linen, and fancy goods.—Austro-Hungarian Consul at St. Petersburg.

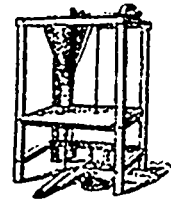
The competition between German and American manufacturers for the rich Russian market for agricultural machinery is becoming more active than ever before. As an offset to the exhibition at Moscow of American agricultural machinery and implements now at the Paris Exposition, the Central Union of German Industrials proposes to make a counter exhibition of German goods in the same line. At present the Germans have two great advantages in that they are in a position to accord liberal credit, and that Russian dealers as a rule understand sufficient German to conduct their correspondence in that language. On the other hand, the present agitation by the German Agrarians to shut out Russian wheat and other agricultural products from Germany is arousing warm resentment in the Russian newspapers, and if the proposed duties are incorporated in the new German tariff, American manufacturers will undoubtedly be given an opportunity to wrest a considerable part of the trade now enjoyed by German manufacturers in Russia away from them. The English seem to be steadily losing ground in this market, except on traction engines and certain of the heavier classes of machinery. In general the Russian agriculturalist desires light, strong machinery, simple in construction, durable and easily operated and repaired by men of little mechanical knowledge. There is a growing demand in this market for all classes of hand farming implements and tools.

The production of good quality and high-class furniture is developing more and more, but a portion of the demand has still to be met by imported goods. Furniture in the French and English style sells well. Attempts have also been made to import original American office furniture, which is bought up quickly owing to its modern price and practical construction. The trade in bent-wood furniture has also largely increased, the eight large and twelve small factories here having produced three million roubles worth in 1899—a figure which will increase still further, as this kind of furniture is daily growing in demand in Russia. The manufacture of bamboo furniture has also increased to a marked degree in Warsaw; in fact the demand has grown to such an extent that the manufacturers, who sell at very high prices, were unable to cope with the demand.—Austro-Hungarian Consul at Warsaw.

The Jones & Moore Electric Co., Toronto, are installing an electric light plant for the Atlantic Refining Co., Toronto

SPECIAL MACHINE

For Packing Soda, Baking Powder,
 Coffee, Chicory and all Powdered
 or Granulated
 Materials,



In Packages of from
 half ounce to six lbs.
 For Flour and Other
 Cereals,
 Six to fourteen lbs.

Ask us about this Machine.

T. H. & A. H. DRYDEN
 TORONTO

Shipping Tags. Invoice Tags.

DUPLICATING BOOKS

HEAD OFFICE:

AUTOMATIC CHECK BOOK COMPANY

46 & 48 Richmond St. W., Toronto.

We are the largest manufacturers of Shipping Tags in Canada. We make all the standard sizes and a great variety of special sizes.

Branch Office: 200 St. JAMES ST., MONTREAL.

I BUY all Minerals at Mines by contract or otherwise. Mineral Lands and Timber Properties bought and sold.

H. FAWCETT HARTLAND,

Room 30310 Merchants Bank Chambers,
 205 St. James Street, - Montreal.
 Correspondence Solicited.

The Rehder Plating & Mfg. Co.,
 THOROLD, - ONT.

Manufacturers of

Stove and Piano Trimmings and Novelties

Fine Grey Iron Castings a Specialty.

Nickel, Copper and Brass Electro Plating.
 WRITE FOR PRICES.

TORONTO MACHINE SCREW CO.

Manufacturers
 of



Hexagon
 AND
 Square
 Head Cap
 Screws.

Steel and Iron
 Set Screws,
 Hanger and
 Placer Bolts,
 Studs, etc.

Send for Price List
 and Discounts.

109; Adelaide St. W. - TORONTO.

WOOD ENGRAVING
PHOTO ENGRAVING
HALF TONES
 OR ANY CLASS OF ENGRAVING FOR ADVERTISING
 PURPOSES, CATALOGUES, MAGAZINES, &c.
J. L. JONES ENG. CO.
 6 · 8 · 10
 Adelaide St. W. TORONTO.

Smith Wool-Stock Co.

219 FRONT ST. E., TORONTO.

Makers of

**WOOL STOCK,
SHODDIES, Etc.**

W. H. PARKER

J. H. PARKER

NEW TORONTO WOOL STOCK CO.

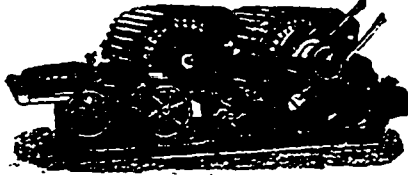
MANUFACTURERS OF

WOOL STOCK and SHODDIES

Write for Samples and Prices.

