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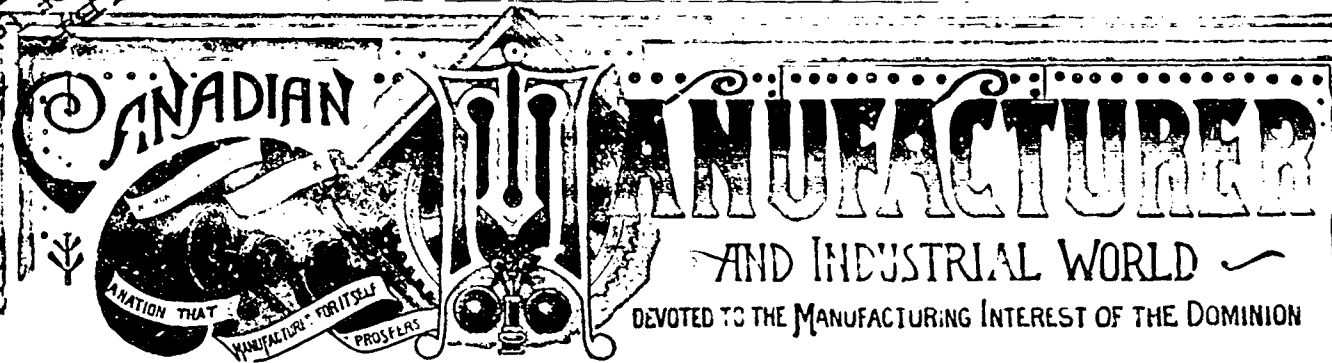
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Vol 47. TORONTO, AUGUST 7, 1903. No. 3.

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

Walkerville Malleable Iron Co.,
 Manufacturers of
REFINED AIR FURNACE Malleable Castings
 WALKERVILLE, ONTARIO.

Beginning on page 40 of this Issue of THE CANADIAN MANUFACTURER will save our Readers money, and should be consulted by them before purchasing.
The Classified Index

PATENTS
 GAVEA ETC.
 EGERT R. GASE
 Register of Patents, Notary Public, Member of the
 TEMPLE
 TORONTO
 WASHINGTON, I

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:

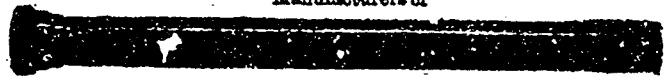
Canada Life Bldg., MONTREAL. 93 York St., TORONTO.

MONTREAL PIPE FOUNDRY CO., (Limited)

SUCCESSORS TO

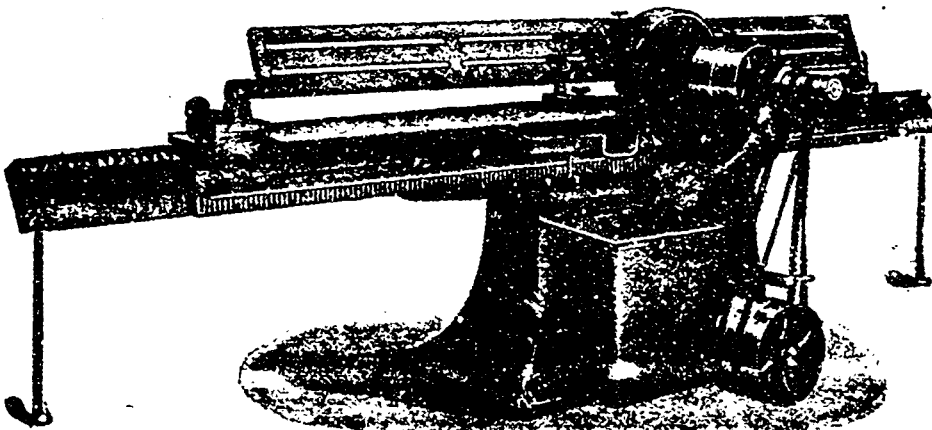
DRUMMOND-McCALL PIPE FOUNDRY CO., (Limited)

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.

SAFE AND VAULT WORK For head offices of banks, insurance and loan companies, and other monetary and security companies. Estimates and plans cheerfully furnished.

SEND FOR A CATALOG.

WE MAKE Wheelock Engines, Ideal Engines, Gas and Gasoline Engines, Hoovers, 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, Vault 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.

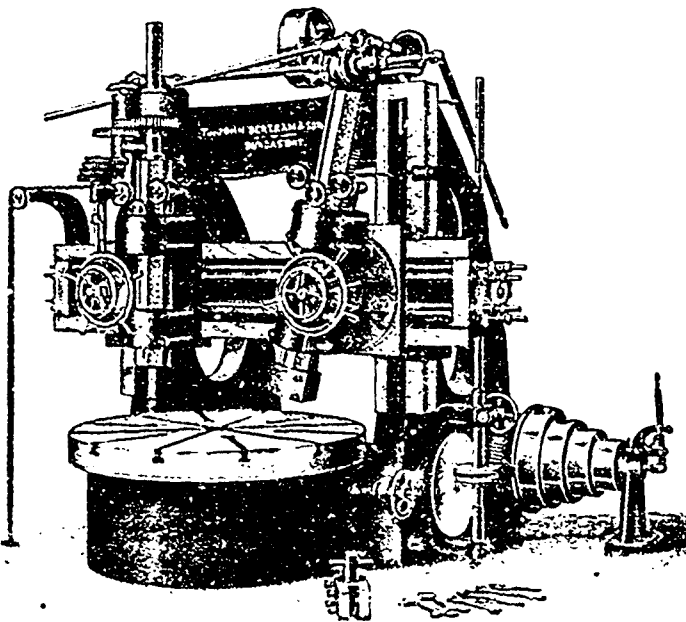
GENUINE EMERY

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, Skilful Manufacture, Sharpness, Durability, and Uniformity of Grain.

Manufacturers
JOHN OAKEY & SONS, Limited, Wellington Mill - 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 to-day 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

WIRE ROPE

FROM STOCK,
ANY LENGTH.

SPECIAL ROPES TO ORDER.

BEST QUALITY. BEST PRICES.

The Dominion Wire Rope Co., Limited, Montreal

THE NOVA SCOTIA STEEL & COAL CO.

MANUFACTURERS OF

LIMITED

BRIGHT COMPRESSED STEEL SHAFTING

FROM $\frac{1}{2}$ TO 5 INCHES IN DIAMETER. GUARANTEED STRAIGHT AND TRUE TO WITHIN $\frac{1}{16}$ OF AN INCH.

Spring, Reeled Machinery, Tire, Tug 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

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

..HEAVY FORGINGS A SPECIALTY..

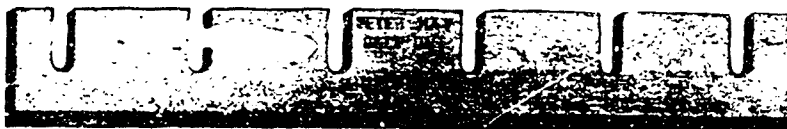
"FERRONA" PIG IRON, For Foundry Use.

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

Head Office—NEW GLASGOW, NOVA SCOTIA

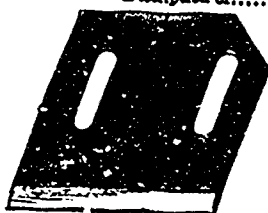
GALT Machine Knife Works

PETER HAY,



GALT, ONT.

Manufacturers of Every Description of.....



KNIVES,

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

BARK KNIVES
PULP KNIVES
RAO KNIVES
Etc., Etc.

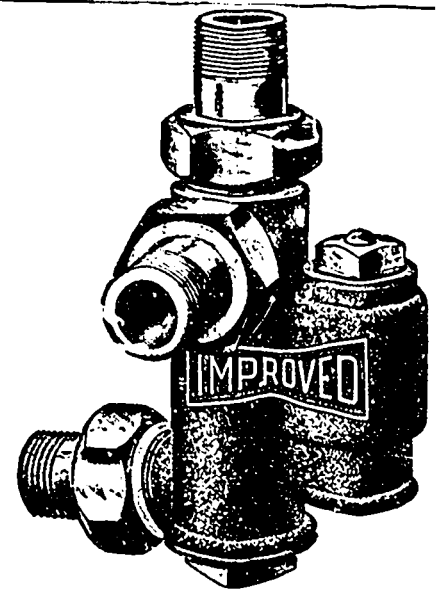
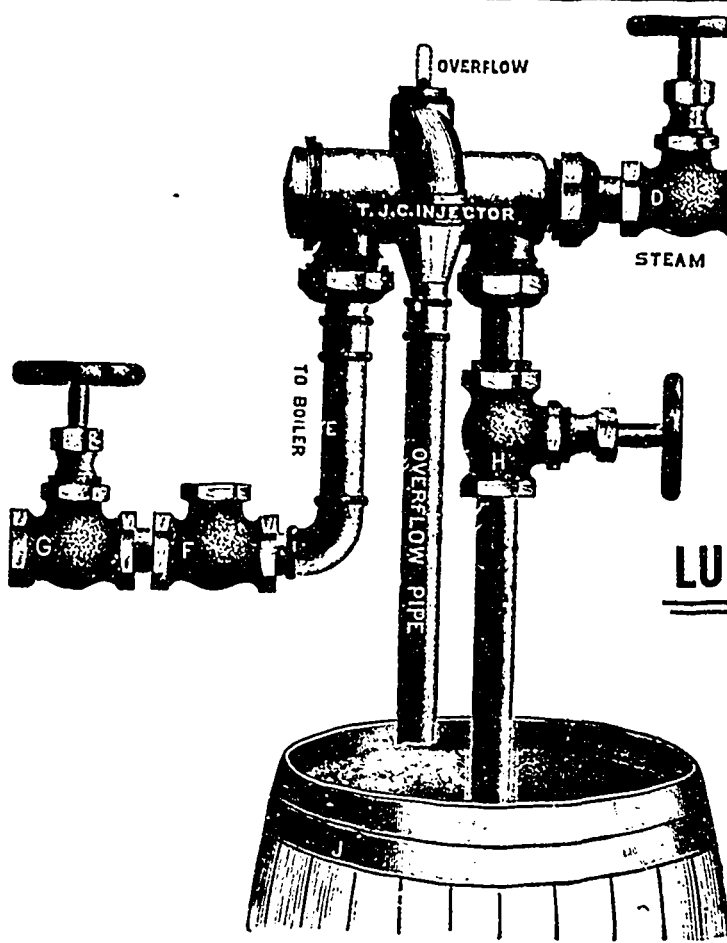


Shear Blades,
Straw Knives,
Paper Knives,
Etc., Etc.



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

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INJECTORS

.. AND ..

LUBRICATORS

OF EVERY DESCRIPTION

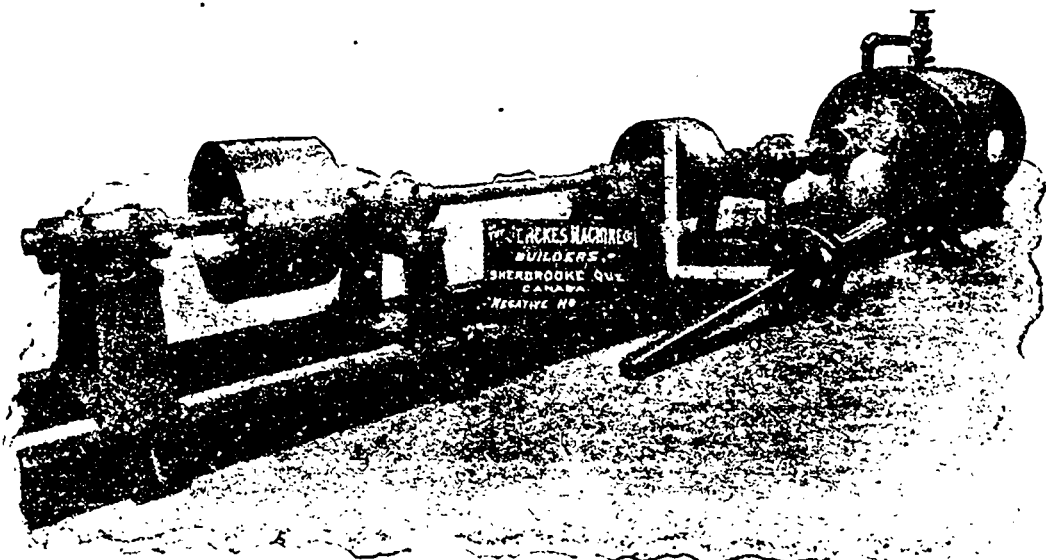
MANUFACTURED BY

The Hamilton Brass
Mfg. Co., LIMITED
 HAMILTON, ONT.

A 15-inch
CROCKER
TURBINE
 horizontal.

Running
 under
 93 ft head.

Electric
 Light Plant



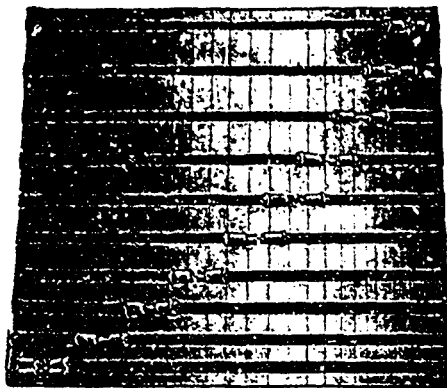
The Crocker Turbine is built in all sizes and all settings for any head. Our Bulletin 200, shows many of them. It is free.

The Jenckes Machine Company,

626 LANSDOWNE STREET,

SHERBROOKE, QUE.

"Absolutely safe and reliable. Ask your friends."



The Caldwell Tanks

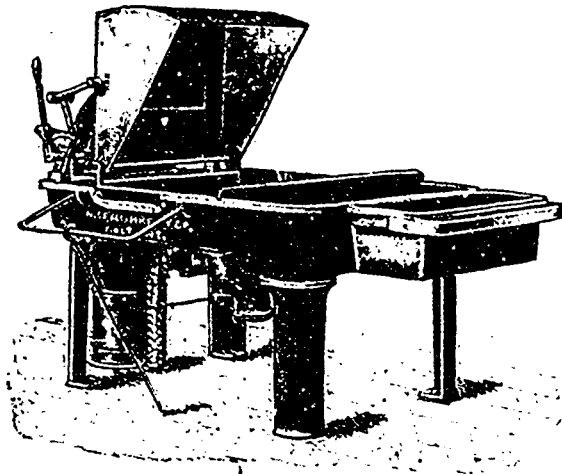
are built of LOUISIANA RED GULF CYPRESS, a wood that will neither shrink nor swell in any weather, because it is swamp grown. They are built by skilled mechanics under careful supervision. They will not leak. They cannot burst and are the most durable tanks known. The water does not become foul. We have an illustrated catalogue and price list which we would like to send you.

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.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

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. Correspondence invited.

Albert Manufacturing Co.

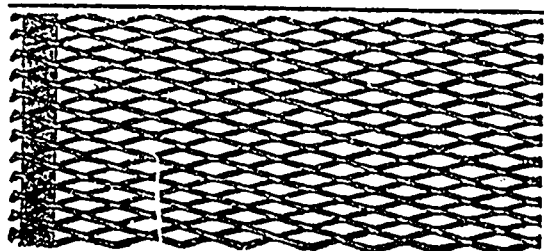
MANUFACTURERS OF THE WELL-KNOWN

"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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SEND FOR CATALOGUE

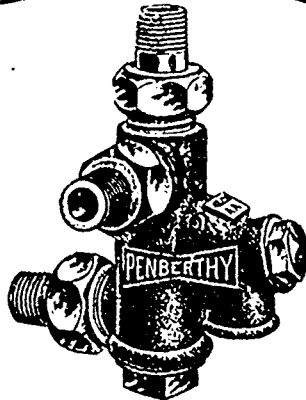
ASK FOR BULLETIN



**"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

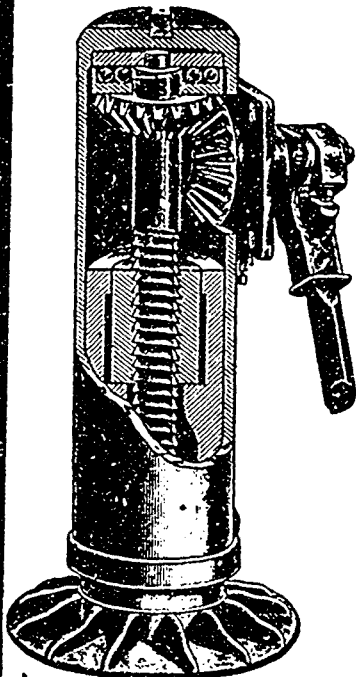
RANGE 22 to 150 LBS., GUARANTEED.

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

MADE IN CANADA

PENBERTHY INJECTOR CO., LIMITED, WINDSOR, ONT.

**Why The Norton Ball-Bearing Jack
Is Better Than Any Other.**



Sectional View of Norton Jack.

THE BALL-BEARINGS

reduce the friction and increase the power of the Jack.

THE GEARS

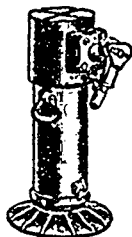
are cut from solid steel forgings, thereby giving highest efficiency and greatest durability.

THE SCREW

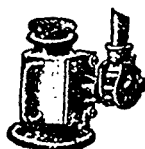
runs in a Phosphor Bronze Nut and is covered by a sliding sleeve which takes all the side strain, prevents the Screw from bending, and protects the working parts from Grit and Rust.



Foot-Lift Jack.



35 Ton Jack.



Journal Jack.

Made in 50 styles—8 to 70 tons capacity.

Manufactured by

**A. O. NORTON,
COATICOOK, PROV. QUEBEC.**

Stock carried by

W. H. C. MUSSEN & CO., Montreal.

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GASSELLA 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.

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'Y

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

SUMACH AND DYEWOOD EXTRACTS

SPECIALTIES FOR CALICO PRINTERS

BRUNNER, MOND & CO., Limited,

NORTHWICH, ENGLAND.

PURE ALKALI

48% and 58% (Light and Heavy)

BLEACH^g PWD.

35% to 37% (Hardwood Casks)

CAUSTIC SODA

60% to 77%.



Winn & Holland,
MONTREAL,
Sole Agents for Canada.

SODA CRYSTALS

Lump and Crushed. Brls. and Bags.

CON^{CTD} SAL SODA

DOUBLE STRENGTH

BICARBONATE SODA

ABSOLUTELY PURE

Also for Mineral Water Manufacturers.

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 Lemoine St.

ANILINES

DYESTUFFS and CHEMICALS

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

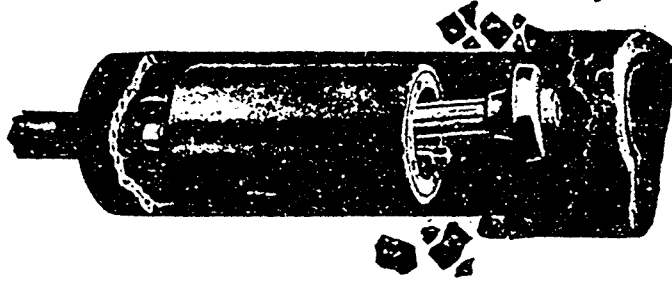
FAST COLORS FOR WOOL and COTTON

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.

Don't Throw Your Money Away

ON WORTHLESS COUNTERFEITS



OF THE ORIGINAL

DEAN BOILER TUBE CLEANER

The genuine Dean Cleaner is the only device on the market for removing scale from the tubes of a water tube or return tubular boiler, and we guarantee a DEAN CLEANER to at least pay for itself in six months' use.

We will loan you a DEAN CLEANER for a free trial to prove that it's all we claim.

Don't be deceived by imitations, but write to-day to

WILLIAM B. PIERCE CO., 322 Washington St., BUFFALO, N.Y.

Packard Lamps

No matter how perfect your installation may be, if you are not using Packard Lamps, you are not receiving the best lamp service.

This fact we have demonstrated by placing the Packard Lamps in competition with other makes.

We would suggest that if you have not yet contracted for your lamp supply for the lighting season that you communicate with us.

THE PACKARD ELECTRIC COMPANY

LIMITED

MONTREAL

ST. CATHARINES, ONT.

When in the market for Transformers don't overlook the fact that Packard Type "R" Transformer is the best insulated—the coolest in operation, the closest in regulation of any transformer made.

