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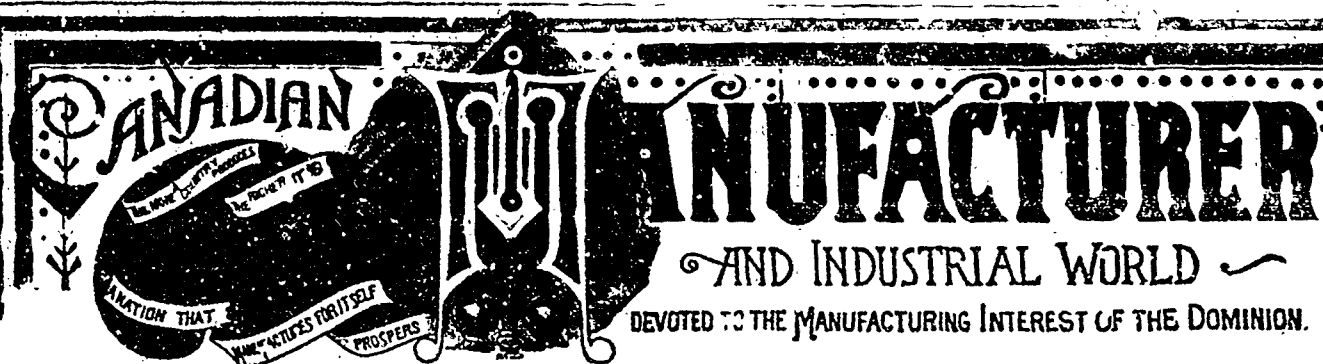
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VOL 47.

TORONTO, AUGUST 21, 1903.

No. 4.

STEAM BOILERS

FOR ALL PURPOSES

ECONOMY

DURABILITY

SAFETY

HEATERS, SUPERHEATERS,
ECONOMIZERS
AND STEAM ACCESSORIES

BABCOCK & WILCOX
LIMITED

NEW YORK LIFE BLDG., PLACE D'ARMES
MONTREAL

Toronto Office—114 King St. West

"REDSTONE" HIGH PRESSURE Sheet Packing

MAKES PERFECT JOINTS.

Does not blow out and requires no following up.

Try a sample lot and be convinced of its merits.

MANUFACTURED SOLELY BY

The Gutta Percha & Rubber Mfg. Co.
of TORONTO LIMITED

Head Office and Warerooms:

45, 47 and 49 WEST FRONT ST.,
TORONTO, CANADA

... Malleable... Iron Castings

XC Plate or Tinned
CASTINGS

also made to order.

McKinnon Dash &
Metal Works Co., Limited

ST. CATHARINES, ONT.

ELECTRIC LIGHT

—AND—

POWER CABLES

FOR UNDERGROUND INSTALLATIONS

The Wire & Cable Company, - - Montreal

"STANDARD of the WORLD"

OTIS ELEVATORS

CANADIAN OTIS ELEVATOR COMPANY, LIMITED

OFFICES

TORONTO

HAMILTON

MONTREAL

AND ALL PRINCIPAL CITIES

THE ...

**Walkerville
Malleable Iron
Co., (Limited)**

Manufacturers of .

REFINED AIR FURNACE

Malleable Castings

ALSO LIGHT GREY IRON CASTINGS.

WALKERVILLE,

ONTARIO.

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Member
of the
Canada
Manufacturers'
Associat

HEAD
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TEMPLE
BUILDING
TORONTO
OFFICE

OTTAWA
AND
WASHINGTON,
D. C.

PATENTS Fetherstonhaugh & Co.

TORONTO MONTREAL OTTAWA WASHINGTON

MANUFACTURER will save our Readers money, and should be consulted by them before purchasing.

The Classified Index

Floor Space is Valuable!



For Attaching to Wall

Type 1 B Direct Current MOTORS



For Suspension from Ceiling

FOR POWER PURPOSES

Substantial, Compact, Practical and Efficient

The greatest care in design, workmanship and testing is necessary to reach these results.

Our Motors are the Standard of the World.

CANADIAN GENERAL ELECTRIC CO.

LIMITED.

HEAD OFFICE
TORONTO, - ONT.

Montreal, Halifax, Ottawa, Winnipeg, Vancouver, Victoria, Rossland.

STEEL RAILS

We are now offering Highest Quality

BESSEMER STEEL RAILS

made by the

ALGOMA STEEL CO., Limited

of SAULT STE. MARIE, ONT.

DRUMMOND, McCALL & CO.,

GENERAL SALES AGENTS

OFFICES:

Canada Life Bldg., MONTREAL. 93 York St., TORONTO.

MONTREAL PIPE FOUNDRY CO...

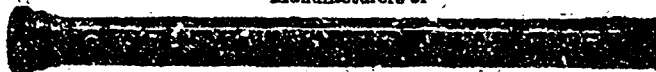
SUCCESSORS TO

(Limited)

DRUMMOND-McCALL PIPE FOUNDRY CO.

(Limited)

Manufacturers of

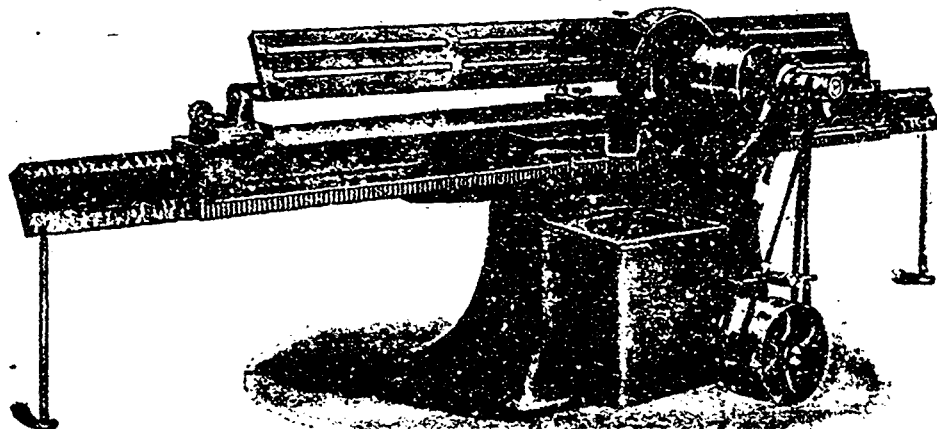


"Specials," Hydrants, Valves, Etc.

Offices:

Canada Life Building,

MONTREAL



HART EMERY WHEEL CO., LIMITED

HAMILTON, ONT.

OUR SPECIALTY:—

Craig Mine Crystal Corundum
Wheels.

Grinding Machinery of every
description.

WRITE FOR PRICES.

AN ENGINE possessing the qualities of Economy, Simplicity, Quick and Even Regulation, Easy to Operate, Needing Few Repairs is the kind required by steam plant operators. These essentials are embodied in the WHEELLOCK and IDEAL STEAM ENGINES made by

WE MAKE Wheelock Engines, Ideal Engines, Gas and Gasoline Engines, Boilers, Water Wheels, Pumps, Flour Mill Machinery, Oat Meal Mill Machinery, Oat Meal Steam Pan Kilns, Wood Working Machinery, Iron Pulleys, Wood Rim Split Pulleys, Shafting, Hangers, Gearing, Friction, Clutch Pulleys, Friction Clutch Couplings, etc., Safes, Vaults and Vault Doors.

THE GOLDIE & McCULLOCH CO., Limited
GALT, Ont., Canada.

LEONARD - CORLISS Engines

For all power purposes.

The **CORLISS ENGINE** is without question the most economical. Universally acknowledged as the peer of all slow speed engines. All Engines have multiported valves.

The **PEERLESS Self Oiling ENGINE** is the most perfect high speed engine in existence, there is nothing about the engine which has not been a proved success.

Boilers for all powers and purposes. **Heaters, Pumps.**
CORRESPONDENCE SOLICITED.

E. LEONARD & SONS, - Manufacturers
London, Canada

Montreal, P. Q. Winnipeg, Man. St. John, N. B.

THE WELLINGTON MILLS
London, England.

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

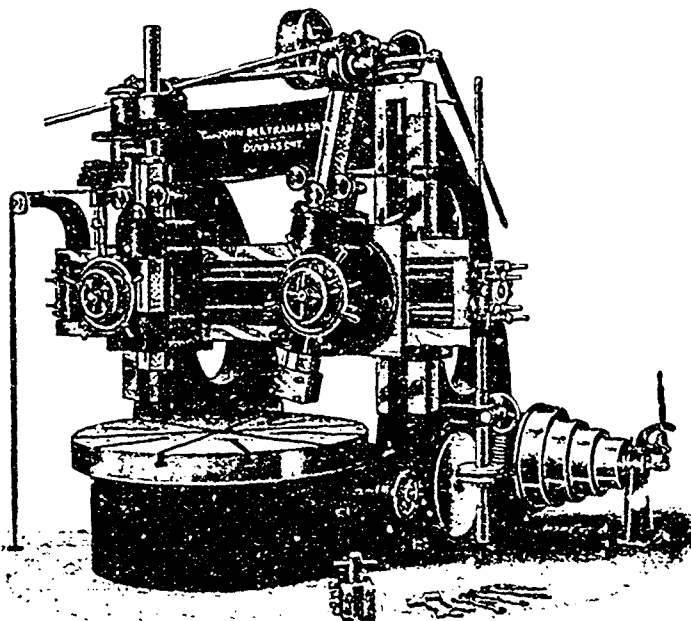
JOHN OAKEY & SONS, Limited, Wellington Mills, Westminster
Bridge Road, London, Eng.

Enquiries should be addressed to

JOHN FORMAN, - 650 Craig St., MONTREAL

ALL THE BEST SHOPS ARE INSTALLING OUR

BORING and TURNING MILLS



This represents our 60 Boring and Turning Mill with one regular head and one special boring head.

THESE shops are then equipped with best facilities for boring and turning a variety of jobs, including wheels, pulleys, etc. The shops best equipped to handle work are the ones that are getting the work.

If any manufacturer thinks he can get along by doing all his boring and turning on a lathe he is making a costly mistake. It may have worked all right in his grandfather's time, but the shop owner of today is bucking up against a harder proposition than his grandfather's competitors.

If you are interested enough in your own progress to write for further information on this subject we will tell you all about our line of Boring and Turning Mills.

THE JOHN BERTRAM & SONS CO.

LIMITED

DUNDAS, - ONTARIO

GAMMELL STEEL RAILS

ALL SECTIONS
and WEIGHTS

LIGHT RAILS—12, 18, 25 lbs.—in Stock

SUPPLIES—STEAM SHOVELS, LOCOMOTIVES, CARS,
DUMP CARS, BALLAST PLOWS

LARGE STOCK of Wheelbarrows, Scrapers, Picks

Shovels, Hammers, Track Tools,

BARRETT JACKS

JAMES COOPER, - - - - - Montreal.

THE NOVA SCOTIA STEEL & COAL CO.

MANUFACTURERS OF

LIMITED

BRIGHT COMPRESSED STEEL CHAFING

FROM $\frac{1}{2}$ TO 6 INCHES IN DIAMETER. GUARANTEED STRAIGHT AND TRUE TO WITHIN $\frac{1}{32}$ 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-

BARK
KNIVES
PULP
KNIVES
RAQ
KNIVES
Etc., Etc.



Splitting
Machines

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



Quality Guaranteed. Special Knives Made to Order. Send for Price List

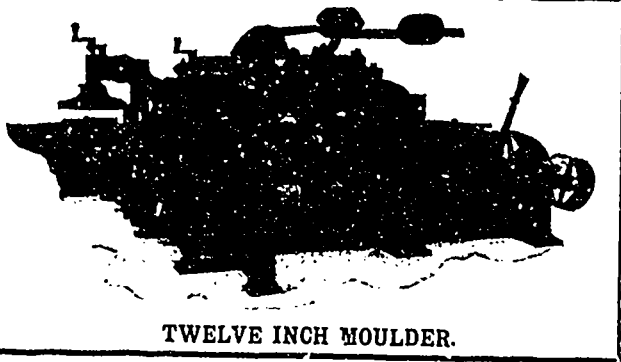
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COWAN & COMPANY OF GALT,

LIMITED

"Galt Foundry"

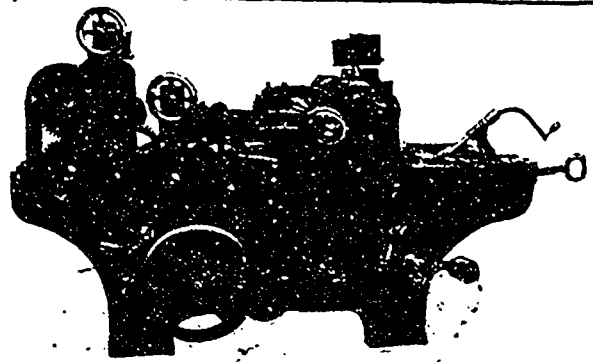
ENGINE and MACHINE WORKS
GALT, CANADA



TWELVE INCH MOULDER.

WOOD-WORKING MACHINERY and ENGINES

... SEND FOR CATALOGUE ...

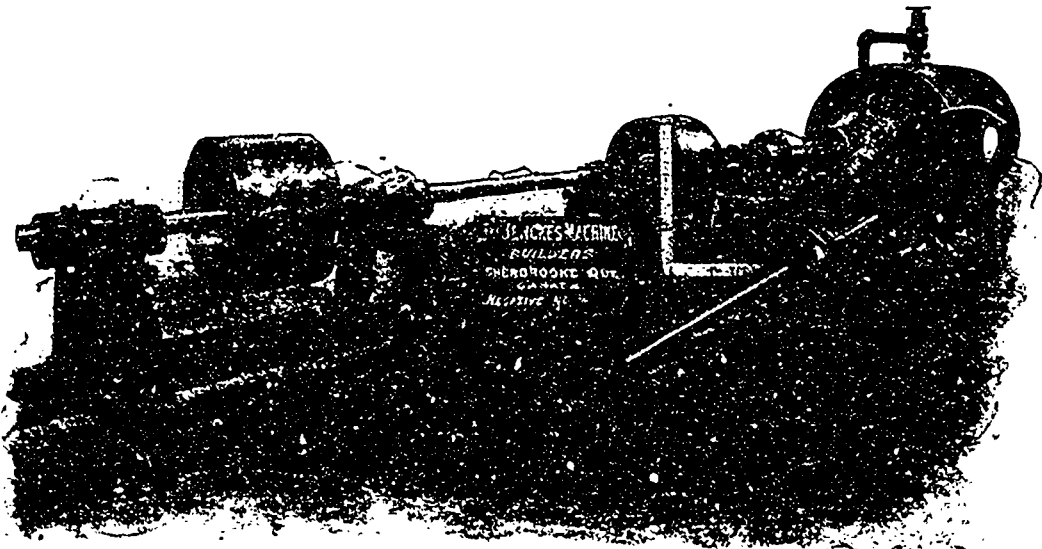


TWENTY-SIX INCH R. B. SURFACE D. C.

A 15-inch
**CROCKER
TURBINE**
horizontal.

Running
under
93 ft. head.

Electric
Ligh. Plant



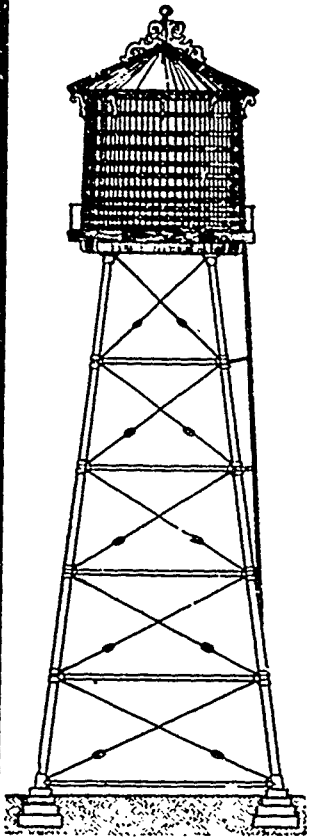
The Crocker Turbine is built in all sizes and all settings for any head. Our Bulletin 200, shows many of them. It is free.

The Jenckes Machine Company,

626 LANSDOWNE STREET,

SHERBROOKE, QUE.

"Absolutely safe and reliable. Ask your friends."



NO TROUBLE

IS WHAT OWNERS SAY OF

Caldwell Tanks and Towers

They find the Red Gulf Cypress used in our tanks the most lasting of woods, and not affected by sudden changes of temperature.

The Caldwell Steel Tower

is strong and slightly and will stand any storm without weakening. Our catalogue describes and gives prices of all kinds of tanks and towers.

W. E. Caldwell Co.

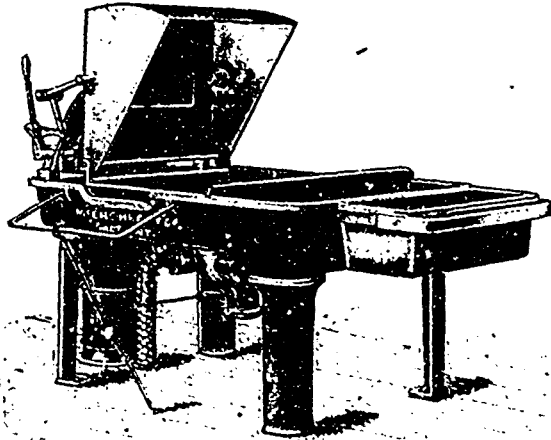
LOUISVILLE, KY.

Down Draft FORGES

— FOR —

BLACKSMITH and CARRIAGE

. . . SHOPS . . .



Have your forge room clear of smoke by installing our **DOWN DRAFT SYSTEM.**

WRITE FOR CIRCULARS AND PRICES.

McEACHREN HEATING and VENTILATING CO., GALT, - ONTARIO

WIRE ROPE

ALL KINDS AND SIZES and for all purposes.

STANDARD AND LANG'S PATENT LAY.

Prices Right



Prompt Shipments



THE B. GREENING WIRE CO., Limited, HAMILTON, ONT. MONTREAL, QUE.

IF WE TOLD YOU

That the SYRACUSE SMELTING WORKS Babbit Metal and Solder are the best on earth, you would be inclined to view the statement in a sceptical light and consider it off color, but that is exactly what we claim and can prove what we say. Not by arguments, but by thousands of testimonials from firms who have used it for the last 15 years, and are still using it.

Ask your dealer for the SYRACUSE SMELTING WORKS Babbit Metal and Solder, and if they don't keep it, send your order direct to us and tell us for what purpose you would want it, and we will send you the right metal at the right price.

Remember and don't forget that the SYRACUSE SMELTING WORKS, Montreal, are the largest Babbit Metal and Solder manufacturers under the British flag.



SYRACUSE SMELTING

... WORKS ...

MONTREAL, CAN. AND NEW YORK, U.S.A. SEATTLE, WASH.

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THE CANADIAN PORTLAND CEMENT CO. LIMITED

MANUFACTURE "RATHBUN'S STAR" BRAND

THE LEADING CANADIAN PORTLAND CEMENT

Capacity of Works—500,000 Barrels per Year

THE RATHBUN COMPANY,
310-312 Front Street West,
TORONTO, ONT.

SALES
AGENTS

ST. LAWRENCE PORTLAND CEMENT CO.,
101-102 Board of Trade Building,
MONTREAL, QUE.

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

Works—SHALLOW LAKE, Ont. Head Office—OWEN SOUND, Ont.

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

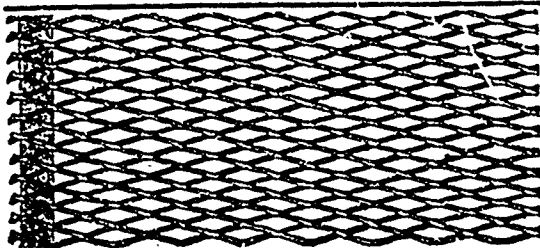
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Albert Manufacturing Co.

MANUFACTURERS OF THE WELL-KNOWN

"Hammer Brand" **Calcined Plaster** AND **PATENT ROCK WALL PLASTER.**

HILLSBOROUGH, N.B., CANADA.



EXPANDED METAL and FIRE PROOFING COMPANY, Limited

CHEAP FIREPROOF CONSTRUCTION

SUITABLE FOR FACTORIES

Write for Booklet and Prices.

Offices, 100 KING ST. WEST, TORONTO

"SCIOTO" FIRE BRICKS

Are the best that money can buy for
BLAST FURNACES, STEEL WORKS and
ROLLING MILLS.

Manufactured and Sold Direct by

LET US TELL YOU ABOUT THEM.

WE HAVE NO MIDDLE MEN.

THE SCIOTO FIRE BRICK COMPANY, - - Sciotoville, Ohio, U.S.A.

"Beech Creek" FIRE BRICK

STRICTLY HIGH GRADE

MADE ONLY BY

PENNSYLVANIA FIRE BRICK CO.,
LOCK HAVEN, PA., U.S.A.

Special Mixtures for use in Rolling Mills,
Malleable Iron Works, Steel Works, Blast
Furnaces, Glass Tanks, Cement Kilns,
Locomotive Blocks, and all
High Grade Uses.

Difficult Shapes a Specialty.

Send for Catalogue and Prices.

BRANDS: BEECH CREEK, BEECH CREEK ROOF, BEECH CREEK BUNG.

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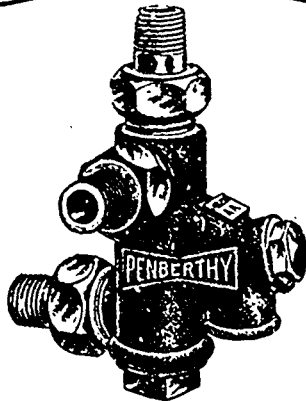
ASK FOR BULLETIN



**"PENBERTHY"
LOW PRESSURE INJECTOR**

FOR WATER PRESSURE.

WORKS LOW AT 10 LBS. PRESSURE.
WORKS HIGH AT 175 LBS. PRESSURE.

MADE IN CANADA

**"PENBERTHY"
HIGH PRESSURE INJECTOR**

THE "AUTOPOSITIVE"

WORKS HIGH AT 200 LBS.
WORKS LOW AT 18 LBS.

MADE IN CANADA

AUTOMATIC INJECTORS

RANGE 22 to 150 LBS., GUARANTEED.

Also a Full Line of Oil and Grease Cups, Water Gages, Gage Cocks, Etc., Etc

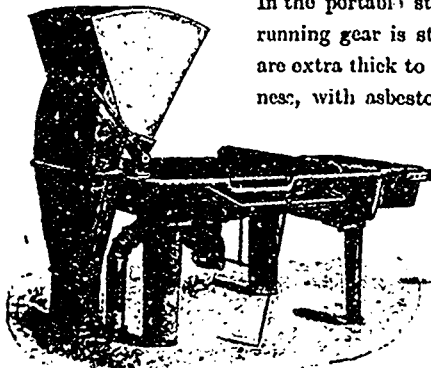
MADE IN CANADA

PENBERTHY INJECTOR CO., LIMITED, WINDSOR, ONT.

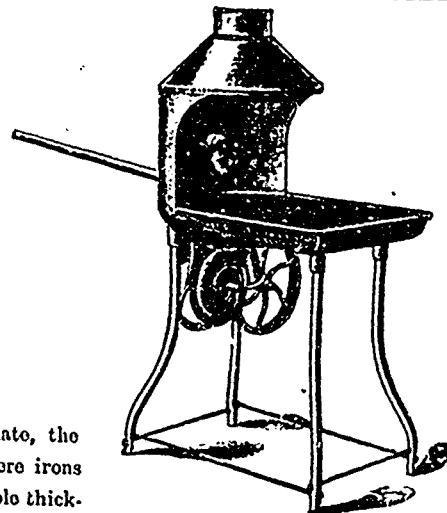
The Sturtevant FORGES

Are Built for Endurance.