NEW TORONTO, - ONTARIO, CANADA.

A. S. PARKER, NEW TORONTO



Dealer in Woolen Waste. Carding a Specialty

PENMAN MANUFACTURING CO.

PARIS, ONT. LIMITED.

Manufacturers of

**Hosiery, Shirts, Drawers,
Glove Linings and Yarns.**

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

**ROSAMOND
WOOLEN CO.**

ALMONTE, ONT.

**Fine Tweeds, Cassimeres,
and Fancy Worsted
Suitings and Trouserings.**

LEITCH & TURNBULL, Canada Elevator Works,
Queen and Peter St.,
HAMILTON, ONT. Patent Safety Hydraulic,
Hand and Power ELEVATORS.
.....Telephone Connection.

W. H. Storey & Son, ACTON, ONT.,

Manufacturers of..... **FINE GLOVES AND MITTS**
In every variety and style. Moccasins.

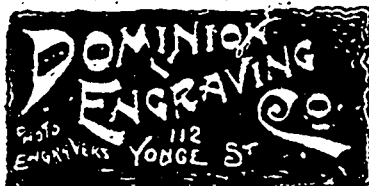
WM. BARBER & BROS.

Georgetown, Ont.

Manufacturers of.....

Book and Fine Papers.

Reproductions Made for Eight
Cents per Square Inch.



Half Tones Made Direct from
Photos.



**CROSBY STEAM GAGE
AND VALVE CO.**

Sole Proprietors and Manufacturers of

Crosby Pop Safety Valves, for all kinds of Boilers, Water Relief Valves including the Underwriter, which is fully approved by the Associated Factory Mutual Insurance Companies; Crosby Steam Engine Indicators, with Sargent's Electrical Attachment; Crosby Improved Steam Gages, Recording Gages and Patent Gage Testers. Original Single Bell Whistles.

BRANDEN PATENT PUMP VALVES

CLARK'S LINEN FIRE HOSE AND ADJUSTABLE COUPLINGS

All Kinds of Pressure and Vacuum Gages used in the Various Arts

Gold Medal Paris Exposition, 1889

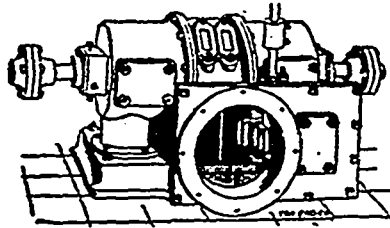
Ten Highest Awards Columbian Exposition, 1893

Main Office and Works.....

BOSTON; MASS., U.S.A.

Underwriter

Branch Offices at New York, Chicago, and London, Eng.



Horizontal Typo.

**"LITTLE GIANT"
TURBINE**

...FOR ALL PURPOSES...

HORIZONTAL AND VERTICAL
BUILT IN 44 SIZES.

We guarantee a higher percentage of power from water used than any other wheel on the market.

Water Wheel Governors, Machine Dressed Gearing, Pulleys, Shafting and Bearings.
Catalogue and Gear List mailed on application. Correspondence Solicited.

J. C. WILSON & CO., - - GLENORA, ONT.

**BELL
PIANOS and ORGANS**

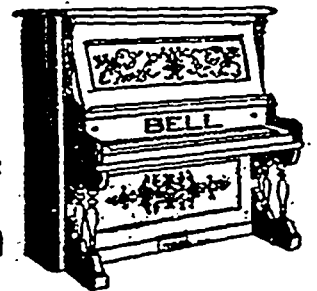
BUILT TO LAST A LIFETIME
AND USED THE WORLD OVER

Send for Catalogue No. 47 to

THE BELL ORGAN AND PIANO CO., LIMITED

GUELPH. - - ONTARIO.

LARGEST MAKERS IN CANADA.



**THE WELLINGTON MILLS, London, Eng.
GENUINE EMERY**

Oakey's Flexible Twilled Emery Cloth.

Oakey's Flint Paper and Glass Paper.

Oakey's Emery Paper, Black Lead, Etc.

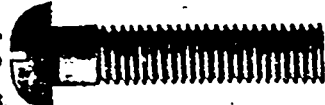
Prize Medal and Highest Award Philadelphia, 1876, for Superiority of Quality, Skillful Manufacture, Sharpness, Durability, and Uniformity of Grain.

Manufacturers, **JOHN OAKY & SONS, Limited,** Wellington Mills, Westminster Bridge Road, London, England.