Jeffrey Machinery

— FOR —

*Mines, Mills, Factories, Industrial
and Power Plants.*

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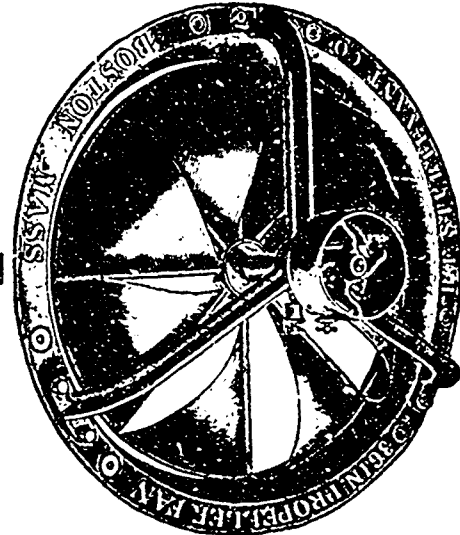
JEFFREY CENTURY RUBBER BELT CONVEYORS.

Elevating, Conveying, Power Transmission,
Screening, Crushing, Machinery.

ADDRESS— Electric Locomotives.

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

Toronto Agents—A. H. WILLIAMS MACHINERY CO.
Montreal Agents—WILLIAMS & WILSON.



PROPELLER for FANS

SUMMER VENTILATION

Sizes from 18-inch to 120-inch. Capacities from
2,000 to 175,000 cubic feet per minute.

Driven by bolt or direct-connected electric motor.

B. F. STURTEVANT CO.

195 BOSTON, MASS.
NEW YORK PHILADELPHIA CHICAGO LONDON



JUST A MOMENT PLEASE—

We want you to know that we are headquar-
ters in Canada for everything in steel shafting.

That we have a daily stock of about 200 tons
of the finest steel shafting, in diameters ranging
from ½ inch to 8 inches, and in standard lengths
of 16, 18 and 20 feet.

That we have the most extensive facilities
for turning up to order large Jack shafts or other
special shafting on the shortest possible notice.

We guarantee a superior product, absolu-
tely equitable prices, and the most prompt
shipments.

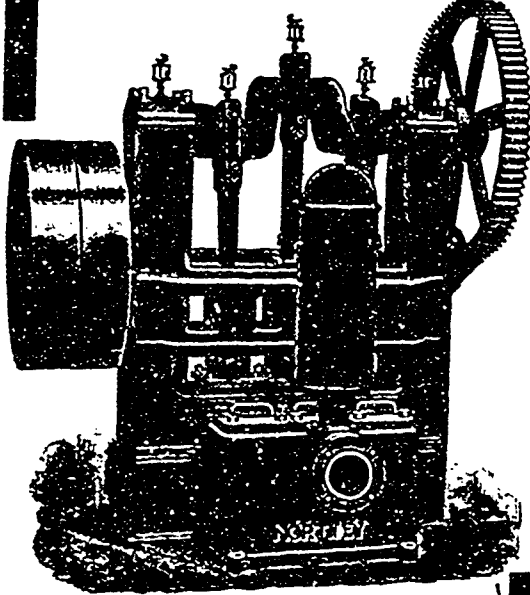
Better write to-day for prices.

**THE DODGE MANUFACTURING CO. OF TORONTO
LIMITED TORONTO**

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J. J. CASSIDEY, - - Editor and Manager.

RECIPROCITY OR RETALIATION.

As a feature of the feeling now existing among some of the manufacturers of the United States regarding reciprocity between that country and Canada, some weeks ago Mr. Eugene E. Hay, a talented American lawyer, was commissioned to visit Canada and study the question from this side of the international line. He did so and has aired his views thereon in an article published in American Industries from which we make some extracts. Speaking of the possibilities of the Canadian North-West Mr. Hays says :

The manufacturers of the United States have long appreciated the splendid market afforded them by eastern and central Canada and have longed for better trade relations between their own government and that of the Dominion ; but the recent rapid development of that vast region of richly productive territory in the basin of Lake Winnipeg has awakened new interest in the subject. Between the Lake of the Woods and the Big Horn Mountains the forces of civilization are now engaged in the building of a mighty empire, destined soon to become the granary of the world. The province of Manitoba and the districts of Assiniboia, Alberta and Saskatchewan extend 400 miles north and south and 900 miles east and west, embracing an area of 359,000 square miles. Add to this Athabaska, with its 122,000 square miles, in which is situated the beautiful Peace River Valley, said to be as fertile and productive as the Valley of the Red River of the North, and we have an area of almost one-half a million square miles.

In the light of the development of our own great western prairies, is it too much to say that one-half of this is arable and will eventually come under the plow. More than one-third of it lies east of the 105th meridian. Forty years ago the man who would have predicted that the time would come when 200,000,000 bushels of wheat would be raised in the United States north of the 45th parallel and between the continental divide and the Rocky Mountains would have been set down as insane. Yet that is what has happened. What in our geographies of that day was called the Great American Desert has become the Golden Grain Belt of the world. Is it not, then, within the bounds of conservative statement to say that within the lives of the present generation 200,000 square miles of this Canadian territory will be under cultivation? Scarce two per cent of this land was cultivated last year ; yet they raised 60,000,000 bushels of wheat and sufficient other small grain to bring the total grain production up to 100,000,000 bushels. Think of the limitless possibilities for trade which this presents. 75,000 settlers entered this territory last year ; more than 100,000 more will make their homes there this year. When settled as thickly as our own western prairies are to-day, it will afford a market for everything required in a grain-growing country unequalled on this continent. The manufacturers in every part of the United States, therefore, whose products are required or consumed by people in the Canadian latitude are vitally interested in securing such a commercial treaty with the Canadian Government as will give to them the privilege of fair competition in this market.

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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.

Mr. Hay discusses the reciprocity he so much desires from the standpoint of commercial union and unrestricted reciprocity very much after the style of Mr. Erasmus Wiman, which was forced upon the attention of Canadians a dozen or more years ago, and which did so much to injure that cause, and to give it a disagreeable odor in the nostrils of all who hope for better things for Canada than to become a hewer of wood and a drawer of water for her ambitious neighbors ; and Mr. Hay misses his point when he considers that it is not the fixed determination of Canadians to maintain a loyal connection with the British Empire. He may not see why there should be any tariff wall between his country and this, but he should bear in mind that such industries as we have have been built up, and our commercial prosperity has been intimately associated with our more or less observed policy of tariff protection. For many years, in comparison with those of Europe and the United States, our industries were in their infancy, and many of them are yet in that condition, struggling with poverty and inexperience, unable to compete upon an equal basis with the longer established industries of the other countries ; and as the existence of manufacturing industries are as important in the building up of a great Canadian nation as they are in the building up and maintenance of a great nation within the bounds of the United States ; and as it is not within the range of possibility that any political union of the two countries can ever occur, Mr. Hay does injustice to those whose commissioner he was to discuss the matter he was sent to investigate from that standpoint ; and he makes no friends for it in Canada. In a reminiscent mood Mr. Hays says :

In 1865 when the abrogation of the commercial treaty of 1854 was under consideration, the Canadians offered, if the treaty was continued in force, to add to the free list a large list of manufactures and in 1874 the so-called Brown-Draft treaty, which was negotiated and apparently satisfactory to the Canadian Government, but which was defeated by the United States Senate, provided for the admission free after the 30th day of June, 1877, of 40 separate items of farm machinery and a long list of other manufactured articles, embracing a large share of the commodities consumed by the people of Canada. The trade relations between these two governments will before many years become either better or worse. Ever since the abrogation of the treaty of '54-'66 the Canadian Government has been endeavoring to secure better commercial relations with the United States, and the political situation in Canada is such that if they fail at the approaching meeting of the Joint High Commission, a commercial war with reprisals and retaliations will certainly follow.

Mr. Hay fears that if some form of reciprocity is not effected Canada will retaliate. He says :

Our average tariff on dutiable goods coming from Canada to the United States is 49.83 per cent., and the Canadian average

tariff on dutiable goods going from the United States into Canada is 24.83 per cent. Add to this the fact that from 1870 to 1902, inclusive, exports from the United States to Canada increased from \$25,339,254 to \$109,642,993, and imports from Canada to the United States increased from \$36,265,328 to \$48,076,124, being an increase of exports of 332 per cent. and of imports of but 32 per cent. No self-respecting nation can forever tolerate such a condition. The Canadian Government has tolerated it as long as it has because those in control have felt the constant hope that the business judgment of the American people would eventually assert itself, and I say without hesitancy that the hope of reciprocity has up to this time prevented or postponed retaliation; but if much longer deferred, hope will be abandoned and in that event there is no possible doubt that Canadian tariffs will be raised to approximately the level of our own, and that, too, in such a way as to minimize the commerce between the two countries.

We are, therefore, I think, brought face to face with exactly this situation. We must either have reciprocity with Canada or Canada will inaugurate a tariff system in retaliation for our own, which will be the beginning of open commercial hostilities. This means the abandonment of commerce between the people whose natural conditions are such that there should be the least possible restrictions upon the interchange of trade. How disastrous this will be to the commerce of the United States may easily be contemplated. Wherever in the United States goods consumed by people in this latitude are manufactured it will be felt. From Penobscot Bay to Puget Sound along the entire border general commerce will be most disastrously effected. In this question no class of people are so vitally interested as manufacturers.

CANADIAN TRADE, 1903.

The unrevised figures of foreign trade for the fiscal year ended June 30 have been made public by the Department of Customs, and they show an enormous expansion in the trade of the country. The aggregate foreign trade for the year, which embraces the total imports and total exports of domestic and foreign produce, amounted to \$467,637,049, which is an increase of \$43,750,000 over the trade of the fiscal year 1902. On the basis of imports which actually entered into consumption, and Canadian produce only, exported, the trade for the year amounted to \$448,188,999, as compared with \$398,811,358 for the previous year, or an increase of \$49,377,641. On this basis our trade has more than doubled in the last seven years, as appears from the following figures:

Trade of 1903.....	\$448,188,999
Trade of 1896.....	220,502,817

Our foreign trade in imports entered for consumption, and domestic produce exported, amounted to about \$1,500,000 per working day the past year.

The exports of domestic produce for the year totalled \$214,401,674. This is an increase of \$18,381,911 over the previous year, and nearly double the exports for 1896, when they amounted to \$109,915,337.

The exports of animals and their products and the produce of the farm figured up to \$114,441,863, compared with \$96,313,897 for the previous year. In 1896 they amounted to \$50,591,002.

The exports of the produce of Canadian forests show an increase of \$4,000,000 for the year, the total amount being \$36,386,015, an increase over 1896 of \$9,000,000.

It is also very gratifying to find that the exports of manufactured articles produced in Canada continue to increase in generous proportions. Last year they totalled \$20,624,967, as against \$18,462,970 for the previous year. In 1896 they amounted to \$9,365,384.

The free list, which largely comprises raw materials for manufacturers, shows a remarkable expansion in imports,

thereby indicating great activity in manufacturing circles. In 1903 the free goods imported, less coin and bullion, amounted to \$88,023,738, an increase of \$10,000,000 over the previous year, and of \$50,000,000 over 1896.

The exports of Canadian products for last year were \$37 per head. For the year 1902 the exports per capita in the United States were only \$18. Our total trade, estimating our population at five and three-quarter millions, was \$81 per head; that of the United States in 1902 was \$31 per head. Comparing ourselves further with the United States, it will be gratifying to note that in 1850 the United States, with a population of twenty-three millions, had a total foreign trade of \$320,000,000, whereas to-day Canada, with a population of less than six millions, has a total foreign trade of about \$470,000,000.

TARIFF PROTECTION TO CANADIAN IRON AND STEEL INDUSTRIES.

In the July 17 issue of this journal was published the Dominion Government's policy in regard to the iron and steel industries as announced by the Finance Minister on July 7. Some articles which were on the free list were made dutiable; bounty was extended to some articles not previously so favored, and the time during which bounty was to be paid on certain forms was extended. The benefits offered to the industry were not as far reaching as had been hoped for, but such as they are cannot but be of a more or less substantial character.

In the same issue it was shown that the increase in the production of pig iron in Canada was from 37,829 gross tons in 1895 to 319,557 gross tons in 1902; that the production of all kinds of steel ingots and castings had increased from 17,000 gross tons in 1895 to 182,000 gross tons in 1902, and that the production of all kinds of iron and steel rolled into finished forms in Canada had increased from 66,400 gross tons in 1895 to 161,400 gross tons in 1902. These figures indicate a substantial increase in production which those interested in the industry contend would have been very much greater had a larger measure of encouragement been extended to it. It will be observed that the increase of the tariff duties is of a rather inconsequential character, and that the bounties offered apply not to the entire production of Canadian works but only to those products which are the raw materials consumed in other Canadian industries.

It will be remembered that early in the present session of the Dominion Parliament Mr. R. L. Borden, leader of the Opposition, introduced a resolution in the House of Commons, looking to an increase and readjustment of the iron and steel schedules of the tariff, and that it was voted down on June 9. This resolution was as follows:

This House is of opinion that the tariff of customs duties should give such protection to iron and steel industries as will not only secure to our own producers and manufacturers the Canadian market in articles now produced or manufactured in this country, but will also develop and sustain the manufacture in Canada of other iron and steel products, which at present are imported in large quantities from other countries. And that the present tariff of customs duties should be now readjusted on this principle.

Mr. Borden said that he had carefully abstained from putting into his resolution a word of censure upon the Government, and he wished it to be distinctly understood that his sole object was to secure the necessary protection for this great industry. Recognizing the position of the American iron and steel industries, it must be conceded that if these industries were to flourish in Canada, some similar degree of

protection must be given here to that which was found necessary in the United States.

Canada at the present time possessed every material in abundance required for the industry. Canada used a considerable amount of iron, and in years to come would require it in vastly larger quantities for her industrial development. There were to-day engaged in this industry in the United States more men than in any other single industry in that country. In 1900 the total amount paid out in wages in this industry alone amounted to \$122,710,193, and the total value of the production was \$835,759,000.

To show the extent to which Canada imported products of iron and steel, Mr. Borden presented the following statement, that being the direct products of blast furnaces and rolling mills for the year ending June 30, 1902 :

	Tons of 2,000 lbs.	Value.
Pig iron.....	40,014	\$35,803
Scrap (cast).....	3,480	39,938
Scrap (wrought) billets and blooms.....	55,701	938,911
Rolls.....	130,602	2,933,230
Wire rods and their products.....	93,919	3,593,831
Sheets of all kinds, tin plate, etc.....	63,300	3,385,208
Bars, round, flat, and small sections, etc.....	63,441	2,519,669
Plates.....	30,301	905,183
Plates, universal.....	3,593	101,682
Plates, agricultural.....	2,336	178,701
Pipes, boiler tubes, etc., but not pipe 2 1/2 inches diameter and over for mining.....	12,071	811,670
Structural shapes, etc.....	23,011	789,644
Hoops, etc.....	2,080	96,728
Ships' plates, angles, etc.....	1,786	70,707
Skelp.....	16,195	490,130
Totals.....	544,518	\$17,527,102
Total importation iron and steel and manufactures of, June 30, 1902.....		\$33,681,629
Total importation iron and steel and manufactures of, June, 1896.....		10,203,052
Increase.....		\$23,478,573

Considering that Canada had the resources necessary for this industry, that some measure of protection already existed, and that the Government in 1899 provided a system of bounties, why was it that the iron and steel industries in Canada were not flourishing to-day? Without referring to any special concern, everyone knew that the iron industry was not in that flourishing condition which all desired. What was the reason? In the first place, Canada was side by side with the United States, which jealously protected its home market, and had utilized to the utmost by a protective tariff its magnificent resources in iron and steel. The result of this was that they now led the world in that product, and to a large extent controlled prices. Under these conditions, what had Canada done for the iron and steel industry? There was an enormous country, with its immense resources and huge population to the south of us, with its iron and steel industry protected by customs duties which were very much higher than Canada's protective duties.

While a system of bounties might for the time being give support to the industry, Mr. Borden declared that it could never be put upon a permanent prosperous footing unless it were given such actual protection as would secure our own markets for the products of our own country. Canada was face to face with one of two alternatives, either there must be increased protection to our iron and steel industries, or for many years to come the industry could not be maintained, because the producers would not be able to obtain command of our home market without that increased protection.

Was there any reason why Canada should not give adequate protection to this industry? Would it follow if the adequate protection was given that, having regard to our natural resources, there would be any permanent increase in prices? Judging by the lessons in the past, there was not. The Government had taken the duty off barbed wire and binder twine

and reduced the tariff on coal oil, and every one of these articles in Canada to-day cost more than under the old tariff.

In 1899 the Government brought down certain resolutions for the purpose of aiding the development of the iron and steel industries by a system of bounties. This was rendered necessary by the material reductions in the tariff enforced in 1897, and Mr. Fielding announced that the reasons for extending the time for these bounties was to give the iron industry a fair chance, by compensating it for the reduction of the duties. Perhaps the country was not aware of the sweeping nature of these reductions, which were exhibited in the following table, showing the tariff of 1897 and the decreases from that of 1894 :

	Tariff 1897.	Decrease.
Pig iron.....	\$2 50 ton	\$1 50
Scrap (cast).....	2 50 "	1 50
Billets and blooms.....	2 00 "	3 00
Scrap (wrought).....	1 00 "	3 00
Steel bars.....	7 00 "	3 00
Steel fishes, tin plates.....	2 00 "	2 00
Steel bands.....	7 00 "	3 00
Plates.....	7 00 "	3 00
Steel shaftings and forgings.....	30 p.c. to \$10 ton	5 p.c. or \$5 ton
Steel angles, less than 35 lbs., per yard.....	7 00 "	3 00
Plates, not less than 1-inch thick.....	10 p.c.	2 1/2 p.c.
Tubing for boilers.....	5 p.c.	2 1/2 p.c.
Angles, tees, beams, etc., weighing over 35 lbs. per lineal yard.....	10 p.c.	2 1/2 p.c.
Plates, rolled edges.....	10 p.c.	2 1/2 p.c.
Barbed wire.....	Free	2 1/2 p.c.
Galvanized wire.....	Free	20 p.c.

From the table it was evident that the differences between the tariff of 1894 and the tariff of 1897 were very marked, in some cases three-fourths of the protection being cut off, while there were many reductions from 25 to 50 per cent.

The following table gives the rates of duties charged upon imports into Canada and into the United States respectively of certain manufactures of iron and steel :

	Canada.	United States.
Pig iron and scrap cast.....	\$2 50 ton	\$3 75 ton
Billets and blooms.....	2 00 "	6 00 "
Scrap (wrought).....	1 00 "	3 57 "
Rails (tramway rails, etc.).....	30 p.c. 7 50 "	7 00 "
Rails.....	Free	7 00 "
Wire rods.....	Free	8 00 and higher
Barbed wire.....	Free	1 1/2 lb. and higher
Galvanized wire.....	Free	1 1/2 "
Wire spring.....	Free	1 1/2 "
Wire fencing.....	15 p.c. 10 80 ton	1 1/2 lb., \$25 ton
Wire covered.....	30 p.c.	45 p.c.
Wire, N. O. P.....	20 p.c. 10 80 ton	1 1/2 lb., \$25 "
Wire for ships.....	Free	1 1/2 "
Canada plate, Russia iron, galvanized sheets, etc.....	5 p.c. 2 63 ton	18 00 ton and higher
Sheets, 17-gauge and thinner.....	5 p.c. 2 55 "	14 00 "
Sheets, corrugated.....	30 p.c. 3 46 "	14 00 "
Tin plates (sheets).....	Free	30 00 ton
Billets and flat spring.....	Free	6 00 and \$10 ton and higher
Spiral spring.....	Free	10 00 ton and higher
Steel for windmills, etc.....	Free	10 00 "
Steel under half inch diameter.....	Free	12 00 "
Steel bars.....	7 00 ton	12 00 ton shaftings, 45 p.c. forgings, 35 p.c.
Steel shafting and forgings.....	30 p.c.	8 00 ton
Steel fish and tin plates.....	8 00 "	10 00 "
Steel angles, less than 35 lbs., per yard.....	7 00 "	10 00 ton and higher
Plates.....	7 00 "	10 00 "
Plates, not less than 1-inch thick.....	10 p.c. 2 83 "	10 00 "
Plates, universal or rolled edges.....	10 p.c. 2 83 "	10 00 "
Plates, agricultural.....	5 p.c. 3 80 "	10 00 "
Skelp, for pipe.....	5 p.c. 1 50 "	10 00 "
Tubing, for boilers.....	5 p.c. 3 75 "	40 00 "
Tubing under 2 inches diameter.....	35 p.c. 22 75 "	40 00 "
Tubing, N. O. P.....	30 p.c.	35 p.c.
Tubing.....	Free	40 00 ton
Tubing over 2 inches diameter.....	15 p.c. 9 60 "	40 00 "
Angles, tees, beams, etc., weighing over 35 lbs., per lineal yard.....	10 p.c. 2 65 "	10 00 "
Hoops, 18-gauge and thinner.....	5 p.c. 2 30 "	12 00 ton and higher

PERILS OF TRADE UNIONISM.

