

Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

Coloured covers/
Couverture de couleur

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

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

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

Cover title missing/
Le titre de couverture manque

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

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

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

Showthrough/
Transparence

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

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

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

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

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

Additional comments:/
Commentaires supplémentaires:

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

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

SEE OR WRITE SITE IN TORONTO? 10 VICTORIA AVENUE, TORONTO

PATENTS
 CAVEAT ETC.
 EGERTO R. CASI
 Register Solicitor of Patent Notary Public; Member of the Canadian Manufacturers' Association
 HEAD OFFICE
 TEMPLE BUILDING TORONTO
 OFFICES
 OTTAWA AND WASHINGTON, D.C.

MENT OF LABOUR

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

Vol 47. TORONTO, JULY 3, 1903. No. 1.

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 0500-114 King St. West

"REDSTONE"
 HIGH PRESSURE Sheet Packing

MAKES PERFECT JOINTS.
 Does not blow out and requires no following up.
 Try a sample lot and be convinced of its merits.

MANUFACTURED SOLELY BY
The Gutta Percha & Rubber Mfg. Co. of TORONTO, LIMITED
 Head Office and Warerooms:
 45, 47 and 49 WEST FRONT ST., TORONTO, CANADA

... Malleable... Iron Castings

XC Plate or Tinned CASTINGS also made to order.

McKinnon Dash & Metal Works Co., Limited
 ST. CATHARINES, ONT.

ELECTRIC LIGHT AND POWER CABLES
 FOR UNDERGROUND INSTALLATIONS

The Wire & Cable Company, - - Montreal

"STANDARD of the WORLD"

OTIS ELEVATORS

CANADIAN OTIS ELEVATOR COMPANY, LIMITED

OFFICES
 TORONTO HAMILTON MONTREAL
 AND ALL PRINCIPAL CITIES

THE....

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

Malleable Castings

ALSO LIGHT GREY IRON CASTINGS,
 WALKERVILLE, - ONTARIO.

Floor Space is Valuable!



For Attaching to Wall

Type 1 B
Direct Current
MOTORS



For Suspension from Ceiling

FOR POWER PURPOSES

Substantial, Compact, Practical and Efficient

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

Our Motors are the Standard of the World.

CANADIAN GENERAL ELECTRIC CO., LIMITED. HEAD OFFICE
TORONTO, - ONT.

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

STEEL RAILS

We are now offering Highest Quality

BESSEMER STEEL RAILS

made by the

ALGOMA STEEL CO., Limited

of SAULT STE. MARIE, ONT.

DRUMMOND, McCALL & CO.,

GENERAL SALES AGENTS

OFFICES:

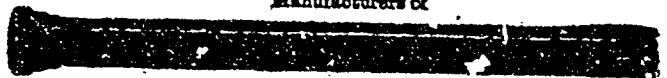
Canada Life Bldg., MONTREAL. 93 York St., TORONTO.

MONTREAL PIPE FOUNDRY CO...

SUCCESSORS TO (Limited)

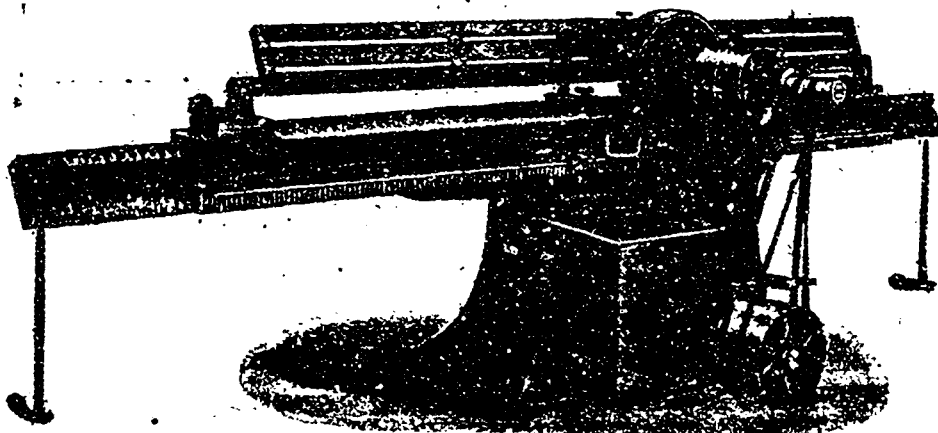
DRUMMOND-McCALL PIPE FOUNDRY CO.

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.

FLOUR MILLS

We build Flour Mills, Oat-Meal Mills, Corn or other Cereal Mills from basement to attic, and can furnish the power plant as well. Write and ask about the GYRATOR SYSTEM of Milling. Let us know your needs in the mill line and we will furnish you plans and estimates.

WE MAKE Wheelock Engines, Ideal Engines, Gas and Gasoline Engines, Boilers, Water Wheels, Pumps, Flour Mill Machinery, Oat Meal Mill Machinery, Oat Meal Steam Pan Kilns, Wood Working Machinery, Iron Pulleys, Wood Run 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.

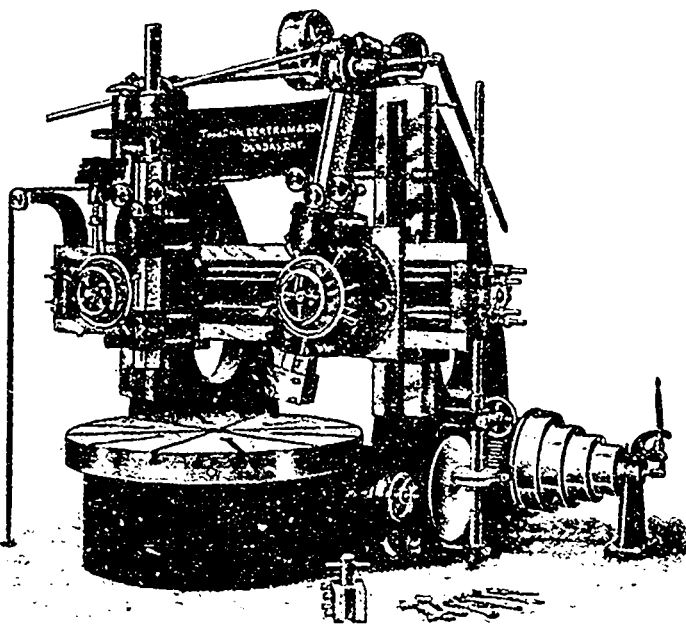
THE WELLINGTON MILLS London, England.

GENUINE EMERY

Oakey's Flexible Twilled Emery Cloth.
Oakey's Flint Paper and Glass Paper.
Oakey's Linery 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 Mills, Westminster Bridge Road, London, Eng.
Enquiries should be addressed to
JOHN FORMAN, - 650 Craig St., MONTREAL

ALL THE BEST SHOPS ARE INSTALLING OUR BORING and TURNING MILLS



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

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

If any manufacturer thinks he can get along by doing all his boring and turning on a lathe he is making a costly mistake. It may have worked all right in his grandfather's time, but the shop owner of 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 ROPEFROM 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 SHAFTINGFROM $\frac{1}{2}$ TO 6 INCHES IN DIAMETER. GUARANTEED STRAIGHT AND TRUE TO WITHIN $\frac{1}{16}$ OF AN INCH.Spring, Reeled Machinery, Tire, Toe Caulk, Sleigh Shoe, Angles, Special Sections
and all Merchant Bar Steel. Sheet Steel up to 48 inches wide.**RAILWAY AND ELECTRIC RAILWAY CAR AXLES****FISH PLATES, SPIKES AND TRACK BOLTS**

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

..HEAVY FORGINGS A SPECIALTY..**"FERRONA" PIG IRON, For Foundry Use.**

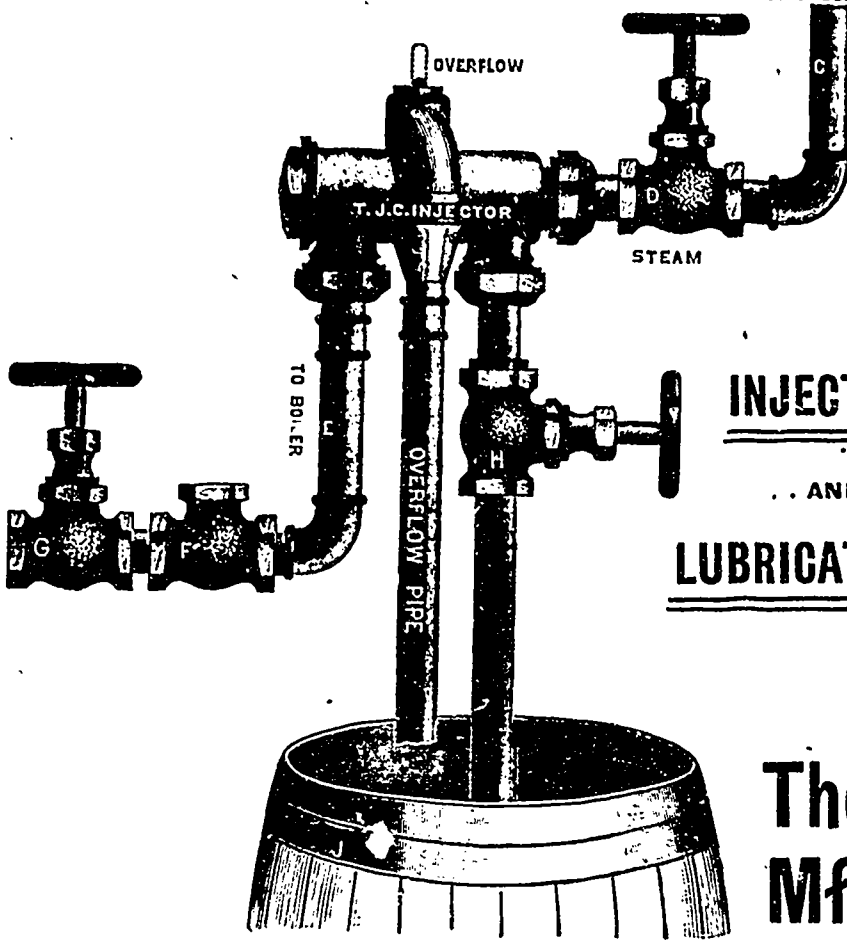
Works—NEW GLASGOW, N.S., and FERRONA, N.S.

Head Office—NEW GLASGOW, NOVA SCOTIA

GALT Machine Knife Works**PETER HAY,**Manufacturers of Every
Description of.....**GALT, ONT.****KNIVES, For Wood-Working, Paper
Cutting and Leather-**BARK
KNIVES
PULP
KNIVES
RAQ
KNIVES
Etc., Etc.Splitting
MachinesShear Blades,
Straw Knives,
Paper Knives,
Etc., Etc.

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

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



INJECTORS
 .. AND ..
LUBRICATORS

OF EVERY DESCRIPTION

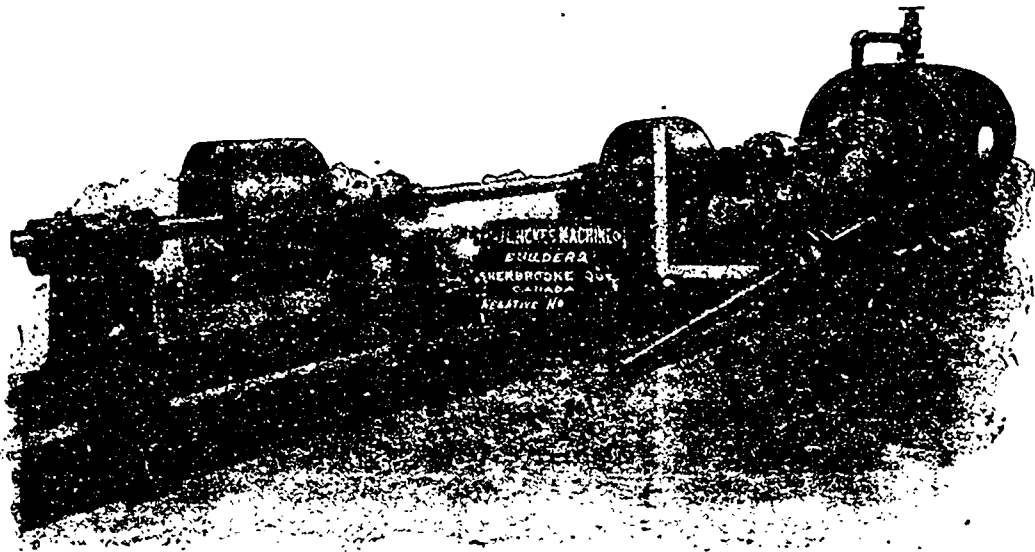
MANUFACTURED BY

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

A 15-inch
CROCKER
TURBINE
 horizontal.

Running
 under
 93 ft. head

Electric
 Light Plant
 at



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

The Jenckes Machine Company,
 626 LANSDOWNE STREET, - - - SHERBROOKE, QUE.

"Absolutely safe and reliable. Ask your friends."

NO DANGER

of leaks or bursting
if you have

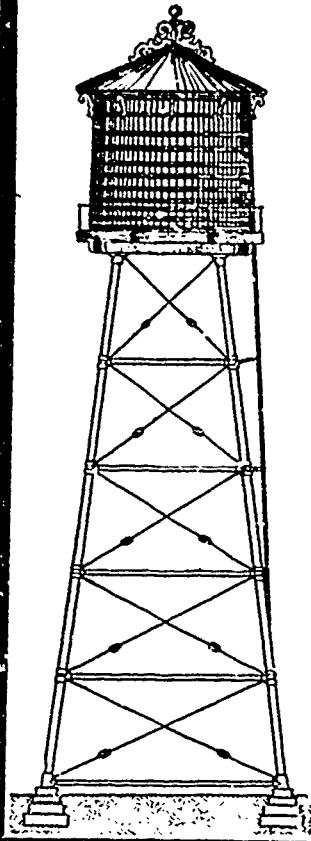
A Caldwell Tank

The Red Gulf Cypress Wood used in its construction will not warp or twist under the greatest strain and its durability is astounding. No Danger of collapse if you have

A Caldwell Steel ...TOWER...

The best mild steel only is used and each tower will safely carry the weight of the tank. The best work and the best materials make the best outfits which is what you need in your business. Have you seen our illustrated catalogue?

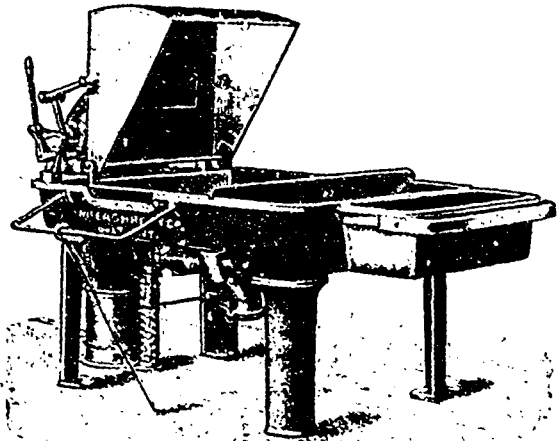
W. E. Caldwell Co.
LOUISVILLE, KY.



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 PULP MATS

PERFORATED COPPER, BRASS and STEEL.

WIRE ROPE—All kinds.

WIRE GUARDS for Mill Windows.

REFUSE BURNER CLOTH, Etc.

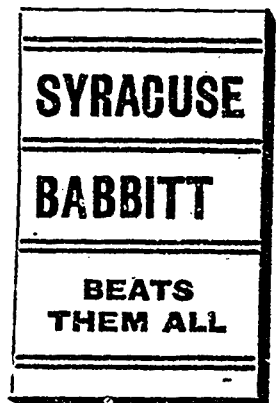
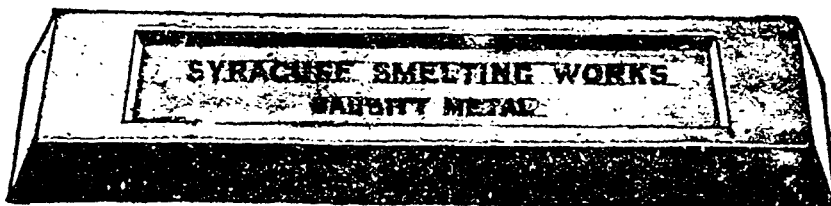
THE B. GREENING WIRE CO., Limited, HAMILTON, - ONT.
MONTREAL, QUE.

THE BEST IS NONE TOO GOOD.

The largest machinery builders in Canada and United States use our Babbitt Metal. Is this not sufficient proof of its superiority over other anti-friction metals? If the largest users are satisfied with our Babbitt Metals, why should it not suit you? We can furnish you with numbers of testimonials.

Importers and Dealers in

PIG TIN, ANTIMONY
INGOT COPPER
ALUMINUM
NICKEL, BISMUTH
IRON AND STEEL
SORAP



Manufacturers of

BABBITT METALS, SOLDER
TYPE METALS
COLUMBIA PHOSPHOR TIN
AND
ALL OTHER WHITE METAL MIXTURES

SYRACUSE SMELTING WORKS

WILLIAM AND ST. THOMAS STREETS, - - MONTREAL

Head Office, American Works, 94 Gold St., New York City

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.

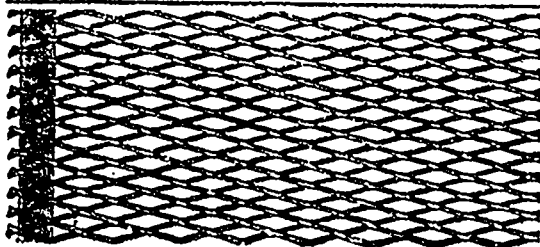
GEO. S. KILBOURN, Sec'y-Treas.

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.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

SEND FOR CATALOGUE

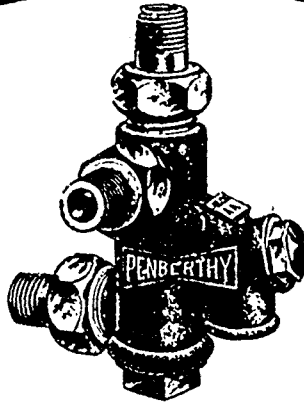
ASK FOR BULLETIN



**"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 12 LBS.

MADE IN CANADA

AUTOMATIC INJECTORS

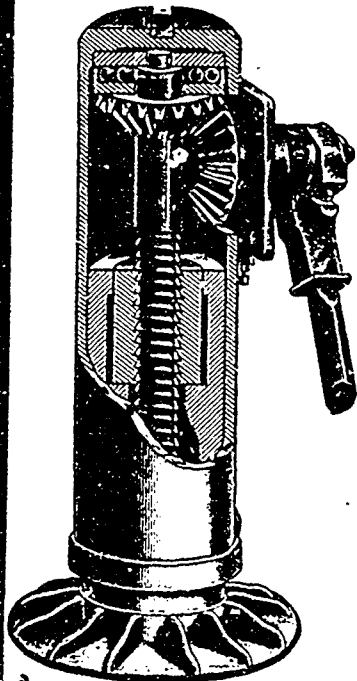
RANGE 22 to 150 LBS., GUARANTEED.