34 Styles and Sizes.



In the portable styles the hoods are of heavy steel plate, the running gear is strong and easily operated. The tuyere irons are extra thick to resist fire, and the fire pan is of double thickness, with asbestos between. The blower is the same as the regular Sturtevant Steel Pressure Blower, with babbitted journal boxes. Forges for heavy work are built in a full line of sizes, designed for large smith shops, railroad and ship works. The fire pans are heavy cast iron, with coal and water tanks. Tuyeres are adjustable. Special up or down draft hoods of heavy steel plate can be provided.



B. F. Sturtevant Co.

Boston, Mass.

New York.

Philadelphia.

Chicago.

London.

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CASSELLA COLOR COMPANY

(American Branch of Leopold Cassella & Co.)

ARTIFICIAL
DYE STUFFS

New York, 182-184 Front Street.

Boston, 524 Atlantic Avenue.

Philadelphia, 126-128 South Front St.

Providence, 64 Exchange Place.

Atlanta, 47 North Pryor Street.

Montreal, 86-88 Youville Square.

ANILINES

St. Denis Dyestuff and Chemical Co.,

(A. POIRRIER), of Paris, France.

Manufacturers of

Aniline Colors, Aniline Oil and Salt, 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

GEIGY ANILINE & EXTRACT CO.

SUCCESSORS TO JOHN J. KELLER & CO., Inc.

104 and 106 Murray Street, - NEW YORK

BOSTON PROVIDENCE PHILADELPHIA
ATLANTA TORONTO

Manufacturers and Importers of

ANILINE COLORS

ECLIPSE SULPHUR COLORS

INDIGO J R G DOUBLE

SUMAC AND DYEWOOD EXTRACTS

SPECIALTIES FOR CALICO PRINTERS

Canadian Branch—23-33 MELINDA ST. T. D. WARDLAW, Mgr.

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

PURE ALKALI

48% and 58% (Light and Heavy)

BLEACH^g PWD.

35% to 37% (Hardwood Oeaks)

CAUSTIC SODA

60% to 77%.



TRADE MARK.

Winn & Holland,
MONTREAL,

Sole Agents for Canada.

SODA CRYSTALS

Lump and Crushed. Brs. and Bags.

CON^{CTD} SAL SODA

DOUBLE STRENGTH

BICARBONATE SODA

ABSOLUTELY PURE

Also for Mineral Water Manufacturers.

BELLHOUSE, DILLON & CO.

201 Coristine Bldg., St. Nicholas St., MONTREAL.

**Dyestuffs,
Chemicals and Extracts**

SOLE AGENTS IN CANADA FOR

KUTTROFF, PICKHARDT & CO'S

ANILINE and ALIZARINE COLORS

TORONTO OFFICE—JAS. HAYWOOD, Agent, 30 Wellington St. East.

NEW YORK OFFICE—DILLON & CO., 20 Cedar Street.

A. KLIPSTEIN & CO.

122 Pearl St., New York

HAMILTON, ONT.—24 Catharine St. N. MONTREAL—17 Lomolne St.

ANILINES

DYESTUFFS and CHEMICALS

Sole Agents for the SOCIETY OF CHEMICAL
INDUSTRY IN BASLE, SWITZERLAND.

FAST COLORS FOR WOOL and COTTON

ALSO FULL LINE OF DIRECT COTTON COLORS

BRANCHES—BOSTON, 233-5 Congress St. PHILADELPHIA, 50-52 N. Front St.
CHICAGO, 136 Kinzie St. PROVIDENCE, 13 Mathewson St.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

YOU MAY NOT NEED A LATHE OR PLANER NOW

But in the near future a machine, as above, with all modern improvements, will be required. On request we will furnish you full particulars of points of merit which you will demand on next tools you buy. ❀ ❀

WRITE US AND BE CONVINCED.

The R. McDOUGALL CO., Limited, - Galt, Canada

THE IMPERIAL OIL COMPANY, Limited

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

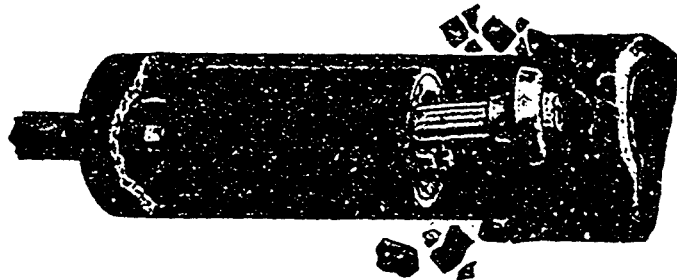
Lubricating, Water White Illuminating Oils,
Paraffine Wax, Etc.

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.S. 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. KINGSTON, ONT. WINDSOR, ONT.

There is just one sure method of removing scale from a water tube or return tubular boiler, and that is by using



The Dean Boiler Tube Cleaner.

DON'T BE DECEIVED BY MAKESHIFT COUNTERFEITS.

The Dean is the Original Cleaner, and we will loan it to you without charge for a thorough trial, and will guarantee that it will pay for itself in six months' use.

WILLIAM B. PIERCE COMPANY

322 Washington Street,

- - - BUFFALO, N.Y.

JEFFREY ELEVATING... CONVEYING... COAL MINING... COAL WASHING **MACHINERY**

ELECTRIC MINE LOCOMOTIVES



JEFFREY REFUSE CONVEYOR
SEND FOR CATALOGUE

THE JEFFREY MFG. CO., - Columbus, Ohio, U.S.A.

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Montreal Agents—WILLIAMS & WILSON.

THEY ARE COMING

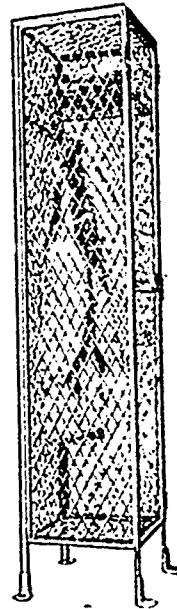
For **FACTORIES**
HOSPITALS
HOTELS
BANKS
CLUBS and
INSTITUTIONS

WIRE LOCKERS

WILL SOON BE IN
GENERAL USE.

WE MAKE THEM

and all kinds of Bank and Office
FITTINGS.



THE GEO. B. MEADOWS

Wire, Iron & Brass Works Co., Limited

117 King St. West, **TORONTO**, Canada



**Send us Your Orders
For Shafting**

We are unquestionably better equipped to fill all regular or special orders for shafting than any other concern in the Dominion.

We carry in stock at all times upwards of 200 tons of high grade steel shafting, absolutely true, and in sizes of 1/2 to 8 inches in regular lengths of 16, 18 and 20 feet.

We have splendid facilities for turning out quickly large Jack shafts.

Whenever you need anything in the line of shafting please bear the above facts in mind.

The DODGE MFG. CO. of Toronto

LIMITED
TORONTO

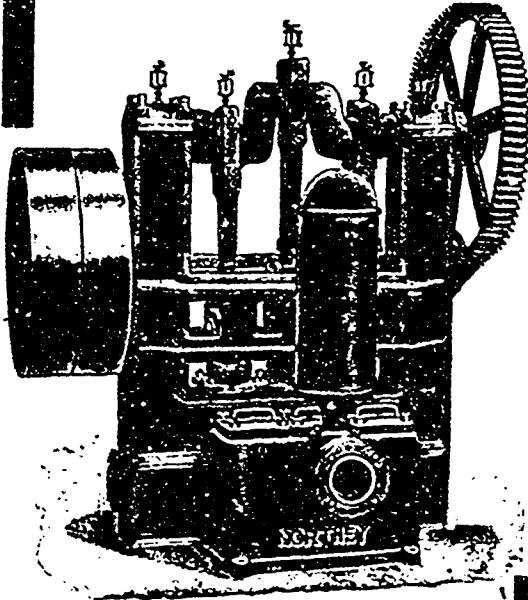
We publish a monthly magazine of Power transmission news "Power Transmission Economics." We shall be glad to send it to you.

Makers of Rope Transmission Equipment, Wood Split Pulleys and General Founders, Machinists and Engineers.

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

THE CANADIAN MANUFACTURER

Reaches all the Blast Furnaces, Iron and Steel Works, Rolling Mills, Manufacturers of Iron and Wood-Working Machinery, Steam Engines and Boilers, Pumping and Mining Machinery, Electric Machinery, Textile, Pulp and Paper Mill Machinery, Water Power Plants, Cement, Sewer Pipe and Terra Cotta Works, Dealers in Steam Fitters' and Plumbers' Supplies, and all Hardware Merchants in Canada.

A ROW OF PINS.

Mr. James Weir, head of the engineering firm of G. & J. Weir, manufacturers of hydraulic and mining machinery, etc., Cathcart, near Glasgow, Scotland, was in Toronto a few days ago completing a tour of the world, having visited many places of interest in the United States. Asked by a newspaper interviewer about American competition in Great Britain and elsewhere against British manufacturers, Mr. Weir said that such competition does not amount to "a row of pins," that British concerns beat the Americans in all parts of the world. In many cases, he said, American machinery was being thrown into the scrap heap as old iron, being replaced by British-made machinery.

Referring to the St. Louis Fair, Mr. Weir said that scarcely a solitary British manufacturer of repute would exhibit, because the designs would be stolen by American firms. There will only be some general exhibits from Europe, but all manufacturers in France, Germany, and Great Britain would positively refuse to exhibit. He had met many able and intelligent Americans, but he was amazed at the general ignorance which prevailed in the States relative even to their own country, while about other countries they were densely ignorant.

Having made the tour of the world it is a question whether Mr. Weir travelled with his eyes open if his conclusion is that American made machinery is of the indifferent character he charges against it: and, as far as Canada is concerned, it is very certain that, even with our tariff preference in their favor, British manufacturers of machinery cannot begin to compete with American manufacturers, either in effectiveness or price. In a recent issue of this journal was published a tabulated statement showing in detail the values of 84 different manufactures of dutiable goods, chiefly of iron and steel, imported into Canada during the fiscal years 1898, 1900 and 1902; and in like detail the values of 45 different non-dutiable articles of similar character. The statement was intended to emphasize the relatively small imports from Great Britain notwithstanding the preferential tariff in her favor, as against the greater value of such imports from the United States. The cause of the preponderance of imports of American manufactures over similar products from Great Britain, as shown, was that American goods are better adapted to Canadian wants, coupled with the fact that American manufacturers are liberal and judicious advertisers in Canadian journals which British manufacturers are not. Mr. Weir is a manufacturer of certain lines of machinery dutiable in Canada, the imports of which, in 1902 was valued at \$3,468,922, that which came from Great Britain being valued at only

\$302,928, while the United States sent us to the value of \$3,116,105, which anomalous fact we leave to Mr. Weir to explain. Mr. Weir is also a manufacturer of mining and similar machinery which comes into Canada duty free, and in 1902 our imports of such from Great Britain were valued at only \$44,061 and from the United States, \$1,464,570, which anomalous fact we leave to Mr. Weir to explain. The total value of the 84 different dutiable articles alluded to, imported from all countries in 1902, was \$23,528,516, of which Great Britain supplied only to the value of \$3,047,812, or 12.9 per cent., and the United States to the value of \$18,738,143, or 75.3 per cent.; our imports of the 45 different articles admitted duty free being valued at \$25,593,294, Great Britain supplying us to the extent of \$3,621,514, or 14.1 per cent., and the United States with \$19,236,847, or 75.1 per cent. The value of all foreign merchandise, both dutiable and free, entered for consumption in Canada in 1902 was \$202,791,597, of which Great Britain supplied us to the value of \$49,206,062, or 24.2, and the United States to the value of \$120,814,750, or 59.5 per cent. And yet, if the interview reports correctly, Mr. Weir's opinion is that the competition of American manufacturers with British manufacturers, in the Canadian market at least, does not amount to "a row of pins."

Mr. Weir is, we take it, far astray regarding the number of manufacturers in his own country who will exhibit specimens of their own products at the St. Louis Fair next year. He says that should they do so their ideas and designs would be pirated by the imitative Yankees; and it is also his opinion that outside some general exhibits from Europe the manufacturers of France and Germany, as well as those of Great Britain, will boycott the Fair, and for the same reason; but it is to be observed that a large number of the manufacturers of the countries named, and also of many other European countries, have already expressed their intention to exhibit at St. Louis, and have made application for necessary space, and that the Governments of these countries have already appointed commissioners to be in attendance, and have, some of them, that of Great Britain especially, made liberal appropriations of money to add to the attractiveness of the displays of their manufactures. Mr. Weir is amazed at the general ignorance which prevails among Americans relative to their own country; not to mention their lack of knowledge concerning other countries; but if this ignorance is a tithe of that of Mr. Weir regarding the subjects he discussed with the Toronto interviewer, our American friends are a stupid lot. It is evident that Mr. Weir travels with his eyes shut.

PRICE OF UNSKILLED LABOR.

Some time ago the legislature of the State of Indiana enacted a law at the request of the labor organizations, providing that unskilled labor should not be employed by counties, cities and towns in that State for less than twenty cents an hour, and providing a fine or imprisonment for any person or corporation doing public work, to employ unskilled labor for less than that wage. That law has been held to be unconstitutional by the Supreme Court of that State. In an opinion written by Judge Dowling it was held that the law interferes with the freedom of contract, and that the Legislature can no more fix the price of labor than it can the price of bricks.

The appeal grew out of a suit of a laborer named Frank Street, who, in the Wayne Circuit Court, sued the Varney Electrical Co. for twenty cents an hour.

In the opinion Judge Dowling says :

No sufficient reason has been assigned why the wages of the unskilled laborer should be fixed by law and maintained at an unalterable rate, regardless of their actual value, and that all other laborers should be left to secure to themselves such compensation for their work as the conditions of supply and demand, competition, personal qualities, energy, skill and experience may enable them to do.

While the counties, cities and towns are political and municipal subdivisions of the state, says the court, they are not governmental agencies in such sense as to subject the management of their local affairs, involving the making of contracts for labor and materials to be used upon local improvements and the payment of the same out of the revenues of the county, city or town, to the arbitrary and unlimited control of the Legislature.

They are corporations, as well as governmental subdivisions and agencies, and as such corporations they have the power to make contracts by which the rate of compensation for property sold to them is fixed.

With regard to such contracts for the purchase of property or the employment of labor, counties, cities and towns stand much upon the same footing as private corporations, and they can not be compelled by an act of the Legislature to pay for any species of property more than it is worth, or more than its market value at the time and in the place where it was contracted for.

The power to confiscate the property of the citizens and taxpayers of a county, city or town by forcing them to pay for any commodity, whether it be merchandise or labor, an arbitrary price in excess of the market value, is not one of the powers of the Legislature over municipal corporations, nor the legitimate use of such corporations as agencies of the state.

For the same reason, the court continues, an act fixing the price of unskilled labor at all public works at not less than twenty cents an hour is a legislative interference with the liberty of contract by counties, cities and towns, which finds no sanction or authority in the doctrine that counties, cities and towns are municipal subdivisions of the state.

The court finds the act deprives a citizen of property without due process of law in the case of labor on public improvements for which assessments are made. Citizens are entitled to have such work done at rates the municipal subdivisions are able to secure.

Lastly the court finds it to be class legislation, for "unskilled labor" is a classification "unnatural and unconstitutional."

"The laboring men of the state," says the opinion, "may, for some purposes, constitute a class concerning which particular legislation may be proper, and this classification has been recognized and sustained in statutes requiring the payment of wages in lawful money of the United States; forbidding the assignment of future and unearned wages, and in similar acts."

THE CUSTOMS ACT.

The new Customs Amendment Act, which has now become law, is a measure of very great importance to the business community of Canada. Customs Acts, as a rule, are of a negative nature, consisting of a number of don't's, but the present Act is in the nature of concessions, such that business men universally, as soon as they understand them, will be quick to avail themselves of. In framing the Act the Minister of Customs evidently had the interests of the importer in view, and endeavored to provide means which would enable him to conduct his business in a more efficient and straightforward manner than has hitherto been possible.

Recognizing the significance of this Act we here give its salient features, in a synopsis, which business men will understand :

Section 3.—This section changes the constitution of the Board of Customs, which formerly consisted of the Commissioner of Customs, Dominion Appraisers and Assistant Dominion Appraisers, giving 14 or 15 members, who were located at various points in the Dominion, from the Atlantic to the Pacific, and a full meeting of the Board could rarely be had. Under the new Act, the Board of Customs is to consist of the Commissioner of Customs and such duly qualified officers of Customs as the Governor-in-Council from time to time appoints. It is probable that the number of members of the Board will be reduced, and that they will be selected in such a way that a full meeting of the Board can be held when required.

Section 4.—Under this section the Minister of Customs is given power to authorize the employment of temporary or acting officers of Customs in the outside divisions of the service, that is, at ports and outports, as may be necessary to carry on the work during the busy seasons. Such extra employees will not necessarily become permanent members of the staff. No such officer shall receive a higher salary than he would be allowed if appointed permanently to the same rank or class to which he is temporarily employed, nor shall his salary be paid until voted by Parliament.

Section 5.—By this section the Board of Customs may declare the rate of duty payable on any class of goods, or that such goods are exempt from duty, subject to an appeal to the Governor-in-Council, and in case of such appeal any Order-in-Council, made upon appeal, shall have the same force and effect as if the rate of duty had been sanctioned by statute.

Section 6.—Section 10 of the old Act read : "All invoices of goods shall be made out in the currency of the country whence the goods are imported." The new Acts adds after the word imported : "Or in the currency in which the goods are actually purchased." This will simplify matters very much for importers who frequently purchase goods in one country in the currency of another. For instance, it is a common practice to purchase goods in France and other continental countries in sterling currency, and it has latterly become a practice to purchase goods in these countries in dollars and cents. The following sub-section is new, and will be interesting to the importing public :

All invoices shall faithfully exhibit the transaction between the exporter and the importer, and contain a true and full statement of the actual price payable for the goods, including cartons, cases and coverings of all kinds, and all expenses incident to placing the goods in condition, packed ready for shipment to Canada, and no such invoice shall state any discount, other than such as has been actually allowed to the importer.

Section 7.—This section repeals Section 15 of the Customs Act of 1898, which reads as follows :

On all articles manufactured from two or more materials, the duty shall be that charged on the article, if there is a difference of duty, which is charged with the highest duty. The new section reads as follows :

On any article not enumerated, manufactured of two or more materials, the duty shall be assessed at the highest rate at which it would be chargeable, if the article was composed wholly of the component material thereof of chief value, having regard to the condition of the component materials as found in the article.

Sections 8 and 9.—These sections extend the time for making claim in respect of damaged goods from ten days from the date of landing to 14 days of the date of entry, or of such landing. This extension of time which will give the importer two weeks after the passing of his entry, within which to prepare his claim for damage, will probably be much appreciated by business men.

Section 10.—Section 51 of the Customs Act of 1898 provides for the assessment of the amount of damage to goods, sustained in course of importation. Under the new Act the following provision is made for the advantage of importers:

Provided that the collector may permit an importer, within 14 days after entry or landing, to abandon to the Crown any whole package or packages of damaged goods and be relieved of the payment of the duties on the portion so abandoned; and the goods so abandoned shall be destroyed if, in the opinion of the collector, they cannot be sold for a sum sufficient to pay duties and charges.

Section 12.—This new section makes provision for dealing with cases of injury or destruction in whole or part of goods by fire or other casualty while in the custody of the Customs, as follows:

Upon production of satisfactory proof to the Minister of Customs of the actual injury or destruction, in whole or in part, of any goods by accidental fire, or other casualty, while they remain in the custody of the officers of the Customs in any customs warehouse, or while in transportation in bond from one port of entry to another port of entry in Canada, or while within the limits of any port of entry, and before they were landed; under the supervision of the officers of the Customs, the duties on the whole or part thereof so proved to be injured or destroyed may be abated or refunded; provided that the claim is made within 14 days after the date of the casualty, and that due appraisal is made of the goods so alleged to be injured as soon as they can be examined.

Section 13.—This section provides for extending the time from 10 to 14 days within which claim for refund may be made, because of inferiority or deficiency in quantity of goods or because of the omission in the invoice of any trade discount or any matter or thing which might have the effect of reducing such values for duty. This extension of time will be of great value to importers in many cases.

Section 16 enacts that, the Collector shall require that the true invoice from the exporter to the owner of the goods be delivered for duty purposes with the bill of entry at the Customs House when such goods have been sold by the exporter thereof prior to their arrival in Canada, although the goods arrive in Canada consigned to a person other than their owner.

Section 17 provides that every officer of Customs and every person acting as such officer under the directions of the Minister of Customs may administer any oath prescribed to be taken in respect of any entry within the scope of the official duties assigned to such officer.

Section 18 gives to the Governor-in-Council power for reducing the duty of all articles, whether natural products or products of manufactures, used as materials in Canadian manufactures; and any such materials specified in such Order-in-Council shall be subject to such reduced duty of Customs, and no other, for the time and under the conditions therein provided.

The Governor-in-Council previously had power under subsection 1 of Section 245 of the Customs Act for transferring to the list of goods which may be imported into Canada free of duty any or all articles (whether natural products or products of manufactures) used as materials in Canadian manufactures. In future the Governor-in-Council may either abolish the duty or reduce it, as may be advisable in the interests of Canadian manufacture.

The new Act reconstitutes the Board of Customs, which formerly consisted of the Commissioner of Customs, Dominion appraisers, and assistant Dominion appraisers—about 15 members in all. As these officials are located at different points in Canada, a full meeting of the board could rarely be held, and it was even difficult at times to secure a quorum. A quorum has now been reduced to three ministers. The principal advantage of this is that it will enable the board, when the

occasion arises, to act promptly in deciding the rating of any article or other difficulty. This will be a great convenience to importers.

Another concession to importers is that invoices may be accepted in the currency in which goods are actually purchased, instead of, as formerly, in the currency of the country from which the goods were exported. Advantage also lies in the enlargement of the time in which refund claims may be made. Formerly, if there was an error in invoice or shortage in goods, or if goods were damaged in transit, no refund claims could be entertained unless notice were given by the importer to the collector within ten days from the date of entry or landing of goods. This period has been extended to fourteen days. A new clause provides that if goods are injured or destroyed, in whole or in part, by fire or other casualty, after entering a customs port and while in the custody of the officer of customs, the duties on the goods destroyed will be refunded. Formerly no refund of duty was allowed under such circumstances.

An important change is made affecting transportation companies. Up to the present time railway, express and steamship companies have had to pay the charge for attendance of custom officers outside of official hours, and this charge has amounted annually in the whole of Canada to nearly \$30,000. The expense of this service will hereafter be borne by the department of customs, an appropriation for that purpose having been voted by Parliament. The companies must, however, pay for the attendance of officers on Sunday.

The Government has power under the new act to reduce the duty on any articles, whether natural products or products of manufactures, used as material in Canadian manufactures. Heretofore the governor-in-council had power to abolish but not to reduce duties.

The Board of Customs as reconstructed consists of the following members:—John McDougald, Commissioner of Customs; John Bain, Assistant Commissioner; S. W. McMichael, Chief Inspector, Toronto; R. W. Brebner, Wyatt S. Wood and George W. Jessop, Dominion appraisers.

WEST INDIA TRADE.

Mr. T. Geddes Grant, Canadian Government Agent from Port of Spain, Trinidad, is in Toronto. Mr. Grant is delegate to the Congress of the Chambers of Commerce of the Empire, in Montreal, but his main purpose in visiting Canada is to familiarize himself more thoroughly with Canada's trade conditions and to get into touch with manufacturers and importers who desire to extend their trade in Trinidad and the British West Indies.

Mr. Grant is quite confident that there is an excellent opening for Canada to do a much larger trade in the West Indies than she is now doing. When he first arrived in Trinidad, about three years ago, he represented a British house, but recognizing the opportunities for developing Canadian trade, he resigned his position to devote his whole attention to handling our goods. The results have more than justified his expectations. At one time there was a strong prejudice in the West Indies against Canadian goods on account of the unusual packages in which they were shipped, not complying with the requirements of the market, the damaged condition in which goods frequently arrived and the slowness and carelessness of their shipment. Now, however, Canadian shippers were adapting themselves more to the conditions of the market, and Canadian products had obtained a strong hold. At the same time there was much yet to be done, and Mr. Grant had several words of advice to Canadian exporters. Out of a total import-

ation of flour (one of the principal products from Canada) consisting of 207,847 barrels for the year ending March 31, 1903, 107 barrels came from the United States, and only 12,448 from Canada. This was an illustration—for other importations were in the same or less proportion except oats—to show that Canadians had not yet captured their due share of the trade.