Mr. Clarence S. Darrow, the lawyer who appeared before the Strike Commission as counsel for the United Mine Workers, recently delivered an address in Chicago on "The Perils of Trade-Unionism." His speech is described as a "note of warning" to organized workmen, and coming, as it does, from a man who has been so prominent as an advocate of labor's claims, it has aroused unusual interest. Mr. Darrow said, in part :

The phenomenal growth of trade-unionism throughout the last two or three years, although unparalleled in any other period of the world, is perhaps not unlike the growth of the Knights of Labor some twenty years ago. It does not follow that trade-unionism will live because it is so strong to-day. When adversity comes, as it must come under our present system of production; when large numbers of men are thrown out of employment, then the great strain upon trade-unionism will be felt. It is comparatively easy to organize workingmen while all are employed or while work is plentiful. It is difficult to sustain this organization while many men are living on the verge of starvation or want.

The great growth of trade-unionism has caused the workman to feel his power; it has necessarily made many of them arbitrary, unreasonable, and unjust in their demands. This has, in many places, awakened a sense of resentment among a large class who otherwise would be sympathetic toward the unions. For instance, in the late strike of the anthracite coal workers, the sympathy of the whole country was with the strikers. This was due not to any special knowledge on the part of the public of the condition of the striking men, but to their hatred against the coal trust, which had monopolized and put up the price on a necessary product. The growth of these great industrial monopolies, whose business has been to take as much from the public as the public would stand, has set against them the great mass of the common people. These people have been sympathetic to trade-unions, not so much because they understood trade-unions, as because they hated the monopolies.

At best, only a small proportion of the real workingmen are reasonably eligible to trade-unionism. Farmers, small merchants, and many others composing the great middle class do not belong to the unions and can not reasonably be expected to belong to the unions. This great middle class, which really creates the sympathy for the common people, which, in fact, is the common people, have believed that they were plundered by the trusts and corporations, and have given aid to the trade-unions. When they imagine that the trade-unions are making unreasonable demands or unfair conditions, their hostility will be turned against trade-unionism as it is turned against the corporate control.

Continuing, Mr. Darrow observed that the majority of trade-unionists to-day devote their whole time to the raising of wages. This he characterized as "a delusion and a snare, on the ground that a rise in wages is almost always followed by a rise in the price of commodities. Above all things else, he said, "trade-unionism should turn its attention to political action, not necessarily this party or that, but towards the solution by law and industrial changes of the problems of the day."

Mr. Darrow concluded as follows:

The energy now directed toward simply organizing men and seeking to better their condition by raising wages, must be more largely turned toward the political and economic questions of the day, upon which labor, capital, and wages depend.

This great energy can not be always kept in the narrow channel in which it is directed at the present time. It is for the trade-unionists of the world to show their ability and generalship by directing this great army of workingmen toward the substantial and permanent change and improvement of the laws and industrial institutions of the world.

The Philadelphia North American deems this speech of special significance, and comments:

Mr. Darrow's address on "The Perils of Trades-Unionism," delivered before the Henry George Association, in Chicago, is not a "blow" at organized labor, as some have been over-quick to hail it. It is the earnest remonstrance of a thoughtful man against the follies into which workingmen have drifted and which menace them and the social structure with disaster. It needs courage for a friend of the laborer to rebuke his selfishness, ignorance, and recklessness, and only a true and wise friend, an unselfish friend, could dare so much and speak so plainly.

What Mr. Darrow says will be misunderstood, distorted, and resented by the ignorant and denied by the selfish and

designing, but the men of brains and heart at the head of labor organizations know that he speaks words of wisdom and truth, and that his warning comes none too soon.

A crisis in the life of organized labor in the United States is impending. It is foreshadowed in aimless strikes, in irrational unrest, in the seething turbulence of masses of men who can give no lucid reason for their turmoil, in the defensive drawing together of harassed employers, in the growing hostility of public opinion to purposeless disturbers of business. The need for sane counsel, sharp rebuke, and earnest remonstrance against foolish action, is great, and the man who supplies that need takes his courage in both hands if he values the friendship of those whom he would save from their own folly.

THE OSAKA EXHIBITION.

The Dominion Government expended the sum of \$70,000 in its efforts to make a good show at the Osaka, Japan, Industrial Exhibition, every dollar of which was well expended, and reflected much credit upon the Minister of Agriculture, who had the matter in charge, and who was personally present much of the time in advancing the interests of this country, ably assisted by Mr. William Hutchinson, the Commissioner, and Mr. W. A. Burns, Secretary of the Commission. The Commissioners distributed great numbers of pamphlets, circulars, etc., printed in the Japanese language, descriptive of the Canadian products in their charge. One of the principal features inside the Canadian Exhibition Building was the great rush by the Japanese each day to purchase biscuits and loaves of bread baked in full view inside the building. Hundreds of these people stood with their arms over the railing and money in their hands, ready to purchase, all clamoring loudly to be waited upon. The bread was made of hop yeast and was in much greater demand than the supply. It is expected that in future Canadian flour will be in great demand in Japan, as the bread made from it is of most excellent quality.

Oregon was the only American State which went to any expense in order to make an exhibit at the Osaka Exhibition, that state having made an appropriation of only \$4,000 to help show up its products, against \$70,000 appropriated by the Dominion Government, which is in marked contrast with the inactivity shown by the United States. Oregon had no State building, but was housed in the Foreign Samples Building, alongside the Canada Building, which, with its contents, reflected no small degree of credit upon Canada.

EDITORIAL NOTES.

A London contemporary, Engineering, discussing the trade of Canada with Great Britain and with the United States, points out that in 1881 Canada imported from Great Britain for home consumption goods valued at \$43,583,808. This was 47.58 per cent. of her total imports. In 1901 the imports were worth \$43,018,164, which was 23.74 per cent. of the total. The value of the goods imported from the United States in 1881 was \$36,704,112, or 40.07 per cent. of the total, and in 1901 it was \$110,485,008, or 60.96 per cent. of the total. The actual value of goods imported from Great Britain in 1901 was slightly less than in 1881; the actual value of the goods imported from the United States in 1901 was slightly over three times as much as in 1881. During the last decade the change in favor of the United States and to the disadvantage of Britain has been greater than in the preceding 10 years; in 1891 Britain provided 37.10 per cent. and the United States 47.36 per cent. of Canada's imports. Both in the United States and Great Britain the competition between the two countries is naturally somewhat antagonistic. The Americans are to a certain extent elated as they reach

and ultimately surpass the British in one industry after another, and they reach out to further conquests. In England there are cries of decadence on the one hand, and on the other assertions that Britain need fear no competition. The Canadian point of view is different from either the British or the American, less conservative, possibly less influenced by preconceived ideas. The conditions of life in a new country give an adaptability not encouraged by residents in an old land. On the other hand, continues Engineering, Canadians are less energetic; not so restless; more content to live simply; not so nervous. They do not make money so fast, perhaps because unwilling to work so hard. They have grown slowly as compared with the United States, but are stimulated by the progress of the country to the south of them, and hope before long to largely export some goods that they now largely import. The sentiments are British modified by American influence.

The right to keep out of unions, says the New York Journal of Commerce, is as important as the right to join them, and those who keep out have the same right to earn a livelihood unmolested as those who are in. The employer has the same right to make his bargain with one man or set of men who desire to work for him, and whom he desires to have, as another. This equality of rights is acknowledged everywhere except in labor unions. It should be vindicated there even if it costs something, as the vindication of human freedom always does.

One point which has been made by trades unions in opposing the premium plan of paying wages is that the increased productive capacity of the workman, resulting from the shortening of the time required for any particular job, should count wholly in his favor; in other words, the time saved by him should be paid for in full by the employer, and the latter should not, as the premium plan provides, have a half share or a third, or any other proportion, in its money equivalent. By taking such a share, it is contended, the employer is really imposing a fine on the workman for increased production. In having this claim made for him, however, the workman ignores the fact that his increased production is not due simply to his own efforts. However well directed these might be, they would serve him only in part were it not for the right kind of machinery with which to exert them. The best automatic tools, the prompt discarding of machines not entirely up-to-date, the best possible lighting facilities in a shop, a superior shop system of handling work in transit,—why should not things like these be entitled to a share in the increased profits in output? They represent the employers' efforts in lightening the work, the employers' expenditure of brains and capital, and in many instances their productive effect is the real effect, while the workman's is only in small part tributary. Clearly if the workman's capital—his labor, in other words—is to bear increased interest, the employers' capital, too, should have that advantage.—Cassier's Magazine.

A correspondent who is upon the road constantly in connection with a branch of the textile industry, and who has visited within the last few weeks about every woolen and cotton mill in Ontario and other provinces, writes us that there is a general cry throughout the trade regarding the scarcity of labor. Factory help, particularly female help is, he says, a vital question with all the textile industries. Many operators do not know which way to turn to obtain the needed assistance, and yet the cities and larger towns are swarming with girls

and women who are not at work. Is it, he asks, that the condition arises because of the general rise in wages going to the head of the family, or is it because a course of cheap instruction is so easily obtained in business colleges which enables them to get into offices at a beggarly rate of three or four dollars per week and be well dressed, if it requires every cent of their earnings to pay for their clothes, while the head of the house supplies the board and food. A good, active, intelligent factory girl can easily earn from six to nine dollars per week in most factories. A cry is going up throughout the land, and in other lands also, that the skilled professions—those of lawyers, physicians and religious ministers—are being overcrowded, the services of good school teachers in Ontario being obtainable at from \$250 to \$300 per year and competent factory workers and skilled mechanics being almost unobtainable at double that remuneration.

The Toronto Industrial Exhibition Association propose issuing an official catalogue of exhibitors for the purpose of assisting visitors at the forthcoming Fair in locating the various exhibits. This is well; and if the catalogue is exhaustive and accurate in the information it will be valuable. A most remarkable feature of the enterprise is that the Fair managers are soliciting paid-for advertising to be inserted in the catalogue which will undoubtedly depreciate its value and destroy its attractiveness as a souvenir of the occasion. Very little would ever be heard of the Fair were it not for the free advertising it gets through the newspapers; and it is an exceedingly short sighted policy that prompts the managers to work against the interests of the newspapers by operating a pennywise advertising competition. Some exhibitors will not care to increase their exhibition expenses in that way, and will no doubt feel dissatisfied in observing the advertisements of other exhibitors in the official catalogue.

The Judicial Committee of the Privy Council of Great Britain has handed out a decision in the celebrated copyright case of Henry Graves & Co., of England, against Mr. G. T. Gorrie, of Toronto, dismissing the appeal of the English firm with costs. Lord Lindley, who delivered the decision of the court, said that those who sought copyright in Canada on drawings, paintings, and photographs should comply with the Canadian law. This upholds the judgments of three consecutive Canadian courts. The case arose out of the English firm seeking to restrain Mr. Gorrie from publishing copies of the famous picture "What We Have We'll Hold." The contention of the plaintiff was that the Imperial Artistic Copyright Act, under which they had registered the picture, extended to the colonies. They based their plea on the meaning of the words, "the dominions of the Crown," which, they asserted, included the colonies. This the defendants denied, with the result above mentioned. Leading members of the Canadian Copyright Association expressed their satisfaction with the result and think that it is a victory for this country. They expect that new copyright legislation in Canada will be introduced, and believe it will not affect copyrights for literary productions, because they are covered by a separate act.

The Iron Trade Review says:—"It was reported in New York and telegraphed widely in press dispatches that the United States Steel Corporation had announced its intention to begin work shortly on the new steel plant at Port Colborne, Ont., concerning which there has been much newspaper discussion. In response to an enquiry we are officially advised that the Corporation has no such intention."

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, belting, lubricants, machinery supplies, wood or iron working machinery, ventilating and drying apparatus; pumps, valves, packing, dynamos, motors, wire, arc and incandescent lamps, and an infinite variety of electrical supplies, chemicals, acids, alkalis, etc. It is well worth the while of every reader of the Canadian Manufacturer to closely inspect all items under the head of Captains of Industry.

The Peninsular Oil & Gas Co., Chatham, Ont., has been incorporated with a capital of \$100,000. The provisional directors include A. McCallum, A. J. Bedford and F. T. Merrill, of Chatham.

The Toronto-Hamilton Portland Cement Co., Toronto, has been granted a charter, with a capital of \$350,000, to manufacture Portland and other cements. The provisional directors include W. H. Merritt, R. Diunis and W. J. Taylor, of Toronto.

The Colonial Portland Cement Co. have prepared plans for the construction of a dock and landing pier at Colpoys Bay, Ont.

William J. P. Gray, representing the Russman & Gray Molybdenum Reduction & Refining Co., Buffalo, N.Y., was in Kingston in the interests of his firm, which has secured 4,700 acres of mineral lands in North Frontenac, Renfrew County, and surrounding district. Mr. Gray says that his firm expects to open up mines and to erect in Kingston a smelter costing \$130,000. It is also the intention of the company to construct a railway from near Tweed to Killaloe Station, on the Canada Atlantic Railway.

The Bank of Hamilton, Hamilton, Ont., will erect a two-story addition to their head office building.

The Parry Sound Dairy Co., Powassan, Ont., has been incorporated with a capital of \$5,000, to manufacture butter and cheese. The provisional directors include J. J. Durrell, J. Hogan and O. Gough, of Himsforth, Ont.

The Ingersoll Canning & Preserving Co., Ingersoll, Ont., has been incorporated with a capital of \$40,000, to manufacture canned goods, etc. The provisional directors include F. G. Walley, H. E. Robinson and W. H. Cook, of Ingersoll.

The Smith's Falls Malleable Castings Co., Smith's Falls, Ont., has been incorporated with a capital of \$150,000, to acquire the business of the Smith's Falls Malleable Iron Works and to manufacture malleable iron and castings. The provisional directors include W. H. Frost, J. E. Frost and L. A. Frost, of Smith's Falls.

Messrs. Gilkinson's laundry, at Kingsville, Ont., was destroyed by fire, July 21. Loss about \$2,000.

Messrs. Wm. Gray & Sons, Chatham, Ont., are erecting a new addition to their carriage factory, 165x90 feet, three stories high.

The Canada Radiator Co., Port Hope, Ont., are considering the establishment of a branch works at Lachino, Que.

Messrs. Bailey's broom factory at Kingston, Ont., was destroyed by fire, July 19. Loss about \$30,000.

Permits have been issued in Hamilton, Ont., to Architect Mills for the erection of a moulding shop for The D. Moore Co. to cost \$9,000, and for a new coal shed for the Rogers Coal Co., to cost \$5,000.

Mr. Geo. Gooderham, Toronto, will erect a business building at the corner of King and Sherbourne Streets, at a cost of about \$50,000.

The Consolidated Lake Superior Co., Sault Ste. Marie, Ont., have contracted to build 500 box cars for the Canadian Pacific Railway Co.

Messrs. Geo. Wilson & Co's storehouses and lumber yard at St. Catharines, Ont., were destroyed by fire July 26. Loss about \$40,000.

The Waterproof Clothing Co's factory at Guelph, Ont., was destroyed by fire July 25. Loss about \$10,000.

The City of Guelph, Ont., have purchased the plant of the Guelph Light & Power Co.

The Temiskaming Railway Commissioners, Toronto, have accepted the tenders of Rhodes, Curry & Co., Amherst, N.S., for 100 flat cars, and of the Rathbun Co., Kingston, Ont., for 50 box cars. These cars are to be of 30 tons capacity and are to be delivered in May next.

A new company is being formed at Toronto Junction, Ont., for the manufacture of underwear, etc. They will erect a three-story factory building 60x40 feet. Mr. W. A. Ferson, of Toronto Junction, is one of the promoters.

The Dominion Fish Co., Warton, Ont., will remove their plant to Owen Sound, Ont., where they will erect ice houses and packing buildings at a cost of about \$10,000.

The Water & Light Commissioners, of Woodstock, Ont., will purchase a Babcock-Wilcox boiler with a capacity of 200 h.p. at a cost of \$4,000, to be installed in the city power house.

The Berlin Foundry Co., Berlin, Ont., will erect a foundry 60x40 feet, two stories high, with moulding shop 45x35 feet, and they will also construct a switch connecting with the Grand Trunk Railway.

The Frontenac Cement Co., Kingston, Ont., will erect cement works and construct a railway at a cost of about \$750,000.

The Ontario Government will erect a new geological museum at Ottawa.

The Huntsville & Lake of Bays Navigation Co. have placed their new steamer Maple Leaf in service. The steamer is 56 feet long, 11 feet beam, and is fitted with fore and aft compound engine, cylinders 6 and 12 by 19-in. stroke. The company have plans ready for a larger steamer which it is proposed to construct during the winter. The company operates on the Lake of Bays and connecting waters of Ontario.

The Clifton Hotel Co., Niagara Falls, Ont., has been incorporated with a capital of \$500,000, to rebuild the hotel destroyed by fire a few years ago. The provisional directors include J. W. Langmuir and W. B. Rankine, of Niagara Falls, Ont.

Ald. Davidson, Ottawa, is inviting tenders for the rebuilding of hotel Cecil.

Twelve thousand feet of sanitary sewers and 6,000 feet of storm sewers will be constructed at Sturgeon Falls, Ont.

A waterworks and sewerage system will be installed at Carleton Place, Ont., at a cost of about \$165,000.

The Empire Metallic Furniture Co., Niagara Falls, Ont., are considering the enlargement of their furniture factory.

Plans have been submitted for the erection of the branch banking building at Chatham, Ont., of the Merchants' Bank, at a cost of \$30,000.

Mr. Robert Noble, Acton, Ont., will erect a steam grain elevator in that town.

The Preston & Berlin Railway will erect car barns and a station at Preston, Ont.

The town engineer of Smith's Falls, Ont., is inviting tenders for sewers, trenching and rock excavation.

The McLagan Furniture Mfg. Co., Stratford, Ont., will erect 18 houses for the accommodation of their employees.

The Adams Wagon Co., Brantford, Ont., will enlarge their works, the addition to be 100 x 64 feet, two stories high.

The Ontario Government have made arrangements for another large sale of timber limits this fall. The limits to be sold will be in the New Ontario District, now open to settlement.

It is possible that radium, the new metal which is worth \$170,000 an ounce, may be found in Ontario. Prof. Miller, of the Provincial Bureau of Mines, reports that at Point Maimansee, on the north shore of Lake Superior, an uranium compound known as coracite, has been discovered. It occurs in small quantities, and what radium that has so far been discovered has been found in deposits of uranium and its compounds.

Plans have been submitted for the installation of water works and an electric light system at Whitby, Ont.

One of two locomotives which are now being built at Baldwin's Locomotive Works in Philadelphia, for the Canadian Copper Co., at Sudbury, Ont., will be a mechanical novelty in its way, as parts of it will be composed of nickel steel, making it cost \$4,000 more than the ordinary locomotive. An important feature of the boiler from a mechanical standpoint will be that every 100 pounds of steel in it will contain from three to four pounds of nickel. The other parts which will be of nickel steel will be the frames and rails, driving axles, crank-pins, piston rods and other important parts. The castings and forgings have been made by the Bethlehem Steel Co., of Bethlehem, Pa. The International Nickel Co., which controls the Canadian Copper Co., will provide the nickel.

The Peterborough, Ont., city council has granted a franchise to the Peterborough & Ashburnham Radial Electrical Railway Co., which is practically the American Cereal Co., of that town. Five miles of railway within the town are to be equipped and in operation not later than July 1, 1904. The plans of the company include extensions to Ashburnham, Lakefield, Young's Point and Chemong.

The Power Accessories Co., 231 King Street East, Toronto, have just installed four lathes manufactured by The MacGregor-Gourlay Co., of Galt, Ont. The company have also installed considerable other machinery.

The Sun Portland Cement Co., Owen Sound, Ont., has just received another large rotary kiln from the Vulcan Iron Works, Wilkesbarre, Pa. The addition of this kiln will increase the capacity of the plant several hundred tons daily. Additional boilers and engines will also be installed.

The Co-Operative Foundry is considering the matter of establishing a plant at Owen Sound, Ont.

William Ferguson, Owen Sound, Ont., has purchased the old plant of the Owen Sound Iron Works and will establish a carriage factory.

The Niagara Peninsula Power & Gas Co., Toronto, has been incorporated with a capital of \$250,000, to supply electricity or natural gas, for power purposes, etc.

The provisional directors include W. J. Gilchrist, R. Credicott and John Payne, Toronto.

The McLennan Paint & Color Co., Hamilton, Ont., has been organized to operate the plant of the Hollywood Paint Co., recently purchased by the McLennan Paint Co., Buffalo.

The Northrop Iron Works, Valleyfield, Que., is being reorganized.

The Rat Portage Lumber Co., Rat Portage, Ont., has been incorporated with a capital of \$500,000, to manufacture timber and lumber.