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

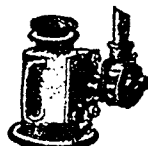
runs in a Phosphor Bronze Nut and is covered by a sliding sleeve which takes all the side strain, prevents the Screw from bending, and protects the working parts from Grit and Rust.



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.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

CASSELLA COLOR COMPANY

(American Branch of Leopold Cassella & Co.)

ARTIFICIAL

DYE STUFFS

New York, 182-184 Front Street.

Boston, 524 Atlantic Avenue.

Philadelphia, 126-128 South Front St.

Providence, 64 Exchange Place.

Atlanta, 47 North Pryor Street.

Montreal, 86-88 Youville Square.

ANILINES

St. Denis Dyestuff and Chemical Co.,

(A. FOIRRIER), of Paris, France.

Manufacturers of

Aniline Colors, Aniline Oil and Salt, Archil Extracts
Cudbear, Cachou de Laval, Thiocatchines, etc.

A Complete Assorted Stock of the above always on hand.

W. T. Ber... & Co.,

Solo Agents for Canada.

164 St. James St., MONTREAL

GEIGY ANILINE & EXTRACT CO'Y.

104 and 106 Murray St., NEW YORK

AMERICAN BRANCH OF THE

ANILINE COLOR & EXTRACT WORKS

(Formerly S. R. GEIGY).

BASLE, SWITZERLAND.

GRENZACH, GERMANY.

Aniline Colors, Calico Printers' Specialties
Dyewood and Sumac-Extracts.

CANADIAN REPRESENTATIVE:

T. D. WARDLAW, 29-33 Melinda St., Toronto

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,

Solo 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 Lemoin St.

ANILINES

DYESTUFFS and CHEMICALS

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

FAST COLORS FOR WOOL and COTTON

ALSO FULL LINE OF DIRECT COTTON COLORS

BRANCHES—BOSTON, 283-5 Congress St. PHILADELPHIA, 50-52 N. Front St
CHICAGO, 133 Kinzie St. PROVIDENCE, 13 Mathowson St.

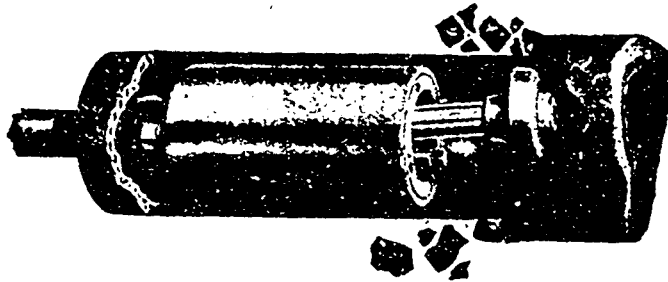
When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

WHEN the mask is off imitations the person who has been deceived by them always finds himself defrauded.

Imitations, while flattering the original, are always inferior.

This is specially true of Boiler Tube Cleaners.

The original and only mechanical device that will actually free the tubes of a water tube or return tubular boiler from scale, is



—THE DEAN BOILER TUBE CLEANER—

Don't take chances on counterfeits. We will loan you a Dean Cleaner free for a thorough trial.

If it pleases you, we'll sell it with a guarantee that it will at least pay for itself in fuel saved, in six months use.

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

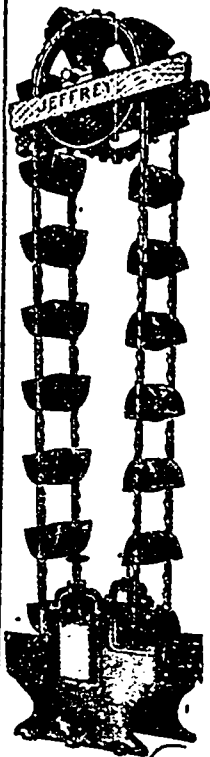
In purchasing incandescent lamps you owe a duty to yourself in the line of economy to investigate the meritorious features of the Packard Lamp.

Packard Lamps have long life, are closely rated and every lamp of a particularly high standard. Our 220 volt lamp is the standard in the Dominion for a lamp of this particular voltage.

The Hylo, the "turn down" lamp of which we are Canadian manufacturers, is the most economical lamp to use in any dark place where you need a light part of the time, yet keep a lamp burning continuously. The Hylo will pay for itself in current saved.

For any lamp need communicate with us.

THE PACKARD ELECTRIC CO., Limited
ST. CATHARINES. Makers of Lamps—Transformers—Meters. **MONTREAL.**



JEFFREY ELEVATING CONVEYING MACHINERY

ALSO—
**Coal Mining
 Coal Washing
 Screening, Crushing
 MACHINERY**

**ELECTRIC
 LOCOMOTIVES**

May we not send you Copy of
 Catalogue 72.

ADDRESS—

The Jeffrey Mfg. Co.,
 COLUMBUS, OHIO, U.S.A.

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

BUFFALO STEEL PLATE FANS

HEATING - VENTILATING - DRYING
 AND
 MECHANICAL DRAFT.



Left Hand Top Horizontal Discharge, Steel Plate Pulley Exhaust Fan, Drawing Through Heater.



Right Hand Bottom Horizontal Discharge. "B" Volume Exhaust Pulley Fan, Drawing Through Heater.

BUFFALO FORGE COMPANY,
 BUFFALO, N.Y., U.S.A.

**Sturtevant
 Exhausters**

Reduce the Cost of Conveying
 Light Materials.



The shells are of steel plate of such thickness as to withstand the abrading action of the material. A cast-iron support attached to the side of the shell carries the continuous oiling boxes with the shaft and pulley, and sustains the entire strain. The fan wheel is overhung upon the end of the shaft, thus leaving the inlet entirely unobstructed for the free passage of the material to be handled. They are suitable for conveying chips, shavings, sawdust, wood pulp, tan, etc. Special fans are built for conveying wool, cotton, jute and similar fibrous materials.

B. F. STURTEVANT CO.,

Boston, Mass.

New York Philadelphia Chicago London.

Byers' Pipe is the only
**GUARANTEED FULL WEIGHT
 WROUGHT IRON PIPE** made.

For Steam, Gas, Water,
 Acids, etc.

See our Monthly Stock-list.

**THE
 BOURNE-FULLER CO.**

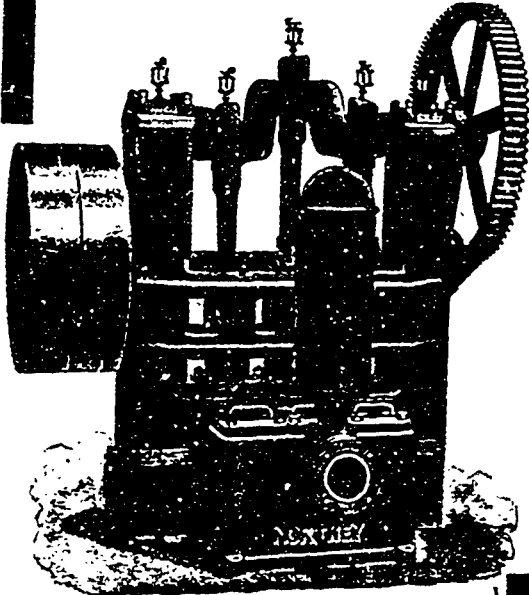
**IRON, STEEL
 and
 PIG IRON.**

Cleveland, O.

**THE NORTHEY
TRIPLEX POWER PUMP**

is a high class serviceable machine; it offers the best means of applying either steam, water or electrical power for pumping purposes. A special feature is the use of three cranks 120 degrees apart—ensuring a practically constant delivery. This pump, for Boiler Feeding, etc., and especially in connection with an electric motor, gives excellent results.

SEND FOR PUMP CATALOGUE.



Pumping Machinery

“For all Duties”

Many manufacturers who are users of Pumping Machinery pay coal bills that are from 10% to 50% higher than they should be, because their pumps are old and leaky, do not give the service they should, and waste steam. Would it not pay you to look into this matter? We can advise you what you can do most profitably with your present plant—discard it or repair it. Our business is the making of Pumps for all services—we do it on a large scale, and we are experts in our line. Write for Specifications and Catalogues.

We manufacture also the
Northey Gas and
Gasoline Engine
a handy and economical
motor.

THE Northey
Company
Limited, Toronto

SEND FOR ILLUSTRATED BOOKLET 1000 KING ST. SUEWAY

EMPIRE MACHINE & METAL STAMPING CO.

LIMITED

MANUFACTURERS OF ALL KINDS

...OF...

HARDWARE
and
Wire Specialties

Wire Straightened
and Cut to Lengths.

MACHINERY

1012 Yonge St., Toronto, Can.

PHONE NORTH 2183

Metal Stamping.
All kinds of Sheet
Steel, Brass,
Aluminum, Copper
and Silver
to any Shape.

Don't use Rough Castings when you can get Stamped Steel at the same price. WRITE US



Reflectors, Shades, Lamps

We Stock a Large Variety of SHADES
and REFLECTORS in

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

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

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

Write us about Lighting
your Factory or Office.

JOHN FORMAN, 708 and 710 Craig St., MONTREAL

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



ESTABLISHED IN 1890.

PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

The Canadian Manufacturer Publishing Co., Limited.

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

Classified Index..... Page 34
Index to Advertisers Page 42

J. J. CASSIDEY, Editor and Manager

THE CANADIAN MANUFACTURER

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

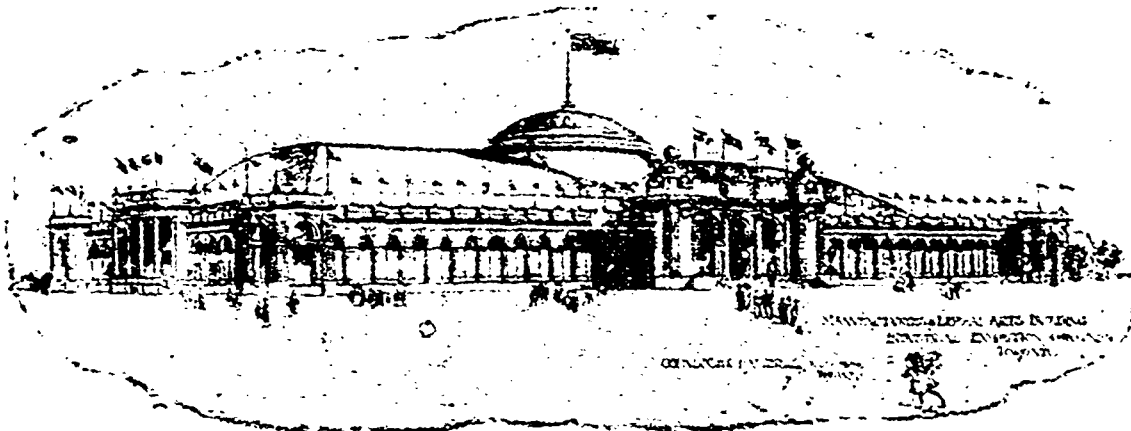
DOMINION OF CANADA INDUSTRIAL EXHIBITION.

As our readers are no doubt aware, the Dominion Government has authorized the Toronto Industrial Exhibition Association to hold a National Canadian Exhibition at Toronto, from August 27 to September 12 of this year, and have granted the sum of \$50,000 to assist in carrying out the enterprise. In addition to this, liberal grants have also been made by the Ontario Government, the Toronto City Council, the York County Council, various associations throughout Canada, and many public spirited citizens of Toronto. The

Machinery Hall is 390x100 feet, conveniently situated near the railway tracks, so that loading and unloading of exhibits can be done with the greatest ease and at a minimum cost. It is fitted up with shafting for the exhibit of machinery in motion.

Agricultural Implement Building will be for the display of agricultural implements and farm machinery of all kinds. It is fitted up with shafting for the exhibit of machinery in motion.

A special building has been fitted up for the exhibition of



Manufacturers' and Liberal Arts Building.

carrying out of such a project upon a scale worthy of its importance, entailed a large expenditure of money for the erection of new buildings and the beautifying of the grounds, all of which has been provided by the liberality of the citizens of Toronto.

In the manufacturing department the following buildings will be available for exhibits this year, viz.: Manufacturers' and Liberal Arts Building, which is constructed of brick and steel, and contains over 100,000 square feet, or over two acres of floor space (all in one floor) and which has cost in the neighborhood of \$120,000. It is located almost in the centre of the grounds and will be reserved specially for the display of the finer classes of manufactured goods.

The Transportation Building, formerly known as the Main Building, is built of brick and iron, has been thoroughly repaired and will be set apart for the display of carriages, harness, bicycles, etc.

The Stove Building is 140x75 feet. It is entirely new and will be devoted to the display of stoves, furnaces and heating apparatus generally.

processes of manufacture. Every manufacturer knows that nothing attracts public attention so readily as machinery in motion and practical illustrations of how goods are made. In order to encourage this feature, the management are endeavoring to make this new department one of the principal features of the Exhibition, and are offering special inducements to manufacturers who desire to avail themselves of this opportunity of advertising their products in this way.

These splendid buildings will furnish to manufacturers nearly double the space in which to exhibit their products, of any exhibition ever held in Canada.

Under the arrangement with the Dominion Government, part of their grant will be used for the equalization of the freight charges upon the exhibits sent to this Exhibition, to encourage the exhibition of processes of manufacture.

A primary object of this Exhibition is to impress upon Canadians as well as visitors from other countries, not only the greatness and variety of Canadian resources, but our rapid development in every department of industrial activity; and the management desire to make this Exhibition an object

lesson which will prove to the world that Canadians can manufacture goods as cheap and as well as any other nation.

MR. CHAMBERLAIN'S NEW POLICY.

What advantage would there be to Canada in being a member of the British Empire if she derives no special benefit from the relationship?

In the world's politics to-day the all absorbing subject is Mr. Chamberlain's recent pronouncement as to the advisability of linking the British Empire more closely together by a system of preferential tariffs between the Mother Country and her colonies and possessions. Every class in all these different communities would be affected by such a system; and while it might seem likely that Canadian agriculturists would derive more benefit than any other, no doubt, the event would tend to enlarge her manufacturing industries, and to an extent much larger than even now exists, induce the transfer of a large number of American manufacturing concerns to Canadian territory.

The advantages of an Imperial Zollverein would be immense. It would consolidate the Empire. It would prevent foreign nations from elbowing out the British subject from his own markets. This is happening now all over the world, even in our latest-acquired colonies in South Africa, which have been won at such a terrible cost in life and substance. It would increase the demand for British manufactured goods, which would improve trade. Foreign produce would not be admitted without payment of a duty. Colonial produce would pay a much smaller duty, or none at all. On some produce, such as flour, a duty would probably be necessary, because, in studying the good of the Empire as a whole, the good of particular sections of it, such as the agricultural section in the British Isles, must not be forgotten. It is certain that Mr. Chamberlain's policy, if carried out, would give an enormous impulse to agriculture in every part of the British Empire, and every year Great Britain would tend to become more self-supporting, not in the matter of food alone, but in everything else. Having thus obtained the whip-hand, so to speak, Great Britain would be in a position to make commercial treaties with other nations, in which British goods would be treated fairly, and not excluded by unreasonably high tariffs from foreign markets. But this underlying principle should never be forgotten, that the foreigner would not be given the same privileges as the Briton. British citizenship ought always to mean something tangible. The plan of throwing the British market open to everybody has not fulfilled its intent. Cobden and Bright said that other nations would be bound to follow the example, and to open their markets too, but other nations have done nothing of the kind. Cobden and Bright were entirely wrong. In his attempt to widen the whole basis of British national life, by caring for the interests of all sections of the community by reason of the family relationship which exists between them, Mr. Chamberlain deserves the special gratitude of all Britishers.

It is Mr. Chamberlain's main contention as to what inducement the Mother Country can offer the Colonies to remain as integral parts of the Empire. The answer that Patriotism demands it, is not enough. Patriotism must be encouraged. It does not grow well in a barren soil. England lost her American colonies through a trade dispute. History teaches that it would not be well to repeat that mistake. The German Empire has attained its present strong position chiefly through the establishment of an Imperial Zollverein. Be-

tween the various German States there is free trade, but foreign produce has to pay a duty. Mr. Chamberlain's idea runs on similar lines. He thinks that the produce of British Colonies should be given a preference in the British market over that of foreign countries. Mr. Chamberlain has nowhere stated that he recommends free trade between all parts of the Empire. The extent of his recommendation is that the Colonies shall always be given an advantage. Many of the Colonies could not possibly exist under free trade conditions. They depend for a great part of their revenue on the duty they impose on English and foreign imports alike. Canada gives a preference to British goods by charging a smaller duty on them than on foreign goods. Why should not the Mother Country pursue the same plan towards the Colonies?

We have stated that the adoption of Mr. Chamberlain's policy would induce the transfer of some very important American manufacturing industries to Canada, in illustrating which contention we point to the exports of American agricultural implements to British possessions. According to recent statistics, published by the United States Government, the exports of agricultural implements from that country made last year were as follows:

Canada.....	\$3,123,660
United Kingdom	1,137,649
Australia	964,512
British Africa.....	232,824
British East Indies.....	57,115
British West Indies.....	5,842
British Oceania.....	12
British Honduras.....	54
British Guiana	1,648
Hong Kong.....	5,833

\$5,629,149

According to the authority alluded to, the value of the total exports of agricultural implements from the United States to all countries last year aggregated \$16,386,740, more than 34 per cent. of which, or \$5,629,149, was to British possessions; and as such goods can be made in Canada to as good advantage as in the United States; and as, under Mr. Chamberlain's policy, Canadian made goods would receive preferential treatment in all British countries, a treatment which would not be accorded to American goods, American manufacturers would of course be forced, in holding their trade to manufacture in and ship from Canada; and this is one reason why so many large American manufacturing concerns are establishing branch works in Canada.

EXPORTS OF AMERICAN FARM IMPLEMENTS.

The United States Bureau of Statistics has published a statement showing the different countries to which farm implements were exported last year and the value thereof, the aggregate of which was \$16,386,740, of which more than 34 per cent. or \$5,629,149 was to British possessions, Canada taking to the extent of \$3,123,660.

In the list of manufactured articles exported from the United States, agricultural implements stands sixth in importance. In fact, no other class of manufactured articles is so widely distributed throughout the world than those in this group. The reason for the popularity of American farm implements is a simple and convincing one. During the conquest of the thousands of square miles of fertile land now under cultivation in that country, the farmers encountered practically every conceivable variety of soil and nearly every known climate, from the cold plains of the northern frontier to the semi-tropical regions of California and the Southern States.