In going after West Indian trade, Mr. Grant said Canadians must recognize that they are in competition with the whole world, and, unless they can bring their prices down to a level with competitors, they might as well stay at home. Many United States manufacturers made special discounts for export, and he actually knew of cases where the Singer Mfg. Co. had purchased its own machines in Trinidad and had to carry them back to the United States and sell them at current prices. Another thing which helped Americans was the system of doing business through commission houses in New York, such as Flint, Eddy & Co., which afforded cheap and effective means of reaching the trade.

The chief difficulty that Canadians must apply themselves to overcome was to get their goods shipped promptly. He had received several orders from Trinidad merchants, which were not filled for some months afterwards, when the conditions of the market had entirely changed, and in some cases the shipments were a complete loss. Merchants were afraid to give orders on speculation in this way.

Mr. Grant emphasized strongly the importance of marking goods conspicuously "Made in Canada." Our goods had a high standard of excellence, and could not be too much advertised, as German, English and American goods were.

EDITORIAL NOTES.

During the first five months of 1903 the imports of mining machinery into Canada were valued at \$478,303, of which \$451,391 were non-dutiable and \$26,904 dutiable. The imports from the United States were, free, \$447,411 and dutiable, \$26,698, and from Great Britain, free, \$1,645 and dutiable \$206, all other countries supplying to the value of \$2,343. American manufacturers advertise their goods in Canadian trade journals, and British manufacturers, as a rule, do not do so. American manufacturers supplied the Canadian market to the extent of \$474,109, and British manufacturers to the extent of only \$1,851. The preferential tariff is not much of a stimulant to the British trade in mining machinery.

Information comes from Washington that the determination of the question whether seal life shall be protected in Behring Sea, and to what extent, or whether all the seals on the rookeries shall be destroyed at once, as proposed in the last United States Congress, is to be referred to the Joint High Commission when that body meets. The debates in Congress showed a strong sentiment in favor of the extermination of the seals as the only means of stopping poaching, and an appropriation was made for an investigation of that phase of the question, but it has been decided to defer the enquiry, in view of the brightening chances of the reassembling of the Joint High Commission, which means that the Dog in the Manger would rather starve itself than to allow the ox to enjoy the hay. It is not at all probable that the Canadian members of the Commission would ever consent to pledging Canada from pelagic sealing in the North Pacific Ocean.

One of the educational features of the Toronto Exhibition will be an exhibit from the Ontario Bureau of Mines. It will be a complete exhibit of the economic minerals of Ontario,

comprising ores of nickel, iron, gold, copper, silver, zinc, arsenic, phosphates, mica, and other minerals, building stones, cements, etc., also some case specimens.

The next regular Annual Meeting of the Canadian Manufacturers' Association will be held in the King Edward Hotel, Toronto, on September 16, 17 and 18.

It should interest Canadian manufacturers who desire to engage in export trade in a scheme spoken of by the Manchester Textile Mercury which says:

Our consuls abroad are continually trying to impress upon British manufacturers the importance of being directly represented by competent commercial travelers, and that a little personal intercourse with customers is far more productive of trade than any amount of correspondence and catalogues. Evidently aware of this fact, some of the leading Austrian manufacturers are, we understand, now organizing a perambulating sample exhibition on an extensive scale, which is to travel through all parts of Russia. The men in charge of this traveling commercial museum will be first-class experts in trade and manufacture who are familiar with Russian business matters and language. Among Japanese export merchants a similar move is now in contemplation. An ambulatory sample museum is to be sent to the towns and trade centres of Siberia. A sample warehouse, representing Italian manufactures and other products of that country, has been established in Smyrna, Asia Minor. It is an annex to the technical commercial school which has been conducted for some time past in that city by the Italian Government.

Mr. A. P. Lowe, who has charge of the expedition which will be sent to Hudson's Bay by the Dominion Government, for the purpose of investigating the fisheries there, is busily engaged in perfecting his plans. Representatives of the Departments of Public Works, Agriculture, Interior, and Marine and Fisheries, will participate in the operations and gather information for their respective branches. The expedition will leave Halifax about the latter part of this month.

The geological exhibit for the Dominion Exhibition at Toronto was prepared by Mr. C. W. Wilmot. The authorities have decided to give credit to the owners of property from which the specimens have been taken.

The British Government have made an additional grant of \$250,000 for the aid of the royal commission to the St. Louis Exposition for the period ending March 31, 1904. An explanatory note says all further contributions will be provided as required.

The injunction issued by a New Jersey judge to restrain the men who went out on strike from the Fletcher Engine Works, at Hoboken, N.Y., from intimidating and talking to non-union men going to and from work is working admirably, as the strikers understand that it means a long term of imprisonment to defy the ancient English laws in force in New Jersey. Under those laws the striker who attempts to intimidate a man from working for a living is regarded as in rebellion against the State, and he may be severely dealt with.

The annual meeting of the Montreal branch of the Canadian Manufacturers' Association was held August 6, Hon. J. D. Rolland, chairman of the branch, presiding. Mr. Rolland in his address defined the attitude of the manufacturers on the imperial preferential tariff. He advocated more ample protection for Canadian industries and also asked for a tariff upon

articles not manufactured in Canada. He pointed out that there were a number of lines on which the duty at present was so low that the tariff preference was insignificant, and he believed that upon these lines the tariff should be raised appreciably. Resolutions were adopted urging the government to protect the interests of Canadian manufacturers in connection with the construction of the new trans-continental road, asking the association to re-affirm the Halifax resolution for adequate protection to Canadian industries and urging the government to place responsibility upon labor unions by compelling their incorporation. Mr. Wm. MacMaster was elected to succeed Mr. Rolland as president, the latter being elected vice-president for the ensuing year. The association nominated Mr. Rolland as vice-president for Quebec of the Canadian Manufacturers' Association, and suggested the name of Mr. George E. Drummond, of the Canada Iron Furnace Co., as president of the Association to be balloted for at the forthcoming annual meeting of the Association to be held in Toronto in September.

The meetings of the fifth Congress of Commerce of the British Empire began in Windsor Hall, Montreal, August 17. The president, Right Hon. Lord Brasey, K.C.B., presiding, assisted by Lord Strathcona, honorary president. The official list of subjects discussed at the congress contains the following: Alaska Boundary, Canadian Bankruptcy Law, Codification of Commercial Law of the Empire, Commercial Education, Commercial Relations Between the Mother Country, her Colonies and Dependencies, Commercial Travelers Licenses, Consular Service, Copyright, Defences of the Empire, Emigration to the Colonies, Far East, Fast Steamship Service, Foreign Treaties and Tariffs, Imperial Contracts, Imperial Postal System, Importation of Canadian Cattle into Great Britain, Light dues, Metric System of Weights and Measures, Naturalization Laws, Newfoundland Patent Law Administration, Railway Communication, Resources of the Empire, Title to British North America, Trade Disputes, Trade Marks, Wireless Telegraphy. Mr. Kenric B. Murray, secretary of the London, England, Chamber of Commerce, was secretary of the Congress. The gathering was a thoroughly representative one. While the large majority of the delegates were from Canada and the United Kingdom, there were delegates present from South Africa, Australia, New Zealand, Barbadoes, Trinidad, Jamaica, India, Ceylon and other British possessions.

The annual statistical report of the American Iron & Steel Association for 1902 will be found upon examination to embrace all the leading features of previous reports and also many new features. Special attention has been paid to the statistics of United States imports and exports of iron and steel, iron ore, manganese ore, coal and coke. Tables are given which show the annual imports of iron and steel and also of tinplates from 1871 to 1902; also annual exports of iron and steel for the same period. Another table gives the annual imports of iron ore since 1879. The tables relating to United States production of pig iron have been greatly extended. Full statistics are given of Bessemer, open-hearth, crucible, and miscellaneous steel castings. Full details are also given of the shipments of iron ore from the Lake Superior and other mines, the imports of Cuban iron ore, the prices of Lake Superior iron ore, the tonnage of iron and steel vessels built in the United States in 1901 and 1902, immigration in

1902 and previous years, etc. The department of the report which is devoted to prices has been enlarged to embrace the monthly prices of steel bars at Pittsburg in the last seven years, and complete and authentic quotations of the monthly prices of tinplates during the last four years. Canadian iron and steel statistics, compiled from reports made by the manufacturers to the American Iron & Steel Association, are full and complete. The report closes with a fresh study of the world's production of iron and steel and iron ore and coal in 1901, the first year of the Twentieth Century, and with detailed statistics of the annual production of iron and steel, iron ore, and coal in the five great iron and steel producing countries of the world—the United States, Great Britain, Germany, France and Belgium—from the earliest periods for which authentic statistics are available.

Montreal in 1904 will have a big industrial exhibition and fair. That is the most recent project to which a large number of business men of that city are bending their energies, and from the progress already made they are encouraged to the belief that they will succeed. Exhibitions have been held in Montreal before and have not been successful, but this fact does not shake the confidence of the men interested in the present venture. Previous exhibitions were conducted by companies for profit. This will be a public undertaking for the sole purpose of benefiting the citizens and booming Montreal. The project is confided to the care of the Montreal Industrial Exhibition Association, which was incorporated at the last session of the Quebec Legislature by an act along the same line as that under which the Toronto Exhibition Association operates. The Association will consist of about ninety-five members, from which a board of directors will be chosen and strong committees appointed. It is expected that organization will be completed by September 1. Under the charter given the Association the following are named as provisional directors: Hon. F. L. Beique, Hon. L. J. Forget, Hon. J. D. Rolland, Hon. H. B. Rainville, Mayor Cochrane, Hon. G. E. Drummond, R. Wilson-Smith, Henry Miles, Ald. Laporte, T. Gauthier and J. X. Perrault.

Canada's aggregate foreign trade for the fiscal year ending June 30 amounted to the enormous sum of \$459,637,049, an increase of \$45,000,000 compared with the previous year. The Dominion's aggregate trade with Great Britain amounted to \$190,098,031, as against \$166,745,909 in 1902. That with the United States amounted to \$209,369,114, as against \$192,012,434 in 1902. Taking the imports for consumption by countries in 1903 they are as follows: From Great Britain, \$58,893,710, an increase of \$9,687,108; from the United States, \$137,605,199, an increase of \$16,790,445; from Germany, \$12,282,637, an increase of \$1,459,468; from France, \$6,580,029, a decrease of \$92,075; from Belgium, \$2,800,179, an increase of \$1,088,760; from Newfoundland, \$1,197,581, an increase of \$519,819. The exports of 1903 contain the following figures: To Great Britain, \$131,202,321, an increase of \$13,882,100; to the United States, \$71,783,919, an increase of \$588,235; to Germany, \$2,098,456, a decrease of \$594,122; to France, \$1,341,618, a decrease of \$47,330; to Belgium, \$2,140,793, a decrease of \$294,657; to Newfoundland, \$2,578,224, an increase of \$197,142.

See Page 47 Re TARIFF EDITION

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, bolting, 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, alkalies, 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 Peterborough Hydraulic Power Co., of which Senator Geo. A. Cox is president, is building a new power plant on the Otonabee river in the town of Peterborough, Ont., which will be equipped with the following apparatus recently purchased from the Westinghouse Electric & Mfg. Co.:—A 1,500 kilowatt 2,240-volt generator, having 7,200 alternations and running at 150 revolutions per minute, to be direct connected to water wheels; also two 125-volt D. C. direct coupled exciters of 75 kilowatts capacity each together with switchboard consisting of a large generator panel and two exciter panels. This power-house, when completed, will be an unusually fine one and is to furnish power to the Peterborough mill of the American Cereal Co., owned by the Quaker Oats Co. Power will be supplied to several other manufacturing plants in the town and also to the Peterborough Light & Power Co., which does the electric lighting and small power business in Peterborough.

The first heat in the new malleable iron department of the International Harvester Co., of Hamilton, Ont., was made this week, and the department will now be operated regularly.

The Thresher Electrical Co., of Dayton, Ohio, are considering the establishing of a Canadian plant.

The Temiskaming Railway Commission have received reports respecting the progress of the work on the new railway. A complete survey of the route shows that the line from North Bay to New Liskeard will be 112 miles long. Over 80 miles have been graded, and the rails have been laid for over 20 miles. Realizing the importance of the road in connection with the Grand Trunk Pacific project, the Ontario Government has placed at the disposal of the commissioners the sum of \$10,000 for an additional survey of 70 miles to the point of junction with the proposed new federal railway. At the next session of the Ontario Legislature permission will be sought to build this 70-mile extension in order that it may be utilized as a means for the carrying of supplies for the building of the transcontinental line.

The Long Lake Gold Mining Co., have been authorized to do a mining, milling and reduction business in Ontario with a

capital of \$25,000. The company have appointed P. E. Mackenzie, of Rat Portage, Ont., to be their attorney.

The Canadian North-West Steamship Co., have been authorized to carry on a passenger and freight business on the Great Lakes. The company have appointed G. T. Marks, Port Arthur, Ont., to be their attorney.

The Superior Copper Mining Co., have been authorized to increase their capital from \$1,500,000, to \$2,000,000.

The Bussman-Gray Molybdenum Mining & Reduction Co. of Ontario, Limited, Fort Erie, Ont., have been incorporated with a capital of \$1,000,000, to carry on a mining, milling and reduction business. The provisional directors include P. F. Bussman, C. R. Gray, Buffalo, N. Y., and W. J. R. Gray, Brantford, Ont.

The Thunder Bay Harbor Improvement Co., Port Arthur, Ont., have been incorporated with a capital of \$50,000, to construct piers, dry-docks, etc. The provisional directors include W. F. Langworthy, R. Vigers and Jas. Whalen, Port Arthur.

The Stratford Knitting Co., Stratford, Ont., have been incorporated with a capital of \$40,000, to manufacture knitted goods, etc. The provisional directors include R. M. Ballantyne, K. C. Turnbull, Wm. W. Gray, Stratford.

The Brown Boggs Co., Hamilton, Ont., have been incorporated with a capital of \$50,000, to manufacture machinery tools, etc. The provisional directors include J. M. Brown, N. G. Boggs and Wm. E. Blandford, Hamilton.

The Jackson Cushion Spring Co., Toronto, have been incorporated with a capital of \$50,000, to manufacture springs for vehicles, mattresses, furniture, etc. The provisional directors include W. Smith, Jackson, Mich.; D. A. Ghent and John Creighton, Toronto.

The Cornwall Paper Mfg. Co., are preparing plans for the erection of their new paper mill, to be located at the foot of Sheik's Island near Cornwall, Ont. The mill will be fitted for the manufacture of the finest book and writing papers.

The Electric Mica Co., Sydenham, Ont., are installing a plant at their mine, for the use of compressed air in drilling.

The Victoria Wheel Works, Galt, Ont., which were recently destroyed by fire, will be rebuilt at once.

The American Shovel & Stamping Co., Lorain, Ont., are considering establishing a plant in Ontario. The firm will erect a large rolling mill, and will manufacture a line of forks, rakes and hoes. The directors plan on doing a business of from \$200,000 to \$300,000 per year. A large number of hands would be employed.

The International Asbestos Co., operating at Elzevir, in Hastings county, Ont., writes to the Bureau of Mines that their output of actinolite will be increased to between 40 and 50 tons per ten hours. The industry is a new one in Ontario.

The Dominion Parliament have voted \$235,000, for additional work on the Trent Valley Canal, in process of construction from Georgian Bay to Lake Ontario.

Mr. Harry McIntosh, Point Edward, Ont., is the inventor of a brick-making machine that is receiving the attention of contractors and builders in Michigan and parts of Western Ontario. Patents have been secured for Canada and the United States. The machine is in active operation at the present time in Port Huron and is turning out the finest pressed brick at the rate of 2,000 an hour, and is capable of a still better record. Machines are in operation at Point Edward and Warton, Ont.

The grinding house of the Marbank Cement Works at Tweed, Ont., was destroyed by fire August 12.

The charcoal building of the Hamilton Powder Co., at Windsor Mills, Que., was destroyed by fire August 5.

It is reported that the Singer Sewing Machine Co. will establish a manufacturing plant at Ottawa.

Prof. Goodwin, Kingston, Ont., who has returned from his summer mining tour, confirms the report of the finding of platinum near Wabigoon, Ont. The mineral is worth \$20 per ounce.

The Severn Power Co., Midland, Ont., have been incorporated with a capital of \$40,000, to construct works on the Severn River for the production of electrical energy. The provisional directors include W. J. Parkhill, R. Smith and H. J. Craig, Midland.

The Belleville Portland Cement Co., Belleville, Ont., have been incorporated with a capital of \$2,500,000, to manufacture Portland cement, marl, etc. The provisional directors include J. S. Lovell, M. Lash and E. W. McNeill, Toronto.

The Toronto City Commissioner has recommended that a new building be erected to replace the Berkeley street fire hall, at a cost of about \$25,000.

The sum of \$18,000 has been voted for improvements to the Sault Ste. Marie, Ont., canal.

Messrs. McKee & Carey's hotel at Ojibwa, Ont., was recently destroyed by fire.

The Barton Building Co., recently incorporated at Hamilton, Ont., are considering the erection of about 200 houses in the east end of that city.

Messrs. W. G. Jeffrey & Co., North Rose, N. Y., are considering establishing an evaporating factory at Glencoe, Ont.

Messrs. Flaville & McLaughlin of Lindsay, Ont., are negotiating with the Fort William council for the erection of one of the largest flour mills in the west at that point.

The Hamilton Street Railway Co. will spend \$50,000 in double tracking their line to the International Harvester Co's works, and making other improvements.

The boiler and engine for the linseed oil works at Owen Sound, Ont., are expected shortly from Messrs. E. Leonard & Sons, London, Ont. The other machinery is ready for shipment at Chicago and will be ordered on as soon as the power is installed. The cement floors are now being laid in the tank room, and when this is completed the six presses, weighing eleven tons each, will be installed.

The Montrose Paper Co., Thorold, Ont., have awarded the contract for the installation of 250 lights, plant complete with generator, to the Martin Electric Supply Co., St. Catharines, Ont. This company also equipped the Warren Electric Co's new factory at St. Catharines with lighting, phones and call bells.

J. B. Miller, Sault Ste. Marie, Ont., and associates claim to have made the largest find of gold-bearing ore ever heard of in Ontario on a property owned by them, situated about three miles west of Webbwood station. The claim comprises a reef 174 feet wide, 900 yards long and standing up perpendicularly from 50 to 75 feet high from the plain below. It is of banded quartz intersected by seams of micaceous schist. A portion of the surface has been stripped of its massy covering, with the result that in the whole section uncovered the gold is visible in the quartz to the naked eye. Several specimens have been tested and some of them found to carry gold values as high as \$5,000 to the ton.

The Board of Works, Stratford, Ont., will have constructed an additional septic tank at a cost of about \$2,000.

The Imperial Bank of Canada have purchased a site near the new St. Lawrence Market, Toronto, upon which they will erect a branch banking building.

The Wells Hardware Co., Fort Francis, Ont., will erect a large store and warehouse.

The Automatic Clerk Co., Newark, N. J., will erect a factory at Niagara Falls, Ont.

Work has been commenced on the Superior Portland Cement Co's works at Orangeville, Ont.

The Toronto Mutoscope Machine Co., Toronto, has been incorporated with a capital of \$20,000, to manufacture slot machines, etc., and to acquire the business of W. A. Noble. The provisional directors include W. A. Noble and A. Asher, Toronto, and E. V. Wright, Hamilton, Ont.

Messrs. J. W. Barchard & Co's box factory at Toronto was destroyed by fire August 10. Loss about \$5,000.

The Royal Engraving Co., Toronto, has been incorporated with a capital of \$40,000, to acquire the business of the Royal Engraving House. The provisional directors include C. J. Beal, F. G. McKay and W. J. McWhinney, Toronto.

The Temiscaming & Hudson Bay Mining Co., New Liskeard, Ont., has been incorporated with a capital of \$25,000, to carry on a mining, milling and reduction business. The provisional directors include Geo. Taylor, A. McKelvie and D. T. K. McEwen, New Liskeard.

The Library Bureau of Canada, Ottawa, Ont., has been incorporated with a capital of \$150,000, to manufacture furniture and fixtures for libraries, offices, etc. The provisional directors include H. E. Davidson, Watertown, Mass., J. A. Cameron and W. C. Edwards, Ottawa. The company have taken over the hardwood department of The W. C. Edwards Co., Ottawa. The present building will be enlarged.

The Grand Trunk Railway Co. will erect a new station, 200x60 feet, at Brantford, Ont.

The Kerr Engine Co., Walkerville, Ont., are supplying the pumping engines for the new waterworks system of Strathroy, Ont.

The Berlin Brush Co., Berlin, Ont., have been granted a bonus and will erect an additional factory and increase their capacity.

The Ontario Construction & Supply Co., Toronto, has been incorporated with a capital of \$100,000, to manufacture ties, pulpwood, etc., and to construct railways, etc. The provisional directors include A. J. McComber, Port Arthur, Ont.; H. L. Drayton and S. S. Martin, Toronto.

The International Stock Food Co., Toronto, has been incorporated with a capital of \$40,000, to acquire the business of the Naisbitt Co., and to manufacture foods, etc. The provisional directors include J. J. Walsh, W. T. McMahon and E. McCormick, Toronto.

The superstructure of the south pier at Goderich, Ont., will be repaired at a cost of about \$15,000.

The Scalp Food Co., Hamilton, Ont., has been incorporated with a capital of \$50,000, to manufacture medicines, etc. The provisional directors include G. T. Tuckett, C. I. Kelly and J. W. Lamoreaux, Hamilton.

The Queen City Printing Ink Co., Toronto, has been incorporated with a capital of \$40,000, to manufacture printing and lithographing ink, etc. The provisional directors include F. W. Manton, F. J. Aylward and Z. Gallagher, Toronto.

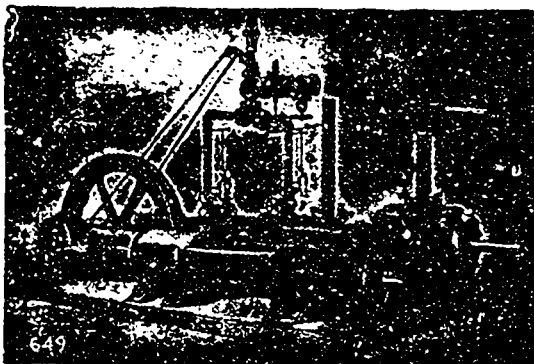
The Menzie Wall Paper Co., Toronto, has been incorporated with a capital of \$250,000, to manufacture wall-papers and to construct and operate paper mills, etc. The provisional directors include R. E. Menzie, A. A. McMichael and S. Johnston, Toronto.

The Saint George's Hall Co., Ottawa, Ont., has been incorporated with a capital of \$40,000, to erect a public hall. The provisional directors include S. J. Davis, J. P. Featherston and W. L. Marler, Ottawa.

The Stratford Radial Railway Co., Stratford, Ont., have applied for right of way to construct an electric railway from Sebringville to Stratford.

The Collingwood Furniture Co., Collingwood, Ont., are having plans prepared for a new factory building which will be 150x60 feet, brick, three stories high. Boiler rooms will be brick, 56x30 feet, and dry kiln of brick, 80x20 feet.

B. Dillon, architect, Brockville, Ont., will prepare plans for the Carnegie library building to be erected at that place at a cost of about \$12,000.



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299 ST. JAMES ST., MONTREAL.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

Messrs. Fraser & Co's lumber mill, near Aylmer, Ont., was partially destroyed by a storm August 6. Loss about \$10,000.

A fat stock building is being erected in the Ottawa exhibition grounds at a cost of about \$10,000.

J. W. Siddall, architect, Toronto, is inviting tenders for the erection of a linen mill at Bracebridge, Ont.

A Methodist Church building will be erected at Stoney Creek, Ont., at a cost of about \$12,000.