Construction work on the line of the Lindsay, Bobcaygeon & Pontypool Railway will commence at once. The contract for the entire line between Burketon and Bobcaygeon has been let to Mr. E. F. Fauquier, Montreal, who is under bonds to have the road completed before December 1, and to accomplish this about 2,000 men will be required.

The Water Commissioners, Windsor, Ont., are inviting tenders for the erection and installation of a pumping engine.

Tenders will be received by the Howard Township Council, Ridgetown, Ont., for a trestle bridge, 71 feet long, over Duffin Creek.

The Grand Trunk Railway will build a new station at Beaconsfield, Ont., at a cost of \$2,500.

The Bell Block, consisting of commercial establishments, at Dundalk, Ont., was destroyed by fire July 28. Loss about \$60,000.

Dr. Adams, Embro, Ont., is considering the establishment of an automobile factory at that place.

The Galt Machine Knife Works, Galt, Ont., are installing a gigantic power shears, made of cold steel, which will cut through a bar of iron six inches wide and an inch thick.

The Lakeside Cheese Factory at Lakeside, Ont., was destroyed by fire July 31.

The factory of the Ontario Tack Co., at Hamilton, Ont., was destroyed by fire July 31. Loss about \$50,000.

W. A. Kribs, Preston, Ont., is building a new power house for the Preston & Berlin Railway. It will be of brick, 104x48 feet, with a 100-foot chimney,

and will have room for three engines and five boilers. Car barns and a station will also be erected.

The City of St. Thomas, Ont., has petitioned the Railway Commission of the Privy Council at Ottawa for a subway at Ross Street and level crossings at Elgin and William Streets, over the Canada Southern Railway.

Coal has been discovered at Wallaceburg, Ont. The Ontario Government are testing the territory under the direction of Mr. Roach.

Messrs. John Ballantine & Co., Preston, Ont., have been incorporated with a capital of \$80,000, to manufacture wood-working machinery, etc. The provisional directors include J. Ballantine, Thos. Ballantine and M. Pollard, Preston.

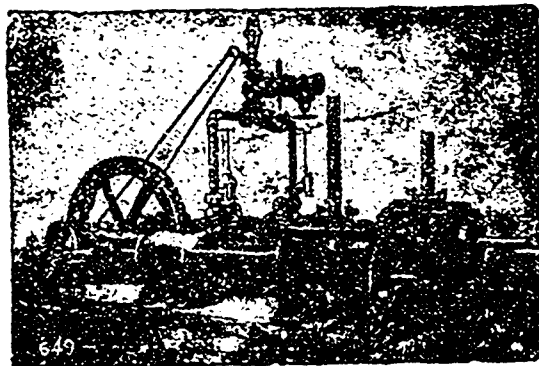
The Book Supply Co., Toronto, has been incorporated with a capital of \$50,000, to acquire the business of The Book Supply Co., and to manufacture paper, books, etc. The provisional directors include J. M. Poole, S. Stewart and E. S. Reade, Toronto.

The two large Grand Trunk Railway iron bridges across the Don River at Toronto, were moved about 35 feet in opposite directions, and the company will build two new bridges and lay four tracks. The old bridges will be used for shunting and freight trains, while the new ones will be exclusively for passenger trains.

The congregation of St. Barnabas Church, at Chester, Ont., will erect a new church building.

Mr. T. T. Simpson, consulting electrical engineer, 55 Sparks Street, Ottawa, informs us that a company is now being formed to develop the water power at the McPherson Falls on the Vermillion River, a few miles from Sudbury, Ont. A large electrical plant will be installed there, from which energy will be transmitted to various nickel and other mines in that vicinity. Mr. Simpson is now preparing specifications for the electrical machinery, which will be completed in a few days.

The Harcourt Lumber Co., Woodstock, Ont., has been incorporated with a capital of \$40,000, to manufacture lumber, etc. The provisional directors include F. Maundrell, Woodstock, and M. S. Schell and W. S. Schell, of East Oxford, Ont.



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The Jarvis Concrete Machines, Ltd., of Toronto, will change their name to The Jarvis Concrete Co.

The Dominion Public Works Department will rebuild the bridge between Bryson and Calumet Island, on the Ottawa, and place it on concrete piers.

Galt, Ont., is considering the erection of a new single-span bridge in that city over the Grand River.

Ottawa is well served as a railroad centre. Beside a splendid canal system seven important railway lines radiate from the city. The Grand Trunk has no direct connections with the city, but shippers have the advantage of the growing Canada Atlantic system in securing competing rates. The Free Press publishes a fine illustrated history of Ottawa (200 illustrations), with maps showing the locations of 1,000,000 h.p. in the rivers near by.

Final arrangements for the development of 100,000 h.p. at the Kababeka Falls, at Fort William, Ont., have been made. The Anglo-American Power Co. and F. H. Clergue have united in the project and work will be begun at once.

The municipal telephone plant at Fort William, Ont., does not appear to have been the success that has been claimed for it, judging from the following statement in the Times-Journal of July 23, of that town, over the signature of Mr. A. F. Woodhead, a prominent citizen: "The public (electric light and telephone) services have been administered with inefficiency and inaptitude culminating in the destruction of the town hall, with its valuable records, a costly lawsuit in which the town has been signally worsted, and to-day we have another breakdown in the electric light plant, simply through sheer mismanagement, which will cost a large sum and deprive the citizens of light for probably some weeks. The municipal telephone service is so bad that every user of it is disgusted and supporters of legitimate public ownership are chagrined and disappointed.

Among recent shipments of Little Giant turbines from the works of J. C. Wilson & Co., Glenora, Ont., are a 21-inch vertical, to Wm. Corey, Upper Bedford, Que.; a 24-inch vertical to Edson Fitch Co., Etchemin, Que.; a 21-inch vertical to Jos. Labrie, Rimouski, Que.; a deep bucket 28-inch vertical to The Skinner Co., Gananoque, Ont.; and two 33-inch verticals to Stuart Bros., Mitchell, Ont.

The American Rare Metals Co., of New York City, have paid over to Kingston parties \$5,000, on account for the smelter site recently purchased by the company at that place, and a smelter will be located on it at once.

The ratepayers of Parry Sound, Ont., will vote on a by-law to raise \$10,000 for the installation of an electric motor at the pumping station and for the extension of the waterworks system.

The plant of the Ontario Portland Cement Co., at Blue Lake, Ont., is nearing completion. The work of installing machinery is progressing rapidly, and will be completed at a very early date. The

engine and boilers are in position, the rotary kilns have been placed for some time; other machinery is being set up. The company will have railway facilities, the siding completed by the Grand Trunk Railway almost encircling the plant.

The Victoria Wheel Works' storehouse, lumber shed and several piles of lumber at Galt, Ont., were destroyed by fire, July 28. Loss about \$6,000.

Since the first of May, when J. C. Wilson & Co., Glenora, Ont., manufacturers of the Little Giant turbine, reported their foreign shipments, this year, as 21 wheels. They have shipped the following additional turbines to customers abroad, viz., two 12-inch, one 21-inch, one 28-inch, and one 44-inch, all of the vertical type, and have also under construction for export one 14, one 21 and one 24-inch.

Plans of the proposed extension of the Bay of Quinte Railway and of the Huntsville & Lake of Bays Railway have been filed with the Ontario Department of Works. Both lines were granted the usual bonuses, and it is understood work on these roads will start at once.

Plans have been prepared by the Waterous Engine Co., of Brantford, Ont., for an addition 200 x 100 feet to their foundry. The proposed improvements will about double the capacity of their foundry and give employment to 100 additional men.

Messrs. Watson Jack & Co., Montreal, have secured the contract for the supply of about ten thousand tons of steel plates and angles for a large power development work near Hamilton, Ont.

The Warton, Ont., Beet Sugar Co. has been granted an additional bonus of \$25,000 by that town. The total production of beet sugar during the past season in Ontario, upon which the Provincial Government paid a bounty of half cent per pound, is as follows: The Berlin factory produced 6,063,926 pounds; Dresden, 3,763,986 pounds; Wallaceburg, 3,606,604 pounds; and the Warton factory, 1,565,000 pounds, making a total of 14,999,516 pounds. At the rate of half cent per pound the bounty was passed by the Provincial Government in 1901, when \$225,000 was appropriated to pay bounties not exceeding \$75,000 a year for three years, at the rate of half cent per pound on the sugar produced during the first two years, and a quarter cent per pound for the third year. If \$75,000 should not be used in any one year the amount unused is to be carried over to the fourth year.

Messrs. Ker & Harcourt, manufacturers of spools, bobbins, etc., recently sold out their works to the Canada Bobbin Co., Walkerton, Ont., to which place their plant has been transferred. Messrs. Ker & Harcourt are one of the oldest and best known concerns in Canada.

J. C. Wilson & Co., Glenora, Ont., have an enviable reputation for the quality of the gear wheels turned out in their works. Finished on special machines, the teeth, both iron and wood, being dressed on both sides, are made mathematically correct, insuring the least possible loss of power through friction. Among their

recent customers are such well known firms as Dodge Mfg. Co., Toronto; The Skinner Co., Gananoque, Ont.; Jno. Fisher & Son, Dundas, Ont.; Jno. McLachlan, Cannington, Ont.; A. B. Lees, Fallbrooke, Ont.; and C. C. Brown, Danville, Que.

A 10 h.p. motor has been installed by the Canadian General Electric Co. for the Hamilton Stamp & Stencil Works, Hamilton, Ont. This is a progressive firm.

At the annual meeting of the Laurie Engine Co., Montreal, the old board of directors were re-elected as follows: President, C. E. L. Porteous; vice-president, W. Yuile; J. Laurie, F. L. Wanklyn, C. W. Davis, W. H. Laurie and W. G. Ross.

The Bell Telephone Co., Montreal, have prepared plans for a building to be erected on Hospital Street, that city. Building operations will commence at once. The company have also awarded the contract for the erection of a four-story building on St. Andre Street, that city.

The J. B. Sparrow Theatrical & Amusement Co., Montreal, has been incorporated with a capital of \$250,000, to construct theatres, opera houses, etc. The provisional directors include J. B. Sparrow, D. Walker and J. E. Martin, of Montreal.

The Royal Portland Cement Co., Montreal, has been incorporated with a capital of \$600,000, to manufacture cement, to erect mills, mining plants, etc. The provisional directors include J. N. Green-shields, R. T. Heneker and W. G. Mitchell, of Montreal.

The Eugene F. Phillips Electrical Works, Montreal, have opened a Toronto office at 50 Adelaide Street West, with Mr. J. P. Thompson in charge, necessitated by the rapidly increasing trade of the company in Ontario.

Mr. S. G. Kolland will erect a new paper mill at the falls of the North River at Ste Adele, Que., from which 4,500 h.p. can be obtained.

The Canadian Pacific Railway Co. will erect buildings at Quebec city for increased hotel accommodation.

The Department of Public Works, Ottawa, is inviting tenders for the erection of a post office building at Valleyfield, Que.

Mr. D. Pottinger, general manager of the Intercolonial Railway at Moncton, N.B., is inviting tenders for the erection of a building for baggage and express rooms at Levis, Que.

It is expected that the pulp mill whose construction is being pushed on at the Bay of Seven Islands, Que., by the North Shore Power, Railway & Navigation Co. will be completed in time to begin manufacturing operations next year. The capacity of the mill is to be 250 tons a day. At the same point the company will have an electric power plant capable of producing 22,000 h.p.

St. Louis, Que., will spend about \$120,000 on improving the waterworks system and street paving; also \$30,000 for the erection of a town hall building.

The Sherbrooke Board of Trade is considering the erection of a customs smelter for treatment of copper and sulphur ores in that city.

A new court house will be erected at Sherbrooke, Que., at a cost of about \$75,000.

Mr. J. H. Bernard, architect, Montreal, has taken out a permit for the erection of a synogogue for the Austro-Hungarian Jews of that city at a cost of about \$20,000.

The Boston & Maine Railway Co. are building a large addition to their freight house at Stanstead Junction, Que.

The Roberval Electric Co., Roberval, Que., has recently placed an order with J. C. Wilson & Co., Glenora, Ont., for a 28-inch deep bucket Little Giant turbine with horizontal mounting, and the same firm have under construction a 12-inch wheel of the same type for J. A. Kirk, Arrowhead, B.C.

The England Tannery, at Knowlton, Que., was destroyed by fire Aug. 2.

It is expected that the new works of the Locomotive & Machine Co., of Montreal, will be complete by the end of September. The power house is almost finished, and there will soon be a triple propelling force to drive the massive machinery—electricity, steam and compressed air. Already initial work has been begun upon a locomotive destined for British Columbia, and an order for structural steel for the new pulp mill at Seven Islands has been entered upon. The locomotive will be turned out in November. The railway system of three or four miles of tracks, in connection with the shops, has already been laid.

The machine shop will be 420 x 132 feet, and a permanent structural steel shop that is to be built will be 300 x 200 feet.

La Compagnie d'Aqueduc de Montmagny, Que., has been incorporated with a capital of \$10,000, to construct waterworks, etc. The provisional directors include J. C. Lislois, J. E. Lepine and T. de Beaumont, of Montmagny, Que.

The Canadian Pacific Railway Co's hotel at Bury, Que., was destroyed by fire July 23.

The locks at the foot of the Lachine Canal are being enlarged to the standard length of 270 feet, with a width of 45 feet and 17 feet of water on the sill.

The Laurentide Paper Co., Grand Mere, Que., will increase their capital from \$1,600,000 to \$2,800,000, and will enlarge their mills and install new machinery.

The Londonderry Iron & Mining Co., now owned by Messrs. Drummond & McCall, of Montreal, is making rapid progress in rebuilding furnace A. The new furnace will have an annual capacity of 48,000 tons and will be put in operation in a short time.

The Maritime Contracting & Mining Co., Charlottetown, P.E.I., has been awarded the contract for the installation of a waterworks system at Shediac, N.B., at a cost of \$7,500.

The Methodist Church congregation at New Aberdeen, N.S., will erect a new church building.

The New Brunswick Petroleum Co. will erect a refinery in the St. Joseph's oil district, near Moncton, N.B.

The Crothers Lumber Co., Oromocto, N.B., has been incorporated with a capital of \$24,000, to carry on a general lumbering business. The provisional directors include C. C. Taylor, Sheffield, N.B.; J. F. Bridges, Gagetown, N.B.; and J. W. Hoyt, McAdam, N.B.

Messrs. A. W. Whitman & Sons warehouse and plant at Canso, N.S., was destroyed by fire August 3. Loss about \$40,000.

The lease of the Dominion Coal Co. held by the Dominion Iron & Steel Co. has been terminated, and hereafter the two companies will be conducted separately.

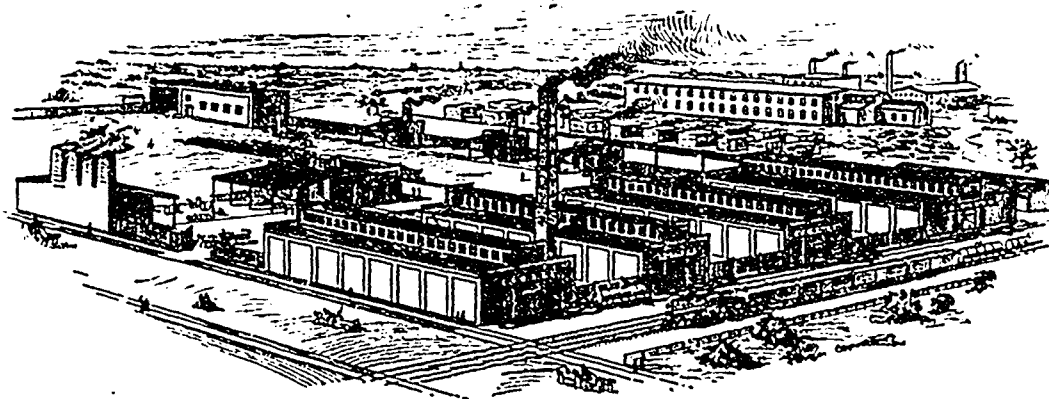
The Cumberland Copper Co., Wentworth, N.S., have mined several thousand tons of ore, and are erecting smelting furnaces.

The Dominion Steel Co., Sydney, N.S., are considering the erection of two finishing mills at that place.

The Baptist congregation at Fredericton, N.B., will shortly invite tenders for the enlargement of their church building.

Mr. H. H. Mott, architect, St. John, N.B., has submitted plans for the Canadian Rand Drill Co's new building at that city, to be 80 x 50 feet three stories high.

Mr. E. Wallace, Backs Harbor, N.B., is inviting tenders for the erection of a new public school house at that place.



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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.

Our experience belongs to those who use and sell Berry Brothers' Varnishes.
Safest goods to handle, surest and most reliable goods to use.

WRITE FOR CATALOGUE.

BERRY BROTHERS, Limited - Walkerville, Ont.



An electric light and power plant will be installed on the Wavorly Gold Mine Co's property near Halifax, N.S., for surrounding places.

The city engineer, St. John, N.B., is inviting tenders for superstructure of No. 4 warehouse at Sand Point, 360 x 70 feet, two stories high.

Messrs. Whitten & Johnson, architects, Sydney, N.S., have submitted plans for the erection of a theatre building at Sydney Mines, to be 106 x 46 feet at a cost of \$20,000.

The Cape Breton Coal, Iron & Railway Co. have begun the development of their coal areas at Cochrane's Lake, 12 miles from Sydney, N.S. A shaft is being sunk, and the work of equipping the colliery will be proceeded with at once. An electric railway will be built from the mine to Mira Bay, four miles distant, where shipments will be made. The company ultimately expect to build an electric railway to Sydney, and make it their principal shipping port. The company owns 67 square miles of coal varying in seams 6 to 7 feet in thickness. An extensive deposit of iron ore has been discovered at Loch Lomond. The deposit varies in thickness from 4 to 6 feet.

Coal has been struck on the Emery seam near Dominion No. 3, Glace Bay, N.S. The thickness of the seam is four feet. Boring is going on near the central machine shop at Glace Bay, N.S.

A syndicate has been formed in Sydney, N.S., to promote a scheme of deep-sea salvage. It is intended to acquire a suitable vessel provided with a deep-sea diving machine invented by Mr. Vernon, of Sydney, who, it is stated, has successfully tested it for several years on pearl fishing grounds at various depths down to 96 fathoms. It is stated that the apparatus has been so improved that it will work at a depth of 200 fathoms. The idea is to recover treasure from sunken ships by means of explosives.

Dominion No. 1 coal mine at Glace Bay, C.B., has commenced mining operations again, employing about 150 men, and four powerful pumps will be added at once to those now in operation.

The engineer of the Prince Edward Island Railway at Charlottetown, P.E.I., is inviting tenders for nine stations, two water tanks and one engine house.

The plans for the locks at St. Andrew's rapids in the Red River, Man., are to be changed so as to permit the building of a bridge across the river at that point.

The Brakman-Ker Co. will add another story to their oatmeal mill at Strathcona, N.W.T.

Messrs. Munro, McIntosh & Co., carriage manufacturers, of Alexandria, Ont., have purchased a site in Winnipeg, Man., upon which they will establish branch works.

The Hazeldean Farmers' Elevator Co., Hazeldean Siding, Man., has been incorporated with a capital of \$10,000, to construct and operate grain elevators, etc. The provisional directors include J. McGill, A. McGregor and C. H. Robinson, of Deloraine, Man.

Tenders will be received by the chairman of the committee on works, Winnipeg, Man., for the supply of 500 tons of asphalt for street paving.

The main storage house of the Arctic Ice Co., at Winnipeg, Man., was destroyed by fire July 27. Loss about \$30,000.

The city of Winnipeg, Man., is expending over \$500,000 in public works this year. This includes new sewers, pavements, side walks and boulevards. In addition to this over ten miles of new waterworks piping will be laid and extensive improvements made to the waterworks plant.

Messrs. Lunquist & Son, Clitherall, Minn., will erect a banking building in Estevan, Man.

Mr. M. A. Sexmith, Baldur, Man., is inviting tenders for the erection of a Methodist church.

The ratepayers of Regina, N.W.T., will vote on a by-law to raise \$200,000, for the installation of a waterworks and electric light plant.

The Canadian-American Coal Co., which lost heavily in the rock slide at Frank, N.W.T., are rapidly putting their property back into condition again. The new shaft is now down over 100 feet, and new machinery is being installed.

Tenders will be received by the chairman of the fire, water and light committee, Winnipeg, Man., for the supply of lead pipe, brass goods, etc. The quantity of lead pipe required is 120,000 pounds, and includes $\frac{1}{2}$ inch, $\frac{3}{4}$ inch, $\frac{1}{2}$ inch and 1 inch.

The town of Edmonton, N.W.T., will erect a dock on the river front at that point.

The Dominion Parliament have passed an act authorizing the city council of Winnipeg, Man., to carry out certain works for benefit of the navigation of the Assiniboine River.