The diversity of crops raised was equally remarkable, including every cereal and nearly every vegetable indigenous to the temperate zone and such special products as cotton, sugar cane, etc. These peculiar conditions presented a most intricate series of problems to the manufacturers of agricultural implements and machinery. Plows had to be made of more than a score of distinct types to meet the requirements of the various soils and crops, and every other important implement had to be similarly specialized to meet local needs.

Added to these complications there soon arose another that did more probably than all the rest combined to encourage invention and promote the industry of manufacturing farm machinery. This was the shortage in the supply of farm labor. The development of the great plains of the West, Southwest and of the Pacific slope went on so rapidly, and farms soon came to have so vast an extent that an adequate supply of competent labor at reasonable wages was never available, hence the farmers turned more and more to the inventors and manufacturers for assistance. Machines were devised that did the work of five, twenty, fifty and even of a hundred men in the larger operations such as harvesting, threshing and binding where speed was essential and the nature of the work admitted of mechanical processes, while in the more laborious and slower operations, such as plowing, planting and cultivating, machinery also greatly lightened the work and reduced the wage accounts. The sharp competition between the various agricultural implement manufacturers led to a rapid development of new inventions and to the most remarkable progress in the direction of simplifying and cheapening each article. Implements became simultaneously lighter and stronger as a result of greater attention to the distribution of metal parts, and simultaneously more perfect and cheaper as a result of the vigorous competition.

All of these influences have operated profoundly in favoring the steady growth of foreign trade in American farm machinery. The American manufacturers quickly found that they were already familiar with most of the conditions prevailing abroad from having experienced similar conditions at home. The problems presented by the agriculturalists in Australia and South Africa were substantially the same as those they had solved for farmers in Kansas, Ohio, or in some other section of the United States, while there was hardly a crop raised anywhere in the world with which they were not familiar. The foreign farmers, on the other hand, were not long in discovering that American farm tools and machinery possessed the prime merits of adaptability, durability and cheapness, and dealers handling the leading American lines found little difficulty in introducing them, and made excellent profits from their rapidly increasing popularity.

It was not until 1864 that the exports of agricultural implements attained sufficient importance to justify the Treasury Department in classifying them separately. In that year these exports amounted to \$611,152. By 1870 they had increased to a million dollars, by 1880 to two and a half millions, by 1890 to three and three-quarter millions. During the next decade the progress made was wonderfully rapid. In 1895 the exports of farm implements and machinery aggregated in value five and a half million dollars, in 1899 twelve million, in 1900 sixteen million, and in 1902 sixteen and a quarter million. Europe, contrary to what might be supposed, is the best customer for American farm implements, taking nine million dollars' worth last year and ten and a half million in 1901, when the Russian demand was heavier. Of mowers and reapers exported to Europe last year Russia bought to the value of \$1,674,784; France, \$1,428,823; Germany,

\$1,153,933, and Great Britain, \$708,379. In 1892 Russia bought American reapers and mowers to the value of only \$81,733, France only \$345,086, and Germany only \$222,261. To Canada the exports of American mowers and reapers increased from \$43,465 in 1892 to \$1,636,731 in 1902. Mexico is also a liberal buyer of American agricultural implements, and the continent of South America now buys to the value of more than two million dollars annually, while exports to Australasia aggregate between \$900,000 and one million dollars each year. Exports to Asia have thus far been light, reaching only two hundred thousand dollars in 1902, and African purchases, although liberal for South Africa, amount to only three hundred and fifty thousand dollars for the continent.

EDITORIAL NOTES.

The United States Bureau of Foreign Commerce of the Department of State which has charge of the publication of the Consular Reports, has been transferred to the Department of Commerce and Labor.

The Canadian Manufacturers' Association propose adopting a graded membership fee, similar to that prevailing in German associations, making the rate proportionate to the number of hands employed, the fee ranging from \$10 per year where less than fifty hands are employed, up to \$100 where there are 2,000 or more hands. The question will not be dealt with finally until the next annual meeting of the Association.

Hon. Raymond Prefontaine, Minister of Marine and Fisheries, has ordered 25 of the latest improved gasoline lighted buoys to be placed along the St. Lawrence channel between Montreal and Quebec. The object is to test the feasibility of running steamships at night as well as day. Discussing the subject the Minister said: "The examination I have made of the channel has convinced me that there is no reason why it should not be so lighted at night as to make it as navigable during the hours of darkness as it now is in the day time. I expect that the work of perfecting the lighting of the St. Lawrence channel will be completed before the end of the coming summer."

Efforts are to be made to give a better steamship service between Canada and South African ports. The compact made between the Allan, the Elder-Dempster and Furness Lines provided for a nominal monthly service, employing three steamers. The Allans have decided to withdraw, but the two remaining companies will continue running two steamers each alternately, making four in all, and providing for a more reliable monthly service than heretofore. The Allan liner Brazilian, which sailed last week, will make the trip, and then resume her former route.

The imports of mining machinery into Canada during 1902 were valued at \$850,339; of which \$789,921 was for machinery from the United States; \$58,133 from Great Britain and \$2,285 from other countries. The total imports of wire rope, which was largely used in mining, were 1,667,560 pounds, valued at \$135,573. Of this quantity, 1,033,307 pounds, valued at \$73,986, came from Great Britain and 563,519 pounds, valued at \$58,902, from the United States. The balance 80,724 pounds, valued at \$2,685, were from other countries.

THE CRAMP STEEL CO.

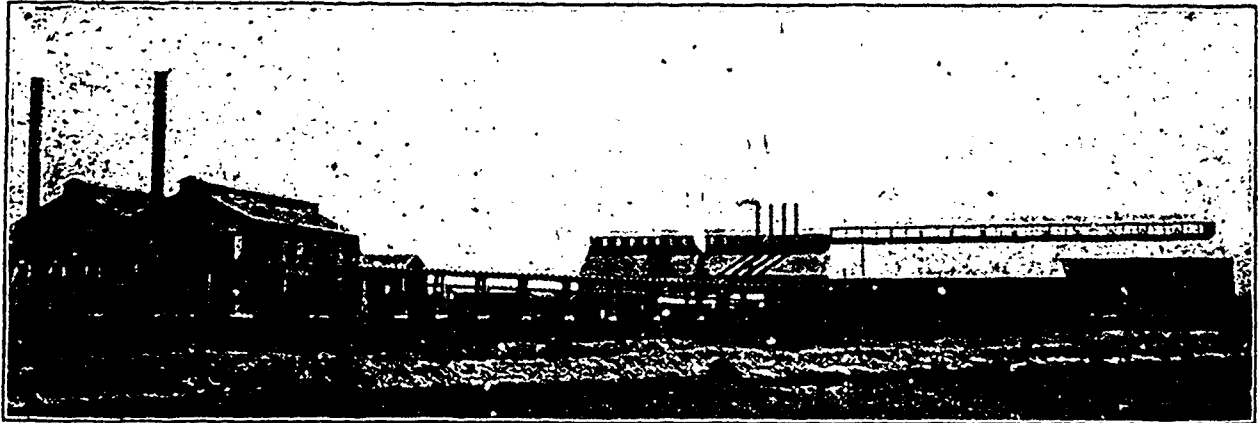
When the Cramp Steel Co., whose works are at Collingwood, Ont., was first promoted and their general scheme placed before the public, many people expected the immense steel plant to come into existence as it were by the stroke of a fairy wand, and were naturally disappointed that two or three years have been occupied in its construction. The wisdom of the management, however, splendidly justified by the magnificent structures that have been erected, ever present monuments to the stability and permanency of the works and in every way a credit to the town and company.

We herewith present some excellent illustrations of the buildings and plant of the company at Collingwood. They hardly

adapted to operate on basic material. That is to say the slag will be lime and by this method the phosphorus and sulphur can be eliminated. This is the process now in use in all the large steel plants in the United States. The product is completely under the control of the chemist and any quality of steel from mickle steel of the hardest description down to soft steel for boiler rivets, etc., can be produced at will.

One of the illustrations shows the charging platform of the furnaces just after the last brick was laid. The lining of these furnaces is made of magnesite brick which was imported from Styria in Austria as there is none of this material to be found in this country or the United States.

Another illustration shows the front of the furnaces and the hydraulic cranes that are used in pouring the steel when it is



General View Cramp Steel Co's Works.

do justice to the plant as the pictures were taken some weeks ago when it was not as far advanced as at present. The plant is now completed and ready for operation.

The general view will give some idea of the appearance of the buildings. On the left is the open hearth building, 100 x 100 feet, 30 feet high, built of structural steel and covered with heavy corrugated iron. This building has also an 18 foot bay of structural steel. In it is installed two twenty-ton open hearth furnaces of the most modern type similar in design to the latest Carnegie furnaces at Duquesne, Pa. The gas producer plant is located in the rear of the building, coal for fuel being brought in on an elevated track shown in general view. Two large steel stacks standing upon their foundations without any guys, carry off the waste products of combustion.

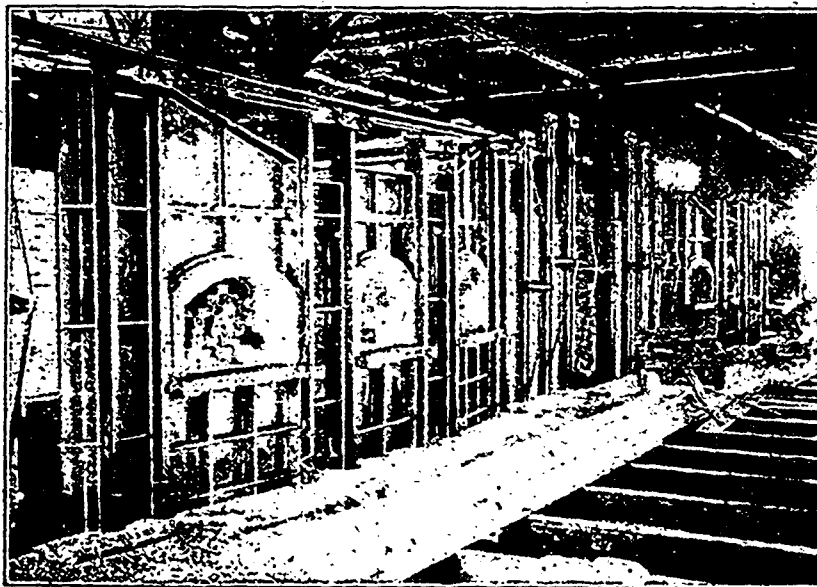
The producer plant consists of four water-sealed producers of the most improved type. The gas producers are stoked from the coal platform, thus doing away with hoisting charges on the coal.

The gas heating chambers are located under the charging platform, this form of construction adding to the life of the furnace. The platform is built of steel and concrete with iron floor plates. The material for the charge is brought upon this platform by a narrow gauge railway which runs up one of the trestles. The material charged into the furnaces will consist of pig iron, steel scrap, a small proportion of limestone and iron ore from the company's own mines.

The furnaces are

cast into ingots. The central crane has a capacity of thirty tons, the one on the left twenty tons, and the one on the right ten tons. The steel when ready is poured from a large ladle swinging on the central crane, into ingots 7x7 inches and four feet high. The moulds for the ingots are set in nests with a central ingot and runners at the bottom so that they will be all bottom poured. There is a standard gauge and a three-foot gauge railway track in this building on the ground level.

The narrow gauge track runs the ingots as soon as they are stripped from the open hearth building into the rolling mill, which is shown on the right of the general view of the works. This building is 330 feet long by 120 feet wide and contains the heating furnaces and mills for finishing the steel into shape for the blacksmith, and agricultural machinery and machine manufacturers.



Charging Platform of Open Hearth Furnaces.

Adjoining the open hearth building is a smaller building which contains the hydraulic pumping plant. In this building there are two large duplex hydraulic rams, a large steel tank that will hold 11,000 gallons, and a Reible machine used for testing the steel bars so as to show their tensile strength. This machine will exert a force of 100,000 pounds, or fifty tons to the square inch of material. Every charge of steel will be tested and a record of it kept, the idea of the company being to turn out nothing but the very best quality of steel.

The rolling mill building is a very important structure. It is sheathed with iron throughout and contains the following equipment:—Two heating furnaces of the reveratory type for heating ingots. The ingots are brought to the doors of the furnaces by the narrow gauge railway. The waste heat from these furnaces is passed through two upright water tube boilers so that nothing is lost. When heated the ingots are carried by a system of conveyors to a three high roughing mill where they are rolled down into three by three billets. A portion of the billets are sent to the ten-inch mill for finishing into sizes below one and a half inches. The larger sizes are finished on two stands of 18-inch three high rolls. The billets are sheared by a large alligator shear and the finished material from the 18-inch finishing rolls is cooled on a hot bed 68 feet long. This hot bed is equipped with a large cold bar shear.

The 10-inch mill is intended to roll a bar 120 feet long. This mill has five stand of rolls and is designed for looping and rolling on the semi-continuous system. Underground tunnels take care of the red hot bars and keep the floor line clean.

The finished bars are run out on straightening plates and are cooled on a hot bed 120 feet long by 15 feet wide. A double shear, driven by steam, shears the finished bars in to the desired lengths. The idea of rolling long bars is to avoid waste as there is always a foot or so at each end of the bar that has to go back to the furnace.

The mills are very powerfully engined. The 10-inch mill is driven by an Allis rolling mill engine of 350 h.p. The roughing and 18-inch finishing train is driven by a 750 h.p. Corliss engine. All the work is of the most substantial description. All the foundations are solid concrete laid on the bed rock.

In this building there is also a Moffat feed water heater, a high speed engine of 90 h.p. which drives the large bar shears, and two large pumps to supply the mills and boilers with water. This mill is of the most modern and complete description.

The central stone building shown in the picture contains a battery of four large boilers which takes care of the engines around the works, also a complete machine shop and forge, and an electric light plant. The power for the lighting and machine shop is derived from a large 90 h.p. engine installed in this building. There is also in this building a large duplex pump and a steel tank which holds 9,000 gallons.

The machine shop is equipped with three large lathes, one of them, a rail lathe swinging 72 inches, a planer, a power hammer, emery grinders, bolt threading machines, radial drills and a large crane to serve the various machines.



Front View Open Hearth Furnaces.

Each building is served with a standard gauge railway switch, and the company owns its own locomotive equipment which consists of a standard gauge switching engine, a standard gauge locomotive crane and a narrow gauge saddle tank locomotive, also crane to handle the material used and scales to weigh it.

The stock yard is equipped with a large shear for cutting. Adjoining the pump building will be the chemical laboratory. The equipment for this laboratory is most elaborate and complete. It will be the duty of the chemist and his assistant to keep constant watch on the process of manufacture, not only to see that the material turned out is of the very best quality, but by making constant analysis to show where there is loss and to avoid it.

The manager, Major J. A. Currie, has devised a shop cost system for the works by means of which the cost of the product is kept daily. A card tied to a bundle of steel bars will give the key in the statistical office to the cost of material, labor fuel, insurance, etc., that entered into its manufacture. This system, being a daily one, will also be used for comparative purposes, and will enable the company to tell exactly every morning its position as to cost of material made the previous day. By this system of organization a constant check is kept on the works and losses avoided.

The company will manufacture bar steel of sections from six inches down, shafting, material for fish plates, tie plates, small angles, plow beams, wagon tires, bolt or rivet steel and such forms of steel as go into consumption in Canada continually, in other words, staples. Of his material there was imported into this country last year 63,441 tons valued at \$2,549,669. The duty on such forms is \$7 per ton, so that the success of the works, as far as the Cramp Steel Co. is concerned is not in any way dependent upon any additional protective tariff. The company is in a very sure position manufacturing and finishing its own material ready for the home market.



Interior of the Rolling Mills.

Who pays for the advertising of the manufacturer who advertises? Certainly not the manufacturer who does the advertising nor those who purchase his products. Who, then, pays for the advertising? Why certainly the manufacturers who do not advertise. The manufacturer who advertises draws far more trade from manufacturers who do not advertise than pays for his advertising. Thus it is that there are manufacturers who persist in paying for the advertising done by their competitors; and in refusing to advertise they simply pay the bills of the manufacturers who advertise by allowing them to capture the cream of the business being done.

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, alkalies, etc. It is well worth the while of every reader of the Canadian Manufacturer to closely inspect all items under the head of Captains of Industry.

The Ottumwa Box Car Loader Co., shipped one of their portable dock loaders to the Canadian Pacific Railway at Fort William, Ont. The dock loader part of this company's business is a great success, and the company confidently expects to install a great many of these loaders at docks during the season. They are now building a dock loader for the Lake Erie Coal Co., at Wakerville, Ont.

The steamer H. W. Oliver recently delivered 7,000 tons of coal at Fort William, Ont. This is equal to some 150 cars, which would mean three good train-loads.

Messrs. John Fisher & Son, Dundas, Ont., has been incorporated with a capital of \$200,000, to acquire the business of John Fisher & Son and to construct pulp and paper mills, and to manufacture machinery, etc. The provisional directors include C. E. Fisher, Dundas, R. C. Fisher and G. C. Campbell, of Toronto.

The Match Machine Mfg. Co., Springfield, Ohio., are considering the erection of a factory at Kingston, Ont.

The Minneapolis Milling Co., Minneapolis, Minn., will probably erect a flour mill at Fort William, Ont.

The Ontario Felt Co's factory at Dundas, Ont., was partially destroyed by fire recently.

A waterworks and an electric light system will be installed in Whitby, Ont., at a cost of about \$65,000.

A Smith, C.E., Stratford, Ont., is inviting tenders for the erection of a steel bridge, span 120 feet over the Nith River.

A company has been formed at Kingston, Ont., with a capital of \$150,000, for the erection of a sanitarium for consumptives.

The Eagle Copper Co., incorporated under the laws of Michigan, has been licensed to do business in Ontario with a capital of \$50,000, F. Rogers, Sault Ste. Marie, Ont., to be their attorney.

The Grand Trunk Railway Co. are making arrangements to place new boilers in the electrical department at Sarnia Tunnel, Ont. A line of piping will be run to the depot, freight sheds and customs offices, and the steam to heat the house will be furnished from the

electrical building. The iron piping will be laid inside of 10-inch sewer pipes.

The Canadian Pacific Railway Co., will erect an overhead bridge at Stephen street, Port Arthur, Ont.

The Hiawatha Navigation Co., Sault Ste. Marie, Ont., has been incorporated with a capital of \$25,000, to carry on a navigation and transportation business. The provisional directors include G. T. Marks, F. S. Wiley, Port Arthur, Ont., and H. Cassels, Toronto.

The Rochester Germicide Co., incorporated under the laws of New York, has been licensed to do business in Ontario, with a capital of \$15,000, W. Fisher, of Toronto, to be their attorney.