The W. J. Bradley Machinery Co., Toronto, which was organized some time ago by W. J. Bradley, W. J. Bradley, Jr., P. H. Bradley and E. F. Bradley will be incorporated with a capital of \$50,000.

The Brantford, Ont., Board of Health are considering the erection of a new isolation hospital in that city.

The Toronto Street Railway Co. are making an extension of their power plant which will give them an additional 1,600 h.p.

The rolling mills at Belleville, Ont., heretofore owned by Messrs. Kirkwood & McKinnon, have been sold to French capitalists, C. Carbonneau and M. Jackson, of Paris, and Dr. A. Wills, of Dawson City; the consideration being \$65,000. The new owners will at once put the plant in order and will introduce up-to-date machinery. It is stated that they also purpose erecting a smelting furnace.

The Electric Mica Co. are installing a plant at their mine at Sydenham, Ont., for the use of compressed air in drilling.

Contracts have been awarded for an addition to the Orillia, Ont., power plant at Ragged Rapids, Ont., as follows: Hydraulic machinery, The Wm. Hamilton Co., Peterboro, Ont., \$9,250; electrical apparatus, The Westinghouse Electrical & Mfg. Co., Pittsburg, Pa., \$21,319.14.

The gross receipts of the Toronto Railway Co. for July amounted to \$196,021.63, of which the city will receive \$23,522.59. The increase is about six per cent. on the receipts for the same month last year. The following are the figures for July in the years mentioned:

	Gross Receipts.	Percentage
1903.	\$196,021.63	\$23,522.59
1902.	162,043.03	17,615.60
1901.	150,620.50	15,062.05
1900.	125,722.60	15,767.42
1899.	117,688.80	12,721.03
1898.	103,670.00	8,293.60

Mr. W. R. Smith, M.E. of the Automatic Smoke Preventer Co., Jackson, Mich., has been in Toronto some days installing the appliance of his company in the boiler room of the McLaughlin flour mills. The efficiency of the appliance has been fully established as may be seen by a visit to the McLaughlin mills at the foot of Bay street.

The Canadian Pacific Railway Co. are considering extending their line through western Ontario. They will extend their existing line from Guelph to Goderich. This road, starting near Guelph, will pass by the way of Gadshill, and will continue on between the Maitland and Bayfield rivers, reaching Lake Huron on the south side of Goderich and touching at Seaforth

and Clinton and crossing the Grand Trunk at Holmesville. Another line will start from thence through Farquhar, in the township of Osborne, crossing the Grand Trunk at some point between Dublin and Seaforth, probably Seaforth, and continuing north by way of Brussels to Wroxeter or Lucknow.

The Collingwood Steel Shipbuilding Co., Collingwood, Ont., have successfully launched the large steel steamer, Midland King, built for the Midland Navigation Co. She is a sister ship to the Midland Queen, and has a grain carrying capacity of 200,000 bushels. Her dimensions are 375 feet over all, 48 feet beam and 28 feet depth of hold.

Robert Boyd, of Downie township, Ont., visited a clairvoyant in Stratford, Ont., some time ago, and she told him he had wealth concealed in a certain portion of his farm of which he knew nothing. He paid no attention to the statement at the time, but the other day he and his son began digging in the spot indicated by the clairvoyant, and were rewarded by finding a bed of marl. A sample was shown to an expert, and Mr. Boyd was offered \$50,000 for two acres of the beds.

The Puebla Light & Power Co., Montreal, have been incorporated with a capital of \$3,000,000, to carry on the business of an electric light and power company. The provisional directors include E. M. Edgar, A. E. Warswick and L. S. Colwell, Montreal.

The City of Montreal will erect three additional fire stations in different parts of that city. The fire committee have awarded contracts as follows: No. 1 Station—mason work, J. Latreille & Co., \$20,000; woodwork, Precourt & Co., \$10,242; plumbing, P. Leclerc & Sons, \$4,102. No. 19 Station—mason work, Martineau & Prenoveau, \$9,456; woodwork, Lambert & Sons, \$8,303; plumbing, Lesperance & Co., \$2,825. No. 9 Station—mason work, Martineau & Prenoveau, \$8,357; woodwork, P. Chamberlain, \$7,998.75; plumbing, J. O'Connell, \$2,750.

The Chicoutimi Pulp Co's new pulp mill at Chicoutimi, Que., will be in operation about September 1.

According to official returns, the Grand Trunk Railway from January 1 last to June 30 turned out the following equipment: from Montreal shops, 20 Richmond compound locomotives, 144 30-ton box cars, 24 caboose cars, 35 cheese cars, 10 baggage cars, 60 long, 10 first-class cars. From London shop, 400 flat cars, 14 caboose cars. From Port Huron shops, 329 flat cars, 22 caboose cars. In addition to the foregoing 163 10-ton box cars were received from the American Car & Foundry Co.

Mr. B. A. Scott has increased the capacity of his sawmill at Roberval, Que., to 400,000 logs, and has added a new mill for barking pulp wood.

The Peribonea Pulp Co., Roberval, Que., on Lake St. John, has constructed a steamer for towing their pulp logs.

Mr. Gilmour's sawmill at Coaticook, Que., was destroyed by fire August 5. Loss about \$2,000. The mill will be rebuilt of brick with an iron roof.

A floating elevator belonging to the Wolvin Syndicate, Quebec City, was destroyed by fire August 6. The loss is about \$20,000.

Messrs. Price Bros. & Co. have completed the erection of a card-board mill at Jonquiere, Que., for using up the product of the pulp mills at that place.

The Actna Boiler Inspection & Insurance Co., Sherbrooke, Que., has been organized, with the following board of directors: F. P. Buck, S. W. Jenckes, F. N. McCrea, Sherbrooke; E. W. Tobin, M.P., Bromptonville, Que.; Geo. R. Smith, M.L.A., Thetford, Que.; C. H. Carrier, Levis, Que.

L'Hydraulique de Grand Mere, have been incorporated with a capital of \$50,000, to operate a system of waterworks at Grand Mere, Que. The provisional directors include E. Beausoleil, J. Dufresno and F. X. Gingras of Grand Mere.

La Compagnie J. & S. Bessette, has been incorporated with a capital of \$100,000, to manufacture agricultural implements, etc. The provisional directors include A. Bessette, A. Chabot, of Iberville, Que., and O. Normandin, Montreal.

The Dominion Cartridge Co., Lachute, Que., will enlarge their factory.

The Chemical Brick Co., Holyoke, Mass., will transfer their brick works to St. Hyacinthe, Que., at an early date. The proposed plant will manufacture approximately about 100,000 red, white and blue bricks per day and will give employment to about 200 men.

The Great Northern Railway workshops, Quebec City, were destroyed by fire August 18. Loss about \$100,000.

Messrs. T. & F. Dobson, Moncton, N.B., are applying for incorporation with a capital of \$15,000, to manufacture hardware, lumber, etc. The provisional directors include T. C. Dobson, F. J. Dobson, Moncton, and J. E. Dobson, Stoney Creek, N.B.

Messrs. Murray & Gregory, St. John, N.B., are applying for incorporation with a capital of \$150,000, to acquire the business of Messrs. Murray & Gregory and to manufacture lumber, etc. The provisional directors include W. H. Murray, J. F. Gregory, St. John; and R. Murray of Fredericton, N.B.

Messrs. Chapel Bros. & Co., Springhill, N.S., are preparing plans for the new Y.M.C.A. building to cost about \$10,000.

The output of the Dominion Coal Co., Montreal, for July is 275,850 tons, an increase of 9,875 tons over that of June.

The Crothers Lumber Co., Oromocto, N.B., are applying for incorporation.

The New Brunswick Petroleum Co., Moncton, N.B., are considering erecting a large refinery and purchasing four additional drills.

The Sussex Packing Co., Sussex, N.B., has been incorporated with a capital of \$100,000, to erect a packing factory and plant for preserving and canning fruit, fish, etc. The provisional-directors include S. H. White, J. E. Slipp and H. H. Parlee, Sussex.

Messrs. Murray & Gregory, St. John, N.B., will rebuild their sawmill which was recently destroyed by fire. The company are now using a portable mill with a capacity of 30,000 feet per day.

The J. F. Bridges Tug Boat Co., Gagetown, N.B., are applying for incorporation with a capital of \$20,000, to carry on a general lumber and shipbuilding business. The provisional directors include J. F. Bridges, A. W. Ebbett and J. F. McAllister, of Gagetown.

The St. John, N.B., opera house management will install an electric plant, to cost about \$12,000.

A butter and cheese factory will be erected at Hampton, N.B., at a cost of about \$25,000. Mr. E. A. Schofield is interested.

The Luke Creek Gold-Copper Mining Co., have been incorporated at Victoria, B.C., with a capital of \$1,000,000, to carry on a mining, smelting and reduction business.

The H. H. Crosby Co., Limited, Hebron, N.S., have been incorporated with a capital of \$20,000, to acquire the business of the H. H. Crosby Co., and to manufacture boots, shoes, rubbers, etc. The provisional directors include B. H. Redding, K. E. Crosby, and G. M. Crosby, Yarmouth, N.S.

The Cape Breton Coal, Iron & Railway Co. is reported to have purchased a complete electrical mining equipment which will be, it is said, the first to be used in the province.

The Boston Engineering Co. and the proposed new Dry Dock Co., Sydney, N.S., will amalgamate their interests for the construction of an extensive plant on Sydney Harbor. This proposed dry dock will cost \$1,250,000.

The Brown Machine Co., New Glasgow, N.S., who have recently extended their plant, have been awarded the contracts for building new screen houses, revolving tripplis, shaking screens and picking tables for the Cumberland Railway & Coal Co., Inverness Railway & Coal Co., and also the Mabou & Gulf Railway & Coal Co.

The ratepayers of Sydney, N.S., will vote on a by law to raise a further sum of \$75,000 for the sewerage extension.

Work on the blast furnaces at Sydney Mines, N.S., is being pushed ahead rapidly. The furnaces themselves are approaching completion as are also the coke ovens which are being built near the furnaces. An immense quantity of material is on the site and some very improved machinery is now to be seen at work.

It is expected that the works of the Londonderry Iron & Mining Co. at Londonderry, N.S., will be in operation in the early part of September.

Messrs. C. J. Hamilton & Sons, manufacturers of biscuits and confectionery at Pictou, N.S., are considering locating at Halifax, N.S.

A company of Boston capitalists, headed by H. M. Pearl are about to take

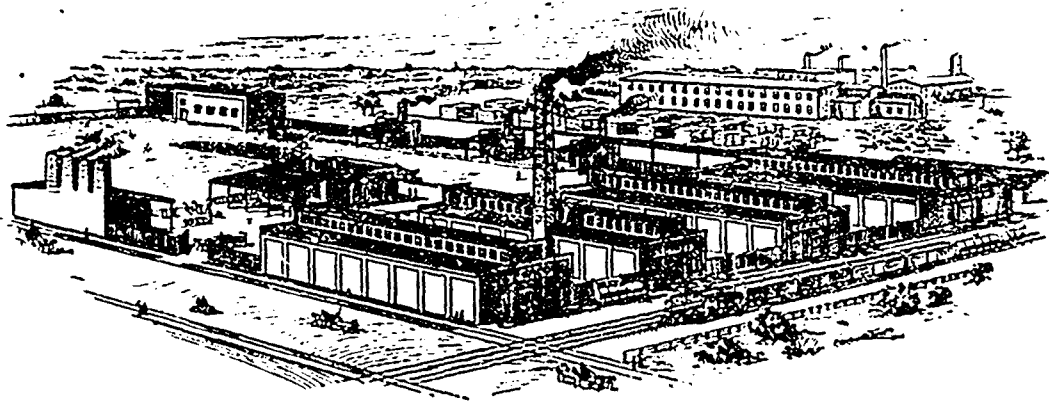
hold of some thirty square miles of coal deposits that they own near Port Hawkesbury, N.S., and develop them. A mine will be opened at Port Malcolm, N.S., which will be made the shipping port. Work has already begun in pumping out a shaft sunk at this place a few years ago. H. M. Whitney, and other leading Boston men are interested in this new company.

The Manitoba Construction Co., which is composed of Winnipeg contractors, have secured the contract for extensive shops and improvements to be made by the Canadian Pacific Railway in their yards in that city. The work includes passenger carshop, locomotive shops, freight sheds, dry kiln, machine shops and stores department.

The National Creamery & Produce Co., Winnipeg, Man., has been incorporated with a capital of \$50,000, to manufacture cheese, butter, etc. The provisional directors include J. Murray, A. A. Andrews and Jas. Carruthers, Winnipeg.

The Gilbert Plains Milling Co., Gilbert Plains, Man., has been organized. The provisional directors include S. Code, Dauphin, Man., A. E. Code, Waterloo, Ont., and D. Cameron, Gilbert Plains. The company is erecting a new flour mill at that place.

The Brandon Brick & Lumber Co., Brandon, Man., has been incorporated with a capital of \$100,000, to manufacture bricks, lumber, etc. The provisional



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since we commenced to make Varnish. During this period we have acquired a knowledge not only of Varnish, but of the varied needs of varnish consumers that nothing but time can impart, and have also learned how to cater successfully to every varnish want.

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directors include H. Sampson, J. Clark and A. R. McDiarmid, of Brandon.

The A. R. Williams Machinery Co., Toronto, have bought out the business of the Winnipeg Machinery & Supply Co., which business has been carried on in Winnipeg for some time. The business will now be continued as a branch of the Toronto company. W. H. Young, late of Toronto, is in charge of the branch.

The Minnedosa Milling Co., Minnedosa, Man., have been incorporated with a capital of \$25,000, to build and equip elevators, grain warehouses, etc. The provisional directors include H. Mutton, P. McDermott and H. F. Maulson, Minnedosa.

The commissioner of public works of Ontario is inviting tenders for the construction of a new steel bridge over the eastern branch of the Winnipeg River at Rat Portage. It is to be of Howe construction, with overhead braces; as supports there will be two abutments and two piers. The bridge proper will be about 450 feet in length.

The town council of St. Boniface, Man., has made an agreement with the Winnipeg Street Railway Co. for the extension of their lines across the Red River into that town. Work will commence at once on the new line.

The board of directors of the Winnipeg, Man., general hospital have decided to go ahead with the proposed new buildings, and trust to the Winnipeg city council to engineer the much-needed \$60,000 grant through.

Dr. Trick, Winnipeg, Man., will erect a brick business block in that city.

The Canadian Pacific Railway Co's freight car repair shops at Winnipeg, Man., and about twenty cars were destroyed by fire August 15. Loss about \$25,000.

A hotel building will be erected at Fort Saskatchewan, N.W.T., at a cost of about \$8,000.

The Smith Bros. Mfg. Co., and The Yorkton Supply Co., both of Yorkton, N.W.T., have been incorporated.

The National Medical Co., York, Nebraska, manufacturers of stock foods, flavoring extracts, etc., are considering establishing a factory at Moose Jaw, N.W.T.

A new jail building will be erected at Edmonton, N.W.T., at a cost of about \$150,000.

The town of Prince Albert, N.W.T., have offered to contribute \$25,000 towards the erection of a bridge across the Saskatchewan River.

The secretary-treasurer of Lethbridge, N.W.T., is inviting tenders for the construction of waterworks and a sewerage system.

The Canada Shoe Co. has been incorporated at Victoria, B.C., with a capital of \$5,000, to manufacture boots and shoes.

The L. T. Dundas Co., Vancouver, B.C., have made application to change their name to the International Logging Co.

The Puget Sound Navigation Co., will build a 250 foot steamer to be placed on the run between Victoria, B.C. and the Sound cities. Plans have already been drawn.

Loo Ge Wing, Vancouver, B.C., will erect a three-story theatre, 122x60 feet. Mr. W. T. Whiteway is the architect.

F. M. Rattsbury, architect, Victoria, B.C., is preparing plans for an addition to the Jubilee Hospital, that city.

The Orangemen of Nanaimo, B.C. will erect a hall at a cost of about \$20,000.

Representatives of the South African Railway syndicate have been in Victoria, B.C., enquiring regarding the possibility of securing 3,000,000 hemlock railway ties for South African railways, of which nine hundred miles are to be built at once.

The Imperial Bank of Canada will erect a brick and stone banking building at Revelstoke, B.C.

The Denver Light & Power Co., Denver, B.C., have been formed to generate electricity for lighting the towns of New Denver and Silverton, B.C.

Mr. Charles Baker, of the Electric Power & Building Co., White River, and the electric power plant, in Washington state, has bought out the rights of the Stave Lake Power Co., 25 miles from Vancouver, B.C. He says he will unite his three plants and have the largest system on the western part of the continent and will be able to turn on 100,000 h.p. to any given point covered by his system. He says he will reach out miles from every station and feed the mines and cross the gulf at the narrowest point and go into Nanaimo and Victoria, B.C.

The Dominion Government will make extensive improvements to the inner harbor at Victoria, B.C.

Mr. Dunsuir is at Cumberland, B.C., pushing the development of the new field of anthracite. Two slopes are now being sunk, and it is expected that it will reach coal in a few weeks. Bradley and Perseverance are also on the list for immediate development. The former has a seam of the best coking coal yet found on the Coast. It is reported that all three will be shipping by Christmas. Mr. Sutton is surveying a line to connect the new mines with the wharves. The Western Fuel Co's new slope at Departure Bay has struck a splendid seam of coal, thereby ensuring the success of this work.

The customs returns of Atlin and the Yukon show that Canadian firms are capturing the trade of the gold fields from the Americans who had almost a monopoly in the first days of the rush to the Klondike. The returns show that \$3,164,592 worth of Canadian, and \$1,170,050 worth of foreign goods were entered in the Yukon and Northern British Columbia last fiscal year. This means a balance of trade in our favor amounting to \$1,994,339, which is \$77,699 of a better showing than the year before.

The discovery in Germany of a new

metal called solum, by Edward Mollard, a Frenchman, is reported. The discoverer asserts that solum costs only one-twelfth as much as aluminum, and is lighter and stronger. It does not rust, and is therefore suitable for ship building, for the manufacture of pipes and for railroad construction. It is asserted that, as it is capable of taking a fine polish resembling nickel, it would be desirable for cooking utensils. Its hardness is not quite equal to that of iron, but is greater than that of lead or zinc. Its power of resistance is said to be greater than that of iron, but less than that of steel.

The protest filed with the United States War Department by Albert Dawson, owner of Galoup Island, near Ogdensburg, N.Y., against the request of the Canadian Government for permission to erect a dam across the Gut Channel in the St. Lawrence River between Adam's Island in Canadian waters and Galoup Island on the American side has been withdrawn. Cleveland Bros., contractors, agree to pay \$4,000 to Dawson to offset any possible damage from the dam. The arrangement now awaits approval by both Governments before work on the dam is begun.

It is reported that Messrs. Mackenzie & Mann will shortly commence the construction of the Hudson Bay section of the Canadian Northern, and that before next spring the line to the Canadian sea will be well under way. It is also stated that the Hudson Bay road will start from a point on the Canadian Northern system, about one hundred and fifty miles east of Prince Albert, and that the terminal port on the great inland sea will be Churchill. The Canadian Northern will have about 500 miles of road to build before it reaches the destination mentioned.

AUTOMATIC SMOKE PREVENTERS.

One of the most efficient of the many smoke consumers or automatic stokers on the market is that manufactured by the Automatic Smoke Prevention Co., which is now organizing a company in Toronto, for the manufacture of their appliance. However, the Automatic Smoke Preventer is not a stoker, but a system for the regulation of firing and controlling the boiler furnaces, an absolute automatic device; the use of which insures a decided economy in fuel and makes firing easy and at the same time keeps the flues clean and prolongs the life of boiler fronts and arches.

The company have just completed the installation of the appliance on the battery of three boilers of M. McLaughlin & Co's flour mills at the foot of Bay street, Toronto, where its operation can be seen. Through the use of this new appliance the chimneys of the plant have become practically smokeless. Although the cost of this smoke preventer is only something like one-fourth or one-fifth that of some stokers now in use in Canada, it is doubtful whether it is equalled in efficiency. Mr. W. R. Smith, of the Automatic Smoke Prevention Co., was in charge of the installation at the mills of M. McLaughlin & Co.

THE CLERGUE INDUSTRIES AT SAULT STE. MARIE, ONT.

A leading official of the Consolidated Lake Superior Co. has handed out a statement giving the facts and conditions pertaining to the standing of the company as it is to-day, and has been for some time. This statement is intended to contradict and absolutely deny the charges and statements which appeared in a series of articles published recently in the Philadelphia Public Ledger, which were written by someone with malicious intent, the sole object being to tear down and, if possible, destroy the confidence which President Shields and his associates have established since their assumption of the management of the Consolidated Co. It would seem that the articles referred to were intended to stop the sales of bonds, and, if possible, block Mr. Shields in his undertaking. Every citizen of the "Soo" who understands the situation here, brands the articles of the anonymous correspondent as base and malicious falsehoods.

The following is the statement handed out by the officials of the company described above, and is believed by the business and professional men on both sides of the river to be a true statement, giving the number of men employed and the products of each particular industry:

The Algoma Central car shops are turning out eight cars per day for the Canadian

Pacific Railway. The ground wood pulp mill is turning out 70 tons of pulp per day, while the sulphite mill is turning out 40 tons per day.

The Algoma iron works and machine shop employ 185 men per day.

The Canadian Electro Chemical Works are producing 3 tons caustic soda and 7 tons bleaching powder daily.

The Soo sawmill is turning out 105,000 feet of lumber, and 25,000 lath daily.

The veneer mill is turning out 30,000 square feet of veneer per day.

The Goulays sawmill is manufacturing 70,000 shingles and 20,000 lath per day.

The Algoma Central Railway and Algoma Central Steamship Lines are in full operation.

The rail mill, Bessemer converters and blast furnaces are in readiness to make iron and roll rails as soon as iron ore and coke are received.

The brick plant is turning out 16,000 pressed brick daily.

The company have 2,000 men in the woods cutting veneer logs, pulp, charcoal wood and sawlogs.

Fourteen hundred tons of iron ore are being taken from the Helen mine each day.

Fifty-eight men are employed at the Grace gold mine, and 60 men at the Gertrude nickel mine.

One hundred and twenty-five men are employed daily on the Fore Bay of the power canal of the Michigan Lake Superior Power Co., which will be completed not later than August 15.

The Tagoma Water & Light Co. is in full operation, supplying water and light in the Canadian Soo, constantly employing 50 men, laying water mains, etc.

The two street railway lines and ferry boats are each carrying between 2,500 and 3,500 people daily.

The retort plant manufactures 6,000 bushels of charcoal, ten tons of acetate of lime, 1,500 gallons of wood alcohol per day, and employs 80 men.

Construction on the copper-nickel converter plant, intended to smelt 300 tons of nickel-copper ore per day, is being pushed by a gang of 30 men, and the plant is expected to be ready for operation by September 5.

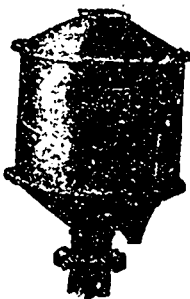
THE SICHE GAS CO.

The New Ontario building at the forthcoming Industrial Exhibition will be lighted with Siche gas; also the magnificent exhibit to be made of West Indian products, etc., by Messrs. Pickford & Black. The Siche Co. will exhibit a fine line of gas fixtures by the Oxley-Enos Co., New York, which will have all the latest novelties in bi-carburet lighting. The exhibit will enable persons interested to form an intelligent judgment of the merits of the Siche gas system as compared with electricity, acetylene, and other older forms of artificial illumination.