ENQUIRIES SHOULD BE ADDRESSED TO **JOHN FORMAN, 650 CRAIG ST., MONTREAL**

ROLLED THREAD MACHINE SCREWS

Equal to CUT THREAD



COST LESS.

HARVEY HUBBELL, BRIDGEPORT, CONN.

WELLAND VALE MANUFACTURING CO.

Limited, ST. CATHARINES, ONT.

Manufacturers of....

Axes, Edge Tools, Saws; Farming Implements and Bicycles.

The Firstbrook Box Co. Limited

PACKING CASES. DOVETAIL BOXES. Bottlers' SHIPPING CASES. BOX SHOOKS, Etc.

TOP PINS, SIDE-BLOCKS & CROSS-ARMS
Write for prices. **TORONTO, Canada.**

CARBONIZER

A neutral substance, harmless to animal fibre or tissue, while it destroys burrs, etc., as efficiently as acid. It leaves the wool in fine condition. Manufactured by the **Merrimac Chemical Co., 12 PEARL ST. BOSTON.**

PATENTS

Write for "Inventor's Help"—FREE.

MARION & MARION, ENGINEERS AND EXPERTS. WASHINGTON

KEYSTONE BRAND
One Pound will do more and better work than two or three gallons of any other lubricating Oil on the Market.

REDUCTION OF EXPENSES.
BETTER SERVICE.
FRICTION REDUCED.

CONSTANTLY MOISTENS BEARINGS
DOES NOT EVAPORATE
CONTAINS NO FOREIGN MATTER
NO CORRODING OR SPLASHING

CANADA LUBRICATING CO.,
CONFEDERATION LIFE BLDG, TORONTO.

McARTHUR,
CORNEILLE & CO.,

OFFICES:
310 to 316 St. Paul Street.

WAREHOUSES:
147 to 151 Commissioners Street.
...MONTREAL...

AGENTS FOR . . .
Berlin Aniline Co.,
Aniline Colors and other Coal Tar Products.
Stamford Manufacturing Co.,
Dyewoods and Extracts.
Coez, Langlois & Co.,
French Extracts.
Miller Extract Co., Hemlock Extracts
British Alizarine Co., Alizarine.
J. H. Heald & Co., Extracts Oak, etc.



The Ontario . . .
Malleable Iron Co.

(Limited)

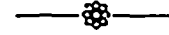
...Manufacturers of...

MALLEABLE IRON Castings to Order for all kinds of

AGRICULTURAL IMPLEMENTS .

...AND...

Miscellaneous Purposes



OSHAWA, - - ONT.

THE UNITED ELECTRIC CO.

SUCCESSORS TO

Limited.

W. A. JOHNSON ELECTRIC CO.
THE TORONTO ELECTRIC MOTOR CO., Limited.
THOMPSON ELECTRIC CO.

We Manufacture a complete line of **Electric Light and Power Apparatus.**

ARE PREPARED TO CONTRACT FOR COMPLETE INSTALLATIONS.

Head Office, - 134 KING ST. W., TORONTO, ONT.

THE CANADA SWITCH & SPRING CO., LIMITED.

Manufacturers of
..... SPECIALTIES FOR

Steam and Electric Railways,

SPRINGS, STEEL CASTINGS,
FROGS, FORGINGS,
TRUCKS FOR ELECTRIC RAILWAYS, ETC.

INTERLOCKING SWITCH
and SIGNAL PLANTS,

(Under patents of Messrs. Saxby & Farmer, Limited, of London, Eng.)

CANAL BANK, POINT ST. CHARLES,
MONTREAL.

BRISTOL'S PATENT
STEEL BELT LACING

— ONE HUNDRED SIZES —



READY TO APPLY FINISHED JOINT

Greatest Strength with Least Material

EASILY APPLIED and LOW IN PRICE

Saves Time, Saves Belts, Saves Money

SAMPLES SENT FREE

THE BRISTOL CO.
WATERBURY, CONN.

SMITH'S FALLS

Malleable Iron
Works . .

00000

CAPACITY 3,000 TONS.

00000

WILLIAM H. FROST

PROPRIETOR,

SMITH'S FALLS,

ONTARIO, CANADA.

CARRIER, LAINE & CO. | Dredges, LEVIS, P.Q.

SAW MILL MACHINERY, ETC.

Montreal Branch....
147 St. James St.
Quebec Branch....
263 St. Joseph St.

LAINÉ & LAINE BRAND TRADE MARK FOR THE PRODS. DEMONSTRATED