The Canada Felting Co., St. Jacobs, Ont., has been incorporated with a capital of \$50,000, to manufacture felt goods, etc. The provisional directors include E. W. B. Snider, N. W. Gingrich, St. Jacobs, and E. Roos, South Bend, Ind.

The Algoma Builders' Supplies Co., Port Arthur, Ont., has been incorporated with a capital of \$40,000, to manufacture builders' supplies, building materials, etc. The provisional directors include Geo. Clavet, J. O. Hourigan and S. J. McCutcheon, of Port Arthur.

The Westport Electric Light Co., Westport, Ont., has been incorporated with a capital of \$40,000, to supply steam, electricity, etc., and to construct works for the production of same. The provisional directors include J. McG. Stoness, Porth Road, Ont., A. W. Gray, Bedford, Ont., and G. H. Berry, of Westport.

The Iron Ox Remedy Co., Walkerville, Ont., has been incorporated with a capital of \$100,000, to manufacture drugs, medicines, etc. The provisional directors include J. S. Lovell, Wm. Bain, and E. W. McNeill, of Toronto.

The Barrie Shoe Co., Barrie, Ont., has been incorporated with a capital of \$40,000, to manufacture boots, shoes, rubbers, etc. The provisional directors include J. C. Irwin, A. Milne and D. H. Ellis, of Barrie, Ont.

The Crosby Limited, Point Edward, Ont., has been incorporated with a capital of \$250,000, to manufacture machinery, metal goods, etc. The pro-

visional directors include O. R. Morrison, P. W. Fulford, Port Huron, Mich., and M. Krakow, Sarnia, Ont.

The Central Business College, Toronto, has been incorporated with a capital of \$150,000, to carry on a business college and training school, to establish branch schools, and to publish text books, etc. The provisional directors include W. H. Shaw, A. F. Sprott, and P. McIntosh, of Toronto.

The Municipal World, Limited, St. Thomas, Ont., has been incorporated with a capital of \$40,000, to carry on a publishing and printing business. The provisional directors include K. W. McKay, F. W. Sutherland, St. Thomas, Ont., and A. W. Campbell, Toronto.

The Hermina Mining Co., Sault Ste. Marie, Ont., has been incorporated with a capital of \$2,500,000, to carry on a general mining, milling and reduction business. The provisional directors include J. Hermann, H. Appleton, and O. J. Larson, of Calumet, Mich.

The Rainy Lake Pulp & Paper Co., Toronto, has been incorporated with a capital of \$500,000, to manufacture pulp wood, paper, etc. The provisional directors include Wm. Blackwood, Winnipeg, Man., W. J. Elliott, Toronto, and W. A. Preston, Mine Centre, Ont.

The Perrin Plough Co., Smith's Falls, Ont., will increase their capital from \$60,000 to \$100,000.

The Canadian Underskirts Co., Toronto, has been incorporated with a capital of \$40,000, to manufacture underskirts, clothing, etc. The provisional directors include G. T. Pepall, A. H. Pepall and Geo. Johnston, of Toronto.

The King Edward Hotel Co., Toronto, will increase their capital from \$500,000 to \$1,000,000.

The Canadian North-West Steamship Co., Port Arthur, Ont., has been incorporated with a capital of \$250,000, to construct barges, ships, etc. The provisional directors include G. M. Murray, G. T. Marks, and H. A. Wiley, of Port Arthur.

The Ottawa Stationery & Office Supply Co., Ottawa, has been incorporated with a capital of \$10,000, to manufacture stationery, etc. The provisional directors include J. B. T. Caron, R. Chevrier and J. L'Ecuyer, of Ottawa.

A new mica factory in which Boston capitalists are largely interested has been established at Ottawa, Ont. The Westinghouse Electric & Mfg. Co., of Pittsburg, Pa., has purchased mines and will also establish a plant in Ottawa.

The contract for building the tunnel at Niagara Falls, Ont., for the Toronto-Niagara Power Co., has been awarded to Mr. A. C. Douglass, who has carried out many similar undertakings. The tunnel is to be 2,100 feet long, with a sectional area of 514 feet.

The Clorgue Co., which possesses valuable waterpower privileges on the Kaministiquia river, near Port Arthur and Fort William, Ont., make the announcement that they will proceed with the development of that power at once.

The Power Accessories Co., Toronto, which has succeeded the Dominion Motor & Machine Co., and which recently removed to larger quarters at 231 King St. East, this city, is installing new machinery and preparing to manufacture an extensive line of power machinery and appliances.

Mr. J. Lang, Berlin, Ont., will establish a large tannery at Ottawa.

The old plant of the Toronto Foundry Co. on Niagara street has been sold to Mr. Arthur Garner, who recently came to Toronto from England and organized the Toronto Brass Bedstead Co.

The Schevlin & Carpenter Lumber Co., has purchased a site and will build a sawmill at Rainy River, Ont.

The Thistle Curling Club, London, Ont., will erect a rink 155x110 feet.

The Delano-Osborn Engineering Co., Manning Chambers, Toronto, has lately received a number of important contracts for engineering work. The company are at present consulting engineers for the Cockshutt Plow Co., of Brantford, Ont.

John H. Land, Hamilton, Ont., has organized a company for the making of sand brick.

A company has been formed at Midland, Ont., to build a number of house-boats. These boats will be towed to desirable locations among the Georgian Bay islands as the lessees require.

The steamer *Chicora* of the Niagara Navigation Co's fleet has been fitted with wireless telegraph apparatus, and messages have been transmitted between the ship and the shore station at Toronto.

Messrs. W. H. Storey & Son, Acton, Ont., has been incorporated with a capital of \$100,000, to manufacture gloves, shoe-packs, etc., and to carry on a leather-tanning business. The provisional directors include W. A. Storey, A. E. Nicklin, and H. P. Moore, of Acton, Ont.

The Canadian Bearings, Limited, Hamilton, Ont., has been incorporated with a capital of \$400,000, to manufacture roller bearings, tools, machinery, etc. The provisional directors include W. H. Wright, Buffalo, N.Y., E. D. Misner and N. S. Jones, of Hamilton.

The Crown Art Stained Glass Co., of Toronto, has been incorporated with a

capital of \$40,000, to manufacture stained, mirror, and plate glass. The provisional directors include R. L. Smith, J. Hurst, and G. Bowman, of Toronto.

The Westport Milling Co., Westport, Ont., has been incorporated with a capital of \$40,000, to manufacture flour, meal, etc. The provisional directors include J. McG. Stoness, Perth Road, Ont., A. W. Gray, Bedford, Ont., and G. H. Berry, of Westport, Ont.

The Dr. T. A. Slocum Co., Limited, Toronto, has been incorporated with a capital of \$100,000, to acquire the business of the T. A. Slocum Chemical Co., and to manufacture drugs, etc. The provisional directors include L. Solomon, H. E. Trent, and L. S. Leye, of Toronto.

The Wakefield Mica Co., Ottawa, has been incorporated with a capital of \$50,000, to acquire the business of The Wakefield Mica Co., and to carry on a mining, milling, and reduction business. The provisional directors include K. B. Holland, Ottawa, H. M. Johnson and T. R. Kennedy, Toronto.

James H. Wylie, Limited, Almonte, Ont., has been incorporated with a capital of \$50,000, to manufacture woolen and flannel goods, etc. The provisional directors include J. H. Wylie, R. L. Wylie, and J. W. Wylie, of Almonte, Ont.

The Blain, Johnston Co., Toronto, has been incorporated with a capital of \$40,000, to manufacture vehicles, carriages, etc. The provisional directors include D. McClure Johnston, W. S. Plows, and C. A. McArthur, of Toronto.

The Dominion Coat & Apron Mfg. & Supply Co., Toronto, has been incorporated with a capital of \$40,000, to manufacture linen and cotton coats, aprons, etc., and to acquire the business of The Dominion Coat & Apron Mfg. & Supply Co. The provisional directors include H. Miller, K. L. Sapera, and J. Hoops, of Toronto.

The Wylie Milling Co., Almonte, Ont., has been incorporated with a capital of \$40,000, to acquire the business of J. H. Wylie, and to manufacture flour, etc. The provisional directors include J. H. Wylie, J. B. Wylie, and A. C. Wylie, of Almonte, Ont.

The Munyon Homeopathic Home Remedy Co., Toronto, has been incorporated with a capital of \$100,000, to manufacture medicines, drugs, etc. The provisional directors include J. M. Munyon and D. Munyon, of Philadelphia, Pa., and J. J. Gibbons, Toronto.

The Western Leather Goods Co., Toronto, has been incorporated with a capital of \$40,000, to manufacture leather and canvas goods. The provisional directors include W. H. Ketchum, of New York City, W. E. D. Tighe, and D. S. McLaren, of Toronto.

The Conn Telephone Co., Conn, Ont., has been incorporated with a capital of \$1,500, to carry on the general business of a telephone company. The provisional directors include A. R. Perry, G. W. Burrows, of Conn, and T. Begley, Proton, Ont.

The New York and Lake Erie Oil and Gas Co., Windsor, Ont., has been incorporated with a capital of \$1,000,000, to explore and drill for petroleum, oil, natural gas, etc. The provisional directors include C. L. Meyer, J. W. Lovell, New York City, and A. H. Clarke, of Windsor, Ont.

The printed copies of the evidence, argument of counsel, and report of the Commissioners in the Gamey investigation, were placed in the hands of the members of the Legislature recently. The report consists of 1,098 pages of small, closely-packed type, and was printed and bound by Messrs. Warwick Brothers & Rutter, of Toronto, within six days. The typewritten manuscript consisted of upwards of 3,854 pages, averaging 300 words to the page.

The following building permits have been issued at Toronto. Messrs. King Bros., seven pair of semi-detached brick dwellings, \$15,000. S. J. Graydon, brick and stone dwelling, \$5,000; also two-story brick detached dwelling, \$4,500. McAlpine Tobacco Works, alterations and additions to factory, \$3,700.

The Massey-Harris Co., Toronto, will increase their capital from \$5,000,000 to \$8,000,000.

The Empire Carpet Co's factory at St. Catharines, Ont., was destroyed by fire June 29. Loss about \$35,000.

Pneumatic Tools and Appliances ARE GREAT MONEY SAVERS.

Air Holets,
Baggage Hand-
lers, Agitation
of Liquids or
Syrups in Re-
fineries.
Cushion and Car-
pet Cleaners,
Chipping Tools
for use by Ma-
chinists, Boiler
Makers, Stone-
cutters and
Marble Works.
Calking and Drill-
ing, Air Brushes

INGERSOLL-SERGEANT

PISTON
INLET

AIR COMPRESSORS FOR ALL DUTIES.

THE JAMES COOPER MFG. CO. LIMITED.

299 St. James St., Montreal

BRANCHES . . . ROSSLAND, B.C. RAT PORTAGE, Ont. HALIFAX, N.S.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

Pneumatic
Augers, Pumps,
Punches,
Hammers,
Rammers,
Rotary Drills,
and Augers.
Reversible
Spring Machine,
Flue Cutters,
Rollers and
Welders,
Air Lift Pumps,
Jacks,
Paint Spreaders,
Bolt Nippers.

The town of Orillia, Ont., is advertising that it will sell electrical energy for \$16 per annum per horse power, 24 hours a day service. If Orillia can sell electric power at \$16 per horse power, Parry Sound ought to sell it at, say \$20 to start with, and if anything like a decent rate were given, there is not a small business in town where power can be used that would not buy electric power. Moreover, during the hot summer months a great many of the householders and business men would put fans into their houses and stores. There are great possibilities in the electrical business, and now that the town has a good plant and a fine water power it ought to be developed to the utmost.—Parry Sound Star.

The Canadian Portland Cement Co., Deseronto, Ont., have declared a 7 per cent. dividend upon their business during the past year.

The Grand Trunk Railway Co. will make extensive improvements to their shops at Stratford, Ont., which will necessitate an increase in the staff of employees to almost double what it is now.

The steamer W. D. Matthews, which was built by the Collingwood Shipbuilding Co., Collingwood, Ont., was successfully launched at that place June 21. The following is a description of the new vessel:—Length over all, 375 feet; beam 48 feet; depth of hold 23 feet. She is built of steel, on the spar deck principle, and will carry a cargo of 180,000 bushels of grain on a draught of 18 feet. She will have triple extension engines with cylinders 20, 33½, 54, and with a 40-inch stroke. The two boilers are of the Scotch pattern, 1½ by 12 feet. The working pressure is 180 pounds, and they will be capable of developing 1,500 h.p. There is a space of five feet between the upper and the lower bottoms of the ship, and six water-tight compartments.

The Canada Metal Co., Toronto, of which Mr. W. G. Harris is proprietor, have just added three new furnaces for the manufacture of babbit metal and are operating a department for the manufacture of lead pipe.

The Toronto Carpet Mfg. Co., Toronto, have awarded the contract for the erection of a new mill 248 x 64 feet, five stories high.

The Essex Flax Mills, Essex, Ont., have begun work on the erection of a new building 65 x 45 feet, two stories high, with engine house 40 x 30 feet. A similar plant will also be built at Belle River, Ont.

Work on the new Collingwood, Ont., dry dock is rapidly progressing. When completed this autumn it will be one of the best equipped docks on the great lakes. It is built entirely with cement and stone, the latter coming from the quarries at Longford and Beamsville, Ont. The dimensions of the dock are as follows:—Length 530 feet over all; width of entrance, 60 feet; width of dock at top, 78 feet; width of dock at bottom, 60 feet; depth of water over sill, 17 feet; depth of water in dock, 21 feet. The pumping plant will be of the most modern pattern. One of the pumps is of

double suction centrifugal style; two 28-inch suction and a 36-inch discharge. The capacity of that pump is 50,000 gallons per minute. The total cost of the dock and equipment when completed will reach nearly half a million dollars.

The Library Bureau, of Boston, Mass., will establish a branch factory at Ottawa, Ont., for fitting up libraries, banks and insurance offices, and will employ about 300 men.

The Western Leather Goods Co., Toronto, are considering establishing a branch works at Brantford, Ont.

Mr. Cornelius Shields, President of The Consolidated Lake Superior Co., states that a departure will be made from the old policy of the Soo companies, and an application will be made for a special charter to do away with the subsidiary companies, on which there is not any bonded debt and incorporate them under two principal companies. By the special charter that will be secured, it is intended the two principal companies should be The Lake Superior Co., in which will be included all the subsidiary companies that have been granted a charter by the Dominion Government, and The Consolidated Lake Superior Co., in which will be included all the companies granted charters by different Governments in the United States. It is proposed to touch only such companies as have no bonded debt. Such a course will greatly simplify the management of the entire works and make it possible for them to be run as one whole.

The Standard Pure Food Co., of Detroit, Mich., which was reported as contemplating establishing a branch factory at Brantford Ont., has decided to locate at Toronto instead.

The Brampton Milling Co., Brampton, Ont., will erect a new elevator and warehouse at that place. The capacity of these mills is 200 barrels daily.

The Ogilvie Flour Mills Co., and The Lake of the Woods Milling Co., of Montreal, have had their brands registered in Japan and will send special representatives to that country to look after the development of the flour trade.

It is announced that the Rainy River Pulp & Paper Co. have secured a pulp timber concession from the Ontario Government. The concession has an area of about 270 square miles, including lakes and rivers. The Island Falls on Sand River, which runs through the centre of the concession, has also been secured for the use of the company and they are now making preliminary surveys of mill site and flumes, etc., and intend erecting a 30-ton mechanical pulp mill and a 15-ton chemical plant. They will put up a saw mill with planing mill, lath mill, and other attachments. This latter will be ready for business next year, and the pulp mill in 1905. A spur of the Canadian Northern Railway will be run into the works.

The Colborne Street Methodist church at Brantford, Ont., will erect a new Sunday school at a cost of \$3,500.

Messrs. F. Westbrook and C. Hacker, Brantford, Ont., have purchased the old

brewery property in West Brantford, upon which they will establish an up-to-date plant for the manufacture of ale and porter, under the firm name of Westbrook & Hacker. The remodeling of the building will cost about \$12,000.

The Brantford Cordage Co., Brantford, Ont., are enlarging their plant and installing new machinery.

New York capitalists are negotiating with Mayor Bell of Kingston, Ont., with a view to establishing a lead smelting works in that city.

The electric light plant at Windsor, Ont., will be improved at a cost of \$3,530.

The Y.M.C.A. will erect a new building at Owen Sound, Ont.

Plans are invited for the installation of a waterworks and an electric light system at Bruce Mines, Ont.

The town of Port Arthur, Ont., is voting on a bylaw to extend the street railway line to Current River.

The Massey-Harris Co. have purchased property adjoining their plant at Brantford, Ont., from the Cockshutt Plow Co. and will build an addition to their works.

The Dominion Wrought Iron Wheel Co. have begun the work of manufacturing their product in their Orillia factory. The work of installing the machinery and fitting up the building has not yet been completed, but as the company's orders are pressing, a start was made as early as possible to turn out wheels.

The Grand Valley Seignory, comprising fifty-four miles of timber limits and a recently erected 100 h.p. mill, formerly owned by the Lovell estate, has been purchased for \$100,000 by a syndicate of western New York and Ontario men. The property is situated on the north shore of the St. Lawrence, ten miles east of the Magdalene River.

A Roman Catholic Church will be erected at North Bay, Ont., at a cost of about \$50,000.

Plans have been prepared for the erection of a new convent building at Fort William, Ont., and tenders will be called for soon.

The ratepayers of Waterloo, Ont., will vote on a by-law to provide \$6,000 for building and repairing bridges in that town.

C. Bowman, C.E., Berlin, Ont., has been instructed to prepare plans for abutements and superstructure for a bridge over Coxes Creek near that town.

Mr. C. E. Chipley, of Sault Ste Marie, Mich., has purchased a site at Sault Ste Marie, Ont., upon which he will erect a two story building 80x50 feet for the accommodation of Messrs. Moore & Brown, hardware manufacturers of that city.

The Martin & Stanley Co., Peterborough, Ont., will enlarge their piano factory.

The Kemp Mfg. Co., Toronto, will erect a five-story factory addition to cost about \$40,000.

The Grand Trunk Railway Co. have commenced the erection of a new station at Whitby, Ont.

A new town hall will be erected in Bowmanville, Ont.

Despite the strikes and other untoward circumstances, building operations in Toronto thus far this year have far exceeded those for the same period of the previous year. The total to the end of June this year amounts to \$2,214,048, and during the first half of last year the total was \$1,901,144, and increase for the present season of \$313,000. During June the values, indicated by permits issued, amounted to \$634,325, and during June a year ago to \$400,470.