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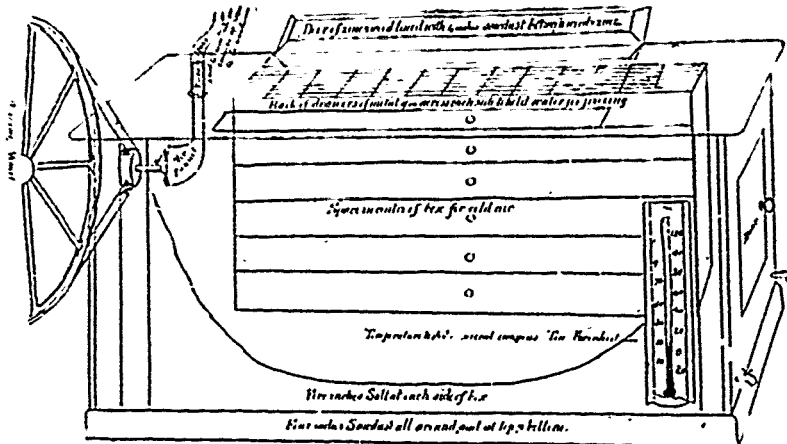
**IRON, STEEL
and
PIG IRON.**

Cleveland, O.

A NEW COOLING SYSTEM.

Among the patents recently granted in Canada is one for an air cooler and refrigerator, known as the Carmack Air Cooler, Ice Maker and Refrigerator, which, it is claimed, possesses many advantages over systems now in use. The new cooler acts alike upon the contents and upon the air of the room; is easily cleaned, neat in appearance, and very

durable. The accompanying illustration of the new invention will convey an idea of its appearance and operation. A company is now being formed to manufacture the refrigerator in Ontario and any interested in the matter can obtain information regarding it from Mr. J. A. Mac-Murtry, 124 Victoria Street, Toronto. English, French and United States patents have also been granted for this new refrigerator.



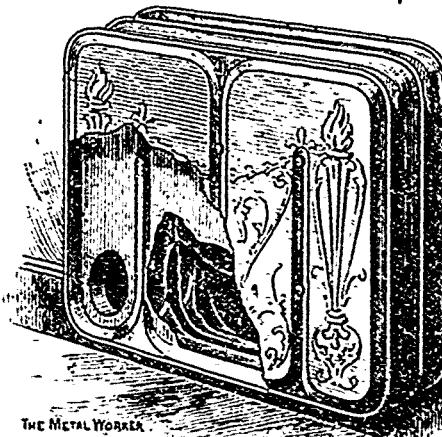
The Carmack Refrigerator.

HOT AIR RADIATORS.

The interest and enterprise manifested by men identified with the hot air furnace system of heating in the improvement of the designing and installation of such systems and all of the apparatus required in them, indicate that the popularity of this method of heating has by no means suffered. The idea that air will circulate in the same way that water does and pass through a system of radiators has long been known, and an effort to use it as a circulating medium for the distribution of heat in buildings has been made, but hitherto without practical results. This may have been due to the form of radiator used and the fact that a successful radiator and system have been devised will lend interest to the illustrations of the radiator and method of utilizing it patented by Dr. George M. Aylsworth, Collingwood, Ont., who has spent several years in study and experiment, to develop what he is pleased to call a needed type of radiator. More than a year ago he succeeded, with rough hand made radiators, in heating a building under extremely unfavorable circumstances, the furnace being, as usual, located in the cellar. Since then he has been completing the details of manufacture to make hot air radiators a commercial possibility, and last winter he fitted up his own house, an old fashioned frame building, with his system of radiators and piping, for circulating the hot air as a heating medium. The furnace, which had done service since the fall of 1889, was placed on the ground floor and connected with the new system, some of the radiators being located on the same floor as the furnace.

The radiator shown in the accompanying illustration is made of sheet metal

and consists of sections, the same as cast iron radiators, three being used, which are connected at the bottom by means of large circular collars. The exposed surface of the radiator is ornamented in bas relief and has sunken ribs, not only to strengthen it, but to provide flues for an indirect passage of the hot air through the radiator requiring the air to travel the height of the radiator four times so as to give up its heat to all parts before it is returned. The different sections are securely joined around the edge by a neat seam and present an ornamental appearance. The sections are so united as to provide flues and increased surface between them. It is pointed out that they have the advantage of being light, and a screw driver is all that is necessary to remove them during the summer, so that they may be stored and the full space of



The Aylsworth Hot Air Radiator.

the apartments devoted to more useful purposes. It is also claimed that by this method the hot air furnace heating systems have the same advantages for heating distant rooms that have heretofore been one of the strong inducements to use steam and hot water systems.

The radiators are connected with the furnace air heating chamber by means of a supply and return pipe, the heating being done by the air in the room coming in contact with the heated surfaces of the radiator. It is claimed that by this means the heated air may be carried with absolute certainty to any point where the radiator may be located. It also has the advantage that it is absolutely noiseless in operation and is free from all danger of freezing, and that the temperature in the radiator may be regulated as required. The method of piping is unique as compared with the hot air systems in general use and may be varied to meet requirements.

The success of this new system of hot air radiation, a purely Canadian invention, is attested to by the fact that its inventor, Dr. George M. Aylsworth, of Collingwood, Ont., by special invitation of the American Society of Heating and Ventilating Engineers read a lengthy paper before the society at its sixth semi-annual meeting held at Niagara Falls, N.Y., July 17 and 18. In this paper entitled "The Scientific Basis and Commercial Feasibility of Heat Radiators Using Air Instead of Water or Steam," mention of which was made in the last issue of THE CANADIAN MANUFACTURER, Dr. Aylsworth set forth the merits of the new system so successfully that the leading American trade journals have given it their approval, and American capital has become interested, and another important point has been scored by Canadian genius and enterprise.

CHAPMAN BALL BEARINGS.

The shafting in Machinery Hall at the forthcoming Toronto Industrial Exhibition has been equipped throughout with Chapman double ball bearings, supplied by the Chapman Double Ball Bearings Co., Toronto, and tests have been made of its efficiency by Mr. W. H. Law, the well-known mechanical engineer, assisted by Mr. E. R. Simpson, mechanical engineer for the company. These tests show a saving in power of about 80 per cent. over the ordinary equipment. The diameter of the shafting varies from 2½ to 3½ inches.

The Nernst Lamp Co., Pittsburgh, Pa., through the H. C. Roberts Electric Supply Co., Philadelphia, have secured the contract for lighting the new Roberts Hall, Haverford College, Haverford, Pa., with two, three and six-glower Nernst lamps. The main auditorium of the college is also to be lighted by Nernst lamps.




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ELECTRICAL POWER IN TORONTO.

Ald. Spence's special committee of the Toronto City Council regarding electric power met a few days ago to consider joint municipal action under the new Ontario law. The new bill enables the appointment by the municipalities of a commission to enquire into the cost of production and transmission of electric power, and the committee agreed to recommend to the municipal representatives the appointment of such a commission.

The City Engineer submitted the following report:

Mr. R. J. Parke has submitted his report upon the amount of power that would be required for electric light and power purposes throughout the city and also the cost of a municipal plant for the purpose of distributing the said power, which I forward herewith. Although Mr. Parke estimates that at present only about 13,750 k.w. (18,425 h.p.) would be required, the estimate covers the cost of a plant sufficient for at least 20,000 k.w. Regarding the annual charges, Mr. Parke, after consultation with the City Treasurer, has allowed interest on the bonds for twenty years at 3.75 per cent., and he also added 7 per cent. for sinking and depreciation fund. This could, I think, be safely reduced to 5 per cent. which would decrease the annual cost to \$35,712.

Upon receipt of Mr. Parke's report, I consulted Mr. Alex. Dow, of Detroit, in connection with this matter and enclose herewith a copy of the report. Mr. Dow has carefully considered the cost of energy per h.p., and assuming that it will be \$10 per h. p. at Niagara, he estimates that it will amount to \$18.96 delivered at the city limits; that is providing for the 10,000 k.w. To increase this 50 per cent., making it 15,000 k.w., would bring the cost down to \$16.48 delivered at the city limits. If the Toronto Railway Co. will agree to take their power from the city over the same line it would be reduced to \$15.13 per h. p. Taking the highest figure, the h.p. at the city limits will cost \$18.96. Adding distribution losses and the expense of distribution brings the total amount to \$38.16. These figures show that the city should receive an average price for power distributed sufficiently in excess of \$38.16 per annum to prevent any possibility of loss. If we can find a market for 25,000 h.p. I am of the opinion that this estimate can be reduced to \$33. Assuming that power will cost an average of \$38.16 per h.p., and comparing this price with the present rate charged in this city for electric light and power, a very large saving would be effected.

MINERALS IN ONTARIO.

Dr. A. P. Coleman of the Ontario Bureau of Mines has returned from a three months' geological survey in the Sudbury district. The party started out from Sudbury in May of this year and worked north and west on a circuit of ridges in the district. They afterwards worked south and west until they again struck the southern Sudbury nickel range. The survey established the fact that all along this northern circle there are de-

posits of nickel of the full value of which further investigation will be made. This survey definitely establishes the fact that from Sudbury south and west and north and west run ridges of nickel ore. The south and western ridge is of course very rich, as every one knows, and now the north and western ridge may be shown to be equally rich.

Dr. Coleman also examined the Hutton or Moose Mountain iron range and found large bodies of magnetite. Dr. Coleman is impressed with the belief that there are very large deposits of ore in these ranges.

He found that the Canada Copper Co., owners of the Creighton mine, were erecting new, larger and improved machinery to enable them to cope with their increased orders. The manager says there are at least three million tons of ore in sight in their mines.

Two new companies organized by American capitalists are arranging to operate in the Hutton range, where their chairman, Mr. Chas. T. Osborne, claims to have twelve million tons of ore in sight. The Canadian Pacific Railway Co. have arranged to run a line to these ore regions and parties are now out locating the road.

HEAVY BUILDING OPERATIONS IN TORONTO.

All the prophets of evil notwithstanding, the labor troubles of this year do not seem to have put a stop to building operations in Toronto. Not since 1891, when permits were issued for a considerable portion of the new municipal buildings have the building permits issued during the first half of the year aggregated as large an amount as to the end of June this year. Following are the figures since 1890:

1890.....	\$878,225
1891.....	2,518,545
1892.....	1,316,00
1893.....	800,2.0
1894.....	522,580
1895.....	\$37,170
1896.....	345,300
1897.....	448,371
1898.....	905,585
1899.....	\$10,100
1900.....	942,194
1901.....	1,154,265
1902.....	1,901,144
1903.....	2,311,773

MINING IN QUEBEC.

The development of our mines goes on systematically, and, in the case of certain specialties, such as asbestos, copper, chrome, mica, and the manufacture of pig iron, constitutes permanent industries, while others, such as graphite, the manufacture of cement and compressed peat, the utilization of our magnetic sands etc., are yearly making marked progress proportionately to industry in general and the wants of the country, says Mr. J. Obalski, Inspector of Mines, in his annual report. No important discovery of iron ore was made in the province during the past year, but important prospecting has been carried on at the Leeds magnetic iron mines in Megantic County. Explor-

ing is also in progress in the magnetic sands on the North Shore, and some important transactions in these lands were made during the year. Two blast furnaces are in operation in the province, one operated by the Canada Iron Furnace Co., at Radnor, and the other by John McDougall & Co., at Drummondville, with a combined annual output of 7,971 tons of pig iron, worth at the furnace \$181,500.

The Canada Paint Co. and the Champlain Oxyde Co. operating at St. Malo produced, during the year, 1,555 tons of burnt ochre, the former company also producing 353 tons of sulphate of baryte at Hull. Ten companies produced 900 tons of chrome during the year. The annual copper production of the province amounted to 31,938 tons. The asbestos industry amounted to 40,398 tons valued at \$1,174,708. The shipment of thumb trimmed mica aggregated 132,822 pounds, valued at \$34,304, while 24 tons of graphite worth \$2,100 were produced. The phosphate industry amounted to 861 tons, valued at \$5,401 and 52 tons of feldspar worth \$172 were mined. Operations were conducted for petroleum and experiments at compressing and utilizing peat were continued. The total value of the mineral industries of the province during the year amounted to \$2,935,463; 4,969 workmen being employed and \$1,388,330 being paid in wages.

The following is a list of mining companies in the Province of Quebec in operation during the year:

Iron.—Chs. Lionais, Kinnear's Mills, County Megantic; J. O. Hibbard, 84 Argyle Avenue, Ottawa; H. C. Bosse, 20 St. James Street, Quebec.

Charcoal Pig Iron.—The Canada Iron Furnace Co., Canada Life Building, Montreal; John McDougall & Co., 597 William Street, Montreal.

Ochre.—The Canada Paint Co., 572 William Street, Montreal; The Champlain Oxyde Co. (Lucien Carrignan), Three Rivers.

Chrome Iron.—International Chrome Mining & Milling Co., Black Lake, County Megantic; Montreal Chrome Iron Co., Colrairie, County Megantic; American Chrome Co., Black Lake, County Megantic; Jos. Nadeau & Co., Black Lake, County Megantic; L. A. Carrier & Co., Levis; R. T. Hopper, Canada Life Building, Montreal.

Copper.—Eustis Mining Co., Eustis, County Sherbrooke; The Nichol's Chemical Co., Capelton, County Sherbrooke; Wilfred Johnson & Co., Sherbrooke; C. E. Kennedy, Suffield, County Sherbrooke; James Reed, Reedsdale, County Megantic; The Matano Gold Copper Mining Co., Matano; F. D. Kelley, 147 Milk Street, Boston, Mass.; A. O. Norton, 280 Congress Street, Boston, Mass.

Lead, Zinc, Silver.—The British Canadian Lead Co., Lake Temiscamingue, County Pontiac.

Gold.—The Gilbert River Gold Fields Co., St. Francis, County Beauce; Dominion Mining Co., C. A. Parsons, 151 Commercial Street, Boston, Mass.

Graphite.—The Walker Mining Co., Graphite City, Buckingham, County Ottawa; The North American Graphite

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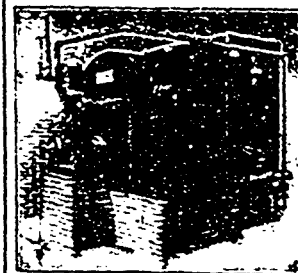
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Cement.—Crescent Cement Works, Th. M. Morgan, Longue Pointe, Montreal; The International Portland Cement Co., Hull, County Ottawa.

Granite.—Stanstead Granite Co., Beebe Plain, County Stanstead; S. B. Norton, Beebe Plain, County Stanstead; James Brodie, Beebe Plain, County Stanstead; The Whitton Granite Quarry Co., St. Samuel, County Compton; M. Fitzgerald, Ste. Cecile, County Compton; Jean Voyer & Fils, Riviere a Pierre, County Portneuf; Joseph Perron, Rivere a Pierre, County Portneuf; M. P. Davis, 565 Rideau Street, Ottawa; The Laurentine Granite Co., St. Philippe, County Argenteuil; J. A. Nadeau, Iberville.

Mica.—Wallingsford Bros., Perkins Mill, County Ottawa; Blackburn Bros., 46 Sussex Street, Ottawa; Fortin & Gravelle, Hull, County Ottawa; Mica Mfg. Co., 213 Dalhousie Street, Ottawa; Yavassour Mining Association (T. F. Nellis), 22 Metcalfe Street, Ottawa; Lila Mining Co., (D. L. McLean), 5 Sparks Street, Ottawa; Chs. Guertin, 398 Wellington Street, Ottawa; E. B. Haycock, 49 Cooper Street, Ottawa; Brown Bros., Cantley, County Ottawa; Angus Cameron, Buckingham, County Ottawa; Lewis McLaurin, East Templeton, County Ottawa; Richard Moore, Pickanock, County Ottawa; Joshua Ellard, Pickanock, County Ottawa; The Glen Almond Mica & Mining Co., Buckingham, County Ottawa; The Allan Gold Reefs Co. of Ontario, Victoria Chambers, Ottawa.

THE ALLITH MFG. CO.

The Allith Mfg. Co., Chicago, have started a branch of their works in Hamilton, Ont. Negotiations looking to this end had been under way for some months and about a month ago the company decided to occupy, as temporary quarters, the building recently occupied by The Leitch & Turnbull Elevator Co., and have installed complete machinery for the manufacture of track door hangers and all sorts of overhead conveying machinery, and other hardware specialties. Mr. C. E. Harrington is in charge of the new plant and operations will be begun at once.

\$50 TO CALIFORNIA AND RETURN,
Via the Chicago and North-Western Railway. First-class round trip tickets on sale from Chicago, August 1 to 14, to San Francisco and Los Angeles, also to Portland, Tacoma and Seattle. Correspondingly low rates from other points. Favorable stop-over privileges. Return limit October 15, 1903. Three trains daily from Chicago to California, through without change, with first-class Pullmans' and tourist sleeping cars. For special folder and all information, write B. H. Bennett, General Agent, 2 East King St., Toronto, Ont.

WHERE POWER TRANSMISSION APPLIANCES ARE MADE.

When a concern has many lines for which it has a national reputation, some of which are made exclusively by the firm, it is not strange that the buying public forgets that there are other lines in which this particular company excels.

Those who are familiar with transmission appliances invariably associate the name of the Dodge Mfg. Co., Toronto, with the production of power transmission equipment and justly too, for the company leads the Dominion in that line.

So when it is wood split pulleys, or iron pulleys or rope drives and kindred machinery, one invariably thinks of the Dodge Co., yet it is likely that few people take into consideration the fact that this company is one of the largest manufacturers of high grade steel shafting in Canada. However, the company carries at all times over 200 tons of shafting, ranging in diameters from 1/2 to 3 inches and lengths of 16, 18 and 20 feet. At the same time the company have the most extensive facilities for turning up large jack shafts and special shafting and at all times are able to make the most prompt shipments on orders of any size.

During these quiet summer days it is well to get ready for the busy times in the fall, and to arrange for appliances that will be needed to turn out the rush orders that are sure to come later and as shafting is a staple article, its a pretty good time to place your order now.

MARYLAND CASUALTY CO.

The advertisement of the Maryland Casualty Co., of Baltimore, Md., appears in this issue. Its large assets, conservative investments, accumulated experience, regard for expense, and adherence to adequate rates, all guarantee its stability and permanence. It has no moss-grown accumulation of suspended liabilities and its financial strength may be seen from the following figures taken from the annual statement for 1902, its income that year exceeded \$2,000,000:

ASSETS.	
Stocks and bonds, market value, less accrued interest	\$2,292,849.17
Ground rent, first lien under Maryland laws on improved business property, centrally located in Baltimore, worth \$235,000.00	100,000.00
Cash in banks and office...	88,115.38
Interest accrued	11,262.84

Premiums uncollected, less commissions.....	\$298,114.02
Agents' balances.....	8,196.67
Bills receivable	3,096.85
Furniture and fixtures (cost \$13,851.43)	100.00
	\$2,801,734.93

LIABILITIES.

Capital stock.....	\$ 750,000.00
Premium reserve.....	822,202.92
Reserve for unadjusted claims	417,423.76
Safety reserve.....	75,000.00
Surplus and undivided profits.....	737,108.25
	\$2,801,734.93

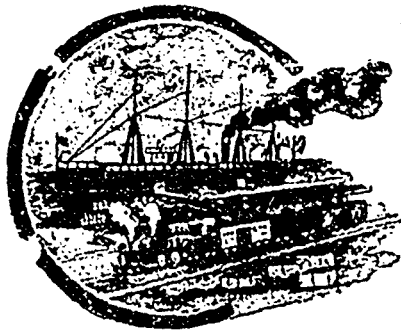
The actual, well established grounds upon which one may be held liable for injuries to another, already embracing a wide range of circumstances, are constantly being extended by statutory enactments, assisted by the well-known prejudices of juries. Further, it is the inalienable right of any person to bring an action, upon any grounds, against another, and the defence of such actions, whether well founded or not, is often a costly experience in itself. We therefore commend this wealthy corporation to the employer who wishes for a known expense, to provide for an unknown liability.

THE CANADIAN LEAD INDUSTRY.

Commenting on the effects growing out of the newly granted bonus granted by the Dominion Government upon the production of refined lead in Canada, Mr. J. L. Parker, M.E., in charge of the North Star mine, at Kimberley, B.C., says:

As long as the bonus lasts, we may consider that we will have good times, for the following reasons:

The mines that are in a shipping condition, but which are not shipping, will naturally ship their ores; those in a developing condition, but not developing, will naturally develop; properties which have a favorable surface mineral condition will naturally either have some work done on them, or the owners will find a more favorable market for them than has been the case the past two years; encouragement will be given the prospector to hunt for new finds; the wage expenditure will return to the old standard of about \$2,500,000 per annum instead of less than \$500,000; merchants, who have been reducing their stocks will replenish them, resulting in the merchants cast getting fresh orders, and giving the railroads more work; the smelters will have live furnaces, instead of dead ones, and this will give employment to more men, and through this certain ores available for fluxes can be used which would otherwise remain in the ground. This latter feature is an important one, in giving employment to more men; the amount of bonus to be distributed in five years time on the basis of \$15 per ton, will be about \$2,500,000, and as the mine owners will spend \$10,000,000 more during the same period, than they would have done under the past bad conditions, it will be seen that the Government aid will mean



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CATALOGUE AND PRICES ON APPLICATION.

a direct aid to the district of \$2,500,000 besides an indirect aid to the amount of \$10,000,000.

The following will be the amounts of bonus on the different grades of ore that each grade will earn:

30 per cent. lead ore, \$4.05 per ton.
40 per cent. lead ore, \$5.40 per ton.
50 per cent. lead ore, \$6.75 per ton.
60 per cent. lead ore, \$8.10 per ton.

ONTARIO MINERAL DEPOSITS.

A letter has been received by Mr. Thos. W. Gibson, Director of the Ontario Bureau of Mines, dated at Moose Factory, July 7, from Mr. J. M. Bell, who is in charge of the expedition sent into northern Ontario in May last in search of workable beds of lignite. Mr. Bell writes: The work done on the Soveska was most encouraging. By means of the numerous test pits along the bank, the lignite was found to outcrop as a seam 2 feet 6 inches to 5 feet thick, continuously, for over one-quarter of a mile, on both sides of the stream (100 feet wide). By means of drill-holes, etc., the basin was found to have at least the same width, and the coal had not died out at the limiting points, but, instead, retained a fair width, so that the coal bed is probably many times greater than this trial area of one-quarter mile square. This bed is at the lowest appearance of coal on the Soveska, and there are other points at which lignite appears, but at none of these is the quality as good as at the lowest. These beds all occur within a distance of four miles. Besides the Soveska, the beds on the Wabiskagami were examined, but, although many of them are of considerable thickness, none are very pure, and they are not of equal importance with the Soveska, which, I think, is really an important and valuable prospect. On the Wabiskagami we found a thick bed of very fine light-grade clay, at least equal, if not superior, to that which Mr. Borron mentions on the Missanabie.

On our way here I stopped for a while and made careful examination of the gypsum beds of the Moose. The gypsum occurs much more extensively than I had previously realized, and is certainly of great value. Careful measurement showed that the beds extend along the north side for two and three-quarter miles, and on the opposite side for two miles and a half, besides which there is a bed half a mile long on the southeast side at three miles below the extremity of the other bed on the same side. The beds are in places at least 16 feet thick, and a careful study of the topography away from the streams shows that they extend back long distances on either side. Of course this gypsum is not of equal importance with the lignite, but is of future value.

The lignite found by Mr. Bell's party is of a fair quality, but, like all lignite, is of little value outside of the district where it is found, unless manufactured into briquettes. This is a feasible plan, however, and the discovery is considered to be one of much importance. The locality of the discovery is close to where

the proposed Grand Trunk Pacific road will pass.

OPPORTUNITIES.

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

1068. A company manufacturing edge-tools wishes to hear from Canadian manufacturers who can supply hickory handles for same in quantity.

1069. The manufacturers of sauces ask to be placed in touch with Canadian firm prepared to take up sale of their goods.

1070. A Liverpool house conducting an export trade in grocers sundries and specialties invites correspondence from Canadian importers of these lines.

1071. A London firm doing a brokerage and merchant's business in grain, chiefly wheat, is anxious to obtain the agency for a reliable firm of grain merchants in Canada.

1072. Enquiry is made for names of shippers of Gaspé dried codfish from Canada.

1073. A South Africa firm enquires through their English agents, respecting Canadian made disc ploughs, mealie planters and manna sowing machines.

1074. A Belfast firm offering good references is desirous of representing reliable Canadian milling firms exporting flake and cut meal, etc.