Messrs. Crockett & Plum, Forsyth, Man., are having surveys made of the Saskatchewan river from Edmonton, Sask., east and west, with a view of ascertaining the class of steamer that may be most profitably built for river use.

The ratepayers of Lethbridge, N.W.T., have voted favorably on a by-law to raise \$120,000, for the installation of a water works and sewerage system.

The Acetylene Construction Co., St. Catharines, Ont., have been awarded the contract for the installation of a street lighting system at Moosomin, N.W.T.

The ratepayers of Regina, N.W.T., will vote on a by-law to raise \$135,000, for the installation of a waterworks, sewerage system and an electric plant in that city.

The Department of Public Works, Ottawa, is inviting tenders for the erection of a court house at Red Deer, N.W.T.

C. R. Oldershaw, Vancouver, B.C., is inviting tenders for the erection of the new high school building at that city.

The Elk Lumber & Mfg. Co. will erect a mill at Hosmer, B.C.

The Dominion Fish Co. are establishing a factory at Selkirk, Man., for the conversion of fish offal into oil and fertilizers.

The Fraser River Power & Pulp Co. has been incorporated at Victoria, B.C., with a capital of \$100,000, to generate power and electricity.

The S. Paul's Church Building Co., Vancouver, B.C., has been incorporated with a capital of \$50,000, to erect a church building in that city.

The Fraser River Tannery has been incorporated at Victoria, B.C., with a capital of \$50,000, to carry on a general tanning and leather manufacturing business.

The British Columbia Copper Co., of Greenwood, B.C., have let a contract for 4,000,000 bricks to be used in the erection of a brick smoke stack 120 feet high to replace the steel stack now in use at the company's smelting works.

The Molly Gibson mine at Kokanee, B.C., is shut down pending the installing of new machinery. Sixty men will probably be employed when work starts up.

The British Columbia Electric Railway Co., have purchased the plant of the Vancouver Power Co., at New Westminster, B.C., and will instal a six-inch centrifugal pump and a 25 h.p. electric motor.

Mr. McInnis, who has recently returned from Ottawa, says the supplementary estimates will provide \$40,000 for a new customs house for Nanaimo, B.C.

The Northern Brewing Co., Atlin, B.C., has been incorporated with a capital of \$20,000, to acquire the business of The Northern Brewing Co., and to carry on the business of brewers, etc.

The British Columbia Box & Lumber Co., False Creek, Vancouver, B.C., has been incorporated with a capital of \$25,000, to acquire the British Columbia box factory and to manufacture packing-boxes, shingles, etc.

The mills, building plant and lumber yard of the Harrison River Mills Timber & Trading Co., at Vancouver, B.C., also the Canadian Pacific Railway Co's station and sheds, including eight freight cars, were destroyed by fire July 21. Loss about \$125,000.

J. C. M. Keith, Victoria, B.C., has submitted plans for an extensive block to be built by an English syndicate at that city.

A new public school building will be erected at Shuswap, B.C.

S. Tretheway will erect a lumber and shingle mill near Port Haney, B.C.

G. S. Curtiss, architect, has submitted plans for the erection of a Catholic church at Phoenix, B.C.

Benton G. Turner, a wealthy capitalist of New York, is at Powell Lake, in British Columbia, where his company has 250 square miles of spruce lands. Work will commence immediately on the erection of a mammoth pulp mill. Mr. Turner will reside permanently in Vancouver or Nanaimo, B.C.

A report from Kamloops, B.C., says that a great discovery was made recently in the shaft of the Iron Mask mine on Coal Hill, at a depth of 550 feet, when a seam of coal was struck. Copper and coal are now being mined and hoisted up the same shaft. Five hundred tons of first-class copper ore has been shipped and many thousands of tons of second-class ore are on the dump ready for the smelter, which may be built in the fall.

The Charles Efos Co., Bayonne, N.J., manufacturers of aluminum steel goods, inform us that they are making extensive additions and improvements in their works, for the enlarged production of aluminum steel which, they say, will be in operation at an early date.

The Canadian Transit Co. has been incorporated under the Ontario Companies' Act to carry on a general navigation business, with offices at Ottawa, Ont., and a capital of \$1,000,000. The incorporators are R. Bjerkdiko, A. Lemieux, C. N. Blakeley and R. Lemieux, of Montreal, and C. B. K. Carpenter, of London, England. The company propose to operate in connection with the New Canadian Co., of London, England, which has been recognized by a Dominion Act of Parliament. The new Canadian company propose to construct deep water wharves and other terminal facilities at Gaspé, Que., and to act as the construction company for a line of railway from Gaspé to the Intercolonial Railway at Causapsal, Que., and thence to Edmundston, N.B. It is claimed that Gaspé is an all the year port, with a suf-

ficient depth of water to provide for the largest ocean-going steamers, and that those behind the company are in a position to secure a portion of the transatlantic trade for the new port. It will be within the recollection of marine men that in 1897 or 1898 an attempt was made to inaugurate a transatlantic service between Paspébiac, Que., in Gaspé County, Que., and Milford Haven, England, but was abandoned.

Under the new schedule of Canadian iron bounties the Dominion Iron & Steel Co., Sydney, C.B., is expected to receive over \$1,000,000 as against \$350,000. The entire schedule is considered particularly favorable to Dominion Iron & Steel Co.; in fact, it is so arranged that other Canadian iron and steel industries, including the Clergue works, are benefited only to a small extent. It is thought in Canada that the restriction by which it is necessary to use at least 50 per cent. of Canadian pig in order to get the benefit of bounties will somewhat block the United States Steel Corporation's project at Port Colborne, although it will also work against the use of Newfoundland iron by the Dominion Iron & Steel Co.

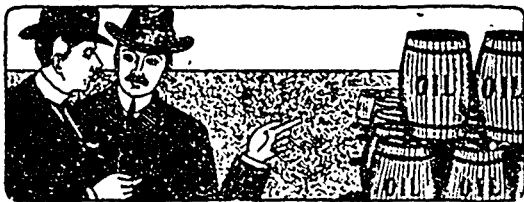
The Buffalo Tool & Machine Co. has discontinued their Canadian branch which was opened in Toronto several months ago.

It is asserted that a new use has been discovered for carborundum as a mask to preserve fire bricks from disintegrating in very high temperatures. The carborundum is finely pulverized and mixed with

some medium to make it adhere to the bricks: possibly silicate of soda (water glass) might answer for the purpose. Fire bricks so treated have a much longer life than when used without carborundum.

A telegram from Pittsburg, Pa., says that the United States Steel Corporation has practically completed plans for the erection of a steel manufacturing plant at Port Colborne, Ont., and that a movement is on foot by Dominion Steel interests to check the scheme and prevent the deal if possible. United States Steel plans have so far progressed that power to operate plants has been engaged from the Niagara Water Power Co. The plant, therefore, will be located on Canadian soil and the Steel Trust mill will come into competition with Dominion Steel and Lake Superior Steel at Sault Ste. Marie. Three thousand men will be employed, and as far as possible native ore will be used, thus securing advantage of new bounty. A subsidiary company will be organized under Canadian laws, the stock being held by the United States Steel Corporation. The opposition of the Dominion Steel Co. will come on the granting of the charter.

Messrs. Westinghouse, Church, Kerr & Co., have recently secured orders for additional boiler and economizer equipments for the Detroit plant of the Solvay Process Co. The Solvay company operates at Detroit and Syracuse, N.Y., two of the largest chemical establishments in the United States. The Detroit plant is located at Delray, a suburb on the Detroit



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10,000 tons in stock.

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IRON, STEEL and PIG IRON.

Cleveland, O.

River, and near the enormous salt deposits occurring in the marshland at this point. Steam power is furnished from a central boiler plant, which at present aggregates 7,200 h.p. Roney mechanical stokers are used throughout, and the several batteries of boilers are also equipped with Roney high pressure circulating type economizers. The plant is laid out in batteries of six boilers each. The additional equipment will consist of a new battery, comprising six 300 h.p. Babcock & Wilcox boilers, fitted with Roney stokers, together with four additional economizers, two of which will complete the equipment of previously installed battery. A conspicuous feature of this plant is a massive brick stack 16 feet in diameter and 260 feet in height.

The Minister of Customs has given the information that the following amounts of binder twine had been imported into Canada from the United States :

1897	.....pounds....	3,394,175
1898	....."	8,676,825
1899	....."	10,629,211
1900	....."	8,016,354
1901	....."	9,674,268
1902	....."	14,927,302
1903	....."	14,198,690

The average price paid each year since 1893 by the Canadian Government for manila used in the manufacture of binder twine at Kingston Penitentiary was :— In 1893 no twine was purchased. Since then the price per hundred was :

1894	.....	\$4.38
1895	.....	4.15
1896	.....	4.46
1897	.....	4.26
1898	.....	3.71
1899	.....	5.39
1900	.....	7.54
1902	.....	6.00
1903	.....	8.75

WHO THEY ARE AND WHAT THEY THINK.

In the prospectus having reference to the forthcoming Tariff Edition of THE CANADIAN MANUFACTURER, published in page 47 of this paper, mention is made of the similar editions published by us, one on September 7, 1894, one on August 6, 1897 and one on July 6, 1900.

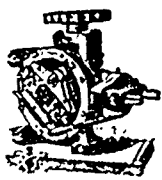
These editions were received with a great deal of favor which was testified to by our friends in letters received from them at the time, and which we have heretofore published, and we therefore now give the names only of some of those who spoke appreciatingly of what we had done :

Acadia Coal Co., Stellarton, N.S.
 Albert Mfg. Co., Hillsborough, N.B.
 American Carpet & Upholstery Journal, Philadelphia, Pa.
 American Watch Case Co., Toronto.
 Auld Mucilage Co., Montreal.
 Austen Bros., Halifax, N.S.
 Barber, Wm. & Bro., Georgetown, Ont.
 Bear River Electric & Power Co., Bear River, Ont.
 Bell, Robert, Jr., Hensall, Ont.
 Bell, B. & Son, St. George, Ont.
 Bell Organ & Piano Co., Guelph, Ont.
 Bertram, John & Sons Co., Dundas, Ont.

Board of Trade, Brandon, Man.
 Board of Trade, Montreal.
 Board of Trade, St. Stephen, N.B.
 Board of Trade, Vancouver, B.C.
 Board of Trade, Vernon, B.C.
 Body & Noakes, Winnipeg, Man.
 Bond, J. M. & Co., Brantford, Ont.
 Booth Copper Co., Toronto.
 Brady, J. H. & Co., Victoria, B.C.
 Brown, Boggs & Co., Hamilton, Ont.
 Brown & Wigle Co., Kingsville, Ont.
 Buntin, Alex. & Son, Valleysfield, Que.
 Butterfield & Co., Rock Island, Que.
 Caue, Wm. & Sons Mfg. Co., Newmarket, Ont.
 Camer, J. W., Ingersoll, Ont.
 Canada Paper Co., Montreal.
 Canadian Engineer, Toronto.
 Canadian Manufacturers' Association, Toronto.
 Capp, T. W. Co., Toronto.
 Chambre de Commerce, Montreal.
 Chicago Time Register Co., Chicago, Ill.
 Clover, H. V., City Clerk, New Westminster, B.C.
 Cling-Surface Mfg. Co., Buffalo, N.Y.
 Cockshutt Plow Co., Brantford, Ont.
 Collector of Customs, Brantford, Ont.
 Collector of Customs, Galt, Ont.
 Collector of Customs, Halifax, N.S.
 Collector of Customs, Owen Sound, Ont.
 Collector of Customs, St. Catharines, Ont.
 Collector of Customs, St. John's, Nfld.
 Collector of Customs, Toronto.
 Collector of Customs, Winnipeg, Man.
 Coleman, T. T., Seaford, Ont.
 Commercial Cable Co., Canso, N.S.
 Connell Bros., Woodstock, N.B.
 Coulon, J. & T., Thorold, Ont.
 Coulthard-Scott Co., Oshawa, Ont.
 Cowan & Co., Galt, Ont.
 Craig & Mahoney, Truro, N.S.
 Crompton & Knowles, Loom Works, Worcester, Mass.
 Dingwall & Bros., Port Hope, Ont.
 Dodd & Rogers, Charlottetown, P.E.I.
 Doherty, W. Organ Co., Clinton, Ont.
 Dominion Brussels Carpet Co., Sherbrooke, Que.
 Dominion Dyewood & Chemical Co., Toronto.
 Dominion Gas Meter Works, London, Ont.
 Dominion Oil Cloth Co., Montreal.
 Dovern Court Twine Mills, Toronto.
 Dowling & Leighton, Harriston, Ont.
 Duclos & Payan, St. Hyacinthe, Que.
 Eco Magneto Clock Co., Boston, Mass.
 Electrical Supply Co., Hamilton, Ont.
 Elliot Co., Toronto.
 Ellis, P. W. & Co., Toronto.
 Empire Carpet Co., St. Catharines, Ont.
 Fibre & Fabric, Boston, Mass.
 Freysing, P. & Co., Toronto.
 Ganong Bros., St. Stephen, N.B.
 Garfield Oil Co., Cleveland, Ohio.
 Gendron Mfg. Co., Toronto.
 Globe File Mfg. Co., Port Hope, Ont.
 Goderich Organ Co., Goderich, Ont.
 Gray, Wm. & Sons, Chatham, Ont.
 Great Northern Transit Co., Collingwood, Ont.
 Greening, B. Wire Co., Hamilton, Ont.
 Groat, John H. & Co., Grimsby, Ont.
 Gurney Scale Co., Hamilton, Ont.
 Hall, James & Co., Brockville, Ont.
 Hamilton Blast Furnace Co., Hamilton.
 Hamilton, Wm. Mfg. Co., Peterborough, Ont.

Hinds, J. R., Kingston, Ont.
 Hopkins, J. C., The Historian, Toronto.
 Hore's, F. W. Sons, Hamilton, Ont.
 Implement Age, Philadelphia, Pa.
 Industrial Canada, Toronto.
 Jack & Robertson, Montreal.
 Jenckes Machine Co., Sherbrooke, Que.
 Kemp Mfg. Co., Toronto.
 Ker Engine Co., Walkerville, Ont.
 Kerr & Harcourt, PARRY SOUND, Ont.
 Kingston Hosiery Co., Kingston, Ont.
 Lamont Glass Co., New Glasgow, N.S.
 Law Bros. & Co., Ottawa, Ont.
 Lees, Geo. H. & Co., Hamilton, Ont.
 Leitch, A. W., Hamilton, Ont.
 Lethbridge Electric Light Co., Lethbridge, N.W.T.
 Lewis, J. & Sons, Truro, N.S.
 Lillicrap, J. F. & Co., Lakesfield, Ont.
 London Brass Works Co., London, Ont.
 London Furniture Mfg. Co., London, Ont.
 Magnolia Metal Co., New York City.
 Mellins Food Co., Boston, Mass.
 Metallic Roofing Co., Toronto.
 Myers, F. E. & Bro., Ashland, Ohio.
 Moir, Son & Co., Halifax, N.S.
 Monetary Times, Toronto.
 Montmagny Mfg. & Electric Co., Montmagny, Que.
 Moore, C. P., Sydney, N.B.
 Morrow, John Machine Screw Co., Ingersoll, Ont.
 McDonald, J., Orangeville, Ont.
 McLaughlin Carriage Co., Oshawa, Ont.
 McQuat & McRae, Lachute, Que.
 McVean & McVean, Dresden, Ont.
 Napanee Electric Light Co., Napanee, Ont.
 National Association of Manufacturers of the United States.
 New Glasgow Electric Co., New Glasgow, N.S.
 Oliver, J. & Sons, Ottawa, Ont.
 Ottawa Porcelain & Carbon Co., Ottawa, Ont.
 Ottawa Transportation Co., Ottawa, Ont.
 Owen Sound Electric & Mfg. Co., Owen Sound, Ont.
 Packard Electric Co., St. Catharines, Ont.
 Parke, Davis & Co., Walkerville, Ont.
 Phoenix Foundry & Locomotive Co., St. John, N.B.
 Plessisville Foundry, Plessisville, Que.
 Presto, The., Chicago, Ill.
 Prince Albert Electric & Power Co., Prince Albert, N.W.T.
 Prince Edward Island Electric Co., Charlottetown, P.E.I.
 Pure Gold Mfg. Co., Toronto.
 Reformer, The, Galt, Ont.
 Reinhardt & Co., Toronto.
 Rhodes, Curry & Co., Amherst, N.S.
 Rolph, Smith & Co., Toronto.
 Roschman, Richard & Bro., Waterloo, Ont.
 Rock, C. C., Broadhagen, Ont.
 Rogers, D. & Son, Summerside, P.E.I.
 Rosamond Woolen Co., Almonte, Ont.
 Royal Electric Co., Montreal.
 St. Croix Soap Mfg. Co., St. Stephen, N.B.
 St. Croix Woolen Mfg. Co., St. Croix, N.S.
 St. Mary's Electric Light Co., St. Mary's, Ont.
 St. Thomas Gas Co., St. Thomas, Ont.
 Sawyer-Massey Co., Hamilton, Ont.

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 Simms, T. S. & Co., St. John, N.B.
 Smart, James Mfg. Co., Brockville, Ont.
 Smith Woolstock Co., Toronto.
 Southampton Mfg. Co., Southampton, Ont.
 Spanish River Lumber Co., Spanish River, Ont.
 Steel Harrow Co., New Glasgow, N.S.
 Stevens, Hepner & Co., Port Elgin, Ont.
 Stewart, John, New Glasgow, N.S.
 Strachan, Wm., Ottawa, Ont.
 Strelenger, C. A. Co., Detroit, Mich.
 Stuart & Harper, Winnipeg, Man.
 Sydendam Glass Co., Wallaceburg, Ont.
 Tate, J. A., Sherbrooke, Que.
 Taylor, Henry, Perth, Ont.
 Telegram, Toronto.
 Thompson Electric Co., Hamilton, Ont.
 Toronto Carpet Mfg. Co., Toronto.
 Toronto Steel Clad Bath & Metal Co., Toronto.
 Toronto Suburban Street Railway Co., Toronto.
 Trader, The, Toronto.
 Truro Condensed Milk & Canning Co., Truro, N.S.
 Turner, N. & Son, Cornwall, Ont.
 Vancouver Gas Co., Vancouver, B.C.
 Vanluven & Co., Napanee, Ont.
 Vidal, J. L. O., Quebec City.
 Vokes Hardware Co., Toronto.
 Walshaw, J., Bolton, Ont.
 Waring, White & Co., St. John, N.B.
 Waterloo Woolen Co., Waterloo, Ont.
 Waterous Engine Works, Brantford, Ont.
 Wenger, Isaac, Ayton, Ont.
 Whitman & Barnes Mfg. Co., St. Catharines, Ont.
 Williams, J. H. & Co., Brooklyn, N.Y.
 Wilson, Chas., Toronto.

ENTERPRISES IN ONTARIO.

United States Consul H. J. Harvey, at Fort Erie, Ont., writing to his Government re recent enterprises at and near that place, says:

This being an agricultural district, there are few manufacturers in it. A Toronto syndicate recently purchased 130 acres of land in this township, on the west bank of the Niagara River, for the purpose of establishing a shipbuilding industry. They have contracted to build ten large vessels next season for the lake trade. They paid \$13,000 for the land. The same amount of waterfront in the city of Buffalo would have cost \$1,000,000. The taxes in the city of Buffalo are very high, while the tax rate here is low, and the town has voted to limit the assessed valuation of this particular plant to \$20,000 for twenty years.

An American company is looking for a site for a steel plant. It seems to favor the west bank of the Niagara, near the shipyards, where they can connect with the Michigan Central Railway and obtain cheap power from the Canadian Electric Co., at Niagara Falls, Ont. The Grand Trunk Railway has shipped this year over 3,000,000 pounds of old steel rails to the Buffalo Steel Co., Tonawanda, to be worked over into new rails. The new steel company will probably get this business.

Railway freight cars originally had a capacity of about eight tons; now they sometimes carry 42 tons, and require heavier rails. The International Bridge had to be rebuilt and made stronger, in order to support the heavier trains.

Dr. R. V. Pierce, Buffalo, N.Y., has a three storey brick building here, where he manufactures his proprietary medicines for the Canadian market, thereby saving the duties he would have to pay if made at his works in Buffalo. He also imports his foreign drugs cheaper into Canada than into the United States. His shipments from this place last year amounted to \$978,000.

ONTARIO TIMBER LIMITS FOR SALE.

The Ontario Crown Lands Department are preparing instructions to govern the sale of extensive timber limits which will soon be placed on the market, probably in December.

This sale will be the largest since 1835, and the fourth largest since confederation. In the neighborhood of 900 square miles, or 25 townships, will be offered. The occasion for the disposal of the timber is to make room for advancing settlement along the line of several new railways—Temiskaming & Northern Ontario, the Bruce Mines & Algoma, and the Central Canada Railways, the latter being the one projected by Mr. Conmee and Mr. Clergue from French River to Hutton township.