Locks of the Lachine Canal, Montreal, are being lengthened from 200 feet to 270 feet, the standard canal size. The new locks will have a width of 45 feet, a depth of 32 feet, with 17 feet of water on the sills. The work is expected to be completed by May 1, 1904.

Mr. R. McKay of McKay & Sons, boiler-makers, city of Quebec, has invented a boiler which is, in the repute of those who have seen it, a decidedly original effort and of much merit in cases where economy of space is desired. The boiler has already been patented in this country and some European countries. The claims for merit in this boiler are: Economy of fuel as the fire has very much more heating surface to act on than in probably any other upright boiler made, it is practically two boilers in one and the fire impinges on the tube surfaces stronger than under ordinary circumstances; the power that can be developed per square

foot of floor space and to be greater by far than in any boiler yet built—no small item, says Mr. McKay. The rapidity with which steam can be raised makes the boiler valuable for fire engines, launches, automobiles, traction engines, and in any plant where steam is required quickly for general use, or as a reserve plant when other sources fail, such as water power or electricity.

The Canadian Bullock Electric Mfg. Co., Montreal, has been incorporated with a capital of \$1,000,000, to manufacture electrical appliances, machinery, etc. The provisional directors include R. A. E. Greenshields, A. F. Cayford and A. Collyer, of Montreal.

The Phoenix Bridge & Iron Works Co., Montreal, has been re-incorporated with a capital of \$500,000, to manufacture machines, machine tools, locomotive engines, etc. The provisional directors include J. N. Greenshields, R. A. E. Greenshields, and W. G. Mitchell, of Montreal.

The J. Bruce Payne, Limited, Granby, Que., has been incorporated with a capital of \$100,000, to acquire the business of J. B. Payne and to manufacture tobacco, cigars, etc. The provisional directors include J. B. Payne, J. J. Payne and Jas. Topp, of Granby.

The Granby Smelting Co., Granby, Que., will enlarge their smelter at a cost of about \$300,000.

The Monarch Mfg. Co., St. Romuald, Que., has been incorporated with a

capital of \$20,000, to manufacture shirts, collars, etc. The provisional directors include E. Lamontague, O. St. Laurent, and E. St. Laurent, of St. Romuald.

The Club Jacques-Cartier, Limited, Montreal, has been incorporated with a capital of \$20,000, to erect club houses, etc. The provisional directors include J. A. David, R. Monty, and J. U. Emard, of Montreal.

The ratepayers of St. Henri, Montreal, will vote on a by-law to raise \$240,000, for street improvements.

The Eastern Townships Bank, with head offices at Sherbrooke, Que., will erect office buildings at Huntingdon, Rock Island, Coaticook and Richmond, Que.

The Montreal City Clerk is inviting tenders for the erection of a steel bridge on St. Catherine street, that city.

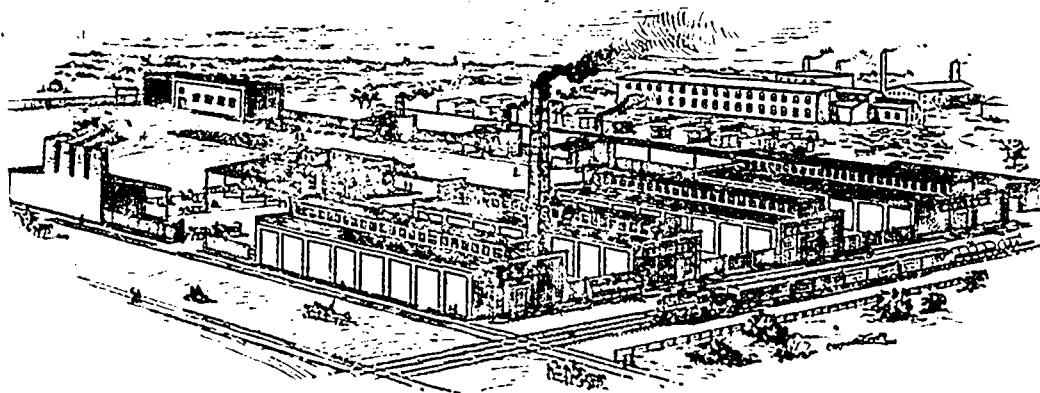
The Bank of Ottawa, Montreal, are inviting tenders for the erection of a ten-story building in that city.

Messrs. J. A. & M. Cote, St. Hyacinthe, Que., will erect a factory 130x40 feet and three stories high for the manufacture of boots and shoes.

The Laurentide Pulp Co., Grand Mere, Que., will increase their capital from \$1,600,000 to \$2,000,000, and will change their name to The Laurentide Paper Co.

Raoul Blais' saw mill at Sayabec, Que., was recently destroyed by fire.

The Canada Iron & Furnace Co., Montreal, in which the Consolidated



It is nearly Half a Century

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.



Lake Superior Co. is largely interested, have started operations on an extensive magnetic iron property situated twelve miles from Egansville, Ont., in the Parry Sound district. In making the announcement of the opening, the president of the company, Mr. G. E. Drummond, stated that the ore was of a very high grade, and found particularly valuable when mixed with the bog ore to be found in the company's properties at Radnor, Que.

The Auditorium Co., Quebec City will establish a new theatre in that city. Mr. A. J. Small will be the lessee and manager of the theatre.

Berlinguet & Co., architects, Quebec City, have prepared plans for a Cathedral at Chatham, N.B. They are also making plans for an addition to the monastery of the Franciscan Fathers.

The Protestant School Commissioners of Longueuil, Que., will erect a new schoolhouse.

The Canadian Rubber Co., Montreal, will remodel their plant and install new machinery.

Mr. Andre Vallani's sawmill at L'Annouciation, Que., was recently destroyed by fire.

The New England Canadian Asbestos Co., which acquired the Beaver and other working properties at Thetford Mines, Que., has suspended operations.

The International Coal & Coke Co., practically a subsidiary company of the Granby Consolidated Mining Smelting & Power Co., is proceeding with the development of its colliery, near Blairmore, N.W.T. The authorized capital is \$3,000,000. The officers are: A. C. Flumerfelt, president; H. N. Galer, treasurer; and W. G. Graves, secretary. At date there are about 600 drifts on the various seams. The coal is of good coking quality, and when the coking plant is completed the company will be in an excellent position to supply the Granby smelter.

At a meeting of the directors of the Nova Scotia Steel & Coal Co., held at Montreal last week the matter of taking over the Dominion Iron & Steel Co., or forming an amalgamation of the two companies was discussed. The Nova Scotia Steel & Coal Co., is now in a highly prosperous condition, the past year being the most satisfactory in the history of the company.

Messrs. E. D. Davison & Sons, Bridgewater, N.S., have sold out their lumber mills to Pittsburg capitalists, who have been incorporated in Nova Scotia with a capital of \$3,000,000, to acquire the Davison's lands. Mr. J. M. Hastings, Pittsburg, Pa., is at the head of the new company.

Tenders are invited for the erection of new St. Andrew's Presbyterian Church building at Sydney, N.S.

The Y.M.C.A. will erect a building in Stellarton, N.S., to cost \$7,000, and one in Springhill, N.S., to cost \$3,000.

The Standard Coal & Railway Co., which a few months ago acquired a large area of coal land near Parrsboro, N.S.,

are about to begin prospecting with a diamond drill. The company, in addition to their large holdings, have been granted a charter to build a railroad from Maccan, on the Intercolonial, to Parrsboro, which will pass through their coal territory.

The daily output of the Reserve mine at Glace Bay, N.S., has reached 3,000 tons, and in a few days, when work is resumed on other levels, several hundred tons will be added to this amount.

The Nova Scotia Telephone Co., have begun work on a line across the Strait of Canso to connect with the Cape Breton telephone system.

The water system of North Sydney, N.S., will be improved at a cost of \$45,000.

The Waverly Gold Mining Co., Waverly, N.S., will install an electric plant at Rutherford's Falls. The electric power generated will be utilized to drive the 60-stamp mill, and will also run the drills and other machinery, supply the mine with all the light and power required, and generate sufficient current to light the towns of Waverly, Bedford and Dartmouth, N.S.

The Maritime Coal Co., which purchased the Chignecto colliery of the old Londonderry Iron Co., have spent about \$100,000 in pumping out the old workings, in development and in the construction and equipment of a line of railway from Chignecto to Maccan, N.S., on the Intercolonial Railway. They are now down a distance of about 1,400 feet and have levels run off at 600 feet and 1,000 feet. The plant has been greatly improved, and the output, it is expected, will shortly be increased to 400 tons per day. The coal from the lower levels has given excellent results from tests made on the Intercolonial and Quebec Central Railways. Mr. James Baird, one of the oldest active colliery managers in Canada, and one of the most capable, is in charge of the property.

The Strathcona Coal Co., River Herbert, N.S., have elected the following officers for the ensuing year: F. A. McCully, president; Senator Wood, vice-president; Wm. Hall, manager; R. A. Borden, secretary-treasurer.

Considerable progress is being made in the construction of the blast furnace that is being erected by the Nova Scotia Steel Co., at Sydney Mines, N.S. They expect to have it blown in early next fall, after which they will proceed with the construction of three more furnaces. The capacity of the furnace that is now being built will be four hundred tons of pig iron daily. Work on the erection of an open-hearth furnace in connection with the plant at Sydney Mines will be commenced some time during the summer, and they expect to add more blast and open-hearth furnaces as their traffic in steel warrants.

A new court house and jail will be erected at Shelburne, N.S., at a cost of about \$12,000.

The St. John, N.B., city council are considering the erection of a bridge between the east and west sides of the

St. John Harbor. The cost to be about \$1,800,000.

The waterworks and sewerage system at Campbellton, N.B., will be extended at a cost of about \$10,000.

The Eastern National Copper Co., are considering the erection of a large smelter works at Cheticamp, N.S.

Mr. H. M. Whitney, of Boston, Mass., has been elected president of the Newfoundland Timber Estate Co., recently organized to operate in Newfoundland. The company controls 1,760,000 acres of timber lands, owns seven mills and has a capacity of \$4,500,000.

It is reported that the Cape Breton Coal & Iron Co. will within a short time begin the development of its coal areas at Caroboo Marsh and Mira Road, a few miles from Sydney, C.B. A large quantity of machinery has been ordered.

The Eastern Canada Brick & Tile Co., has taken over the brick works at Sylvester, N.S., operated by Wm. A. Cameron, Stellarton, N.S. The incorporators are Wm. A. Cameron, C. J. Coll, Wm. P. McNeil, H. T. Sutherland, T. Cantley, D. McDearmid, Raymond Dand, and Harvey Graham. The capital of the company is \$50,000 with power to increase to \$100,000.

Alex. McNeil, of Halifax, N.S., is the principal promoter of the Dominion Antimony Co., a corporation with a proposed capital of \$1,000,000. It is asserted that there are large deposits of antimony in the country which can be profitably worked.

A new court house will be erected at Kentville, N.S., at a cost of \$9,000.

A new glebe house will be built at Dominion No. 2, Glace Bay, N.S., at a cost of about \$3,000.

A. Drysdale, Commissioner of Public Works, Halifax, N.S., is inviting tenders for the erection of an agricultural college at Truro, N.S.

The Union Bank, Halifax, N.S., will erect a new banking building in Parrsboro, N.S.

Plans have been prepared and tenders are invited for the erection of a new mill, 202 x 58 feet, two stories high, for the Oxford Woolen Mills, Oxford, N.S. A large part of the old mill will be torn down, what remains to be used for storing wool. The company proposes having the new plant ready for occupancy by fall.

The Grand River Pulp & Lumber Co., controlled by Messrs. Dickie & Gillies, of Stewiacke, N.S., will erect a new saw mill in Labrador, where they have 400 square miles of timber lands, capable of giving them ten million of logs yearly for a long period, for manufacture into deals. The supply of pulp wood on the acreage is said to be almost inexhaustible. The saw mill will be 168 x 60 feet, and will have a Killam double circular saw installed.

The Logan Tanning Co., of Pictou, N.S., are constructing a new brick power house, and installing Robb boilers having a capacity of upwards of 400 h.p. An interesting feature in connection with this plant is the mechanical draft apparatus,

which is designed to burn the wet tan bark as it comes from the leaches. It has hitherto been very difficult to burn or dispose of this wet bark. Two boilers are being provided with bark burners, and it is expected these will provide sufficient steam for all purposes. Mr. Alfred J. Stevens, of Toronto, is looking after the work, and furnishing the draft apparatus, which is of special design, and manufactured by the American Blower Co., of Detroit, Mich.

The Maritime Packing Co., Sussex, N.B. has been incorporated with a capital of \$150,000, to erect and operate a packing factory, etc. The provisional directors include S. H. White, H. R. Ross, and J. E. Slipp, of Sussex, N.B.

The Elgin Milling Co., Elgin, N.B., has been incorporated with a capital of \$15,000, to carry on a general flour milling business. The provisional directors include H. R. Emerson and Jas. Friel, Dorchester, N.B., and D. D. Lutwick, of Alma, N.B.

The proposed new building for the Y.M.C.A., at St. John, N.B., will cost between \$60,000 and \$80,000.

Eighty more coke ovens will be constructed by the Nova Scotia Steel & Coal Co., Sydney Mines, N.S.

The Canada Life Assurance Co. have purchased the Burpee building, St. John, N.B., which will be remodelled and fitted up as a modern office building.

The Northern Iron Works Co., Winnipeg, Man., have rebuilt a plant to take

the place of the one destroyed by fire several months ago and are again in full operation.

The G. B. Housser Lumber Co., Portage la Prairie, Man., has been incorporated with a capital of \$100,000, to carry on a general lumber and saw-milling business, and to acquire the business of G. B. Housser & Co. The provisional directors include G. B. Housser, F. J. Medway and D. A. Macdonald, of Portage la Prairie.

The Canadian Port Huron Co. will erect a warehouse 300x150 feet in Winnipeg, Man.

The Gaults Co, Limited, Winnipeg, Man., has been incorporated with a capital of \$750,000, to manufacture clothing, drygoods, etc. The provisional directors include H. M. Belcher, F. G. Crawford and J. D. Brown, of Winnipeg.

New machinery is to be installed in the mill of the Arrow Milling Co., at Birtle, Man.

The Cement Block Co. will establish a plant at Fort Rouge, Winnipeg, Man.

A Methodist college will be erected at Edmonton, N.W.T.

A large fire occurred on June 23 at Wetaskiwin, N.W.T., which destroyed the Driard Hotel; Criterion Hotel; J. W. Heric & Co's departmental store and several other buildings. The total loss is about \$200,000.

The Dowling Milling Co., are erecting a new wheat elevator near their mill at Edmonton, N.W.T. It is 50x40 feet,

with bins 60 feet high, and will have a capacity of 80,000 bushels. This will bring the total elevator capacity of the mill up to 120,000 bushels.

The Brandon Binder Twine Co., Brandon, Man., will increase their capital from \$100,000 to \$200,000.

Messrs. Turnbull & McManus have purchased the Citizens' Bank property at Winnipeg, Man., on which they will erect a cash and door factory.

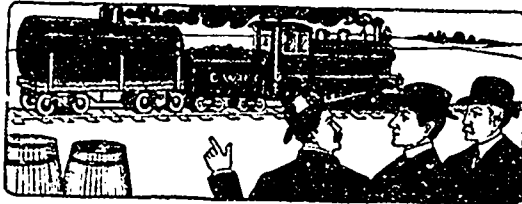
Mr. B. N. Fraser, who recently purchased the felt factory at Brandon, Man., is converting it into a woolen mill and expects to start running about September 1. A warehouse is being built in connection therewith.

A waterworks system will be installed at Moosejaw, N.W.T., at a cost of about \$150,000.

Tenders are invited by the chairman of the committee of works, Winnipeg, Man., for the supply of a quantity of sewer pipe including bends and junctions.

The Canada West Land Co., Edmonton, N.W.T., has been incorporated with a capital of \$20,000, to manufacture timber and to operate mills, etc. The provisional directors include A. T. Gurd, W. M. Lowery and H. J. Dawson, of Petrolia, Ont.

The Department of Railways at Ottawa, have approved the plans for the erection of a bridge across False Creek, near Vancouver, B.C. The bridge will be 4,000 feet long and will be built by the Great Northern Railway Co.



How Far Does Your Oil Go?

If you use your lubricating oil only once you are losing money.

The oil you throw away will do duty again and again if it is cleaned and filtered through a



CROSS OIL FILTER.

It reduces oil bills from 50 to 75 per cent., as it makes your oil go two or three times as far as before.

Let us put a Filter in for you to try 30 days.

If it saves half the money you pay for oil, send us your check. If not, return at our expense.

Will you write for it to-day?

One man says, "It saves enough lubricating oil in a year to pay for many Filters."

THE BURT MFG. CO.,

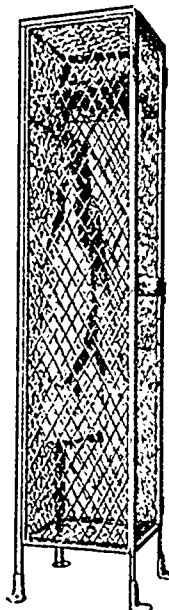
LARGEST MFRS. OF OIL FILTERS IN THE WORLD.

AKRON, OHIO, U.S.A.

A complete stock carried by the

FAIRBANKS CO., Montreal.

THEY ARE COMING



For FACTORIES
HOSPITALS
HOTELS
BANKS
CLUBS and
INSTITUTIONS

WIRE LOCKERS

WILL SOON BE IN
GENERAL USE.

WE MAKE THEM

and all kinds of Bank and Office
FITTINGS.

THE GEO. B. MEADOWS

Wire, Iron & Brass Works Co., Limited.

117 King St. West, TORONTO, Canada

The town of Red Deer, N.W.T., has concluded an agreement with the Western Telephone Co., whereby there will be installed a telephone system of the most efficient and up-to-date character. An agreement has also been made for the erection of a power house and electric plant of the finest modern class to furnish light and power.

Messrs. J. M. Hole's agricultural implement works and J. J. Smith's brick works at Yorkton, N.W.T., were destroyed by fire recently.

The Canadian Bank of Commerce will erect new banking buildings at Fernie, B.C. and Morrissey Mines, B.C.

Mr. A. J. Burton, Parry Sound, Ont., will erect a large saw factory in Vancouver, B.C. at a cost of about \$15,000.

The King Mercantile Co., Cranbrook, B.C., are constructing a second sawmill on their limits, one mile west of their present mill. The new mill will have a capacity of about 35,000 feet, giving a combined output of the two mills of 65,000 feet.

The new cannery being erected at Steveston, B.C., on the site of the old Imperial, will be about the largest on the river. The machinery is now being installed, and the cannery will be in good working order by the time the season opens. There are four separate lines of machinery, so that, if the supply of salmon is sufficient, the cannery will have a capacity of 60,000 to 80,000 cases for the season.