1075. A London firm asks to be referred to large importers in Canada of rags for paper making.

1076. A business man in London, offering good references, is willing to undertake the representation of Canadian houses requiring such services.

1077. The names of parties in Canada able to ship ore for German steel works are asked for.

1078. A Swiss importer wishes to get into communication with Canadian exporters of food products at the different ports of shipment.

1079. A correspondent in Malta has asked that he may be placed in touch with Canadian cattle shippers.

1080. A firm of merchants and agents at Calcutta, India, being desirous of interesting themselves in Canadian trade are anxious to correspond with parties in the Dominion with a view to business.

An article in the Handels-Museum calls attention to the opportunities offered for the sale of building material and furniture in Johannesburg, Transvaal, South Africa. The article emphasizes the demand for furniture, and points out the popularity of American furniture, office supplies, etc., attributing the same to the fact that the articles furnished are suited to the tastes of the people.

According to the St. Petersburg Times, the demand for agricultural machines in the Siberian country beyond Lake Baikal is to be very large. New houses are opening up for business and the old firms are enlarging their plants. Farmers are having their orders filled as fast as the

machines can be put together, and the demand is constantly increasing.

The St. Petersburg, Russia, Journal announces that the Russian Department of Agriculture is instituting a competition for the best milk separators, which must be able to separate from 40 to 50 gallons per hour. The contest is open to both Russian and foreign manufacturers, and will take place next year at the Agricultural Museum, St. Petersburg. Two prizes—of \$780 and \$258, respectively—are offered. Entries must be made before February 15, 1904. Canadian manufacturers of cream separators should note this opening for their trade.

PERSONAL.

Mr. John Abell, one of the original Captains of Canadian industry, died in Toronto on August 7. Mr. Abell was the founder of what is now known as the American-Abell Engine & Thresher Co., Limited, this city. He was in his eighty-second year, having been born at Charlton, Kings, Gloucestershire, England, in 1822. He was trained in mechanical pursuits, and while still a very young man, came to Canada and settled at Woodbridge, where, in 1845, he started a small factory for the manufacture of plows and wagons. Then he branched out into reapers and mowers. In 1847 he built one of the first separators made in Canada. It was then operated by horse-power, and in 1863 and 1864 he manufactured the first portable threshing engine built on this continent. In 1864 he commenced to operate threshing machines by steam power, being the first in America to do so. He met many obstacles, having to execute a bond against loss by fire and secure the farmers before being permitted to thresh with steam engines. In 1874 the first Abell threshing machine outfits were shipped to Manitoba, having to be transported by wagon from St. Paul, Minn., into the Manitoba territory. In 1874 the plant at Woodbridge was destroyed by fire and rebuilt in the same year. In 1886 the works were removed to Toronto, and in 1894 the firm was incorporated under the name of the John Abell Engine & Machine Works Co., Limited, and capitalized at half a million dollars. On May 15, 1902, the company was reorganized as the American-Abell Engine & Thresher Co., Limited, with a paid-up capital of one million dollars.

The Patent Exchange & Investment Co., 124 Victoria St., Toronto, of which Mr. J. A. MacMurtry is manager, write us that they would be pleased to investigate the merits of patents offered for sale. They say that they are in constant receipt of inquiries from clients who desire to purchase good inventions of articles to be manufactured and placed upon the market. They invite correspondence.

The annual convention of the National Association of Master House Painters and Decorators, of the United States and Canada, will be held in Toronto next February, upon which occasion about 500 master painters from all parts of the United States and Canada will be present.

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Undertake legitimate Detective business and Confidential Investigations for CORPORATIONS, COMPANIES, BANKS, MERCANTILE HOUSES, LEGAL FIRMS, or Individuals in any part of Canada or the United States by experienced and Reliable operatives.

WE supply Detectives who are Mechanics, Clerks or Laborers to work in Factories, Warehouses, Storehouses, Mines, etc. In order to learn all going on in regard to Unions present or prospective; contemplated strikes; grievances, thefts or leaks of any kind, and all general information of value to the employer. We do not operate for rewards nor engage in divorce cases. Terms as reasonable as is consistent with good service. Patronage solicited.

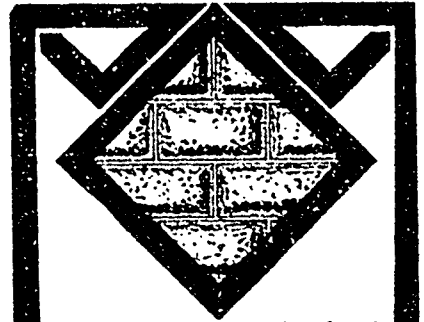
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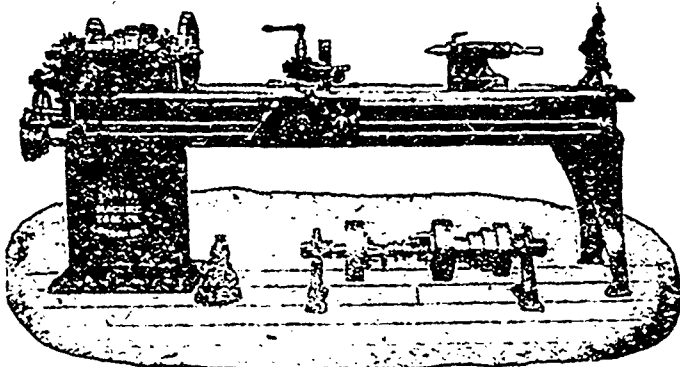
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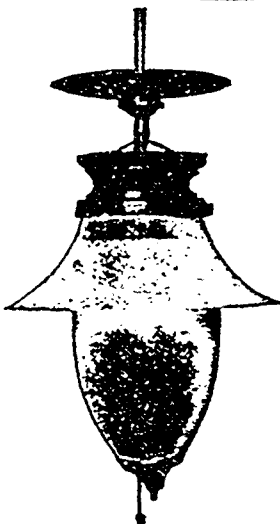
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INDUSTRIAL PUBLICATIONS.

The Crosby Steam Gage & Valve Co., Boston, Mass., are sending out a folder exploiting their latest type of spring seat valves. These valves are made with conical seats which constitute their characteristic novelty and present a double seating capacity, thus removing the liability of leaking or rolling in use. A central groove in the two seats permits of a springing action when they are together, preventing them from jamming when the valve is closed, and allowing a freedom of accommodation when subjected to any variation of temperature. When partially open outrushing steam or fluid does not abrade their surfaces, as ordinarily happens.

Mines and Minerals Directory issued by Mines and Minerals, Scranton, Pa., contains the names and addresses of reliable manufacturers of, and dealers in, machinery, equipment, supplies, instruments, tools, etc., used in the mining and milling industries.

Vol. III of The Copper Handbook, a manual of the copper industry of the world, compiled and published by Horace J. Stevens, Houghton, Mich., recently issued, contains more than 600 pages. It reviews the entire copper industry of the world, and lists more than 2,200 copper mines, giving the history of this important mineral, its chemistry and mineralogy, and in fact tells everything about the copper industry. Price in buckram \$5.00 morocco, \$7.50.

IMPORTANT RAILROAD EXTENSION.—

The Ontario Government has determined that as soon as the rails of the proposed Grand Trunk Pacific Railway cross Ontario, the Temiskaming & Northern Ontario Railway shall be ready to connect with the new transcontinental road, and to do business for this province. With this object in view the route from New Liskeard northerly will be at once surveyed, and the location of the road decided upon. Immediately the point at which the Grand Trunk Pacific will cross this proposed northern extension is decided upon, the Temiskaming & Northern rails will be laid to that spot, and a junction made with the transcontinental.

The work on the line from North Bay to New Liskeard has been so rapidly pushed ahead that it will be completed several months before the date fixed by contract expires. This expedition will be to the great benefit of the district. The new transcontinental line will probably run about 70 or 80 miles north of New Liskeard, but whatever the distance may be, the Temiskaming & Northern Ontario Railway will be extended to meet it.

It is understood that the recent visits of the Hon. Mr. Latchford, Minister of Public Works, and Mr. A. W. Campbell, his assistant, to this district, have been in connection with the extension which, when carried out, will give Ontario almost, if not quite, 200 miles of Government constructed and owned railway, connecting with a Dominion constructed and owned railway, running from Moncton to Winnipeg.

A CANADIAN HYDRAULIC LOCK.—Following is a description of the hydraulic lift lock (now nearly completed) on the Trent Valley Canal, a few miles north of Peterborough, Ont., on the Otonabee River, which is said to be the largest lock of its kind in the world.

There are two water-tight steel boxes or chambers, 33 feet in width by 140 feet in length, with 8 feet of water in the clear, and closed at the ends by means of gates hung on the lower edge.

Similar gates also close the ends of the reaches. These chambers are carried by means of heavy trusses supported on top of two rams, 7 feet 6 inches in diameter, which work in two steel water-tight presses, one under each chamber. The presses are connected with each other by a pipe 12 inches in diameter, in the centre of which a valve is placed for the purpose of regulating the motion of the chambers. For the purpose of making up for the small quantity of water lost in the working of the main presses, an accumulator is installed in one of the side towers. This accumulator has a ram 20 inches in diameter, with a stroke of 30 feet 6 inches, working at a pressure slightly greater than that of the main presses. Its pressure is also used to operate the gates, capstans and small pumps. The junction between the ends of the movable superstructure and the ends of the reaches is made water-tight by means of a continuous rubber hose placed on the outer sides of the ends and bottom of the gate of the reach. This hose is inflated with compressed air from a Taylor air compressor installed in the main wall.

The mode of operating the lock is as follows: Supposing both chambers are at a standstill, one up and the other down, both gates toward the reach open ready for the vessel to enter. When the chambers are thus the bottom of the upper chamber will be about 10 inches lower than the bottom of the canal above, and has, say, 8 feet 10 inches of water on the sill. The bottom of the lower chamber will be just level with the bottom of the canal below, and will have 8 feet of water on the sill. Thus the upper chamber has 10 inches more water in it than the lower chamber, and consequently is so much heavier than the lower one (approximately 100 tons). The valve in the connecting pipe between the two presses is closed. When it is desired to operate the lock gates at the end of each chamber, and the gates at the ends of the reaches are closed, the air is allowed to escape from the air hose—making the water-tight seal between the lock and the end of the reach—and the operator, who stands in his cabin on the top of the central tower, opens the valve in the connecting pipe between the presses. The upper chamber then commences to descend and the lower chamber to ascend till both chambers reach their new positions, the upper chamber being now level with the lower reach and the former lower chamber being opposite the upper reach. The operator now closes the main valve in the connecting pipe and inflates the air hose forming the water-tight seal at the end of the lock. When the chambers are in their new positions, the surface of the water in the lower

chamber is 10 inches above the surface of the water in the reach below and the surface of the water in the upper chamber 10 inches below the surface of the water in the reach above.

Communication between the water in the chambers and the reaches is now made by opening the valves in the gates nearest the reaches, and the water in each chamber is allowed to find its own level. The gates are then opened. When this is done the chambers are in the condition they were on starting. Vessels are hauled in and out of the chambers by means of hydraulic capstans. The time allowed to lock and pass one or two vessels in and out of the lock will be from twelve to fifteen minutes. The time required to raise or lower the lock chambers will be about three minutes. On the upstream side of the lock a guard gate will be placed which will be operated by hydraulic power and will be closed when a vessel enters the lock. The substructure of the hydraulic lock is built of concrete. The natural surface of the limestone is at such an elevation that very little expense is necessary for the finishing of the floors at the lower-reach level. The main retaining wall—126 feet long by 40 feet thick—rests upon the limestone formation. Its height will be about 83 feet. The sides are carried up plumb for their whole height, the bearing pressure upon the lock being only about 6 tons per square foot. The steel superstructure is being built by the Dominion Bridge Co., Montreal.

THE MINERAL PRODUCTION OF CANADA.—Mr. E. D. Ingall, head of the Mines Bureau of the Canadian Geological Survey, has issued a preliminary statement of the mineral production of Canada for 1902. Although the figures given are subject to revision, they may be taken as a very close approximation to those which will be given in the final report. The completed annual report will follow later, and besides containing a revise of the general table of production, will include other details relating to explorations, development, exports, imports, etc. As much of this information is not available till several months after the close of the year, and the compilation and printing necessarily occupy some time, it cannot be issued till well on in the year following the one covered.

The total production of pig iron in Canada in 1902, from Canadian and foreign ores, amounted to 357,903 tons, valued at \$4,243,645, of which it is estimated 71,665 tons, valued at \$1,043,011, should be attributed to Canadian ore and 286,238 tons, valued at \$3,200,534, to the ore imported. The respective columns give quantity and value of product marketed. The ton used is that of 2,000 pounds; the copper contents of ore, matte, etc., at 11.626c. per pound. The lead shows contents of ores, etc., at 4.069c. per pound. The nickel shows nickel contents of ore, matte, etc., at 47c. per pound. The silver contents of ore are valued at 52.16c. per ounce. The coke is oven coke, all the production of Nova Scotia and British Columbia. The natural gas means gross returns from sale

THE REASON WHY

Manufacturers Locate

AT

PETERBOROUGH.

An American manufacturing concern recently erected in Peterborough a Canadian branch factory—having a capacity of 800 hands—for export and Canadian trade.

The following letter, addressed to the "Peterborough Examiner" gives the reason why.

"We notice in your issue of Saturday, September 27th, 1902, a statement by Mr. ——— at the meeting of the Peterborough Board of Trade, that we were induced to locate here through the influence of one man.

"Please permit us to state that Mr. ——— is incorrect in making a statement of this kind, privately or publicly, and evidently speaks without full knowledge, or, in fact, without any knowledge whatever on the matter, and in correcting this mis-statement permit us to assure you and the public that our Company came here on account of the natural advantages of Peterborough, which are the geographical location, railways, the water power, and the Trent Canal, which, we were assured would be shortly completed, and which, when finished and in operation, will in our opinion secure to Peterborough all the industries that your city can comfortably take care of."

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Head Office—Cor. George & Hunter Sts., PETERBOROUGH.

ADDRESS BRANCH OFFICE—9 Toronto Street, TORONTO

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of gas. The oil statement includes crude oil sold to refiners and oil sold for fuel and other purposes.

The total values reported for 17 years past have been as follows:

1886	\$10,221,255
1887	11,321,331
1888	12,518,894
1889	14,013,913
1890	16,763,353
1891	18,976,816
1892	16,628,417
1893	20,035,082
1894	19,931,158
1895	20,648,964
1896	22,584,513
1897	23,661,430
1898	38,697,021
1899	49,584,027
1900	64,505,137
1901	66,712,708
1902	64,970,732

The rapid growth since 1897 has been largely due to the discovery and development of the gold placers of the Yukon.

The report says that notwithstanding the most gratifying increase in the total value of the production of non-metallic minerals, the grand total of the value of the production of all the mineral industries of Canada shows a falling off of 2.6 per cent. This is due not merely to the decrease in the Yukon output of gold, amounting to \$3,500,000, but also to the very considerable falling off in values of all the remaining metallic minerals other than nickel. But for the large growth of the coal and coke industry, helped by increases in many of the other non-metallic products, the decrease in the grand total on account of the metallic class would have amounted to nearly 10 per cent. The total of the production of the metallic products shows a falling off of over 15 per cent., as compared with the equivalent figures for 1901, while the non-metallic class shows an increase of over 20 per cent. in a similar comparison.

In regard to their relative importance, the metallic industries as a group still occupy the most important place, although not leading to the extent they did in former years. They contributed about 55 per cent. of the whole, the non-metallic following with nearly 33 per cent., and the structural class with nearly 12 per cent. Grouping the metalliferous class with coal and coke, about 81 per cent. of the value is accounted for.

The following table gives the relative contribution to the grand total of the different industries in comparison with 1901.

Product.	1901.	Per cent. of total.
1. Gold	36.17	
2. Coal and coke	17.99	
3. Copper	9.14	
4. Building material	7.71	
5. Nickel	6.89	
6. Silver	4.89	

Product.	Per cent. of total.
7. Lead	3.37
8. Asbestos	1.89
9. Coke	1.84
10. Pig iron*	1.82
11. Petroleum	1.51
12. Iron ore†	1.14
13. Cement	0.99
14. Gypsum	0.51
15. Natural gas	0.51

1902.	
Product.	Per cent. of total.
1. Gold	31.92
2. Coal	28.92
3. Building material	8.47
4. Nickel	7.74
5. Copper	7.01
6. Silver	3.51
7. Coke	2.37
8. Asbestos	1.85
9. Cement	1.72
10. Iron ore†	1.64
11. Pig iron*	1.61
12. Lead	1.44
13. Petroleum	1.44
14. Mica	0.62
15. Gypsum	0.55

*Made from Canadian ores. †Ore exported.

It will be noted that copper has fallen from third to fifth place; lead from seventh to twelfth. Iron ore exported has advanced two places, but pig iron from Canadian ore is now eleventh in importance, where last year it ranked tenth. Silver maintains its position, while nickel advanced to fourth. The per cents. of changes in various items are shown herewith:

METALLIC.		
Product.	Quantity.	Value.
Copper.....lbs.	39,163,292	\$1,533,695
Gold, Yukon....	\$14,500,000	
Gold, all other..	6,211,245	
Iron ore (exports).....tons	428,901	20,711,245
Pig iron from Canadian ore.....tons	71,655	1,065,019
Lead.....lbs.	23,000,000	1,013,011
Nickel....." "	10,693,410	935,870
Silver.....oz.	4,373,000	5,025,903
Zinc.....lbs.	166,700	2,289,357
Total metallic.....		\$35,633,763

NON-METALLIC.		
Product.	Quantity.	Value.
Actinolite.....tons	550	\$4,400
Arsenic....." "	800	43,000
Asbestos....." "	31,779	1,191,338
Asbestos....." "	8,662	12,114
Chronite....." "	900	12,400
Coal....." "	7,639,255	15,538,611
Coke....." "	506,466	1,533,930
Corundum....." "	768	81,465
Felspar....." "	7,576	11,375
Fire clay....." "	2,741	4,283
Graphite....." "	1,035	23,300
Grindstones....." "	6,159	48,400
Gypsum....." "	332,015	356,317
Limestone for flux....." "	293,103	218,809
Manganese ore....." "	84	2,774
Mica....." "		400,000
Mineral pigments:		
Barite....." "	1,096	3,957
Ochre....." "	4,955	30,435
Mineral water....." "		100,000
Moulding sand.....tons	13,352	27,651
Natural gas....." "		195,992
Peat.....tons	475	1,663
Petroleum.....bbls.	521,485	934,740
Phosphate.....tons	856	4,933
Pyrites....." "	35,616	133,939
Salt....." "	63,656	283,531
Talc....." "	689	1,801
Tripolite....." "	900	15,800
Total non-metallic.....		\$21,215,091

STRUCTURAL MATERIALS AND CLAY PRODUCTS.		
Product.	Quantity.	Value.
Cement, natural rock.....bbls.	124,400	\$91,870
Cement, Portland.....bbls.	594,591	1,023,618
Granite....." "		170,000
Pottery....." "		200,000
Sands and gravels (exports).....tons	159,703	119,120
Sewer pipe....." "		291,465
Slate....." "		19,200
Terra-cotta, pressed brick, etc....." "		318,597
Building materials, including bricks, building stone, lime, tiles, etc....." "		6,500,000
Total structural materials and clay products....." "		\$7,771,870
Estimated value of mineral products not returned....." "		300,000
Total 1902....." "		\$64,970,732

METALLIC.		
Product.	Quantity.	Value.
Copper.....I.	2.5	D. 22.0
Gold.....D.		D. 14.0
Pig iron (from Canadian ore).....D.	13.8	D. 13.9
Pig iron (from both home and imported ores).....I.	30.4	I. 20.8
Lead.....D.	55.7	D. 58.4
Nickel.....I.	16.4	I. 9.1
Silver.....D.	21.1	D. 30.2

NON-METALLIC.		
Product.	Quantity.	Value.
Arsenic.....I.	15.3	I. 15.2
Asbestos and asbestio.....I.	0.6	D. 3.7
Coal.....I.	22.7	I. 29.4
Coke.....I.	33.6	I. 25.3
Corundum.....I.	82.9	I. 59.0
Cement.....I.	59.6	I. 69.7
Gypsum.....I.	13.0	I. 4.7
Petroleum.....D.	10.2	D. 7.3
Salt.....I.	6.1	D. 10.1

In studying the above table it will be noted that the showing made by the metallic class as a whole is in great contrast with that exhibited by the non-metallic class. In the former case, although copper, pig iron as a whole, and nickel were turned out in larger quantities than last year the beneficial results were modified or even reversed by the lower values obtained. In all the other metallics, the heavy falling off in production is markedly aggravated by the fall in values in these instances also.

In the non-metallic class, there is fortunately a more hopeful record. Only in the cases of asbestos, etc., and petroleum do the values show decreases, while for all the other items the proportional growth is very marked. Although in several of the industries there has been a decrease in values, in others on the contrary, the increase has been very marked.

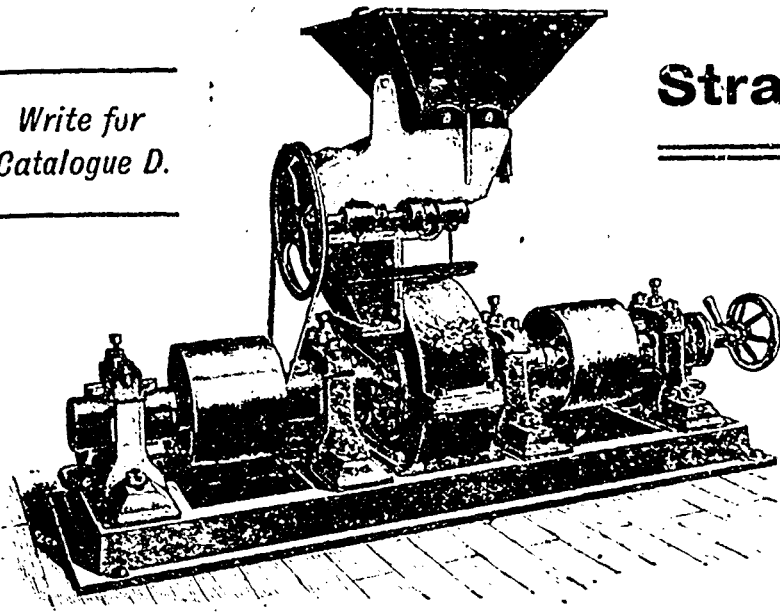
It will be noticed that although the output of pig iron from Canadian ore has fallen off, the whole iron smelting industry shows marked growth notwithstanding. Taking the values of the coal and coke produced during 1902, together with those in the allied iron smelting industry, an increase of nearly \$4,500,000 is exhibited, showing a growth in these, the most commercially important industries of the country, more than offsetting the diminution of the \$3,500,000 in the necessarily fluctuating product of the placer gold washings of the Yukon Territory.

The per capita value of the total mineral products for 1902 was \$11.87 as compared with \$2.23 in 1886, the first year for which figures are available.

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ANOTHER CANADIAN STEEL PLANT.—It is currently reported in the vicinity of Niagara Falls that Canadian capitalists had secured the Ruthenberg process of making steel by electricity, and in the near future will construct mammoth electrolytic steel plants on the Welland River at Chippewa, using a large block of Canadian Niagara power.

The projected railway along the Welland River and the recent activity there leads to the belief that the scheme is well mapped out. If steel can be made cheaply from electricity a wonderful growth will be seen along the Niagara frontier, as an enormous amount of power will be consumed, and the nearer the plants can get to the source of power the better electrolytic steel is known to be a probability, and it is said that the Ruthenberg process is so good that strong competition can already be given to the old style process of making steel.