Since confederation there have been fourteen timber sales in Ontario, disposing of 10,818½ square miles. The price has varied greatly, of course, owing to the differences in the quantity of timber. The largest sale was the north shore limits in 1872, when 5,031 miles were disposed of, but the price was at the same time the lowest, averaging but \$117.79 per mile. Thus, for that large area only \$592,601 was received, while in 1892, 633 miles were sold for \$2,315,000, an average of \$3,657, the highest average received in any sale. In 1881, 1,379 miles were sold for \$733,675, or \$532 a mile, while in 1887, 459 miles were sold for \$2,859 per mile. The last sale held was in September, 1901, when 399½ miles were sold for \$732,787, or \$1,835 per mile. The only other sale held under the Ross Government was in December, 1899, when 360 miles were sold for \$723,550, or \$2,010 per mile.

DEPRESSION IN AMERICAN SHIP-BUILDING.

The Blue Book of American Shipping, issued annually by the Cleveland, Ohio, Marine Review, which is an undoubted authority on the subject, and which has just been published, contains a review of the conditions prevailing in the American shipbuilding industry, from which the following is taken:

Not a single contract has been let for a vessel for the foreign trade of the United States during the past two years. Here is a country whose exports are unrivalled among the nations of the earth without a single ship ordered for two years to carry

away its freight. Could any one thing demonstrate more clearly than this the need of government aid for shipping? Why is this feature of our trade neglected? The ability to make things to export is aided by a tariff. Why not the carrier itself? Space in a ship is a commodity. It is something made to sell. The statistics of the export trade would be vastly enriched if there could be added to them the freight earned in transporting the goods.

Except on the great lakes, where the industry is peculiarly a special one, protected by the existing regulations, there is little encouraging to report regarding ship building in the United States. Orders have become like the proverbial visits of the angels—few and far between. During the fiscal year ended June 30 last, 1,536 vessels of 456,076 gross tons were built in the United States, compared with 1,657 vessels of 473,981 gross tons for the previous fiscal year. Vessels now under construction indicate a further lessened output for the coming fiscal year. The principal decrease for the past year has been in steel steamers built on the great lakes, which number forty-one of 131,660 tons, compared with fifty-two of 161,797 tons for the preceding year. The previous year was the one of greatest output in the lake district. On the seaboard eighteen ocean steel steamers of 101,471 gross tons were built—the largest output of this type in our history. Think of it. Eighteen ocean steel steamers in this continent—covering a country with 70,000,000 of souls. Nor were these all for oversea trade. Far from it. Only five of them can properly be credited to that service. All these ships were ordered over two years ago and there have been no new orders to fill the plans left vacant on the stocks. A few contracts have been received by the coast shipyards for some splendid vessels for the coastwise service.

It might be pertinent to state that the coastwise trade of the United States and the foreign trade are two different things. The coastwise trade, meaning trade between United States ports, is a protected trade. Vessels of other flags may not engage in it. The past four years have marked a distinct revival in shipbuilding for the coastwise trade, but the crest appears to have been reached, for new orders are not forthcoming.

A foreview of shipbuilding on the great lakes does not show many orders in abeyance. A year ago the ship yards were filled up with orders for a full year ahead. But that is not the case now. The lake ship yards, broadly speaking, are now well up with their work. If they had to do so they could probably turn out all orders on hand within six months. Those best informed, however, do not take a dubious view of things on the great lakes. The industry, as stated before, is special; the ships are not like other ships; the shipping is not like other shipping; it is not made up of a multiplicity of things as is ocean carriage, but is confined to a few items in bulk; these items are likely to continue to be moved for years in a constantly ascending scale and ships will continue to be built to carry them. Moreover, a fair part of existing tonnage on

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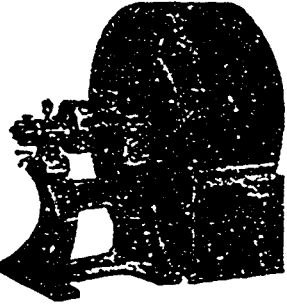
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the lakes is wooden; it is old and decaying and must go the way of all craft; and it must be replaced by new and more modern carriers. Thus shipbuilding on the lakes for many years is assured, although the number of orders for the coming year will fall considerably of the business of any of the past three years.

A NEW FOUNDRY.

The Toronto Iron & Brass Bedstead Co., recently organized by Mr. Arthur Garuer, have purchased the old plant of the Toronto Foundry Co., 146 to 150 Niagara St., Toronto, which they have thoroughly remodeled and installed complete facilities for all kind of foundry work. The company are now prepared to turn out all kinds of iron and brass castings and guarantee the best class of work at reasonable terms.

ONTARIO AND QUEBEC POWER COMPANY.

Ottawa has within one mile of its limits an undeveloped water power of 20,000 h.p. A few Ottawa gentlemen who have been identified with every progressive movement in this city, and who have invested money and taken risks where more cautious and less progressive men have held back and awaited results, propose to develop this water power and to distribute its energy to the present and future industries of Ottawa. The bill incorporating these gentlemen as the Ontario and Quebec Power Co. is vigorously opposed by the Hull Power Co., which has made its development on the Hull side of the river. After full consideration by the Railway committee of the Commons and by the House the bill was amended and passed, and is now before the Railway committee of the Senate, where the same competitive interests are again opposing it.

Ottawa is interested in the passage of the bill.

Ottawa aims to be one of the large industrial cities of Canada, and the people of this city will strongly object to the efforts now being made to prevent the development of a water power of such great value and importance to Ottawa and great value and importance to Ottawa and to Canada.—Ottawa Free Press.

IMMENSE COAL AREA.

"The people of Canada have no conception of the value of the property the Dominion Coal Co. have out there," said Dr. Bruce Riordan, who has just returned to Toronto from a trip to Sydney, N.S. "The area of coal land extends for a distance of forty-five miles from Sydney to Louisburg. Five collieries are now working, raising 11,000 tons of coal a day. The general sales agent, Mr. Dick, told me they could easily sell four times the quantity of coal they are now raising. They cannot keep up with their orders. The coal area owned by the company is so extensive that other shafts and collieries

can be put in to meet any future demand. The amount of coal is conceded by experts to be so enormous that in 100 years, even if the output is ten times what it is now, the supply will not be exhausted. Excellent, up-to-date machinery is in use, and the way they handle the product is perfect, while their shipping facilities are most modern."

Dr. Riordan said that the miners are principally Nova Scotians, born in the country. There is no foreign element there. Good wages are paid. Dr. Kendall, who represents Sydney in the Dominion Parliament, told him that many of the miners have savings bank accounts from \$2,000 to \$5,000 each. Many of the miners make \$160 a month. The two Sydneys, as they are called in Cape Breton, show every evidence of prosperity. One new general store in North Sydney would compare favorably with any of our three large departmental stores in Toronto, Dr. Riordan says.

The Sydney people say they can assemble the products which go to make steel and iron cheaper than any other place in the world.

THE SLIGO IRON & STEEL CO.

The Sligo Iron & Steel Co., successors to the well known firm of Phillips, Nimick & Co., are about to put in operation their new plant at Connellsville, Pa. The company will operate 28 puddling furnaces and muck, guide, bar, sheet and plate mills. The principal product will be high grade iron of the celebrated "Tyrono" and "Sligo" brands, which have been manufactured by the company for 80 years. The Sligo rolling mills were established in 1823, being operated by Lyons, Shorb & Co. until 1873 and from that time until the formation of the new company by Phillips, Nimick & Co. Mr. Omar S. Decker, who has long been connected with the prominent iron and steel concerns of Pittsburg, is general sales agent of the Sligo Iron & Steel Co.

ANOTHER ROLLING MILL.

It is learned from what is considered a reliable source that one of the terms of the cancelling of the lease between the Dominion Iron & Steel Co. and the Dominion Coal Co. is the setting aside of certain notes held by the Coal Co. against the Steel Co. to the extent of about \$600,000.

With the money that will be at the disposal of the Steel Co. (about \$3,000,000) it is understood that the intention is to at once erect a mill for turning out nail rods and small billets. It will practically be two mills in one. Provision has been made also for the erection later of another mill, but whether it will be for the manufacture of steel rails or other finished product is one of the questions still under consideration. But it is practically decided that this second new mill will be built with a part of the funds on hand. Just now the mills at Sydney are turning out pig iron and large billets, which are marketed mostly in the United

States. It is learned that the pool in steel billets in the United States operated advantageously for the products of the Dominion Iron & Steel Co., and that prices were fairly well maintained. So far there has been a sufficient demand to keep the plant going at Sydney. Recently it looked as if the Canadian mills were about to lose the market, and that is the reason given for the closing down of the open hearth furnaces and blooming mills. The outlook suddenly improved, however, and an order to resume work followed. At the time a rumor was afloat that the seemingly inconsistent action was the result of rival factions among the board of directors.

CANADIAN EXPORT TRADE.

Many leading manufacturing concerns in Canada are giving attention to the export trade, and while much business has been and is being done with Great Britain and the Colonies, it is also rapidly developing in all other parts of the world. Quite a number of the large manufacturing establishments maintain their own offices and salesrooms abroad, and others are represented through agencies.

During the past year the Canadian Export Co., Toronto, has gone into business and their services are being sought by many Canadian exporters. They maintain offices in all the British Colonies and issue catalogues and price lists illustrating and describing all classes of Canadian manufactured products. The company book orders and buy outright for cash from the manufacturers by which method the manufacturers are saved a great deal of time and labor, for it is possible for the exporting company through its special organization and methods to conduct this feature of the trade on a more economic basis than can the individual manufacturer.

POWER HOUSE AND REFECTORY AT NIAGARA FALLS.

An important meeting of the Niagara Falls Park Commission was held at Niagara Falls, Ont., a few days ago when several plans of pending work were up for discussion. Plans for the new refectory and shelter were submitted and approved, and the tenders will shortly be invited for its construction. The building will be in the form of a Swiss chalet, and will provide ample room. Under the agreement with the Ontario Power Co., the latter will pay \$20,000 towards the construction, by virtue of the privilege of removing the old museum for the accommodation of their pipes. They also place the old material at the disposal of the commissioners.

Amended plans of the power house of the Canadian Niagara Power Co. were also submitted and approved. Since the first plans were proposed the commissioners have visited the power houses on the American side, and as a result several changes were suggested to the Canadian company in the exterior design of their building, which the company accepted. The design will be artistic and in harmony with the park landscape.

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THE HAMILTON ELECTRIC LIGHT AND CATARACT POWER CO.

The steam power station of this company in Hamilton, Ont., which will be used as an auxiliary to its water power plant at De Cew Falls, 34 miles distant, is to be equipped with the following machinery recently ordered from the Westinghouse Electric & Mfg. Co.: two 1,000 kilowatt, two-phase, 2,400 volt, 8,000 alternation, engine-type generators, each driven by a vertical Corliss engine furnished by the Goldie & McCulloch Co., of Galt, Ont., one 50 kilowatt motor generator exciter set for these alternating current generators, consisting of one 75 h.p., two-phase, 400 volt, type C induction motor, and a 50 kilowatt, 125 volt, compound wound, engine-type generator, constituting a two-bearing set; also a switchboard consisting of two generator panels.

In the receiving station of The Hamilton Light & Power Co., which adjoins the auxiliary steam power station in Hamilton, will be installed six 500 kilowatt, oil-insulated, self-cooling Westinghouse transformers with transformer panels, stepping down the current from 20,000 volts or 40,000 volts, three-phase to 2,400 volts, two-phase.

The two engine-type alternators mentioned above will be operated in parallel with the secondaries from these transformers.

For the water power station at De Cew Falls, the Westinghouse Co. will furnish two 5,000 kilowatt, three-phase, 2,400 volt alternators, which will be direct coupled to water wheels that are being built in Italy; two 100 kilowatt motor-generator exciter sets, each consisting of a 150 h.p., 2,400 volt, type C induction motor, and two 100 kilowatt, 70 volt, direct-current, compound wound, engine-type generators, constituting three-bearing sets; five 2,500 kilowatt, oil insulated, water cooled transformers, transforming from 2,400 volts, three-phase to 22,500 or 45,000 volts three-phase; together with the necessary switchboards to control the apparatus recently ordered as well as that already installed in the station, aggregating eight separate switchboards with a total of 18 panels, these to be equipped with type F instruments and Types C and B oil switches throughout.

COTTON BELTING MADE IN CANADA.

The new plant of the Dominion Belting Co. recently put into operation at Hamilton, Ont., is the first plant of the kind in Canada devoted to the manufacture of cotton belting. The plant occupies a handsome two-story brick building adjoining the plant of the Hamilton Cotton Mills Co. and are thoroughly equipped with the most modern appliances for the manufacture of cotton duck belting. The belting manufactured by the company is constructed from cotton duck manufactured by the Hamilton Cotton Mills Co. adjoining the belting plant, this arrangement effecting a decided economy. The product of the company is what is known as stitched oiled cotton duck belting, the

duck being treated by a special preparation perfected by the superintendent of the company, the use of which improves the tensile strength, pliability and weight of the belting and prevents it from stretching. The company are now turning out about 6,000 feet of this belting daily and will increase their output shortly. The new company is strictly a Canadian one, having been organized last January by Jno. J. McGill, of Montreal, C. T. Grantham, J. M. Young and David Bell, of Hamilton.

AN INTERESTING REPORT.

The report of the Commissioners for the Queen Victoria Niagara Falls Park for 1902, which is ready for submission to the Legislature, is more than usually interesting, dealing as it does not only with the scenic features of the park, but also with the important questions which have been so much in evidence during the past year relating to the generation of electricity from the waters of Niagara River. The Commissioners also deal in a very trenchant way with charges of vandalism, in the granting of franchises for revenue purposes, which have appeared in the press, chiefly across the border, during the past two years. The great cataract, although within the confines of the Province of Ontario and the State of New York, is preeminently a possession of the world, and viewed from that high plane it is a monument to the prescience displayed by Sir Oliver Mowat, in joining with the State Government of New York in rescuing Niagara Falls and its immediate surroundings from the goths and vandals that had taken possession. It is now seventeen years since a commission, comprised of the late Sir Casimir Gzowski, Mr. J. W. Langmuir and Mr. Grant Macdonald, was appointed to take charge of the important work of restoration and improvement. Of these, Mr. Langmuir, the present chairman of the commission, only remains, and the report just issued gives a marvellous and interesting record of the progress made in the creation of this great national park.

In the original territory expropriated running south from the old Clifton House to a short distance above the Falls, the aggregation of hotels, taverns, shacks, photograph galleries and other structural defacements, are now all things of the past, and all of the land surrounding the Falls is converted into a series of beautiful lawns, terraces, clumps of choice shrubs, with new views and vistas opened up, and miles of good roads and paths laid down and well kept, to enable visitors to enjoy the magnificent scenery with ease and comfort. And the work of restoration has not by any means been confined to the territory surrounding the Falls. The design of the commissioners is to restore and improve the whole of the shore line of the Niagara River, and the park system under their care now practically extends from Lake Erie to Lake Ontario.

Queenston Heights Park, with its historic Brock's monument and magnificent views, has been greatly extended and improved; Foster's Flats, comprising over one hundred acres, "unique in its un-

rivalled grandeur and primitive wildness," has been acquired and converted into an intermediate park, with the euphonious name of "Niagara Glen," and last year the battle field of Fort Erie was added to the park domain, and so the work of restoration and improvement goes on, and has in the past only been limited by the restricted finances of the commissioners.

Respecting the generation of electricity, the fullest details are given in the report of the negotiations, and discussion brought out by the application of Messrs. MacKenzie, Pellatt and Nicholls for a franchise within the park. It is shown that franchises have been granted for the right to use the waters of the River Niagara within the park to generate a maximum of 375,000 h.p., namely:

	H.P.
Canadian Niagara Power Co.	100,000
Ontario Power Co. - - - -	150,000
The Toronto & Niagara Power Co. - - - -	125,000
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	375,000

In addition, the Ontario Power Co. has the right to take waters from the Welland River, leading through the park, for 125,000 h.p. If, therefore, all the foregoing franchises are operated to their fullest capacity it will be seen that the enormous quantity of 500,000 h.p. will some day be generated on the Canadian side of the river. The works of the various companies are now in active operation and over one thousand men are employed.

Perhaps the most satisfactory statement in connection with electrical generation is the report of Mr. Isham Randolph, hydraulic engineer of the Sanitary Canal now in course of construction in Chicago at a cost of \$35,000,000, and who was employed by the commissioners to make a special report on the remaining available power sites at the Falls. Mr. Randolph's report emphatically sets out that there are still most valuable sites remaining, both above and below the Falls, which can be operated at about the same cost as the franchises already granted, and the commissioners, based upon the statement of this eminent hydraulic engineer, say: "Mr. Randolph's report, therefore, sets at rest the newspaper opinion that the granting of the concessions already made has exhausted the field for power development at Niagara Falls, and that municipalities and other consumers of electric power will for all time be at the mercy of a possible combine of the licensed companies." They further say, however, that they are of the opinion that further rights should not be granted until it is shown that a combination having for its object an undue increase in the cost of power is either possible or probable.

The members of the commission, in addition to Mr. Langmuir, are Messrs. Geo. H. Wilkes, James Bampfield, A. W. Campbell and Robert Jaffray. The superintendent is Mr. James Wilson, whose qualifications for the position and valuable services cannot be over-estimated. The esteem in which Mr. Langmuir is held was recently shown by the Government voting him an honorarium of \$5,000 in

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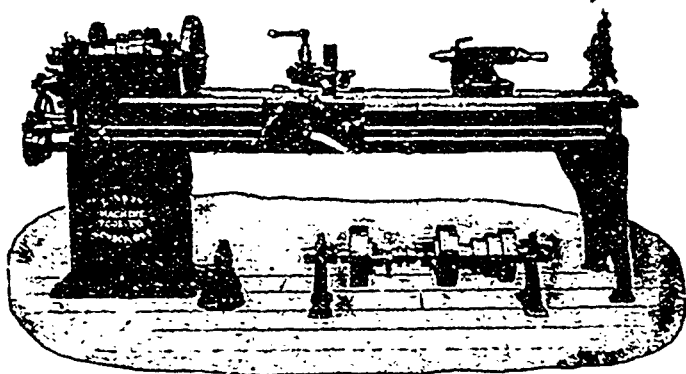


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Via the Chicago and North-Western Railway. First-class round trip tickets on sale from Chicago, August 1 to 14, to San Francisco, Los Angeles, also to Portland, Tacoma and Seattle. Correspondingly low rates from other points. Favorable stop-over privileges. 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.

TEXTILES.

The Perth Flax & Cordage Co., Stratford, Ont., under the skilled management of Mr. Holmes, who was thoroughly trained in England to every phase of the business, has entered upon a new era of prosperity. It is their intention to materially enlarge their present business and cater for the best twine trade in the Dominion.

Messrs. Brown & Wigle, Kingsville, Ont., have the reputation for making the nicest all-wool blankets ever slept under in Canada. Their method of finishing a 6th blanket makes it as lofty as the ordinary 9th blanket. There is constant personal care at every point, and particularly in giving the goods a smart, clean, bright finish.

Messrs. T. H. Taylor Co., Chatham, Ont., are busy, busy, busy on dress goods, mackinaws and other lines. The designs of their dress goods are a revelation. Mr. Smith, the manager, deserves praise for the work he is turning out.

The Monarch Knitting Co., Dunnville, Ont., are making high-grade sweaters and are making them well. The trade fully appreciate this line, as a plethora of orders indicates.

Messrs. Slingsby & Walthe, Dunnville, Ont., smile with great geniality when asked if business is good. The woolen

yarns made by this firm are highly appreciated.

The Imperial Knitting Co., Dunnville, Ont., are "filled up with orders," says Mr. Brennan, the manager of this lively hustling concern.

The Empire Carpet Co., St. Catharines, Ont., is hard at work clearing up the ruins of their weaving factory recently destroyed by fire, and they hope to have everything in order—with improved machinery—by the end of August. The dye house and warehouse were not injured by the fire.

Messrs. Kitchen Bros., carpet manufacturers, Dunnville, Ont., have orders in hand until they are almost oppressed with them. Every man and loom is working to the limit. Their designs are neat and very attractive.

PERSONAL.

Mr. William Burlingham has accepted an appointment as chief engine designer with the B. F. Sturtevant Co., Boston, Mass., resigning a position in the United States Inspection Office with the Wm. R. Trigg Co., Richmond, Va. Mr. Burlingham has previously been associated with the Bath Iron Works, the General Electric Co., the Southwark Machine & Foundry Co., and the Newport News Ship-Building & Dry-Dock Co. He has also served on Mr. T. A. Edison's staff at his East Orange Laboratory, and is a graduate of the Worcester Polytechnic Institute.