The report of the Crow's Nest Coal Co. states that the coal produced during the year 1902 amounted to 442,049 tons, as compared with 425,457 tons in 1901. Of this tonnage 191,605 tons were sent to the company's ovens, and produced 121,000 tons of coke as against 125,085 tons made in 1901, while the balance, 250,444 tons, were disposed of as merchantable coal.

The city engineer, of Vancouver, B.C., has recommended the construction of sewers to cost about \$118,000.

The School Board of Vancouver, B.C., have decided to build the new high school building on the Fairview property.

The British Columbia Sugar Refinery Co. will erect a large warehouse at Vancouver, B.C. It will be 200x90 feet and will cost \$50,000.

Messrs. Frank Marquis and Geo. Gilbert recently returned to Kaslo, B.C., from a prospecting tour in that district, bringing with them pieces of quartz that are more than one half gold. A prominent mining man stated that in describing them it would be more proper to say pieces of gold with a little quartz. The property, which is called the gold park group of claims, is located on Poplar Creek, a tributary of the Lardo River, about one mile from the Kootenay and Arrow Head Railway, and about twenty miles from Lardo, B.C.

Since the settlement of the strike at the mines in the Crow's Nest Pass region, B.C., the output has been steadily increasing, and the maximum tonnage of coal and coke will soon be produced. At Michel the daily average has reached

1,200 tons, and the coke ovens are in full blast. At Coal Creek between 700 and 800 tons of coal are being produced daily, and the output is steadily increasing. Of the 424 coke ovens at Fernie, B.C., over half of them are in operation, and others are being put in blast every day. At Morrissey the coal output has reached 600 tons per day.

The Summerland Development Co. has been incorporated at Victoria, B.C., with a capital of \$150,000, to erect hotels, public halls, bridges, etc.

The British Columbia Broom Mfg. Co., Vancouver, B.C., has been incorporated with a capital of \$10,000, to manufacture brooms, brushes, etc.

The Port Renfrew Lumber Co., has been incorporated at Victoria, B.C., with a capital of \$10,000, to construct dams, bridges, etc., and to carry on a general lumbering business.

The Big Bend Lumber Co. has been incorporated at Victoria, B.C., with a capital of \$500,000, to manufacture lumber, shingles, etc.

The British Columbia Standard Mining Co. has been incorporated at Victoria, B.C., with a capital of \$200,000, to do a mining and milling business.

The Black Diamond Tunnel Co., of Dover, Del., has been licensed to do business at Ainsworth, B.C., with a capital of \$1,000,000, H. M. Stevenson, of Ainsworth, to be their attorney.

The China Creek Lumber Co. has been incorporated at Victoria, B.C., with a capital of \$30,000, to carry on a general lumber and milling business.

The North Vancouver Ferry & Power Co. has been incorporated at Victoria, B.C., with a capital of \$100,000, to operate a ferry on English Bay, B.C. and to generate power for manufacturing purposes, etc.

The Victoria (B.C.) Electrical Works will build a line of direct connected marine lighting equipments up to 150 lights capacity.

The British Westinghouse Electric & Mfg. Co., near Manchester, England, outbids German and Austrian manufacturers and wins another large municipal contract in England, the competition among manufacturers having been unusually keen and speculation rife as to the successful tenders. The London, England, County Council, however, at a recent meeting, closed a contract with the British Westinghouse Co., amounting to about \$590,000, and calling for 200 tramcars which are to be used on its lines south of the Thames. This is the largest order ever given for electric cars in England. One-half of the cars are to be of the single-truck type, 32 tenders having been received for these. The remaining 100, for which 26 tenders were received, will be double-deck, bogie-truck tramcars which are to be delivered in 28 weeks.

Wm. B. Scaife & Sons Co., Pittsburg, Pa., sole manufacturers of the We-Fu-Go and Scaife Water softening and purifying systems, have found it necessary to build an addition to their plant at Oakmont,

Pa., to accommodate their increased business. They have just completed the erection of a new shop 100x60 feet, equipped with the latest improved machinery, which will be used exclusively for manufacturing the We-Fu-Go and Scaife Systems. The company have at the present time, systems aggregating 95,000 h.p., under construction for steam boiler plants, in addition to plants for softening water to be used in manufacturing processes such as dyeing and bleaching in woolen and cotton mills, washing in laundries, etc.

The American Promotion Syndicate, Portland, Ore., is preparing to develop coal mines at Edmonton, N.W.T.

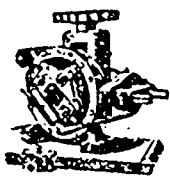
Recently in the Newfoundland Legislature the Premier introduced the following resolutions in relation to the working of the coal areas and iron deposits of the colony: The Governor-in-Council may authorize the payment of the following bounties on pig iron, puddled into bars and steel ignots made in Newfoundland: 1. A bounty of \$1.50 per ton on pig iron made in Newfoundland from ore, fuel and flux, the products of the colony. 2. A bounty of \$1.00 per ton on pig iron made in Newfoundland from ore and flux, the products of the colony. 3. A bounty of \$1.00 per ton on puddled iron bars manufactured from pig iron made in Newfoundland from Newfoundland ore. 4. A bounty of \$1.00 per ton on steel billets manufactured in Newfoundland from pig iron (made in Newfoundland from Newfoundland ore), and such other ingredients as are necessary and usual in the manufacture of steel ignots, the proportion of such ingredients to be regulated by order of the Governor-in-Council. Provided that in computing the bounty no payment shall be made with respect to foreign ores or metal produced therefrom used in the products herein mentioned.

Mr. F. H. Clergue is interesting himself in the development of water powers on Lake Superior, and has closed negotiations for the purchase of rights that carry the immense power of Kakebeka Falls, a few miles back of the Canadian head of the lake.

Three new steamers, J. H. Plummer, H. M. Pellatt and A. E. Ames, built in Great Britain for the Canadian Lakes & Ocean Navigation Co., have reached Montreal from Antwerp with steel rails and are proceeding to Port Arthur at the head of Lake Superior to unload. The cargoes are for the Canadian Northern Railway. These are the first vessels loaded in Europe to go to Port Arthur without breaking bulk.

It is understood that the Dominion Government has decided to loan a further sum of \$3,000,000 for harbor equipment to the Montreal harbor commissioners. The steel sheds which it is proposed to erect will alone cost \$2,500,000.

The Welland Canal Tug Co. has been incorporated under the Dominion Companies' Act with a capital of \$95,000 to carry on a general towing business on the Welland Canal and the great lakes. The head offices are at Port Colborne, Ont., and the incorporators are Dr. W.



ARMSTRONG'S PIPE THREADING AND CUTTING OFF MACHINES,

Save Time and Labor.

For Hand or Power.

Capacity from 1/2 to 6 inches.

Armstrong's Genuine Stocks and Dies,

THE BEST WATER, GAS, AND STEAM FITTERS' TOOLS

ARE MANUFACTURED BY

THE ARMSTRONG MFG. CO., - BRIDGEPORT, CONN.

New York Office 139 Centre St.

Catalogue on Request.



**M^cCULLOUGH-DALZELL
CRUCIBLE COMPANY
PITTSBURGH PA. U.S.A.**

The best materials, most thorough workmanship and long experience combine to make the McCullough-Dalzell crucibles live longer than others and represent the maximum amount of strength in their make-up.

-If interested write.



PIG IRON.

M. & L. SAMUEL, BENJAMIN & CO., 27 Wellington St. W., Toronto.

ENGLISH HOUSE - SAMUEL, SONS & BENJAMIN, LONDON, E.C.

IRON and STEEL

All goods for import at close prices to wholesale buyers.

A. C. LESLIE & CO., - MONTREAL.

CANADA IRON FURNACE CO., Limited

Manufacturers of the well-known

Montreal, Radnor and Three Rivers

"C.I.F." THREE RIVERS CHARCOAL PIG IRON

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

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

Offices: CANADA LIFE INSURANCE BLDG., - - MONTREAL.

Charcoal Pig Iron

DESERONTO IRON COMPANY, LIMITED, - Deseronto, Ontario

Manufacturers of High Grade Charcoal Pig Iron for Special Foundry Purposes, Malleable Castings, Car Wheels and other Chilled Castings.

COAL JAS. H. MILNES & CO. COKE

WHOLESALE DEALERS IN
Best Grades of STEAM COALS.
Best Grades of BLACKSMITHS' COALS.
Best Grades of FOUNDRY COKES.

Shipments made direct from Mines to any point in Canada. Write for quotations.

Head Office: 86 KING ST. EAST

TORONTO.

Docks: Esplanade, Foot of Yonge

**W-H-F-U-G-O
SCAIFE**

Water Softening and Purifying Systems
FOR STEAM BOILERS AND ALL INDUSTRIAL USES

SCAIFE SAND AND CHARCOAL FILTERS...

FOR DOMESTIC AND INDUSTRIAL PURPOSES
Filters and Filtering Systems of any Size and Capacity.

WM. B. SCAIFE & SONS CO., (FOUNDED 1802), PITTSBURG, PA.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

Carter, C. S. Carter, F. W. Carter, R. R. Carter and M. Macdonald, all of Port Colborne.

The Union Railway Co. of New York City is building three new sub-stations in the vicinity of New York, one at West Farms, one at Mount Vernon and the other at Yonkers, all of which are to be equipped with Westinghouse apparatus exclusively. They will be operated by the very large power station at Kingsbridge, which is owned by the Interurban Street Railway Co., having been built by Westinghouse, Church, Kerr & Co., and the Westinghouse Electric & Manufacturing Co.

The E. Howard Clock Co., Boston, Mass. have recently installed the following Watchman clock systems for the American Axminster Industry, Auburn, N. Y.; the Stillwater Mfg. Co., Stillwater, Minn.; a large tower clock with bell for the court house at St. Francisville, La., and a tower clock with 8-foot dials for the Congregational church at Holliston, Mass. They have also made two special bronze clocks for the interior of the New York Stock Exchange, and erected a fine pocket clock for the Lorimer Wright Co., Providence, R. I.

For the purpose of furnishing current to the arc lamps at the Allouez Ore Docks on Lake Superior, which are the largest iron ore docks in the world, the Great Northern Railway Co. has recently purchased from the Westinghouse Electric & Mfg. Co., Pittsburg, Pa., two 75-kilowatt, 2,200 volt, two-phase generators, complete with two 562 kilowatt exciters, and a four-panel switchboard. The order also calls for seven 7½ kilowatt and one 2½ kilowatt, O. D. type transformers.

The Stowe-Fuller Co., Cleveland, Ohio, is extensively known for its fire-bricks, fire-clay and tile, which they manufacture; also for magnesite, silica and fire-clay materials for all furnace work, and also for their furnace engineering. The company is now selling agent for the Olive Hill (Ky.) Fire-Brick Co.

Three modern freight steamers were launched this week at the plants of the American Shipbuilding Co. at Wyandotte and Superior for the Great Lakes & St. Lawrence Transportation Co. and the Provident S.S. Co.

The American Sault Paper Co., of Sault Ste. Marie, Mich., are inviting tenders for the erection of a new plant. J. H. Wallace, Masonic Temple Building, Sault Ste. Marie, Mich., is the engineer in charge of the work.

The Canadian officials who had charge of the exhibit made by the Dominion at the exhibition recently held in Osaka, Japan, state that there is a great opening in the Flowery Kingdom for Canadian pulp and paper. A prominent exhibit in the Canadian building was one showing the pulp and manufactured paper in all the different processes, from the standing tree to the finished paper. The Japanese showed the greatest interest in this exhibit, and expressed a desire to see more of the Canadian article. Japan has many newspapers with circulations over the fifty thousand mark, and a number that

run over one hundred thousand. These would take big orders of paper shipped from abroad, and as Canada has a direct line of steamers running from Vancouver to Japan, it is likely an early effort will be made to introduce Canadian pulp and paper into that country. A good hold has already been secured in Australia, for which there is a similar direct line to facilitate shipments.

The resolution recently passed by the Newfoundland Legislature for thorough scientific exploration of the coal fields of that island is a very important event in the history of the colony. The Premier, in his speech on the introduction of the resolutions, showed very conclusively that both iron and coal existed in the island in immense quantities. The coal fields are a continuation of those of Cape Breton. They extend in an irregular line from southwest to northeast, beginning at Codroy, near Cape Ray, then on to St. George's Bay, where coal of a very superior character has been found over a large area, thence continuing in a northeasterly direction to Grand Lake, where coal has been discovered extending over eleven miles. As the mineral has been found at the mouth of Sandy Pond river, which flows into Grand Lake, the coal field in all probability extends all through the river valley to Green Bay. That iron abounds in Newfoundland needs no demonstration. Bell Island, within twelve miles of St. John's, has in actual sight 40,000,000 tons of splendid ore.

Mr. F. H. Clergue states that work on the Central Canada will be prosecuted with vigor, and he expects that the line from Sudbury to the French River will be completed this summer. In respect to the Manitoulin and North Shore, Mr. Clergue said that next spring the company purposed building on the extension of the line to the "Soo," and on the Canada Central to Scotia Junction. They expect to build about 100 miles a year, so that in about two years they will have the system completed from the "Soo" to Scotia Junction.

A CHANGE IN NAME.

The Geigy Aniline & Extract Co., importers and manufacturers of aniline colors, dyestuffs, dyewood extracts, etc., 104-106 Murray street, New York City, announces that their corporation has been organized under the laws of the State of New York, and has acquired the entire business and liabilities of John J. Keller & Co. The same management as well as the entire staff of their predecessors will remain with the new corporation. The Toronto branch of this old and well-known concern is under the management of Mr. T. D. Wardlaw.

CANADIAN MANUFACTURERS EXCEL.

Messrs. Goold, Shapley & Muir, Brantford, Ont., manufacturers of the Imperial steel wind mill who entered the wind mill competition recently held at Park Royal, near London, England, under the auspices of the Royal Agricultural

Society, has just been awarded the first prize of £50. Fifteen other firms competed and the success of the well-known Canadian company in the contest is another high testimonial to the progressiveness of Canadian manufacturers.

THE WM. BUCK STOVE CO.

The new plant of the Wm. Buck Stove Co., of Brantford, Ont., which will be ready for operation in September will be one of the most complete in Canada. The company recently purchased the buildings formerly occupied by the Canada Cycle & Motor Co. at Brantford and these are now being remodeled and enlarged. When the work now under way has been completed the plant will consist of a warehouse and shipping department, 300x60 feet, four stories; mill room, 100x50 feet, one story; machine and mounting department, 225x40, three stories; pattern and polishing shop, 150x40 feet, one story; nickel plating and buffing department, 70x30 feet, one story; steel range and sheet department, 65x40 feet, three stories; japanning and finishing department, 50x25 feet, three stories; office sample rooms and stores, 150x40 feet, three stories; moulding shop, 275x160 feet, one story; pattern vault, 125x40 feet, one story. In addition to these there will be a power house of three stories, besides a large cupola attached to the moulding shop. Messrs. Stewart, Stewart & Taylor are the architects, and the improvements will cost about \$100,000.

A POCKET FLASHLIGHT.

The "Handy" pocket flashlight is a small, rectangular electric light operated by dry batteries contained within its case. It is equipped with a small electric lamp situated in the focus of a polished silver parabolic reflector, and a crystal bulls-eye of high magnifying power projects a clear white beam of light to a great distance. It is intended for intermittent use only, and when so used will give lasting service before battery needs renewal. The light is instantly obtained by pressing a button, so situated that it is impossible for it to be operated unintentionally, thus wasting the light and running down the battery. Old battery case can be removed and new one inserted by anyone in a moment.

This lamp is indispensable to watchmen, policemen, sailors below decks, miners, hunters, plumbers, looking for gas leaks, physicians, in dark localities, oilmen in tanks where candles or matches would cause explosions, engineers for examining machinery, gas inspectors, messengers and deliverymen looking for street numbers, etc.

Can be used with perfect safety around acetylene or other gas generators. Is useful around the house, in dark closets and cellars, in offices, stores, factories, or warehouses, wherever a strong, safe light is required instantly.

For further particulars address the Canadian General Electric Co., Toronto.

Established 1873. Telephone Main 1839.
THOMAS HEYS & SON
 CHARLES H. HEYS, Manager.
CHEMICAL and MINING EXPERTS.
 Analyses of all commercial products, etc. Plans and reports on mines and mining locations.
 114 Bay Street, TORONTO, ONT.

Ventilation and Heating.
 Mechanical Draft.
 Lumber Kilns.
 Waste Heat System of Brick Drying, etc.
 All apparatus is of beautiful design, superior materials and workmanship. Manufactured by the American Blower Company.
ALFRED J. STEVENS
 Temple Building, TORONTO, ONT.

S. DILLON - MILLS
MINING EXPERT
 SPECIALTY: - Examination, Prospecting and Initial Development of Mining Properties.
 Address correspondence to
 538 HURON STREET. - - TORONTO

THE S. R. SMYTHE CO.
 PITTSBURG, PA.
 OPEN HEARTH, CRUCIBLE, TUBE, STEEL, MALLEABLE CASTING and ROLLING MILL EQUIPMENT COMPLETE.
 SMYTHE GAS PRODUCERS Three (3) Types and Patent Devices, embracing New and Unequaled Features.
 STEAM HYDRAULIC MACHINERY, BUILDINGS, Etc. Note - Over 700 Complete Plants built and operating.

NEFF & POSTLETHWAITE
CHARTERED ACCOUNTANTS
 26 Wellington St. East, TORONTO
 Phone Main 1830.
 Audits and Investigations a Specialty.

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

THE METALLURGICAL LABORATORY
 GEO. P. MAURY, MANAGER.
CHEMISTS, ASSAYERS, METALLURGISTS, CHEMICAL and MINING ENGINEERS.
 545 LIBERTY AVE. | Analyses of every description, consultations and examination of properties.
 PITTSBURGH, PA.

T. T. SIMPSON
 A.M. Amer. Inst. E.E.
CONSULTING ENGINEER
 DESCHENES. OTTAWA.
 QUE. 55 Sparks Street.
 LONG DISTANCE PHONE 1333.
 Factory Light and Power Distribution.
 Long Distance Transmission.
 Reports - Tests.
 Specifications - Valuations.

C. H. VOGEL
 A. M. Can. Soc. C.E. ENGINEER
 OTTAWA, CAN.
WATER POWER
 PAPER, PULP and SULPHITE FIBRE MILLS

RODERICK J. PARKE
 A.M. AMER. INST. E.E.
 A.M. CAN. SOC. C.E.
CONSULTING ENGINEER
 Temple Building, TORONTO
 Long Distance Telephone.
TO MANUFACTURERS: - Advice and specifications covering Industrial Applications of Electricity - Lighting - Power Transmission - Factory Power Distribution - Steam Plants.
TESTS - REPORTS - VALUATIONS.