HUTTON IRON RANGE.—Dr. A. P. Coleman, of the Ontario Bureau of Mines, who has been conducting geological in-

vestigations in New Ontario, has returned from a trip devoted to the inspection of the Northern nickel range and the Moose Mountain range, better known on account of recent discoveries as the Hutton iron range. Of the latter, Dr. Coleman reports large bodies of iron ore, not only in the Township of Hutton, but in the district to the west of it. Two companies have been formed to develop the deposits of both, of which Mr. Chase S. Osborne, of Sault Ste. Marie, Mich., is president. A number of American iron masters, who are understood to be independent of the Steel Trust, are interested. Mr. Osborne estimates that there are ten million tons of iron ore in the deposits. The Canadian Pacific Railway is surveying a line to the range, which lies about 25 miles north of Sudbury.

STREET RAILWAY FACTS.—The revenue from the Toronto street railway amounted last year to \$235,417.21, an increase of \$22,238 over the previous year. The number of passengers carried was 44,437,678, on which the railway bases its

gross earnings, amounting to \$1,834,908.37, a sum rather less than that on which the city is paid its percentage, the latter being based not on the gross earnings, but on the gross receipts for railway fares only. In 1892 the number of passengers carried by the street railway was 19,122,022. The number of transfers of passengers increased from 5,592,703 in 1892 to 15,974,220 last year. The mileage ran during 1902 was 10,517,433.

The following statement gives the revenue of the Toronto Railway Co. since 1891 :

Year.	Mileage.	Perc'tage.	Total.
1891 (4 mos.)	\$18,135	\$22,961	\$41,102
1892	55,134	65,239	120,373
1893	56,340	72,234	128,574
1894	58,170	76,385	134,555
1895	60,000	78,196	138,196
1896	60,000	78,922	138,922
1897	60,000	85,673	145,673
1898	64,000	98,631	162,631
1899	64,000	111,426	175,426
1900	64,000	127,128	191,128
1901	68,000	145,209	213,209
1902	70,274	165,173	235,447

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14 in. Garrin
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No. 2 Pratt & Whitney</p> <p>Boring Mills
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36 in. Snyder</p> <p>Planors
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22 x 18 x 5 Planer
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chines
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Machine
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accelerated speed, Hurl-
burt & Rogers
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No. 4 Fox Multiple Tube
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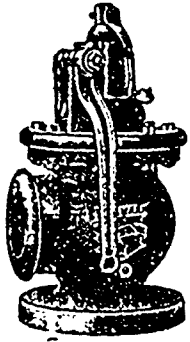
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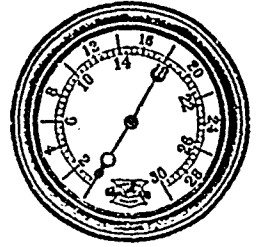


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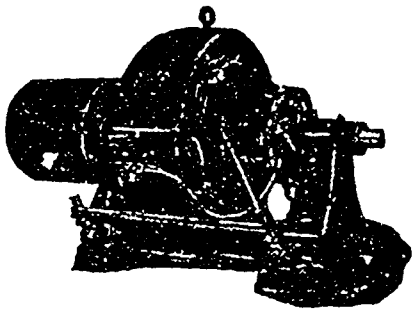
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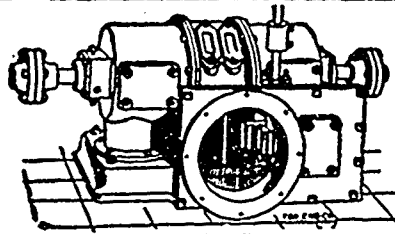
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RAILWAY FEEDER and TROLLEY WIRE

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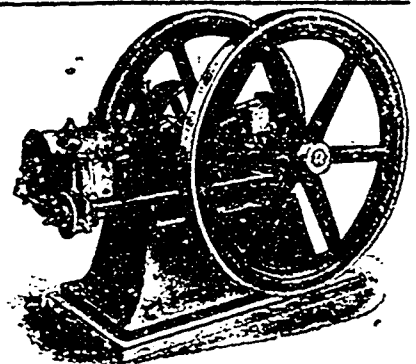
CABLES FOR AERIAL and UNDERGROUND USE.

GASOLINE ENGINES

3 to 21 Horse Power.

Write for prices and descriptive matter.

The Dominion Motor & Machine Co.,
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TORONTO.



HAMILTON COTTON Co.

HAMILTON, ONTARIO

YARN DYERS and BLEACHERS

Manufacturers.

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, WEBBINGS, Etc.

Dyeing of all Colors, including GENUINE FAST BLACK.

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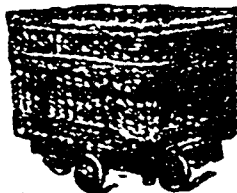
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WE BUILD TRUCKS

That sustain our Reputation.

THE LARGEST TRUCK ESTABLISHMENT IN THE WORLD.

NOTHING BUT THE BEST



Spins Like a Top.

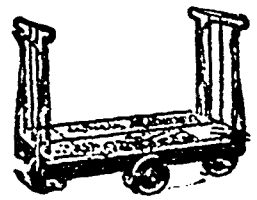
For the Warehouse, Factory, Brewery, Stores, Hospitals—in fact for every conceivable purpose—all on the famous Slingsby Patent Sliding Wheel Principle.

HAVE YOU SEEN IT?

We also make special Trucks. Simply give us your ideas.

H. C. Slingsby for Canada

TEMPLE BLDG., MONTREAL



Runs either way.

A decided difference in the Coal Bill

By using the Mumford Standard Boiler instead of a return tubular, there will be a reduction in the coal bill of 10 to 25 per cent.

If you require a boiler it will pay you to carefully consider the merits of the Mumford. Catalogue with full particulars sent on application.

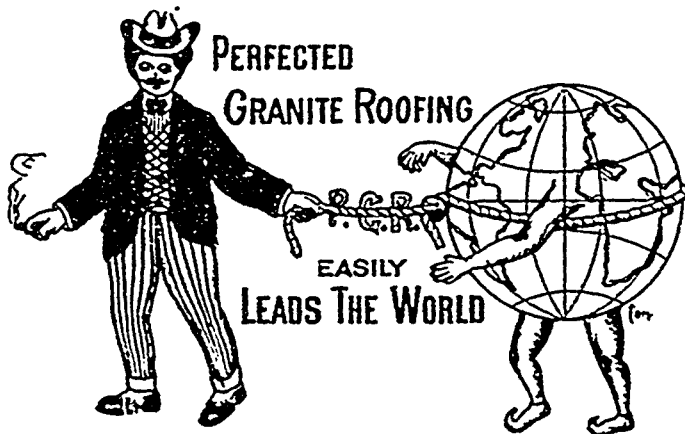
Robb Engineering Co., Limited

AMHERST, N. S.

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WILLIAM McKAY,
19 McKenzie Crescent, TORONTO.

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7 St. Helen St., MONTREAL.



For Mine, Breaker, and Smelter Buildings, P. G. R. is the only Roofing that resists sun, weathers, gases, and lasts for years, without attention. WRITE US FOR SAMPLES AND PRICES.

EASTERN GRANITE ROOFING CO.,
1 Irving Building NEW YORK.

CLASSIFIED INDEX.

Abrasives.

Canadian Corundum Wheel Co., Hamilton, Ont.
Hart Emery Wheel Co., Hamilton, Ont.
Hico Lewis & Son, Toronto.
Williams, A. R., Machinery Co., Toronto.

Air Compressors

American Steam Pump Co., Battle Creek, Mich.
Canadian Rand Drill Co., Sherbrooke, Que.
Cooper, James, Mfg. Co., Montreal.
Darling Bros., Montreal.

Jenckes Machine Co., Sherbrooke, Que.

Air Reservoirs.

Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Aluminum

Syracuse Smelting Works, Montreal.

Angles, Beams and Girders

Bourne-Fuller Co., Cleveland, Ohio.
Leslie, A. C. & Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Annealing Boxes.

Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Annealing Muffles and Furnaces.

Turner, Vaughn & Taylor, Cuyahoga Falls, Ohio

Antimony

Samuel, M. & L. Benjamin & Co., Toronto.
Syracuse Smelting Works, Montreal.

Anvils and Vices.

Leslie, A. C. & Co., Montreal.

Architects

Parke, R. J., Toronto.
Vogel, C. H., Ottawa.

Assayers.

Metallurgical Laboratory, Pittsburg, Pa.
Wentz, R. F. Engineering Co., Toronto.

Axles

Nova Scotia Steel & Coal Co., New Glasgow, N.S.

Babbitt Metal

Samuel, M. & L. Benjamin & Co., Toronto.
Syracuse Smelting Works, Montreal.

Bar Iron and Steel

Bourne-Fuller Co., Cleveland, Ohio.
Leslie, A. C. & Co., Montreal.
Hico Lewis & Son, Toronto.
Samuel, M. & L. Benjamin & Co., Toronto.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Belt Dressing.

Rosendale Belting Co., Toronto.
Williams, A. R., Machinery Co., Toronto.

Bolt Fasteners.

Bristol Co., Waterbury, Conn.
Rosendale Belting Co., Toronto.
Williams, A. R., Machinery Co., Toronto.

Bolting (Cotton.)

Dominion Belting Co., Hamilton, Ont.
Fleming, W. A. & Co., Montreal.
Rosendale Belting Co., Toronto.

Bolting (Leather.)

McLaren, D. K., Montreal.
Hico Lewis & Son, Toronto.
Williams, A. R., Machinery Co., Toronto.

Bolting and Supplies

Bristol Co., Waterbury, Conn.
Carrier, Laine & Co., Lewis, Que.
Dominion Belting Co., Hamilton, Ont.
Fleming, W. A. & Co., Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
McLaren, D. K., Montreal.
Hico Lewis & Son, Toronto.
Rosendale Belting Co., Toronto.
Smith, N., Toronto.
Williams, A. R., Machinery Co., Toronto.

Bobbins

Wilson Bros. Bobbin Co., Liverpool, England.

Boiler Tube Cleaners

Pierce, Wm. B. Co., Buffalo, N.Y.

Bolt Taps

Butterfield & Co., Rock Island, Que.

Brass

Samuel, M. & L. Benjamin & Co., Toronto.

Brass Founders

Hamilton Brass Mfg. Co., Hamilton, Ont.
Meadows, Geo. B. Wire, Iron & Brass Works Co., Toronto.

McDougall, R. Co., Galt, Ont.
McKinnon Dash & Metal Works Co., St. Catharines, Ont.

Bridges.

Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Building Iron and Steel.

Canada Foundry Co., Toronto.
Expanded Metal & Fireproofing Co., Toronto.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

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RATES ON APPLICATION

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(CONTINUED).

Builders' Materials

Albert Mfg. Co., Hillsboro, Ont.
 Buffalo Forge Co., Buffalo, N.Y.
 Canada Foundry Co., Toronto.
 Canadian Otis Elevator Co., Toronto.
 Canadian Portland Cement Co., Deseronto, Ont.
 Dominion Radiator Co., Toronto.
 Eastern Granite Roofing Co., New York City.
 Expanded Metal & Fireproofing Co., Toronto.
 Gartshore, John J., Toronto.
 Metallo Roofing Co., Toronto.
 McEachron Heating & Ventilating Co., Galt, Ont.
 Owen Sound Portland Cement Co., Owen Sound Ont.
 Rice Lewis & Son, Toronto.

Canada Plates

Leslie, A. C. & Co., Montreal.
 Nova Scotia Steel & Coal Co., New Glasgow, N.S.
 Samuel, M. & L. Benjamin & Co., Toronto.

Canoes

Peterborough Canoe Co., Peterborough, Ont.

Caps

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Cast Iron Pipe

Canada Foundry Co., Toronto.
 Gartshore-Thomson Pipe & Foundry Co., Hamilton, Ont.
 Rice Lewis & Son, Toronto.
 Montreal Pipe Foundry Co., Montreal.

Castings (Iron and Brass)

Toronto Iron & Brass Bedstead Co., Toronto.

Cement

Canadian Portland Cement Co., Deseronto, Ont.
 Owen Sound Portland Cement Co., Owen Sound, Ont.

Cement Machinery

Wentz, R. F. Engineering Co., Toronto.

Chain Making Machinery

Turner, Vaughn & Taylor, Cuyahoga Falls, Ohio.

Channels

Bourne-Fuller Co., Cleveland, Ohio.
 Leslie, A. C. & Co., Montreal.
 Nova Scotia Steel & Coal Co., New Glasgow, N.S.
 Samuel, M. & L. Benjamin & Co., Toronto.
 Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Charcoal Pig Iron

Canada Iron Furnace Co., Montreal.
 Deseronto Iron Co., Deseronto, Ont.

Chemicals and Dye Stuffs

Bellhouse, Dillon & Co., Montreal.
 Benson, W. T. & Co., Montreal.
 Brunner, Mond & Co., Northwich, England.
 Casella Color Co., New York City.
 Geigy Aniline & Extract Co., New York City.
 Klipstein, A. & Co., New York City.
 McArthur, Cornelio & Co., Montreal.
 Winn & Holland, Montreal.

Chemists

Archbold, Dr. Geo., Prescott, Ont.
 Heys, Thos. & Son, Toronto.
 Metallurgical Laboratory, Pittsburg, Pa.
 Wentz, R. F. Engineering Co., Toronto.

Clay Working Machinery

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Coal and Coke

Milnes, James H., & Co., Toronto.

Coal Cutting Machines

Jeffrey Mfg. Co., Columbus, Ohio.

Coal Tipples

Jeffrey Mfg. Co., Columbus, Ohio.
 Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Coil Chains

Greening, B. Wire Co., Hamilton, Ont.
 Leslie, A. C. & Co., Montreal.

Conveying Machinery

Dodge Mfg. Co., Toronto.
 Jeffrey Mfg. Co., Columbus, Ohio.
 Perrin, William R., & Co., Toronto.
 Stevens, Alfred J., Toronto.

Copper Materials

Greening, B. Wire Company, Hamilton, Ont.
 Samuel, M. & L. Benjamin & Co., Toronto.
 Syracuse Smelting Works, Montreal.
 Wire & Cable Co., Montreal.

Corrugated Iron and Steel

Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Corundum

Canadian Corundum Wheel Co., Hamilton, Ont.
 Hart Emery Wheel Co., Hamilton, Ont.

Corundum Wheels

Canadian Corundum Wheel Co., Hamilton, Ont.
 Hart Emery Wheel Co., Hamilton, Ont.
 Rice Lewis & Son, Toronto.

ALEX. GARTSHORE, President. J. G. ALLAN, Soc. Treas. JAS. THOMSON, Vice-Pres. and Gen. Mgr.

THE GARTSHORE-THOMSON PIPE & FOUNDRY CO. Limited



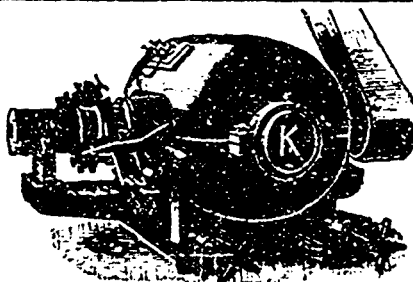
3 in. to 60 in. diameter.
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Special Castings and all kinds of

FLEXIBLE AND FLANGE PIPE.

WATER WORKS SUPPLIES

HAMILTON, ONT.



Special Attention Given to Electrical Repairing.

THE KAY ELECTRIC DYNAMO & MOTOR COMPANY, Limited

219-221 Queen St. East,
 Manufacturers of — TORONTO, ONT.

MULTI-POLAR MOTORS.

BI-POLE MOTORS

ALTERNATING CURRENT MOTORS.

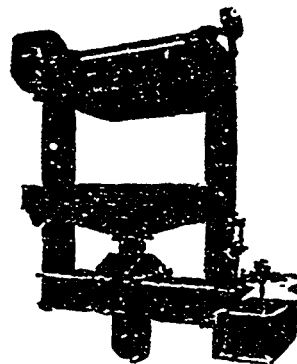
INDUCTION MOTORS.

DYNAMOS for Incandescent and Arc Lighting.

DYNAMOS for Electro-plating and Electrotyping.

ELECTRIC CONTROLLERS for Elevators.

ELECTRIC ORGAN BLOWERS.



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—and—

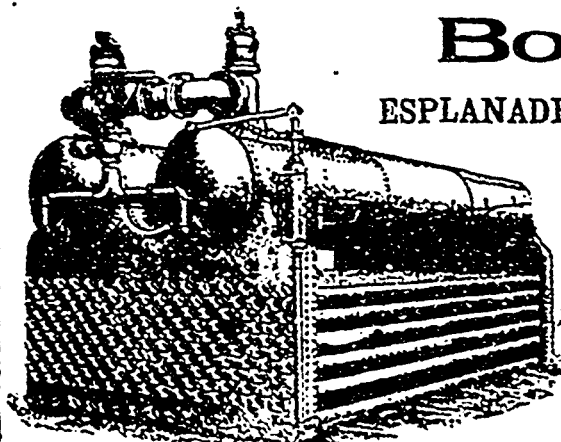
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WILLIAM R. PERRIN & COMPANY

Toronto, - Canada.

The Canadian Heine Safety Boiler Co.

JOHN J. MAIN,
 President and
 Manager.



ESPLANADE (Opp. Sherbourne St.)

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HIGH-CLASS

Water Tube Steam Boilers..

FOR ALL PRESSURES
 DUTIES AND FUEL

From 75 to 600 H.P. Each

REFERENCES:

N.B.—We do not make small Boilers

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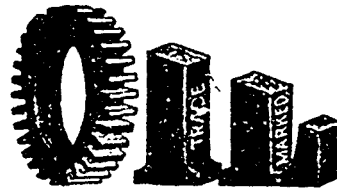
"Capitol" Cylinder

"RENOWN" ENGINE

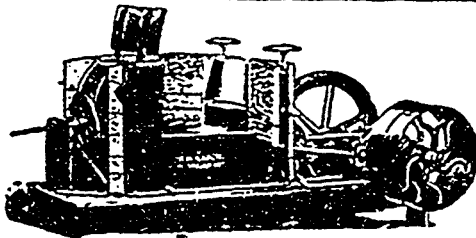
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SAMUEL ROGERS, Pres. TORONTO, Canada.



H. W. KARCH

HESPELER, ONT.

IRON FOUNDER and MACHINIST

Manufacturer of

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Cloth Washers, Wool and Waste Dusters, Rag Dusters, Drum Spool Winders
Reels, Spooling and Doubling Machines, Ring Twisters, Card Creels
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Patent Double-Acting Gix Dyeing Machines.

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FULL STOCK CONSTANTLY ON HAND.

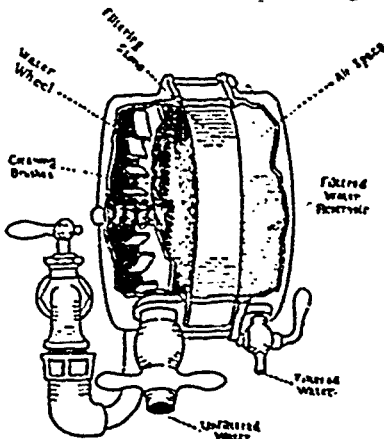
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D. K. McLAREN, - 751 Craig Street, - MONTREAL
- 132 Bay Street, - TORONTO

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The Filter Business in your Town
if you secure this Agency



The water cleans the stone,
The stone cleans the water.

THE ROTA FILTER

is guaranteed to deliver pure, sparkling, aerated water, at 1 pint to 1 quart per minute, depends on water pressure.

It never requires cleaning—IT CLEANS ITSELF.

It will last a life time. It sells on sight.

Sample to any address on receipt of \$10.00.

You take no chances, we guarantee the goods.

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(CONTINUED).

Covers.

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Crayons

Lowell Crayon Co., Lowell Mass.

Crucibles

Dixon, Joseph, Crucible Co., Jersey City, N.J.
McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Samuel, M. & L. Benjamin & Co., Toronto.
Syracuse Smelting Works, Montreal.

Crucible Caps and Nozzles

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Crucible Covers and Stoppers

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Detective Agencies

Noble's Dominion Detective Agency, Toronto.

Dies

Hamilton Stamp & Stencil Works, Hamilton, Ont.
Dies (Socket, Bower Pipe and Tilt-Clay).
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Directorates

Dean & Son, London, E. C., England.
Kelly's Directorates, Limited, Toronto.

Draw Benches (Wire)

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Drills

Bertram, John, & Sons Co., Dundas, Ont.
Canadian Hand Drill Co., Sherbrooke, Que.
Cooper, James, Mfg. Co., Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
London Machine Tool Co., London, Ont.

Dry Kilns.

Buffalo Forge Co., Buffalo, N.Y.
McEachren Heating & Ventilating Co., Galt, Ont.
Stevens, Alfred J., Toronto.
Sturtevant, B. F. Co., Boston, Mass.

Dust and Shavings Separators

Buffalo Forge Co., Buffalo, N.Y.
McEachren Heating & Ventilating Co., Galt, Ont.
Sturtevant, B. F. Co., Boston, Mass.

Electric Mine Locomotives

Jeffrey Mfg. Co., Columbus, Ohio.

Electrical Supplies

Canadian General Electric Co., Toronto.
Electrical Construction Co., London, Ont.
Forman, John, Montreal.
Jones & Moore Electric Co., Toronto.
Kay Electric Dynamo & Motor Co., Toronto.
Packard Electric Co., St. Catharines, Ont.
Phillips, Eugene F., Electrical Works, Montreal.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.
Worth & Martin, Toronto.

Electro-Plating

Brantford Plating Co., Brantford, Ont.

Elevators

Canadian Otis Elevator Co., Toronto.
Darling Bros., Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.

Emery and Emery Wheels.

Canadian Corundum Wheel Co., Hamilton, Ont.
Forman, John, Montreal.
Hart Emery Wheel Co., Hamilton, Ont.

Employers' Liability Insurance

Maryland Casualty Co., Toronto.

Engineers (Consulting)

Wentz, R. F. Engineering Co., Toronto.

Engineers (Chemical)

Heys, Thos. & Son, Toronto.
Metallurgical Laboratory, Pittsburg, Pa.

Engineers (Civil)

Parke, R. J., Toronto.
Vogel, C. H., Ottawa.

Engineers (Consulting)

Electrical Construction Co., London, Ont.

Parke, R. J., Toronto.

Perrin, Wm. R. & Co., Toronto.

Simpson, T. T., Deschene, Que.

Vogel, C. H., Ottawa.

Wentz, R. F. Engineering Co., Toronto.

Engineers (Contracting)

Darling Bros., Montreal.
Electrical Construction Co., London, Ont.

Engineers (Electrical)

Canadian General Electric Co., Toronto.
Electrical Construction Co., London, Ont.
Electric Engineering & Supply Co., Montreal.
Jones & Moore Electric Co., Toronto.
Kay Electric Dynamo & Motor Co., Toronto.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.
Worth & Martin, Toronto.

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Engineers (Mechanical)

Carrier, Laine & Co., Levis, Quebec.
Darling Bros., Montreal.
Electrical Construction Co., London, Ont.
Kerr Engine Co., Walkerville, Ont.
McEachren Heating & Ventilating Co., Galt, Ont.
Northey Co., Toronto.
Robb Engineering Co., Amherst, N.S.
Wentz, R. F. Engineering Co., Toronto.

Engineers (Mill and Hydraulic)

Vogel, C. H., Ottawa.

Engineers (Mining)

Hoyt, Thos. & Son, Toronto.
Metallurgical Laboratory, Pittsburg, Pa.
Mills, S. D., Toronto.

Engineers and Contractors.

Jeffrey Mfg. Co., Columbus, Ohio.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Engines and Boilers

Babcock & Wilcox, Limited, Montreal.
Buffalo Forge Co., Buffalo, N.Y.
Canadian Heine Safety Boiler Co., Toronto.
Cowan & Co., Galt, Ont.
Goldie & McCulloch Co., Galt, Ont.
Hyde Bros. & Co., Pittsburg, Pa.
Leonard, E. & Sons, London, Ont.
McDougall, R. Co., Galt, Ont.
Robb Engineering Co., Amherst, N.S.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.
Stratford Mill Building Co., Stratford, Ont.
Williams, A. R., Machinery Co., Toronto.

Engravers

Canadian Manufacturer, Toronto.
Jones, J. L., Engraving Co., Toronto.

Exhaust Hoods

Burt Mfg. Co., Akron, Ohio.
Darling Bros., Montreal.