The S. Morgan Smith Co., York, Pa., one of the largest builders of water wheels in the United States, and who have been making a specialty of McCormick turbines, have recently opened an office in Boston, in charge of Mr. Herbert C. Daggett. A new catalogue, "Fifth Edition," has recently been issued by the company containing photogravures of a number of important installations, which may be had upon application.

The Ryder Belt & Cordage Co., New York City, capitalized at \$200,000, will establish a plant in Buffalo for manufacturing belting and cordage of all kinds. It is expected that the new plant will be in operation about the middle of August. George A. Cole, A. C. Goodyear and others are interested.

Mr. C. W. Thomas, formerly president of the Roe Stephens Mfg. Co., Detroit, Mich., has purchased the Michigan Brass & Iron Works, which is located at Springwells, a suburb of Detroit, on a site on which are iron and brass foundries, machine shops and brass finishing shops. Mr. Thomas has retired from the Roe Stephens Co.

The R. F. Wentz Engineering Co., Toronto, have been retained as consulting engineers by the El Ca Jon Portland Cement Co., of Alpena, Mich., recently formed with \$500,000 capital stock.

P. M. Arthur, grand chief engineer of the Brotherhood of Locomotive Engineers, dropped dead on July 16, at Winnipeg, Man., while speaking at the banquet

closing the annual union convention of the Brotherhood of Locomotive Engineers. He was 72 years old and was a native of Scotland.

Among the papers read at the sixth semi-annual meeting of the American Society of Heating and Ventilating Engineers, recently held at Niagara Falls, N. Y., was one on "The Scientific Basis and Commercial Feasibility of Heat Radiators Using Air Instead of Water or Steam," by Geo. M. Aylsworth, M.D., Collingwood, Ont.

The Canadian Corundum Wheel Co., Hamilton, Ont., has opened Toronto offices and salesrooms at 98 Church Street, in charge of Mr. J. F. Radigan.

We direct attention to the advertisement in another page of the Patent Exchange and Investment Co., Toronto. This company is well known as general patent agents, and in addition to their work as solicitors and attorneys for the securing of home and foreign patents, they make a specialty of the promoting, selling and financing of meritorious patents, and at their offices hundreds of models of inventions can be seen. The manager, Mr. J. A. MacMurtry, is a gentleman of long experience and business activity.

Mr. Isaac Waterman, who died at London, Ont., July 18, was, during his life, one of the most prominent manufacturers in Canada, one of the founders and supporters of the Canadian Manufacturers' Association, and a firm and fast friend of THE CANADIAN MANUFACTURER from the time of its establishment in 1880. He was one of the first oil refiners in Canada to manufacture wax from petroleum, and was a prominent exhibitor in this line at the World's Fair in Paris, winning there the decoration of the Legion of Honour.

Manufacturers who desire to obtain the services of a really competent and experienced agent residing in Montreal for the sale of their products can be put into communication with such on request to editor of THE CANADIAN MANUFACTURER.

The Council of the Institute of Chartered Accountants of Ontario have elected the following officers for 1903-4: George Edwards, president; W. T. Kernahan, first vice-president; W. B. Tindall, second vice-president; David Hoskins, secretary-treasurer; Wilton C. Eddis, chairman of board of examiners. The council consists of the foregoing and James Hardy, J. P. Langley, C. R. W. Postlethwaite, T. G. Williamson, John H. Young and Ralph E. Young, Toronto, and C. S. Scott, Hamilton; F. H. Macpherson, Windsor; J. W. Johnson, Belleville, and Geo. L. Blatch, Ottawa. G. O. Merson was re-elected assistant secretary, librarian and registrar.

Among recent orders for Little Giant turbines placed with J. C. Wilson & Co., Glenora, Ont., is one from A. B. Lees, Fall Brook, Ont., for a 33-inch vertical, and one from Copeland & Zeigler, Salem, Ont., for a 21-inch vertical of the deep bucket pattern.

INDUSTRIAL PUBLICATIONS.

The Sligo Iron & Steel Co., of South Side, Pittsburg, Pa., has issued a new price list of their "Sligo" and "Tyroue" brands of iron and steel.

Vol. II. of "Analysis of Pig Iron," collected and published by Seymour R. Church, San Francisco, Cal., recently published, contains a complete list of the different brands of pig iron manufactured in every country in the world, together with an analyses of the various brands, and also a number of valuable articles on the industry and statistics on production. The work is finely illustrated and is invaluable to those engaged in the metal industries. Price \$5, postpaid.

The 1903 edition of "Fowler's Mechanical Pocket Book" is fully in keeping with former editions of this well-known work. In some 500 pages it treats in a concise form every topic of interest to the mechanical engineer, and in fact to any practical man. Manufacturers will find it of much use. Price, in leatherette, 1s. 9d., postpaid. The Scientific Pub. Co., Manchester, England.

The Frank M. Watkins Mfg. Co., Cincinnati, Ohio, have issued their annual catalogue, which can be had for the asking from the trade, having reference to

the gas and gasoline engines for electric lighting, irrigating, ventilating, factories of all kinds, mining operations, special pumping machinery, etc., manufactured by them. In design, material and construction, the products of the Watkins Co. are of the highest possible character.

The American Tin Plate Co., through its general sales agent, W. C. Cronomeyer, Carnegie Building, Pittsburg, Pa., have issued a booklet referring to their "M.F." brand of tin plates, terne plates and black plates.

Messrs. H. A. Metz & Co., 122 Hudson Street, New York City, have published volume five of their "Year Book for Colorists and Dyers," which is an annual publication which has become a recognized feature in the trade. It presents a review of the year's advances in the printing, dyeing, bleaching and the finishing of textiles. Part 1 contains valuable tables most in use by dyers; Part 2 a list of the fibres in ordinary use for textiles, giving their particular characteristics. Then follows a list of the patents for 1902 covering dye-stuffs and coloring matters, processes of application, chemical processes, machinery, etc. Part 4 contains notes of processes, new colors, etc., gathered from authoritative sources in

this country and abroad. The new products are discussed in this section. A chapter is given to educational institutions which include dyeing in their curriculum. Next is a list of books of the year, and last, and perhaps most convenient of all, a list of dyestuffs, makers and methods which is of valuable ready reference for the trade. The book is compiled in attractive form and is of a size for convenient reference.

"The Evolution of the Handy Trap" is the title of a folder being sent out by E. M. Nichols, 639 Arch Street, Philadelphia, Pa., illustrating and describing the evolution of the Handy steam trap, which has been adopted so extensively throughout the country.

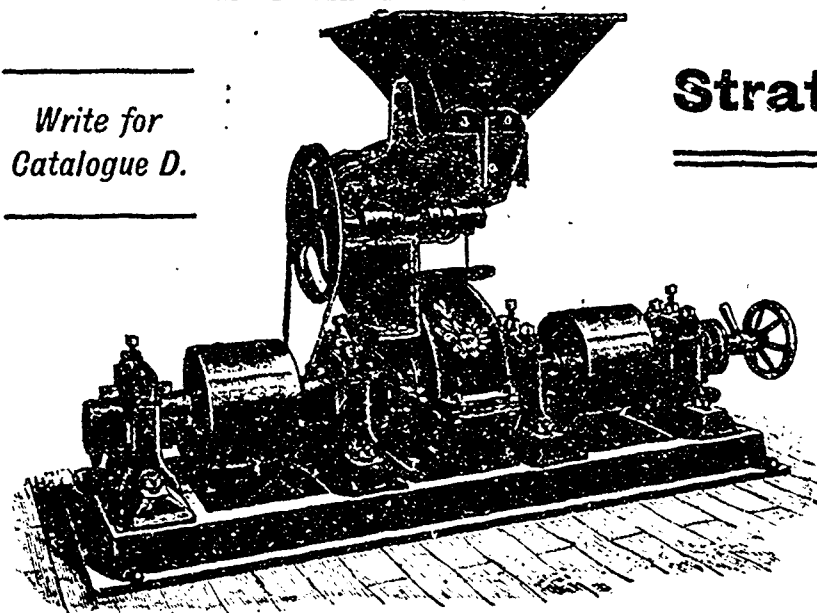
Modern engineering practice has aimed to insure absolute combustion of coal in steam furnaces. Steam-users will therefore be interested in a brief reference to the system invented by Dr. J. B. Harris, arrangements for the introduction of which are now being actively completed. An illustrated booklet giving details regarding the system can be obtained by addressing Dr. J. B. Harris, 71 Arcade Building, Nashville, Tenn.

The S. Obermayer Co., Cincinnati and Chicago, manufacturers of foundry facings

Are you using **PNEUMATIC TOOLS** in your shops? They are great labor savers. Write us for an estimate on plant including **AIR COMPRESSOR.**

THE CANADIAN RAND DRILL CO.
SHERBROOKE, QUE.

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CUT SHOWS 12" PLATE CHOPPER.

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and equipments, have secured the contracts for the entire foundry equipment of the new technical school of the University of Chicago, and they have also secured contracts for the entire foundry equipment of the "Crane" School of the City of Chicago. In these contracts are included complete outfits for both brass and iron foundries, and these two technical departments will, they say, have the most complete and modern brass and iron foundries of any technical institution in the country. They are issuing a descriptive catalogue having reference to their product.

During the past ten years the demand for Atkins saws has made rapid strides in Canada. Branch houses and sales-rooms are now being conducted in the leading cities, and the demand continues to grow. Notwithstanding extensive enlargements effected during the past several years, it has been found necessary to again increase the capacity of the Atkins Saw Works, and steps to effect this have just been taken. Messrs. E. C. Atkins & Co., Inc., of Indianapolis, Ind., manufacture these well-known saws, and have purchased the entire plant of the Parry Mfg. Co., that city, consisting of several large well-arranged brick buildings and several of smaller size which can readily be converted for the Atkins needs.

The Ewing-Merkle Electric Co., 1106 Pine St., St. Louis, Mo., have issued a catalogue descriptive of the lines of electrical and other supplies made by them, under the trade mark "Everbest." It is a cloth-bound book of 512 pages, illustrating and describing about every kind of electrical appliance, from the largest to the smallest, that could possibly be mentioned. This general catalogue embodies only standard material, and is presented to the trade in compact form for ready reference. The full details on machinery, lamps, etc., are summarized in the catalogue, and on this line of apparatus special bulletins are furnished on application.

The Stromberg-Carlson Telephone Manufacturing Co., West Jackson St., Chicago, are putting on the market a new intercommunicating telephone for interior systems. The company, which is now the largest independent manufacturer in its line in the country—if not in the world—started less than ten years ago, manufacturing only interior telephones. They have since branched off into making other kinds of telephones but have been adding various improvements on their interior telephones. They claim these latter are now the best on the market. They have received a series of testimonials from a number of the largest houses in Chicago who have installed Stromberg-Carlson interior telephone systems. They are sending out a descriptive circular regarding their apparatus which can be had on application.

The Standard Roller Bearing Co., Forty-eighth Street and Girard Avenue, Philadelphia, Pa., has for a number of years been devoting its attention exclusively to ball and roller bearings, and has met with great success. Its bearings are manufactured of hardened steel and ground ac-

curately, which, in connection with their mechanical construction, produces outfits which have great durability and give perfect satisfaction. These standard bearings have been tried on nearly every class of machine, and with what success is evidenced by the fact that the total number in use amounts to several hundred thousand. The company has issued a catalogue presenting full details as to its bearings, and the publication should be in the hands of every machine builder.

The Eureka Fire Hose Co., 13 Barclay Street, New York, manufacturers of fire hose, are issuing a pamphlet giving a full history of their product, showing how their business has developed since first established in 1875.

The Whitman Mfg. Co., Garwood, N.J., manufacturers of the well-known B & C friction clutch pulleys, are sending to enquirers and friends an attractive, descriptive circular, having reference to them. Makers and users of gas, gasoline and oil engines, are requested to direct their attention to the simple and durable construction of them, and their general adaptability to all classes of work.

Messrs. Julian Scholl & Co., 126 Liberty Street, New York, are soliciting correspondence regarding the road-making machinery manufactured by them. The exceptional activity now prevailing in Canada and elsewhere in the construction of modern highways is attracting much attention. It seems to be a revival of the good roads movement which received such impetus a few years ago when the bicycle was in the height of its popularity. They issue attractive literature on the subject which can be had on request.

The Great Prairie Investment Co., of which J. J. Borbank is secretary, and A. E. Howey managing director, has opened offices in the Manning Chambers, Toronto, and is sending out a prospectus calling attention to the valuable properties of the company in Winnipeg, Man.

An interesting and handsome catalogue illustrating and describing an immense number of lamps comes from the Buhl Stamping Co., Detroit, Mich. The many kinds of tubular, headlight and other lanterns are of very attractive designs, and any one wishing to handle high grades of lamps and lanterns should send for this catalogue. The Canada Meter Co., of Windsor, Ont., represents this company in Canada.

A catalogue published by the American Steel & Wire Co., describes "Jumata" horse and mule shoes and toe calks. Twenty-six illustrations are given of shoes, along with descriptions, weights in ounces and average number of shoes in a keg.

The Joseph Dixon Crucible Co., Jersey City N.J. are sending out a neat little folder having reference to their Eterno indelible pencil, a peculiarity of which is that in ordinary use its mark is black, while for copying purposes its mark is an indelible purple. Eterno is furnished with or without a nickel point protector, the object of the protector being to prevent the indelible lead from staining the clothing.

"The Export Merchant Shippers' Directory," Messrs. Dean & Son, 160a Fleet Street, E.C., London, England, have sent us their 1903 edition of this valuable directory, having reference to the export shippers of Great Britain and Ireland, with their trading ports and classes of goods which they handle. The book embodies three salient parts, the export section giving a complete list of exporters in the United Kingdom, classified under towns, with the names of the ports traded with and the classes of goods shipped, containing also an indexed classification of the goods. The manufacturing section comprises the names of such concerns who manufacture for export, and the trade mark section shows the names of owners of British registered trade marks. The book should have special value to Canadian exporters.

D. Sleeth, of Montreal, representing the Lord Boiler Compound Co., is sending out a circular printed in form of a barrel of this well-known compound.

Bulletin No. 95 of the Cassella Color Co., of New York, refers to Cyanole Fast Green G, patented.

The D' Olier Engineering Co., mechanical and electrical engineers, of Philadelphia, Pa., have issued a bulletin on steam and electric turbine pumps.

Coal operators interested in economical production will find valuable information in a publication which is now presented for their consideration. This publication comprises information, accompanied by illustrations, of a class of machinery for mining coal, designed and built according to the latest ideas arising from a thorough knowledge of the subject and from a successful experience of many years in making this work a specialty. The Jeffrey Mfg. Co., of Columbus, Ohio, publishes the book, designating it as its catalogue No. 19. This company is prepared to examine mines for the purpose of obtaining data on which to estimate the cost of a plant of proper size for the production required, and after such examination to submit propositions for the full and complete equipment, and to furnish and install same under the direction of competent and experienced men. These equipments will be installed for the generation and utilization of electricity or compressed air, and cover the boilers, engines, dynamos, compressors, wiring, piping, undercutting machines, drills, electric locomotives, hoists, pumps, fans, etc., which are formed into a complete plant and turned over to purchasers with machinery in operation.

CANADA AS A SHIP BUILDER.—Canada is ambitiously inclined toward having, even if she has to pay for it, a ship building industry. The fine vessels which used to be turned out of the St. Lawrence yards of the sea-bound provinces were in their day ships of which any country might well be proud. Liverpool has harbored hundreds of these craft, and the "blue-noses" were ever welcome to the port, for they were splendid, well-kept ships, and their custom was eagerly sought after by the tradesmen of Liverpool and

was well worth having. Owing to the displacement of wood for the better and more durable steel in ship construction, the ring of the live-oak mallet has practically ceased in the once busy yards of the Nova Scotia mainland and Newfoundland. Fewer ships bearing the Canadian legend on their sterns are to be seen every year, and this will continue until eventually the class of ship now so decorated will be a thing of the past. But before that time arrives Canada will have her steel ships ploughing the main and supplanting those now rapidly dying out. With the development of the iron and steel industry in the Dominion, the laying of keels, the bending of frames, and the riveting of ship plates will follow as a natural consequence, for the maritime provinces will continue to breed seamen and ship builders just as has been the case in the past and is at the present time. This is a period of transition, but it does not appear that it will be very long before the sounds of the ship yard will again be stirring the air in centres suitable for ship construction. It is expected almost daily that the Dominion Government will offer an increased bonus to the firm or company which will establish a competent ship building plant in the country. The amount already offered has not had the effect of inducing builders to lay down a plant, but the movement now afoot to increase the amount on offer to a sum which will enable an enterprising concern to see its way to start will have the desired effect. Nova Scotia is keen on advancing

the scheme, and the decision now rests with a Government which certainly has the best interests of industrial Canada at heart, and which cannot be charged with niggardliness in forwarding the Dominion's welfare. The Dominion Iron & Steel Co. is undoubtedly in the best position to take the matter up, and negotiations will be commenced with the company immediately it is decided to offer sufficient inducement. Nova Scotia would benefit immensely by the establishment of a large ship yard there, hence the evident anxiety of the local Government to secure the assistance of the Ottawa Government.—The Liverpool Journal of Commerce.

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.

NOTE.—Those who may wish to correspond with any of these enquirers can obtain the names and addresses by applying to the CANADIAN MANUFACTURER, Toronto. No charge for giving information. When writing refer to the numerals opposite the enquiries, and enclose 2c. postage stamp for reply.

1061. A Sheffield firm of tool steel manufacturers are desirous of falling in with a reliable wholesale hardware dealer in Canada who can hold a stock of best

quality tool steel as used by engineers, shipbuilders, etc.

1062. An English firm of cider manufacturers and bottlers are desirous of hearing from Canadian exporters who will be in a position to ship large quantities of next season's production.

1063. A Liverpool firm invites correspondence from Canadian shippers of tallow, hides, skins, mica, plumbago, and other lines, who wish to be represented in Liverpool.

1064. THE CANADIAN MANUFACTURER is in receipt of an enquiry for addresses of manufacturers of cement mixing machines.

1065. A house manufacturing essences, cordials, crystals, mineral waters, and similar lines asks to be placed in communication with Canadian firms prepared to take sale of same.

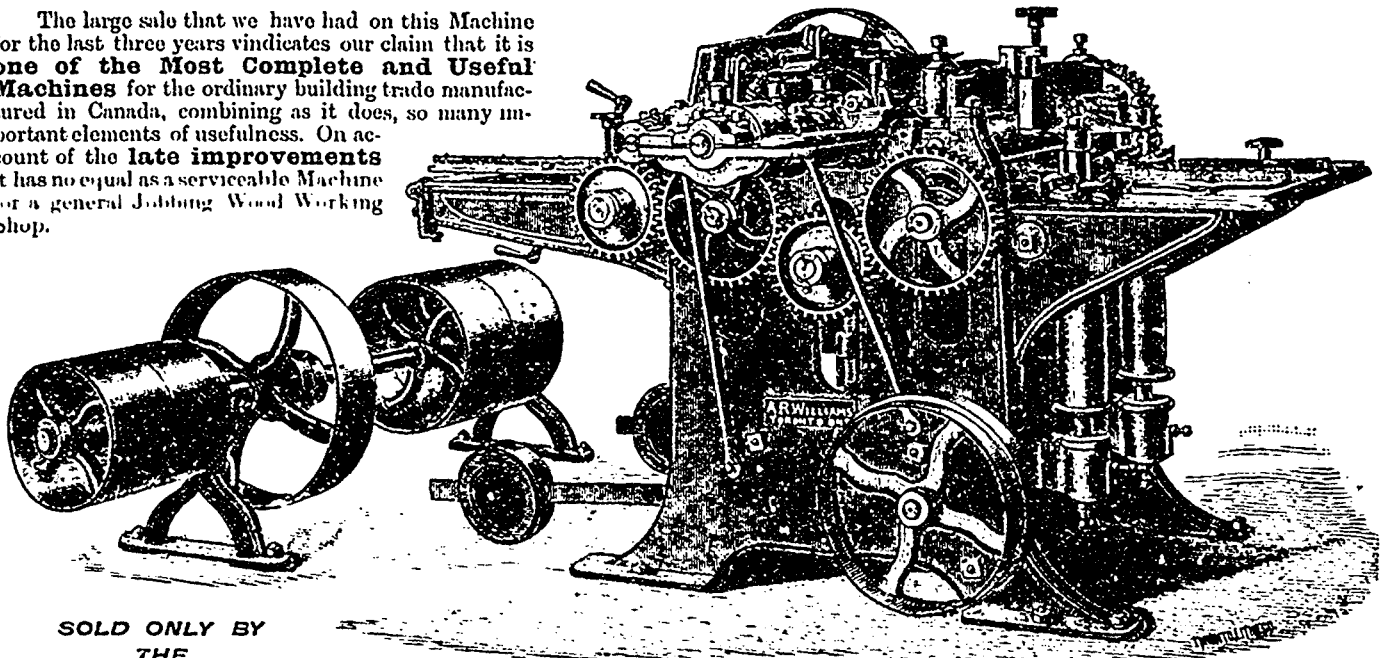
1066. A company manufacturing colored prints, show cards, almanacs and other specialties wishes to hear from Canadian dealers in these goods.