T. A. MORRISON & CO.
 204 St. James Street, MONTREAL.
 New and Second Hand Contractor's Plant.
 Complete Concrete Plants.
 Portable and Stationary Gasoline Engines.
 Road Machinery.
 Fire Apparatus.
 Gasoline Fire Engines.

DR. GEO. ARCHBOLD, M.A.,
TECHNICAL CHEMIST
 PRESCOTT, ONT.
 Dr. Archbold is technical adviser to three of the oldest firms in U.S.A. Terms on application.

WORTH & MARTIN,
Electrical and Mechanical
Contractors . . .
 -AND-
BRASS FOUNDERS and FINISHERS
Electric Supplies, Nitrous Oxide Gas SWITCHES and SWITCHBOARDS MANUFACTURED.
Dynamos and Motors
 Built and Repaired. We have a well-equipped Machine Shop, Model and Experimental Work a specialty. Inventions perfected. All work strictly confidential. Correspondence solicited.
 35 to 39 ADELAIDE ST. W., TORONTO
 PHONE MAIN 3494.

MOTORS For All Circuits.
DIRECT OF ALTERNATING.
 Phone Main 4227.
The Electric Engineering and Supply Co., MONTREAL, CANADA.

R. F. Wentz Engineering Co.

Consulting Engineers and Cement Work Specialists

Designing Cement Plants. Specifications and Estimates.
 Superintendence of Construction.
 Inspection and Reports of Cement Material and Properties.
 Analysis and Tests of Raw Material and Cement.

DESIGNED and CONSTRUCTED

24 CEMENT PLANTS in United States and Canada.
20 YEARS PRACTICAL EXPERIENCE
 Designing, Constructing and Operating Cement Works.

CEMENT PROPERTIES FOR SALE.

For further information address - **ROBERT F. WENTZ, M.W.S.E., Prest.**

OFFICES : 12-15 Bab's Block, - - NAZARETH, PA., U.S.A.
 509-510 Manning Chambers, TORONTO, ONT., CAN.

Wire Drawing
MACHINERY.

Chain Making
MACHINERY.

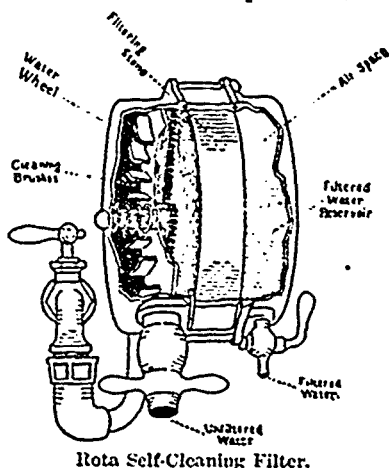
Largest capacity mills.
 Save time and scrap.

WRITE US FOR PRICES.

The TURNER, VAUGHN & TAYLOR CO.
 Cuyahoga Falls, O., U.S.A.

THE ROTA SELF-CLEANING FILTER.

One of the most useful appliances for domestic and general use for purifying water now on the market is the Rota self-cleaning filter manufactured by the Rota Filters, of Windsor, Ont. The operation of this handy little appliance is aptly illustrated in the accompanying illustration. It is very simple in its operation, being readily attached to any water faucet. The filter consists of a cylindrical chamber divided by a one-inch filter stone. In the chamber directly connected with the faucet rotary brushes driven by the pressure of the water force the water through the stone. The stone cleans the water and the water cleans the stone, so that the interior of the filter is always perfectly clean and the filtered water is absolutely pure. The impure water is drawn off by means of a tap



at the lower part of the filter in the chamber beneath the rotary brushes, while the pure filtered water is passed out through a similar tap at the bottom of the opposite chamber. The capacity of the filter is from one pint to one quart per minute dependent upon the water pressure.

Ordinary filters take all the air out of the water, consequently the flat and insipid taste of the water. The Rota filter recharges the water with air, giving it a sparkling appearance and delicious taste. Aside from the advantageous points already mentioned, the Rota filter possessed the further advantage of economy in cost, the filter complete being shipped for \$10. The company is prepared to establish agencies throughout Canada and would be pleased to give full information upon application.

THE BURT EXHAUST HEAD.

The Burt exhaust head is a device to be attached to the exhaust pipe of an engine and boiler plant, to prevent oil and wet steam from escaping. Its use prevents drenching and disfigurement of the building and the rotting of the roof; this applies to the adjoining property as well. It prevents condensed steam falling on the sidewalks, which in the winter is dangerous through the formation of ice under foot. Then its use saves water employed in the steam system, as the some water (after the cylinder oil has

been removed) is used over and over again. Most fresh water has lime or other sediment in it, which forms scales in the boiler and makes it harder for the heat to penetrate, so the use of the water a second time is also a money saver, as in it these elements are eliminated, for returning from the exhaust head it is distilled, and thus the boilers are kept clean, and in the increased effectiveness of the apparatus fuel is saved.

In construction, the Burt exhaust head has perpendicular sides, instead of being cone shaped. This increases the inside area. With plenty of room for expansion, there is no back pressure, and as the area of the steam chamber is not lessened by useless stuffing, it is virtually increased. There is but one steam chamber—the entire head. Built from extra heavy iron, lapped, riveted and soldered, no stronger construction is possible.

“The Burt” is equipped with malleable iron bases and drips (galvanized)—another point in its favor—for the reason that malleable iron is much stronger and more durable than cast iron. The seams and attachments are water tight; the head cannot overload or blow up. It will not break nor rust, because it is painted with the anti-rust paint, and will last a lifetime.

The exhaust steam delivered through the pipe strikes the drum immediately over the inlet: this breaks up the steam into the smallest particles, condensing some of the vapor. The greatest volume rises to the small projector, is cast over to the flange, then forced down the inner wall, and coming out of the opening again rises to the top of the head and seeks its way out at the outlet pipe. When it comes in contact with cold air, it is condensed into water, which drips down the wall, is caught on trough shaped lugs, drips down the tubes which carry it to the outlet pipe and thence out through the drip.

The Burt exhaust head is built by the Burt Mfg. Co., Akron, Ohio, and a dainty little illustrated booklet, published by the company and sent to any one asking for it, tells of its merits in detail.

CANADIAN PLANT FOR U.S. STEEL CORPORATION.

Negotiations have been in progress for a considerable time by the United States Steel Corporation looking towards the establishment in Canada of an immense steel and iron works plant, making every description of iron and steel used for manufacturing, building and rails. The recent action of the Dominion Government, intimating that a duty may be placed on steel and iron, has decided the promoters to hasten their preparations. Whilst there are several prominent Canadians associated with the promoters, the chief organizers are said to be connected with the United States Steel Corporation, and see in the great development of Canada a bright future for the steel and iron industry. These Americans also realize that, with an immense plant in Canada, with Canadian capitalists on the directorate, and with Canadian workmen exclusively, the company would stand a much

better chance of securing contracts in all parts of the British Empire. It is said that it will be one of the special features of the new undertaking to try to secure South African, Egyptian and Indian contracts of which there will be many very large ones in the course of the next few years. The latest reports indicate that the new plant, which is to give employment to 3,000 workmen, will be located at Port Colborne, Ont., which location will give the company decided advantages for receiving iron ore and fuel as well as for water transportation for the finished product.

AN IMPORTANT BRITISH COLUMBIA INDUSTRY.

EDITOR THE CANADIAN MANUFACTURER:

SIR,—The Dominion Government, it is said, is likely to relax its restrictions on the use of traps, especially on the Pacific Coast. These concessions are doubtless due to the strong representations made on behalf of traps and the exceptional conditions on the west coast of the Dominion. Last year no fewer than 250 applications were made for shore licenses on the southern and western borders of Vancouver Island with a five years' tenure. The locations are restricted to a half a mile frontage. A license is fixed at \$160.

Some idea of the extent and importance of the west coast fishery industry may be gathered from the following statistics showing the catch of salmon for 1902: Sock-eyes, 533,436 cases; all others, 95,246 cases; total, 636,002 cases. Of this catch 394,324 cases were shipped to Great Britain, 135,800 to Eastern Canada, 10,355 to Australia and New Zealand. The total sales representing the balance. The total catch in 1901 was about 1,236,186 cases. It is not unlikely that in a short time the Skeena River catch will greatly exceed the Fraser River supply.

Victoria, B.C., June 5, 1903.

INSTALLING GAS APPARATUS.

The Economical Gas Apparatus Construction Co., Limited, Toronto, have recently taken several large contracts for installation of gas machinery. They are erecting for the Montreal Light, Heat & Power Co. two sets of improved carburetted water gas apparatus, each of the capacity of 1,000,000 cubic feet per diem.

They have recently installed one of the above sets at the Toronto Gas Works and another set of the same capacity will be installed within the next two months.

For the Chatham Gas Co. a complete scrubbing and condensing plant has been shipped and is now being erected.

The Windsor Gas Co. are making extensive improvements. Owing to the failure of the natural gas supply the business of the company is increasing rapidly.

The consumption of gas in all the cities in Canada is increasing rapidly and the companies are preparing for a very large output next winter by installing up-to-date gas appliances.

Noble's Dominion Detective Agency

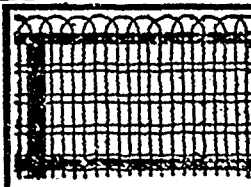
TORONTO, CANADA.

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

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

LONG DISTANCE PHONE.

ALEX. F. NOBLE, *Principal.*
A. E. NOBLE, *Superintendent.*



Page Metal Ornamental Fence

Handsome, durable and low-priced. Specially suitable for front and division fences in town lots, cemeteries, orchards, etc. Estalls for 20 CENTS PER RUNNING FOOT. Just about the cheapest fence you can put up. Write for full particulars. Use Page Farm Fence and Poultry Netting.

The Page Wire Fence Co., Limited, Walkerville, Ontario.
Montreal, P.Q., and St. John, N.B.

7

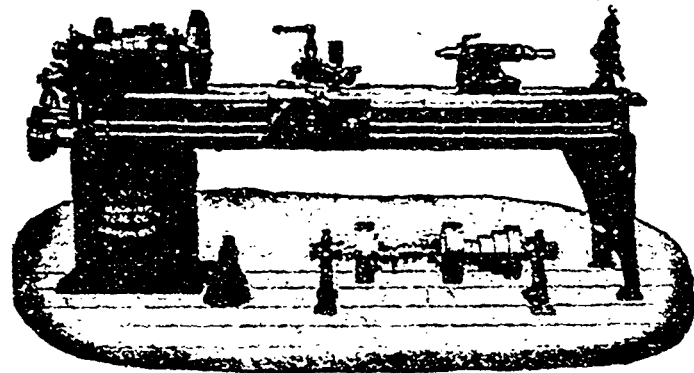


IF you have any problem in connection with lubrication which you cannot solve to your own satisfaction, we are willing to put our time against yours to prove that Dixon's Flake Graphite is the solution.

Ask for booklet 33-c.

JOSEPH DIXON CRUCIBLE COMPANY, JERSEY CITY, N.J.

The London Machine Tool Co., LONDON, ONT.



MANUFACTURERS OF

GENERAL MACHINERY

LATHES
PLANERS
DRILLS
SHAPERS
HAMMERS
BULL DOZERS
PUNCHES
PRESSES

MAIN FACTORY—BRADFORD, ENG.

CANADIAN FACTORY—MONTREAL

WE BUILD TRUCKS

that sustain our reputation.

The largest truck establishment in the world.

NOTHING BUT THE BEST

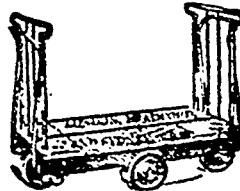
For the Warehouse, Factory, Brewery, Stores, Hospitals—in fact for every conceivable purpose—all on the famous Slingsby Patent Sliding Wheel Principle.

HAVE YOU SEEN IT?

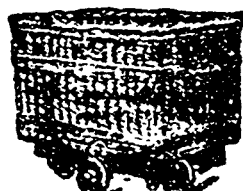
We also make special Trucks. Simply give us your ideas.

H. C. Slingsby for Canada

TEMPLE BLDG., MONTREAL.



Runs either way.



Spins Like a Top.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



THIS SHOWS THE "HALITUS"

THE FINEST VENTILATOR OR CHIMNEY COWL MADE.

It gives a positive upward draft under all conditions—can't get out of order—and exhausts more cubic feet of air per minute than any other ventilator. Made of Galvanized Steel or Sheet Copper.

The perfect simplicity and clever mechanical arrangement of the "HALITUS" will delight you, if you want a ventilator that really and perpetually ventilates. Read all about them in our catalog.

METALLIC ROOFING CO., Limited,
Wholesale Manufacturers,
TORONTO, CANADA.

Established



1799.

By Special Warrant.

Now Ready

For 1903

KELLY'S DIRECTORY

OF THE

MERCHANTS,
MANUFACTURERS and
SHIPPERS OF THE WORLD

CONTAINING

Classified Lists of the Merchants, Manufacturers, Importers and Exporters, as well as the Customs Tariffs of every known Country in the World. Over 4,000 pages.

Kelly's Directories Limited (London, Eng.)

Dominion Branch—71 Victoria St., Toronto, Ont.

W. P. DENT, - Manager.

Branches in Great Britain—Glasgow, Liverpool, Manchester, Birmingham, Leeds, Sheffield, Nottingham; also Paris, Hamburg, New York, Bombay, Calcutta, Cape Town, Melbourne, Sydney, Dunedin, Buenos Ayres, etc.

SAULT STE. MARIE CANAL TRAFFIC.

During the months of April and May the total freight carried through the two canals at the "Soo" was 6,039,856 tons, which is 74,963 tons more than the quantity carried in April and May of 1902, and 4,591,811 tons more than recorded for the same two months of 1901. The quantity carried through the Canadian canal was 796,510 tons, against 532,188 tons in 1902, and 151,679 tons in April-May, 1901. During April-May, 1903, the Canadian canal carried 11.64 per cent. of the total; in 1902, nearly 8 per cent., and in 1901, 6.80 per cent. The season, therefore, opens with an increase of 264,322 tons in the quantity carried by the Canadian canal, and an increase of 3.65 per cent. in the proportion carried by our canal compared with the total carried by both canals. The eastbound freight carried by the Canadian Soo in the two months of 1903 was 616,543 tons, compared with 444,864 tons in 1902, and 113,740 tons in 1901. The westbound freight was 179,967 tons, against 87,324 tons and 37,939 tons in 1902 and 1901 respectively. Compared with the total carried by the two canals the tons conveyed through the Canadian were:—Eastbound, 12.10 per cent. in 1903, 7.96 per cent. in 1902 and 6.85 per cent. in 1901. Westbound, 10.20 per cent. in 1903, 7.40 per cent. in 1902 and 6.85 per cent. in 1901, showing a great gain in the business of the canal both absolutely and relatively. The registered tonnage going through the Canadian canal was 14.53 per cent. of the total for the two canals in 1903, 9.98 per cent. for 1902, 8.23 per cent. for 1901, showing a steady gain by the Canadian canal in the proportion of the tonnage using the canals.

SHERWIN-WILLIAMS CO'S PLANT AT MONTREAL.

The new plant of the Sherwin-Williams Co. of Cleveland, which is now being erected at Montreal, will be the largest of its kind in Canada. The buildings comprise a four-story office and warehouse with a frontage of 280 feet and a depth of 50 feet; a paint factory immediately in the rear of the office and warehouse building, four stories high, 220 feet long and 50 feet deep, and a modern power house, 103 feet long and 72 feet deep. The buildings are made as nearly fireproof as possible by the erection of fire walls and the enclosing of the staircases in brick walls. The floors are of mill construction. The grouping is such as to admit plenty of light and air. The buildings were designed entirely by the architect of the company's own staff. The main entrance to the new plant, which will be through the office and warehouse building and intended for the use of both factory and office-employees, will be of cut stone in the Doric style of architecture. In the gable of the pediment the trademark of the company will be hewn out of the stone. The vestibule will have marble wainscoting, marble steps and tile floors. The warehouse capacity of the plant will be more than double that of the old one.

The factory building will be equipped throughout with the most modern and approved machinery. The company has its own machine shops and designs and builds its own mixers and mills. The machinery will be electrically driven, each department having its own motor. Throughout the entire plant, labor-saving devices, such as hydraulic lifts, will be installed. A tin can factory will be a feature of the new facilities. The power house is to be equipped with two Corliss engines, one of about 130 h.p., the other about 200 h.p. These will drive two Westinghouse alternating generators, one of 75 kilowatts, the other of 120 kilowatts, furnishing electrical power for the entire plant. The buildings are so arranged as to facilitate the handling of goods in the speediest and least laborious way. The company has its own sidings, the Grand Trunk Railway running switches into the grounds, one for bringing in raw materials, another for handling the finished products, and a third for supplying coal to the power house. An interesting feature of the new factory will be the industrial betterment of the company. A lunch room with well-appointed kitchen annexed; a club room; shower baths and rest rooms for the women will be installed, and practically the same privileges that are enjoyed in the large Cleveland plant of the company will be inaugurated.

CHRISTIAN ENDEAVOR, DENVER.

For the International Convention at Denver, July 9 to 13, the official route selected by the transportation managers for Ontario and Quebec is via the Chicago and North-Western and Union Pacific Railways. Special train of tourist sleeping cars through to Denver. Tickets on sale July 6, 7 and 8. Return limit August 31, 1903. Very low rates from all stations in Canada. Write for official Christian Endeavor folder, rates and full information to B. H. Bennett, 2 East King St., Toronto.

INDUSTRIAL PUBLICATIONS.

Storage tanks as used by various industrial enterprises are the especial product of the Charles Efron Co., Bayonne, N.J. This company manufactures the Bayonne Aluminium Steel Storage Tank and is sending out catalogues descriptive of the same.

The Walter A. Zelnicker Supply Co., St. Louis, Mo., is mailing descriptive matter of their double clutch car mover.

The Ewing-Merkle Electric Co., St. Louis, Mo., has issued a folder entitled "Opportunity" dealing with their electrical supplies and apparatus.

The Sprague Electric Co., New York City, manufacturers of the Lundell fans, has issued catalogue No. 306, which tells all about these devices.

Buyers of the celebrated wire rope manufactured by the John A. Roebling's Sons Co., of Trenton, N. J., should not fail to have on hand a copy of the company's latest price list and discount sheet just issued.

One of the most comprehensive catalogues of recent issuance is that which the Bates Machine Co., Joliet, Ill., is now

distributing. The publication tells about power-transmitting machinery, complete motive-power plant, air and gas-compressing machinery, etc., and is accompanied by illustrations.