Factory Sites

Central Ontario Power Co., Peterboro, Ont.
Sweeney, James Jr., North Tonawanda, N.Y.
Walshaw, J., Bolton, Ont.

Films

Spence, R. & Co., Hamilton, Ont.

Financial

Bradstreet's, New York City.
Dun, R. G. & Co., Toronto.
Neff & Postlethwaite, Toronto.

Filters

Burt Mfg. Co., Akron, Ohio.
Darling Bros., Montreal.
Perrin, Wm. H. & Co., Toronto.
Rota Filters, Limited, Windsor, Ont.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Fire Brick

Hamilton Facing Mill Co., Hamilton, Ont.
Pennsylvania Fire Brick Co., Lock Haven, Pa.
Scioto Fire Brick Co., Sciotoville, Ohio.

Flue Cleaners

Pierce, Wm. B. Co., Buffalo, N.Y.

Founders

Buffalo Forge Co., Buffalo, N.Y.
Canada Foundry Co., Toronto.
Cowan & Co., Galt, Ont.
Gartshore-Thomson Pipe & Foundry Co., Hamilton, Ont.
Karch, H. W., Hespeler, Ont.
McDougall, Tho R. Co., Galt, Ont.
Northey Co., Toronto.

Foundry Facing

Hamilton Facing Mill Co., Hamilton, Ont.

Galvanized Iron and Steel.

Leslie, A. C. & Co., Montreal.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Galvanizing

Brantford Plating Co., Brantford, Ont.
Ontario Wind Engine & Pump Co., Toronto.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Galvanizing and Tinning Machinery and Furnaces (Clay.)
Turner, Vaughn & Taylor Co., Cayahoga Falls, Ohio.

Gas and Gasoline Engines

Dominion Motor & Machine Co., Toronto.
Goldie & McCulloch Co., Galt, Ont.
Morrison, T. A. & Co., Montreal.
Northey Co., Toronto.
Stratford Mill Building Co., Stratford, Ont.

Gas Plants

Sicho Gas Co., Toronto.

Gas Producers.

Smythe, S.R. Co., Pittsburg, Pa.

Generators

Canadian General Electric Co., Toronto.
Electrical Construction Co., London, Ont.
Forman, John, Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
Jones & Moore Electric Co., Toronto.
Kay Electric Dynamo & Motor Co., Toronto.
Phillips, Eugene F., Electrical Works, Montreal.
Toronto & Hamilton Electric Co., Hamilton, Ont.

Government Notices

Factory Inspectors.
Minister of Agriculture.

Grinding Machinery

Hart Emery Wheel Co., Hamilton, Ont.

Hardware

Butterfield & Co., Rock Island, Que.
Cooper, James, Montreal.
Empire Machine & Metal Stamping Co., Toronto.
Gartshore John J., Toronto.
Morrow, John, Machine Screw Co., Ingersoll, Ont.
Rico Lewis & Son, Toronto.
Samuel, M. & L. Benjamin & Co., Toronto.

Heating and Ventilating

Buffalo Forge Co., Buffalo, N.Y.
Darling Bros., Montreal.
Dominion Radiator Co., Toronto.
Leonard, E. & Sons, London, Ont.
McEachren Heating & Ventilating Co., Galt, Ont.
Stevens, Alfred J., Toronto.
Sturtevant, B. F., Co., Boston, Mass.

Hydraulic Machinery

Darling Bros., Montreal.
Jenckes Machine Co., Sherbrooke, Que.
Northey Co., Toronto.
Perrin, Wm. H. & Co., Toronto.
Smythe, S.R. Co., Pittsburg, Pa.
Wilson, J. C. & Co., Glenora, Ont.

Iron and Steel Specialties

Armstrong Mfg. Co., Bridgeport, Conn.
Bourne-Fuller Co., Cleveland, Ohio.
Brown & Co., Paris, Ont.
Dodge Mfg. Co., Toronto.
Karch, H. W., Hespeler, Ont.
Meadows, Geo. B. Wire, Iron & Brass Works Co., Toronto.
McDougall, R. Co., Galt, Ont.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Rico Lewis & Son, Toronto.
Samuel, M. & L. Benjamin & Co., Toronto.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.
Smythe, S.R. Co., Pittsburg, Pa.

Japans.

Berry Bros., Walkerville, Ont.

Lamps—Electric

Forman, John, Montreal.
Packard Electric Co., St. Catharines, Ont.

Lathos

Bertram, John, & Sons Co., Dundas, Ont.
London Machine Tool Co., London, Ont.
McDougall, R. Co., Galt, Ont.
Williams, A. H. & Co., Toronto.

Leather Belting

Fleming, W. A. & Co., Montreal.
McLaren, D. K., Montreal.
Smith, N., Toronto.

Machinists.

Worth & Martin, Toronto.

Machinists' Supplies

Armstrong Mfg. Co., Bridgeport, Conn.
Butterfield & Co., Rock Island, Que.
Cooper, James, Montreal.
Goldie & McCulloch Co., Galt, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
Morrow, John, Machine Screw Co., Ingersoll, Ont.
Worth & Martin, Toronto.

Machine Tools

Bertram, John, & Sons Co., Dundas, Ont.
Darling Bros., Montreal.

Malleable Iron Castings

McKinnon Dash & Metal Works Co., St. Catharines, Ont.
Ontario Malleable Iron Co., Oshawa, Ont.
Smith's Falls Malleable Castings Co., Smith's Falls, Ont.
Walkerville Malleable Iron Co., Ltd., Walkerville, Ont.

Metal Specialties

Brantford Plating Co., Brantford, Ont.

Metal Stamping

Empire Machine & Metal Stamping Co., Toronto.

Metallurgists.

Metallurgical Laboratory, Pittsburg, Pa.
Mills, S. D., Toronto.
Wentz, R. F. Engineering Co., Toronto.

Hyde Water Tube Safety Boiler

The modern boiler for Rolling Mills, Blast Furnaces, and general power purposes.

In successful operation in every state from Atlantic to Rockies.

HYDE BROS. & CO.

PITTSBURG, PA.

R. SPENCE & CO.

HAMILTON, ONT.

FILE and RASP MANUFACTURERS AND RE-CUTTERS.

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Book and Fine Papers.

THE.....

Toronto Paper Manufacturing Co., Cornwall, Ont.

Manufacturers of Engine Sized Superfine Papers, White and Tinted Book Papers, Blue and Cream Laid and Wove Foolscaps, Account, Envelope and Lithographic Papers, etc.

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219 FRONT ST. E., TORONTO.

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Mill Machinery and Supplies

Armstrong Mfg. Co., Bridgeport, Conn.
Cooper, James, Montreal.
Cooper, James, Mfg. Co., Montreal.
Cowan & Co., Galt, Ont.
Darling Bros., Montreal.
Fleming, W. A., & Co., Montreal.
Gartshore, John J., Toronto.
Goldie & McCulloch Co., Galt, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
Hamilton Brass Mfg. Co., Hamilton, Ont.
Hay, Peter, Galt, Ont.
Jenckes Machine Co., Sherbrooke, Que.
Karch, H. W., Hespeler, Ont.
Leonard, E. & Sons, London, Ont.
London Machine Tool Co., London, Ont.
McDougall, R. Co., Galt, Ont.
Morrow, John, Machine Screw Co., Ingersoll, Ont.
Rice Lewis & Son, Toronto.
Robb Engineering Co., Amherst, N.S.
Samuel, M. & L. Benjamin & Co., Toronto.
Smytho, S.R. Co., Pittsburg, Pa.
Spence, R. & Co., Hamilton, Ont.
Stratford Mill Building Co., Stratford, Ont.
Wilson, J. C., & Co., Glenora, Ont.

Mining Machinery

Canadian Rand Drill Co., Sherbrooke, Que.
Cooper, James, Montreal.
Cooper, James Mfg. Co., Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
Jenckes Machine Co., Sherbrooke, Que.
Perrin, Wm. H. & Co., Toronto.
Williams, A. R. Machinery Co., Toronto.

Motors and Dynamos

Canadian General Electric Co., Toronto.
Electrical Construction Co., London, Ont.
Forman, John, Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
Jones & Moore Electric Co., Toronto.
Kay Electric Dynamo and Motor Co., Toronto.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.

Novelty Manufacturers.

Worth & Martin, Toronto.

Nozzles.

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Office Furniture and Supplies

Canadian Office & School Furniture Co., Preston, Ont.
Morton Co., Toronto.

Oils and Lubricants

Dixon, Jos., Crucible Co., Jersey City, N.J.
Fleming, W. A., & Co., Montreal.
Imperial Oil Co., Petrolia, Ont.
Queen City Oil Co., Toronto.

Oil Filters

Burt Mfg. Co., Akron, Ohio.
Darling Bros., Montreal.

Paints and Colors

Bellhouse, Dillon & Co., Montreal.
Berry Bros., Walkerville, Ont.
Fleming, W. A., & Co., Montreal.
Geigy Aniline & Extract Co., New York City.
Klipstein, A., & Co., New York City.
McArthur, Cornelio & Co., Montreal.

Paper Manufacturers

Barber, Wm., & Bros., Georgetown, Ont.
Toronto Paper Mfg. Co., Cornwall, Ont.

Patents

Budden, Hanbury A., Montreal.
Case, Egerton R., Toronto.
Fetherstonhaugh & Co., Toronto.
Patent Exchange & Investment Co., Toronto, Ont.

Perforated Metals

Greening, B. Wiro Co., Hamilton, Ont.

Phosphorizers.

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Pig Iron

Bourne-Fuller Co., Cleveland, Ohio.
Canada Iron Furnace Co., Montreal.
Deseronto Iron Co., Deseronto, Ont.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Samuel, M. & L. Benjamin & Co., Toronto.
Syracuse Smelting Works, Montreal.

Pipe Threading Machines

Armstrong Mfg. Co., Bridgeport, Conn.
Rice Lewis & Son, Toronto.

Pipe (Riveted Iron and Steel.)

Scalfo, Wm. B. & Sons Co., Pittsburg, Pa.

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Pipes and Tubes

Bourne-Fuller Co., Cleveland, Ohio.
Canada Foundry Co., Toronto.
Gartshore-Thomson Pipe & Foundry Co., Hamilton, Ont.
Montreal Pipe Foundry Co., Montreal.
Rice Lewis & Son, Toronto.
Samuel, M. & L. Benjamin & Co., Toronto.

Plaster

Albert Mfg. Co., Hillsborough, N.B.

Plates

Bourne-Fuller Co., Cleveland, Ohio.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Rice Lewis & Son, Toronto.
Samuel, M. & L. Benjamin & Co., Toronto.
Scalfo, Wm. B. & Sons Co., Pittsburg, Pa.

Plating

Brantford Plating Co., Brantford, Ont.

Plumbago

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Pneumatic Tools

Cooper, James, Mfg. Co., Montreal.
Jenckes Machine Co., Sherbrooke, Que.

Pointers (For Rods and Wire.)

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Portland Cement

Canadian Portland Cement Co., Deseronto, Ont.
Owen Sound Portland Cement Co., Owen Sound, Ont.
Rathbun Co., Toronto.
St. Lawrence Portland Cement Co., Montreal.

Power—Electric and Water

Central Ontario Power Co., Peterboro, Ont.

Power Plants—Equipments

American Steam Gauge & Valve Mfg. Co., Boston, Mass.

Buffalo Forge Co., Buffalo, N.Y.
Canadian General Electric Co., Toronto.
Cooper, James, Mfg. Co., Montreal.
Darling Bros., Montreal.
Electrical Construction Co., London, Ont.
Goldie & McCulloch, Galt, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
Jenckes Machine Co., Sherbrooke, Que.
Jones & Moore Electric Co., Toronto.
Kay Electric Dynamo & Motor Co., Toronto.
Leonard, E. & Sons, London, Ont.
Northey Co., Toronto.
Perrin, Wm. R. & Co., Toronto.
Phillips, Eugene F. Electrical Works, Montreal.
Robb Engineering Co., Amherst, N.S.
Smytho, S.R. Co., Pittsburg, Pa.
Stevens, Alfred J., Toronto.
Sturtevant, B. F. Co., Boston, Mass.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.
Wilson, J. C., & Co., Glenora, Ont.

Presses (Tile, Sower Pipe, Nozzles and Sleeves.)

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Pulleys

Darling Bros., Montreal.
Dodge Mfg. Co., Toronto.
Goldie & McCulloch Co., Galt, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
Wilson, J. C., & Co., Glenora, Ont.

Purifiers

Cowan & Co., Galt, Ont.
Goldie & McCulloch Co., Galt, Ont.
Scalfo, Wm. B. & Sons Co., Pittsburg, Pa.

Purifying System (Water.)

Darling Bros., Montreal.
Scalfo, Wm. B. & Sons Co., Pittsburg, Pa.

Railroads

Chicago & North-Western Ry., Toronto & St. Paul, Minn.

Railway Supplies

Algoma Steel Co., Sault Ste. Marie, Ont.
Cooper, James, Montreal.
Gartshore, John J., Toronto.
Greening, B. Wiro Co., Hamilton, Ont.
Montreal Steel Works, Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Phillips, Eugene F., Electrical Works, Montreal.

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Rivets
Bourne-Fuller Co., Cleveland, Ohio.

Roofing
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Metallic Roofing Co., Toronto.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Rubber Goods
Gutta Percha & Rubber Mfg. Co., Toronto.

Scale Removers
Pierce, Wm. B. Co., Buffalo, N.Y.

Second-Hand Machinery.
Wormer, C. C., Machinery Co., Detroit, Mich.

Shafting
Bourne-Fuller Co., Cleveland, Ohio.
Jeffrey Mfg. Co., Columbus, Ohio.
Nova Scotia Steel & Coal Co. New Glasgow, N.S.

Shoar Knives
Hay, Peter, Galt, Ont.

Sheets (Iron and Steel.)
Bourne-Fuller Co., Cleveland, Ohio.
Leslie, A. C. & Co., Montreal.
Samuel, M. & L. Benjamin & Co., Toronto.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Shellac Gums.
Berry Bros., Walkerville, Ont.

Smoke Stacks.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Softening Systems (Water.)
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Solder
Syracuse Smelting Co., Montreal.

Stamps & Stencils
Hamilton Stamp & Stencil Works, Hamilton, Ont.

Stand Pipes,
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Steam Gauges
American Steam Pump Co., Battle Creek, Mich.
Crosby Steam Gauge & Valve Co., Boston, Mass.
Northey Co., Toronto.
Williams, A. R., Machinery Co., Toronto.

Steam Pumps
American Steam Pump Co., Battle Creek, Mich.
Darling Bros., Montreal.
Goldie & McCulloch Co., Galt, Ont.
Leonard, E. & Sons, London, Ont.
Northey Co., Toronto.
Williams, A. R., Machinery Co., Toronto.

Steam Separators
Darling Bros., Montreal.

Steam Specialties
Darling Bros., Montreal.

Steam Valves
American Steam Pump Co., Battle Creek, Mich.
Crosby Steam Gauge & Valve Co., Boston, Mass.
Darling Bros., Montreal.
Kerr Engine Co., Walkerville, Ont.
Williams, A. R., Machinery Co., Toronto.

Steel Rails
Algoma Steel Co., Sault Ste. Marie, Ont.
Cooper, James, Montreal.
Drummond, McCall & Co., Montreal and Toronto.

Steel Sharpening
Darling Bros., Montreal.
Dodge Mfg. Co., Toronto.
Leslie, A. C. & Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Wilson, J. C., & Co., Glenora, Ont.

Stocks and Dies
Armstrong Mfg. Co., Bridgeport, Conn.
Butterfield & Co., Rock Island, Que.
Rico Lewis & Son, Toronto.
Worth & Martin, Toronto.

Stoppers.
McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Structural Steel.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Tags
Morton Co., Toronto.

Tanks (Iron and Steel.)
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

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Textile Manufacturers
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Cantile, James, A., Montreal.
Dominion Oil Cloth Co., Montreal.
Hamilton Cotton Co., Hamilton, Ont.
Morris, D., Sons & Co., Montreal.
Rohco & Co., Bradford, England.
Smith Wool Stock, Toronto.
Storoy, W. H., & Sons, Acton, Ont.

Tin
Leslie, A. C. & Co., Montreal.
Samuel, M. & L. Benjamin & Co., Toronto.
Syracuse Smelting Works, Montreal.

Tin Plates
Leslie, A. C. & Co., Montreal.
Samuel, M. & L. Benjamin & Co., Toronto.

Tool Steel
Bourne-Fuller Co., Cleveland, Ohio.
Leslie, A. C. & Co., Montreal.

Trucks
Slingsby, H. C., Montreal.

Trucks (Wiro Mill)
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Tubs (Cleaning and Coating Wiro)
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Turbines
Jencke Machine Co., Sherbrooke, Que.
Wilson, J. C., & Co., Glenora, Ont.

Typewriters and Supplies
United Typewriter Co., Toronto

Valves
American Steam Pump Co., Battle Creek, Mich.
Canada Foundry Co., Toronto.
Hamilton Brass Mfg. Co., Hamilton, Ont.
Kerr Engine Co., Walkerville, Ont.
Williams, A. R., Machinery Co., Toronto.

Varnishes.
Berry Bros., Walkerville, Ont.

Ventilators
Buffalo Forge Co., Buffalo, N.Y.
Darling Bros., Montreal.
McEachron Heating & Ventilating Co., Galt, Ont.
Sturtevant, B. F. Co., Boston, Mass.

Wagons and Carriages
Hore, F. W., & Son, Hamilton, Ont.

Washers or Hollenders (Cleaning Rubber.)
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Water Filters and Filtering Systems.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Water Softening and Purifying Systems.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Water Tanks
Caldwell, W. E. Co., Louisville, Ky.

Water Towers
Caldwell, W. E. Co., Louisville, Ky.

Weaving Machinery
Karch, H. W., Hespeler, Ont.

Wiro and Wiro Rope
Dominion Wiro Rope Co., Montreal.
Greening, B. Wiro Co., Hamilton, Ont.
Leslie, A. C. & Co., Montreal.
Samuel, M. & L. Benjamin & Co., Toronto.
Wiro & Cable Co., Montreal.

Wiro Cloth
Greening, B. Wiro Co., Hamilton, Ont.

Wiro Drawing Machinery
Turner, Vaughn & Taylor, Cuyahoga Falls, Ohio.

Wiro Specialties
Empire Machine & Metal Stamping Co., Toronto.
Meadows, Geo. B. Wiro, Iron & Brass, Works Co., Toronto.

Wood-Working Machinery
Carrier, Laine & Co., Lewis, Que.
Cowan & Co., Galt, Ont.
Karch, H. W., Hespeler, Ont.
London Machine Tool Co., London, Ont.
McEachron Heating & Ventilating Co., Galt, Ont.
Wormer, C. C., Machinery Co., Detroit, Mich.

Zinc
Leslie, A. C. & Co., Montreal.
Samuel, M. & L. Benjamin & Co., Toronto.
Syracuse Smelting Works, Montreal.

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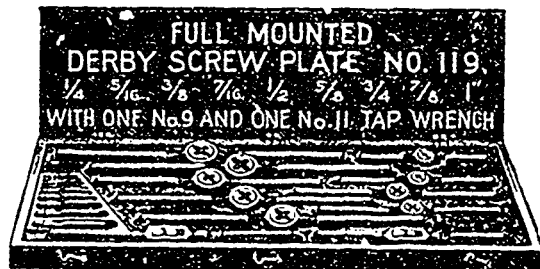
JOHN DRYDEN, Minister of Agriculture.

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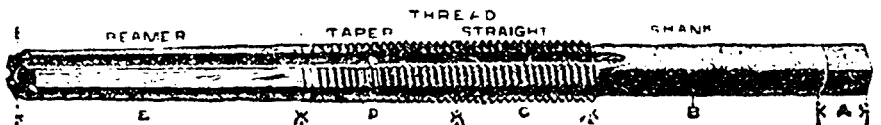
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Canadian Office & School Furniture Co., Prescott, Ont.	ofc	McEachron Heating & Ventilating Co., Galt, Ont.	45	Winn & Holland, Montreal.	ofc
Canadian Otis Elevator Co., Hamilton, Ont.	7	McKinnon Dash & Metal Works Co., St. Catharines, Ont.	40	Wilson Bros. Bobbin Co., Todmorden England	39
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Canadian Rand Drill Co., Sherbrooke, Que.	44	Neff & Postlethwaite, Toronto	12	Wire & Cable Co., Montreal	ofc
Canadian Heino Safety Boiler Co., Toronto	41	Noble's Detective Agency, Toronto	31	Wormer Co. Machinery Co., Detroit, Mich.	37
Canadian Manufacturer Pub. Co., Toronto	43	Northey Co., Toronto	7	Worth & Martin, Toronto	37
Canadian Office & School Furniture Co., Prescott, Ont.	ofc				

ofc outside front cover obc outside back cover



BUTTERFIELD & CO.,
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When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

Another Tariff Edition of THE CANADIAN MANUFACTURER

The issue of THE CANADIAN MANUFACTURER of September 7, 1894, contained complete reproductions of the then recently enacted tariffs of Canada and the United States, which, we believe, was the first time in the history of journalism, in either country, that two such important documents were ever published under one cover of a trade journal.

Important changes having been made in the tariffs of both these countries in the meantime, and to meet a general demand for information, the issue of THE CANADIAN MANUFACTURER of August 6, 1897, contained complete reproductions not only of the Canadian and United States tariffs, but also those of Great Britain and Newfoundland; and in the same issue was also published the full text of the British Merchandise Marks Act.

After the publication of these tariffs in 1897, very important political changes occurred in both Canada and the United States, one of the most noticeable of which was the adoption by Canada of a tariff preference in favor of Great Britain; and in the issue of THE CANADIAN MANUFACTURER of July 6, 1900, was published complete reproductions of the Canadian tariff, including the Act providing

for tariff preference in favor of British goods; the United States tariff; the British tariff, and the Newfoundland tariff.

The rapid growth and development of Canada, and the changing conditions under which we live call for some changes in the Canadian tariff, and such as may be made will no doubt be officially announced, probably by mid-summer, and it is the intention of the publishers of THE CANADIAN MANUFACTURER, in accordance with the precedents already established to publish another tariff edition which will contain complete reproductions of the tariffs of Canada, United States, Great Britain and the Commonwealth of Australia.

Advertisements of this Tariff Edition are solicited at the following rates:—

One Page.....	\$25 00
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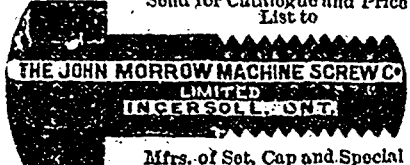
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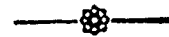
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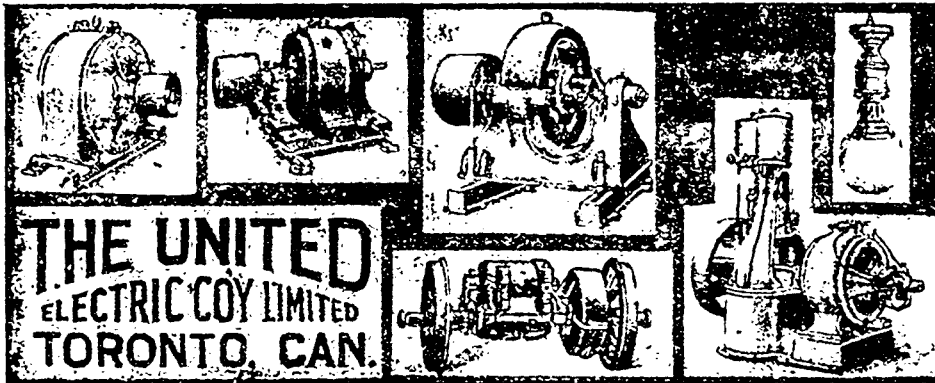


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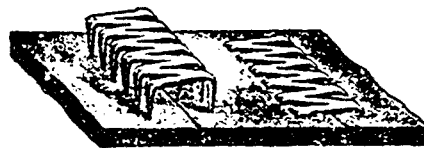
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