1067. A firm with offices in Constantinople, Cairo and Alexandria, is open to represent manufacturers of goods suitable for their market.

The Cantin Co., Warwick, Que., who recently installed a 28-inch Little Giant turbine, have procured from the makers, J. C. Wilson & Co., Glenora, Ont., a Walsh-Improved Double-Acting Water-Wheel Governor.

IMPROVED "ECLIPSE" PLANER, MATCHER and MOULDER

The large sale that we have had on this Machine for the last three years vindicates our claim that it is one of the Most Complete and Useful Machines for the ordinary building trade manufactured in Canada, combining as it does, so many important elements of usefulness. On account of the late improvements it has no equal as a serviceable Machine for a general Jobbing Wood Working Shop.



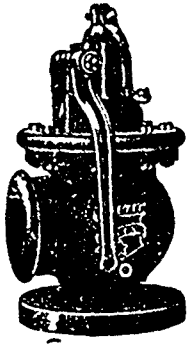
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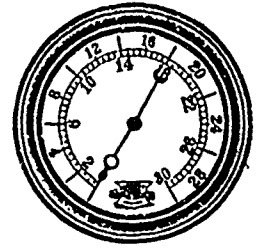
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Water and Steam Hose,
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PERFECTED GRANITE ROOFING

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THE EASTERN GRANITE ROOFING CO.
IRVING BUILDING
New York.

THE ENORMOUS INCREASE SHOWN HERE PROVES THAT PERFECTED GRANITE ROOFING IS THE ROOFING TO USE.

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BOLTON, ONT.

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Electric Supplies, Nitrous Oxide Gas
SWITCHES and SWITCHBOARDS
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Dynamos and Motors

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AN opportunity well worth your time investigating: the Sweeney property, situated in the center of the city of North Tonawanda, half way between Buffalo and Niagara Falls, eleven miles from either place, with steam and electric cars every fifteen minutes, on the well-known Niagara Frontier, at the foot of lake navigation, on the Erie canal, and having some thirty different railroad connections, making it possible for manufacturers to do business by rail or water with all markets, offers to parties desiring to manufacture in a small way splendid opportunities; we will erect small frame buildings for responsible people and lease for a term of years; the Tonawanda Power Company, a branch of the Niagara Falls Power Company, will sell cheap electric power in large or small quantities, from one-half horse power upward; natural gas as a motive power may be had if desired; we are after small users of electric power, we invite correspondence more especially from people who having enough money for operating expenses, might want to avail themselves of our offer to erect small factory buildings, thus enabling them to start manufacturing in an economical way in order to develop and grow. Write for particulars to

JAMES SWEENEY, Jr.,

Agent Sweeney Property, North Tonawanda, N.Y.

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New and all around practical system of Destroying Insects and Fungi. Patent to be supplemented by copyrights. Proof of value from practical farmers and United States officials. 46 pages of explanatory matter. Cheap if taken quick. Good reasons for offering for sale. Investigation solicited. Address, **FRED. REINLEIN, Mount Vernon, Ill., U.S.A.**

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WATER TUBE BOILERS

as described in Canadian Patents Nos. 76937 and 77872; they are also prepared to receive propositions for the purchase of the said patents or for licenses to manufacture under the same.

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In stock for immediate delivery. This list is only partial—Write us your Wants.

Lathes

12 x 5 Reed
12 x 6 Prentice
13 x 6 P. & W. with taper
13 x 5 Binsdell
13 x 6 Sebastian
13 x 6 Ames
14 x 6 Bogart
16 x 6 Porter
16 x 6 Perkins
16 x 10 Bridgeport
18 x 6 Perkins with chuck
18 x 6 New Haven
18 x 8 Lodge & Shipley
18 x 10 Lodge & Davis
20 x 8 Latho & Morse
21 x 8 Blaisdell
26 x 20 Blaisdell
28 x 12 Wood Light
48 in. Pulley Latho

Turret Lathes

14 in. Pratt & Whitney
16 x 6 Universal, Lodge & R.
16 in. Warner & Swasey
16 in. Jones & Lamson
16 in. Pratt & W.
18 in. Hendey

Scrow Machines

14 in. Garvin
15 in. Garvin
14 in. Warner & Swasey
No. 2 Pratt & Whitney

Boring Mills

60 in. Bickford, 3 hoods
60 in. Niles, 1 head

Drills

No. 5 Plain Rad., Alfd Box
15 in. Lauer, adj. table
12 in. two-spindle adj., Foot-
Burt.
36 in. Snyder

Planers

24 x 24 x 5 ft. Genera Ma-
chine Co.
14 ft. Plate Planer, Sellers
16 in. x 12 in. x 21 in. Brad-
ford
22 x 18 x 5 Planer
30 x 30 x 10 ft. Gleason

Milling Machines

No. 2 Lincoln, P. & W.

Shapers

6 in. Boynton & Plummer
13 in. dbl. hd. trav. Rollers
18 in. Traverso Hd. Shaper
15 in. Hendey
30 in. Fox
10 in. Fitchburg

Hammers

25 lb. Poppet Drop
25 lb. Herantou, power
50 lb. Baudry
No. 900 Tretheway
250 lb. Bell, steam
1000 lb. Board Drop Hammer
Morrill, steam

Presses

125 ton Wheel Press
P 222 Foot Ferracuto

Miscellaneous

No. 3 Clement vert. Wood
Boring Machine
1 in. Swaging Machine, Good-
year, also Dayton
1 in. Keyseater, Mills &
Merrill
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Shear, Niagara
42 in. Power Squaring Shears,
Niagara
1 1/2 in. Double Head Bolt Cut-
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Wim Forner
Horizontal Keyseaters
50 in. Auto. Gear Cutter
No. 1 Universal Grinder,
Diamond
14 in. Power Riveter, Adl.
14 in. Schlenker Bolt Cutter
18 in. x 7 ft. 6 in. Lead Rolls
5 in. Whiton Centering Ma-
chines
No. 1 Garvin Hor. Tapping
Machine
36 in. Semi-Automatic Gear
Cutter, G. & E.
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Cock Grinder, Warner & S.
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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. * *

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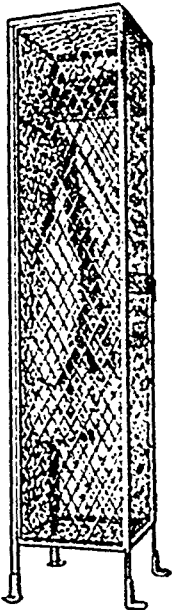
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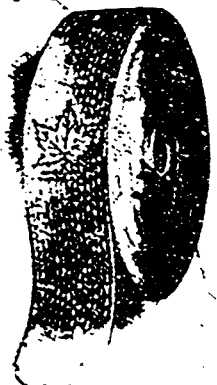
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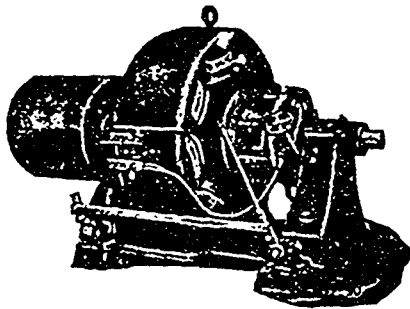
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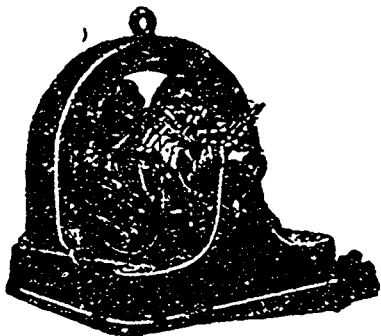
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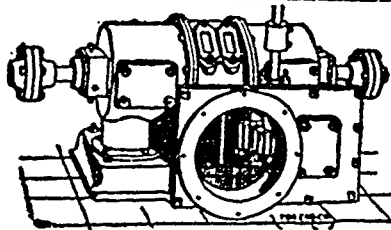
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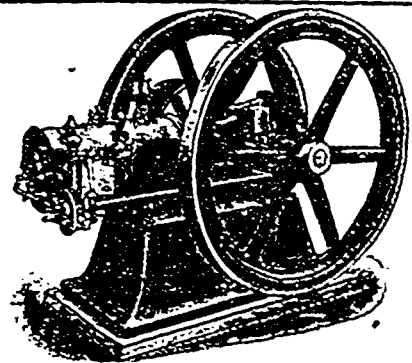
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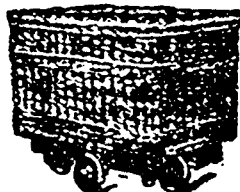
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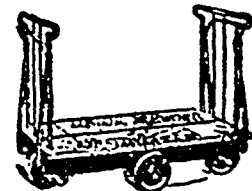
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Scalfe, Wm. B. & Sons Co., Pittsburg, Pa.
- Anncoaling Muffles and Furnaces.**
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- Bolt Fasteners.**
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Rossendale Belting Co., Toronto.
Williams, A. R., Machinery Co., Toronto.
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Rossendale Belting Co., Toronto.
- Bolting (Leather.)**
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Smith, N., Toronto.
Williams, A. R., Machinery Co., Toronto.
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Wilson Bros. Bobbin Co., Liverpool, England.
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- Bolt Taps**
Butterfield & Co., Rock Island, Que.
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- 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.**
Scalfe, Wm. B. & Sons Co., Pittsburg, Pa.
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Expanded Metal & Fireproofing Co., Toronto.
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 Buffalo Forge Co., Buffalo, N.Y.
 Canada Foundry Co., Toronto.
 Canadian Oils 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.
 Metallic Roofing Co., Toronto.
 McEachern 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.

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Turner, Vaughn & Taylor, Cuyahoga Falls, Ohio.

Channels

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 Nova Scotia Steel & Coal Co., New Glasgow, N.S.
 Samuel, M. & L. Benjamin & Co., Toronto.
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Canada Iron Furnace Co., Montreal.
 Deseronto Iron Co., Deseronto, Ont.

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 Winn & Holland, Montreal.

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 Heyn, Thos. & Son, Toronto.
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 Wentz, R. F. Engineering Co., Toronto.

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

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

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

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

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Greening, B. Wire Company, Hamilton, Ont.
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Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

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Canadian Corundum Wheel Co., Hamilton, Ont.
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CAST IRON PIPE

3 in. to 60 in. diameter.

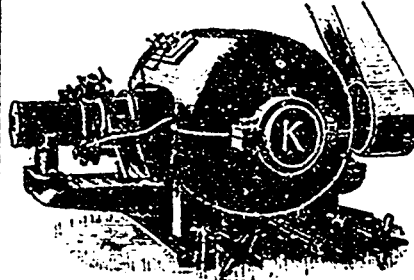
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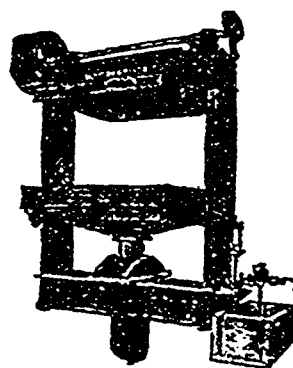
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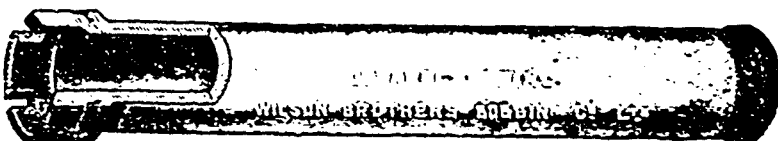
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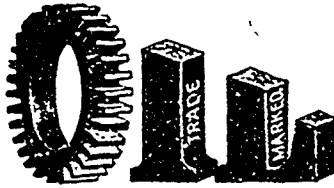
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ALL ORDERS PROMPTLY FILLED



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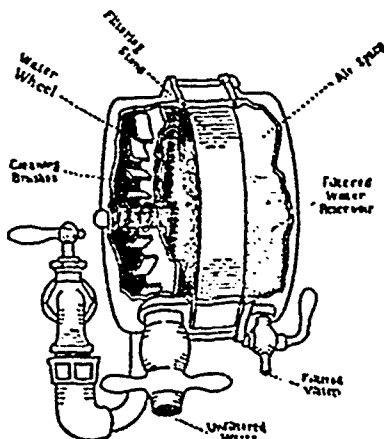
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It will last a life time. It sells on sight.

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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.

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Noble's Dominion Detective Agency, Toronto.

Dies

Hamilton Stamp & Stencil Works, Hamilton, Ont.

Dies (Socket, Sower Pipe and Tile-Clay.)
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Directories

Dean & Son, London, E. C., England.
Kelly's Directories, 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.

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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.

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

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

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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., Deschenes, 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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(CONTINUED).

Engineers (Mechanical)

Carrier, Laine & Co., Lewis, 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)

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Metallurgical Laboratory, Pittsburg, Pa.
Mills, S. D., Toronto.

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

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Babcock & Wilcox, Limited, Montreal.
Buffalo Forge Co., Buffalo, N.Y.
Canadian Heino 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.
Scalfe, 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 Heads

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

Factory Sites

Central Ontario Power Co., Peterboro, Ont.
Great Northern Railway of Canada, Quebec, Que.
Sweeney, James Jr., North Tonawanda, N.Y.
Walshaw, J., Bolton, Ont.

Files

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

Financial

Bradstreet's, New York City.
Dun, R. G. & Co., Toronto.
Neff & Postlethwaite, Toronto.
South American Trade Journal, London, England

Filters

Burt Mfg. Co., Akron, Ohio.
Darling Bros., Montreal.
Ferrin, Wm. R. & Co., Toronto.
Hota Filters, Limited, Windsor, Ont.
Scalfe, Wm. B. & Sons Co., Pittsburg, Pa.

Fire Brick

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

Fluo 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, The R. Co., Galt, Ont.
Northey Co., Toronto.

Foundry Facing

Hamilton Facing Mill Co., Hamilton, Ont.

Galvanized Iron and Steel.

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

Galvanizing

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

Galvanizing and Tinning Machinery and Furnaces (Clay.)
Turner, Vaughn & Taylor Co., Cuyahoga 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 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.
Jencks Machine Co., Sherbrooke, Que.
Northey Co., Toronto.
Ferrin, Wm. R. & Co., Toronto.
Smythe, S.R. Co., Pittsburg, Pa.
Wilson, J. C., & Co., Glenora, Ont.

Iron and Steel Specialties

Armstrong Mfg. Co., Bridgeport, Conn.
Bourno-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.
Scalfe, 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.

Lathes

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

Leather Belting

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

Lifting Jacks

Norton, A. O., Boston, Mass.

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.
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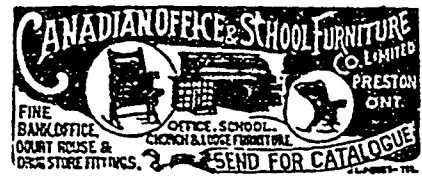
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Cooper, James, Mfg. Co., Montreal.
Cowan & Co., Galt, Ont.
Darling Bros., Montreal.
Fleming, W. A., & Co., Montreal.
Gartshore, John J., Toronto.
Goldie & McCulloch Co., Galt, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
Hamilton Brass Mfg. Co., Hamilton, 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.
Smythe, S.H. Co., Pittsburg, Pa.
Spence, R. & Co., Hamilton, Ont.
Stratford Mill Building Co., Stratford, Ont.
Wilson, J. C., & Co., Glenora, Ont.

Mining Machinery

Canadian Hand Drill Co., Sherbrooke, Que.
Cooper, James, Montreal.
Cooper, James Mfg. Co., Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
Jenckes Machine Co., Sherbrooke, Que.
Perrin, Wm. R. & 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.
Morlon 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, Cornello & Co., Montreal.

Paper Manufacturers

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

Patents

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

Perforated Metals

Greening, B. Wire 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 (Rivoted Iron and Steel.)

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

Plating

Brantford Plating Co., Brantford, Ont.

Plumbago

McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Wickramanayaka, J., & Co., Kalutara, Ceylon, India.

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.
Great Northern Railway of Canada, Quebec, Que.

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.
Smythe, S.H. 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 (Tilo, 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.

Pulp and Saw Mill Sites

Great Northern Railway of Canada, Quebec.

Purifiers

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

Purifying System (Water.)

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

Railroads

Chicago & North-Western Ry., Toronto & St. Paul, Minn.
Great Northern Railway of Canada, Quebec.

Railway Supplies

Algoma Steel Co., Sault Ste. Marie, Ont.
Cooper, James, Montreal.
Gartshore, John J., Toronto.
Greening, B. Wire 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
Eastern Granite Roofing Co., New York City.
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.

Shear Knives
Hay, Peter, Galt, Ont.

Shoots (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 Sharling
Darling Bros., Montreal.
Dodgo Mfg. Co., Toronto.
Leslie, A. C. & Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Wilsor, J. C., & Co., Glenora, Ont.

Stocks and Dies
Armstrong Mfg. Co., Bridgeport, Conn.
Buttersfield & 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
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Tanks (Iron and Steel.)
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

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Textile Manufacturers
Canadian Colored Cotton Mills Co., Montreal.
Cantile, James, A., Montreal.
Hamilton Oil Cloth Co., Montreal.
Hamilton Cotton Co., Hamilton, Ont.
Morrice, D., Sons & Co., Montreal.
Holcho & 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 (Wire Mill)
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

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

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

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.
McEachren Heating & Ventilating Co., Galt, Ont.
Sturtevant, B. F. Co., Boston, Mass.

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

Washers or Hollinders (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.

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

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

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

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

Wood-Working Machinery
Carrier, Laine & Co., Levis, Que.
Cowan & Co., Galt, Ont.
Karch, H. W., Hespeler, Ont.
London Machine Tool Co., London, Ont.
McEachren 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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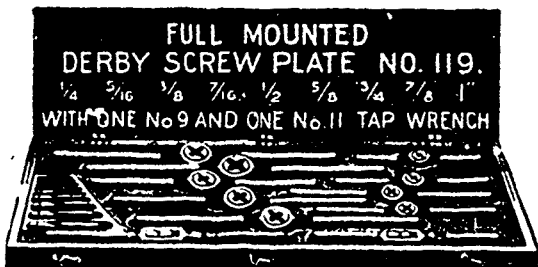
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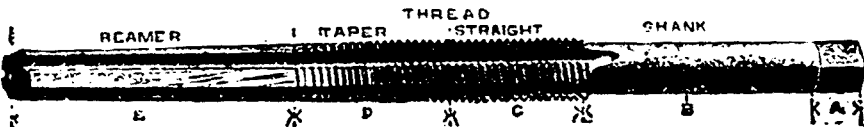
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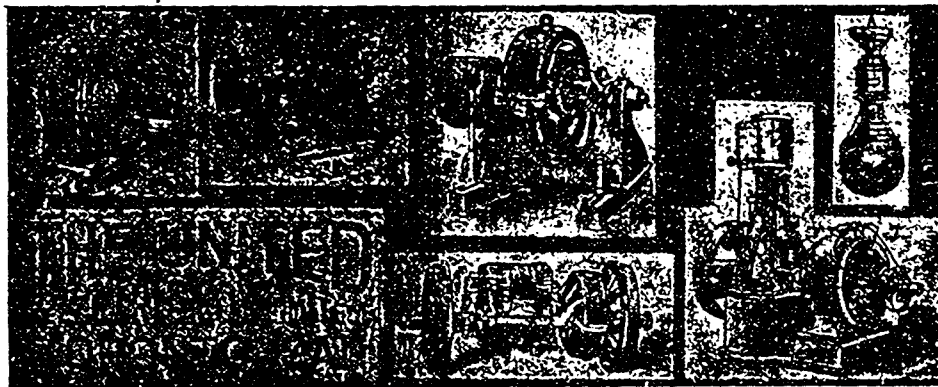
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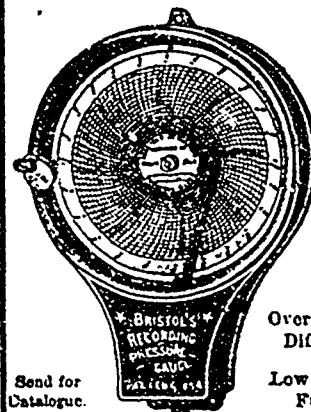
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