The George Haiss Mfg. Co., New York, has just issued a revised and enlarged catalogue devoted to coal handling machinery and hoisting engines. The latter feature of their business they have added since issuing their previous catalogue.

The Crocker-Wheeler Co., Ampere, N.J., have issued an extremely handsome booklet entitled "The Source of the Electric Light." The text treats of the best methods of taking up and sending forth the electric current, more especially, as a power in industrial plants.

The Simon-Carves Limited, of Manchester, England, owners of the Simon-Carves bye product coke oven system, has issued a catalogue on the Baum system of coal washing and screening plants.

The Geo. L. Squier Mfg. Co., Buffalo, N.Y., has issued catalogue '62 E., referring to tortilla mills and corn shellers.

"Electricity in Mining" is the title of the latest of the Industrial Series issued by the Westinghouse Electric & Mfg. Co., East Pittsburg, Pa.

The Dominion Oil Filter Co., Guelph, Ont., has issued a catalogue giving some information on economy in the use of lubricating oils.

A reprint in booklet form of a valuable contribution to the journal of the Society of Chemical Industry, by Geo. Archbold, A.M., Ph. D., F.S.Sc., Prescott, Ont., entitled "Cassava as a Competitor of Maize in the Production of Starch and Allied Products," has been issued from the press of Eyre & Spottiswoode, London, England.

The Rota Filters, Windsor, Ont., has issued a booklet entitled "More about the 'Rota' Self-Cleaning Filter," which tells the whole story of this useful appliance.

Frank B. Gilbreth, Boston, Mass., has issued a catalogue entitled "Modern Concrete Machinery" describing and illustrating the portable gravity concrete mixer, Gilbreth's accurate measurer and feeder, and the slow-feeding tipping box.

The Sterling Electrical Mfg. Co., Warren, Ohio, whose Canadian representatives are Messrs. J. A. Kammerer & Co., Toronto, have issued an illustrated price list of their incandescent lamps.

The De Laval Steam Turbine Co., 74 Cortlandt street, New York, has issued in bulletin form a translation from the report of High Privy Councillor Wichert of the Prussian national railways at the German engineers' convention on the subject of train lighting with De Laval steam turbines. The report is a very interesting one and is well-illustrated.

Catalogue No. 9 of the Bristol Co., Waterbury, Conn., describes and illustrates the Bristol recording pressure and vacuum gauges. These gauges are adapted to all ranges of pressure and

THIS IS IT!

The **BALL CHECK**



FITS ANY ...BURNER.

LESSENS YOUR GAS BILL, GIVES BRIGHTER LIGHT. The **BALL CHECK** controls, breaks up and spreads the gas as it enters the mixing tube, thereby mixing it more thoroughly with the air.

RESULT:—INCREASED EFFICIENCY, LESS GAS AND LONGER LIFE FOR THE MANTLES.

Call at our store and prove its beauty and value to your own satisfaction.

25 Cents Each, by mail postpaid. A complete line of **GAS ARC LAMPS** for INDOOR and OUTDOOR LIGHTING on the

BALL CHECK LIGHT SYSTEM

W. W. MITCHELL

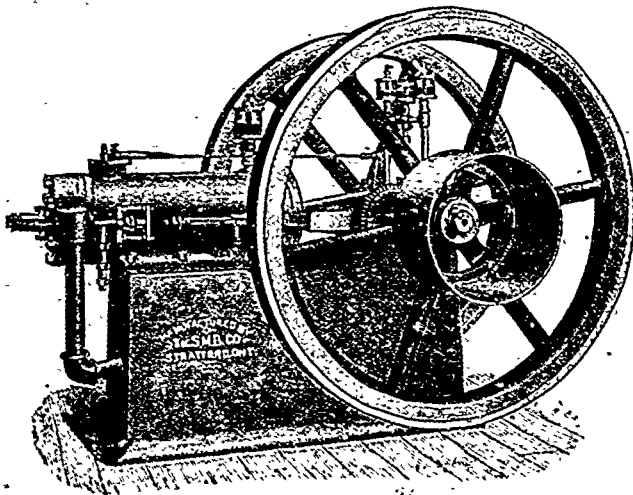
25 Toronto Arcade - - - TORONTO

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.



The Neverfail Gas and Gasoline Engine

2½ to 30 H.P. STATIONARY and MOUNTED.

THE LATEST AND BEST.
ALWAYS RELIABLE.

The cut shows our 8 h.p. size.

Write us for descriptive catalogue and prices of our Engines and Plate Choppers.

AGENTS WANTED THROUGHOUT CANADA.
Apply for full information.

The Stratford Mill Building Co.
STRATFORD, ONTARIO

insure uniform accurate indications and records. All power users will be certain to find much of interest in the catalogue.

Catalogue No. 10, of the Bristol Co., of Waterbury, Conn., relates to Bristol's recording volt, ampero and Watt meters and in addition to the numerous descriptions of these recorders, the catalogue contains charts of their records.

PERSONAL.

Messrs. J. A. Kammerer & Co., have been appointed exclusive Canadian agents for the Sterling Electrical Mfg. Co., Warren, Ohio, and have opened offices and sales rooms at 78 and 80 King street East, Toronto.

Capt. Thomas Donnelly, Kingston, Ont., formerly inspector for Inland Lloyds, has been appointed to the surveyorship of Bureau Veritas (French register). The appointment was made at Paris and gives Capt. Donnelly control as inspector of steel vessels on the Canadian side of the lakes from Port Arthur to Montreal.

Mr. H. C. Slingsby, patentee of the Slingsby hand and warehouse truck, has sailed for England, after making a trip to his Canadian branch at Montreal, where he installed practically a new plant. On his return to New York he selected a more convenient place to manufacture his trucks for the American trade, and has located at 156 West street, that city.

The R. F. Wentz Engineering Co., Toronto, has been retained as consulting engineers for the new plant of the St. Mary's Portland Cement Co., St. Mary's, Ont.

The Pilling-Kruse Air Motor Co., Bucyrus, Ohio, is a new concern engaged in the manufacture of air motors, compressed air machinery, etc., over the destinies of which presides that poet-prince of manufacturers, J. L. Pilling, lately the chief pusher of a similar concern at Port Huron, Mich.

Mr. W. W. Mitchell, of the Ball Check Light Co., New York, has opened an office at 26 Toronto Arcade and will organize a Canadian company for the manufacture of these well-known products.

The well-known Rosendale Belting Co., Manchester, England, has opened a branch office and sales rooms at 59 to 63 Front street, Toronto, in charge of L. J. Rowland, for the sale of their belting and accessories. The company will carry a full line of canvas and Gutta Percha belting, belt fasteners, belt dressing, etc.

Mr. R. Curry, of Rhodes, Curry & Co., Amherst, N.S., was at Saratoga last week attending the annual convention of the Master Car Builders' Association, after which he will proceed to Toronto, Ottawa and other Canadian cities to interview the different railway managements and secure business for his firm for next winter's work.

The Hamilton, Ont. Bridge Co's new plant was opened on the evening of June 19 with a ball and supper. An illuminated address was presented to President Wm. Hendrie.

A. P. Damon, Boston, Mass., is in Hamilton, Ont., for the purpose of or-

ganizing a Canadian company for the manufacture of the sub-target gun.

Roderick J. Parke, Toronto, the well-known consulting engineer has moved his offices from the Temple Building to the James Building, corner of King and Yonge streets.

The new offices of Frost & Wood, the well-known agricultural machinery manufacturers, Smith's Falls, Ont., are among the finest in Canada. The building is two stories high and is finely finished throughout.

Messrs. Wm. F. and Henry W. Wendt, owners of the Buffalo Forge Co. and the George L. Squier Mfg. Co., have purchased the Buffalo Steam Pump Co., whose works are at North Tonawanda, and will continue to operate the plant, with offices at Broadway and Mortimer street, Buffalo, N.Y. The Messrs. Wendt and the Buffalo Forge Co. are thoroughly known for their introduction of the Buffalo fan system of heating, ventilating, drying and cooling, also for forges, blowers, exhausters, engines, etc. Their success with their former enterprises will doubtless be duplicated with the Buffalo Steam Pump Co.

Mr. F. G. Ingram, representing Mr. E. F. Broad, general merchant with head office at Sydney, and branches at Melbourne and Brisbane, Australia, was in Toronto a few days ago and visited THE CANADIAN MANUFACTURER seeking information regarding the various manufacturing industries of Toronto and other cities and towns, with a view to larger trade between the Dominion and the Commonwealth. Mr. Ingram will, in a few days, proceed to Great Britain via New York.

W. H. Cone, a well known electrical engineer of Toronto, has been retained in that capacity by the municipality of Berlin, Ont., which recently took over the electrical plant at that place.

A branch chapter of the American Institute of Electrical Engineers has been instituted at the rooms of the Engineers' Club of Toronto. The following are the officers: J. A. Kammerer, chairman; Prof. Rosebrugh, vice-chairman; R. A. MacKeen, secretary; executive committee, W. C. Hawkins, of Hamilton, Ont.; J. Kynoch and Prof. Rosebrugh, of Toronto. Regular meetings will be held at the engineers' club rooms.

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.

1035. The manufacturers in London, England, of a patented wire strainer wish to arrange with some Canadian firm to manufacture and sell the tool in Canada.

1036. A firm of Bordeaux, France, wine shippers wishes to appoint influential Canadian resident agent. First class references required.

1037. A Liverpool, England, firm, manufacturing ventilating appliances of all kinds is prepared to appoint suitable Canadian resident agent.

1038. An enquiry has been made for the names of Canadian wholesale firms wishing to import teas direct from India and Ceylon.

1039. THE CANADIAN MANUFACTURER has a request for names and addresses of Canadian manufacturers of electrical clocks and time registers for factories, etc.

1040. THE CANADIAN MANUFACTURER has a request for names and addresses of manufacturers of machinery for making and shaping rubber and felt boots.

1041. A Liverpool, England, house wishing to obtain supplies of basswood broom handles 50 x 1 1/2" invites quotations from Canadian manufacturers.

1042. A Manchester, England, house desires to be placed in touch with Canadian producers of mica.

1043. The proprietors of a chemical specialty for electrical batteries is prepared to appoint some Canadian firm connected with the electrical trade as agents.

1044. Enquiry is made for the addresses of Canadian shippers of box-shooks by a London, England, firm in a position to place large orders.

1045. A North of England correspondent has asked to be placed in communication with Canadian exporters of manufactured horse hair.

1046. A London, England, export merchant has requested to be referred to large flour millers in Canada who are interested in the South African market.

1047. Application has been received for the names of the leading iron and steel manufacturers in the Dominion.

1048. An old and influential house in Johannesburg, South Africa, wishes to be put in communication with Canadian manufacturers of mouldings, cornices, sashes and doors, etc.

1049. A reliable commission house in London, England, established more than forty years ago, and who maintain branches in Johannesburg and Cape Town, South Africa, at Santa Cruz de Tenerife, Canary Islands, and at Buenos Ayres, Argentina, South America, invite correspondence with Canadian exporters who desire to do business in any of those countries.

Carl Langerfeldt, Brunswick, Germany, enquires for the names and addresses of prominent firms engaged in the manufacture of small decorative furniture, for the purpose of introducing their products into Germany. Not only furniture manufactured from different kinds of wood is desired, but furniture made of bamboo and rattan.

BRITISH PIG IRON MARKETS.—Messrs. Wm. Jacks & Co., 49 Leadenhall street, London, E.C., England, under date of June 19, 1903, quote as follows:

Since writing you last our market has continued steady, with a tendency to lower prices. Stocks are low both in public stores and consumers' yards, and

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

YOU MAY NOT NEED A LATHE OR PLANER NOW

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

WRITE US AND BE CONVINCED.

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

THE IMPERIAL OIL COMPANY, Limited

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

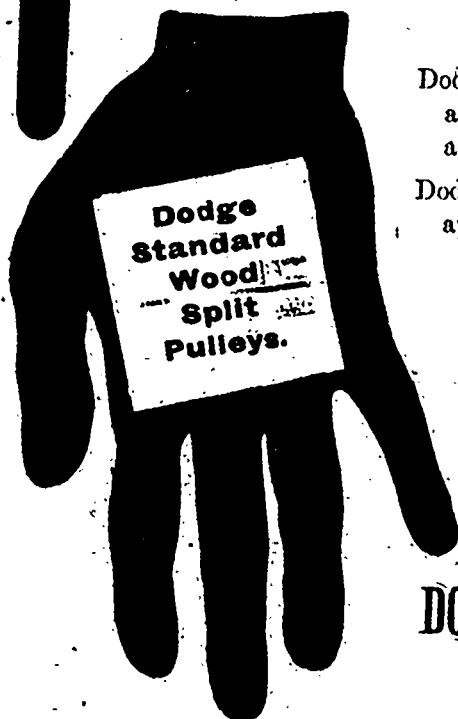
**Lubricating, Water White Illuminating Oils,
Paraffine Wax, Etc.**

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

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

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

The lines in the hands tell their own story

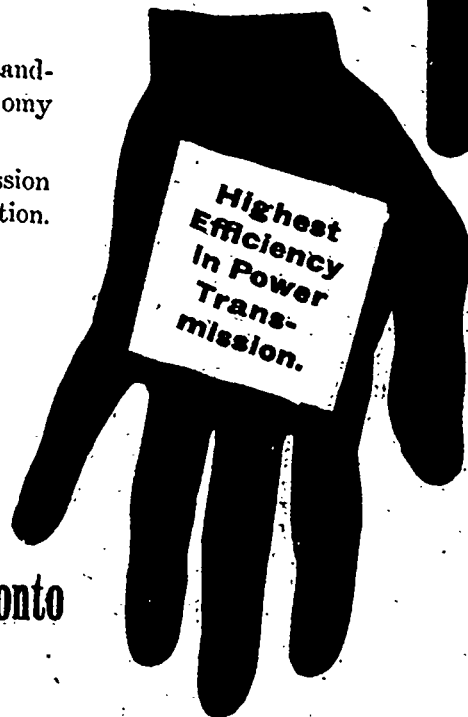


Dodge Wood-Split Pulleys are the standard of the world for efficiency, economy and durability.

Dodge Quality in power transmission appliances marks the acme of perfection.

Dodge Prices are equitably balanced to give a heaped up dollar's value for every dollar of cost.

Better write to-day for news of the Dodge Line of money saving power appliances.



DODGE MFG. CO. of Toronto

LIMITED

TORONTO, - ONT.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

there are no sales being made for delivery in the second half of this year.

To-day's prices are as follows:—

- No 1 Gartsherrie... 63/- p.t. f.o.b. Glasgow including dues
- No 3 " 57/7 p.t. f.o.b. Glasgow including dues
- M/Nos. Cumberland Hematite..... 64/6 p.t. f.o.b. L'rp'l
- M/Nos. Cumberland Hem. (to special analysis)..... 70/- " "
- No. 3 Foundry Middlesbro 47/- p.t. f.o.b. m'k's whf, including dues.

BUFFALO PIG IRON MARKET.—Office of Rogers, Brown & Co., Buffalo, N.Y., July 1, 1903.

Enquiries of good size from well distributed quarters are serving to crystallize prices. If all the present specifications for iron should result in orders, there would soon be a well defined market price. Contrary to what would seem to be the natural tendency, this large prospective business at present is operating to reduce prices rather than to increase them. It now looks as if the final level upon which business for the last half is to be done may not be far off.

Coke is plentiful at low prices.

ELECTRIC PROJECT FOR QUEBEC.—A project for an extensive electric railway system through the south shore counties and eastern townships of Quebec is now in tangible form. It is understood that two main lines will be commenced this season, one to connect Montreal with St. John's by way of Longueuil and Chambly and the other between Montreal and Valleyfield, closely following the river bank and taking in St. Lambert, Laprairie, Chateauguay, and Beauharnois. The roads are to be built with heavy tracks and in the most modern way, the cars being 50-odd feet in length, supplied with air brakes and motors capable of running at a speed of between 50 and 60 miles in straight stretches. There will also be parlor coaches for private parties.

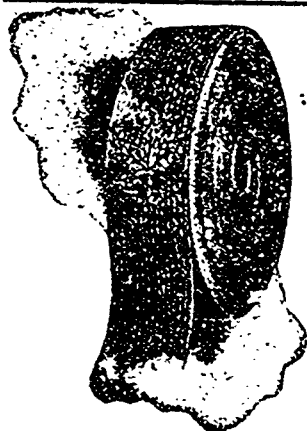
It is claimed that this will be one of the largest electric railway systems in Canada, and it will form part of vast plans now being mapped out for an electric road to connect New York with Mont-

real. It is understood that connections will be made with the important trolley roads in eastern New York—the Berkshires—and nearly a dozen systems in Vermont. Among the lines that are expected to serve as feeders for the projected main line, besides the Montreal and Southern Counties Railroad, are the Troy Traction Co., the Bennington Hoosick Railroad, the Hudson Valley line, the Troy and New England Co., and the Berkshire Street Railway Co., with about fifteen other corporations of less importance. The scheme is reported to be backed by capitalists from New York, Boston, and Chicago. The proposed main line from New York to the Canadian border would pass through much attractive scenery, the shore of Lake Champlain, which it will follow, being particularly beautiful. The Montreal and Southern Counties Railway route will also have the scenic advantages of the Richelieu and St. Lawrence rivers. It will further enable the farmers all along the south shore to reach the markets of Montreal with their products. The company's intention is to make special arrangements for the carrying of all kinds of farm products between midnight and 6 a.m., thereby allowing the farmers to get their stuff into Montreal in good condition for the morning market.

NEW PROTECTION AGAINST LIVE WIRES.—Professor Artemieff, director of the Electrotechnical Institute at Kief, Russia, has invented a suit which is an effective protection against live wires. It was intended at first for the use of students in his laboratory, but proved to be so practical that the well-known firm of Siemens & Halske, Charlottenburg, Berlin, has taken up its manufacture and sale. The suit consists of a closely woven network of metal fibers, lined with linen, which completely covers the body from head to foot. It is worn outside of the ordinary clothing. The mask which covers the head does not materially influence the eyesight. The outfit is especially valuable to those whose business is the mending of live wires. Experiments show that 200,000 volts make no impression on either the wearer or the outfit. It must be understood, however, that in these experiments the poles were not connected.

CANADIAN-YUKON RAILWAY.—There is a movement on foot in Vancouver, B.C., to secure the construction of a railway from some point on the coast within that province to some available point in the Yukon country, regarding which the Vancouver Daily Province says:—Active arrangements are being made by a syndicate of prominent Vancouver business men looking to the building of a railroad from Kitimaat Inlet through the northern part of British Columbia and the Yukon to Dawson. The Coast-Yukon is the name of the proposed line of railway, which is to start from the British Columbia Coast, 400 miles north of Vancouver, and form an all-Canadian route to the Klondike. It is under this title that the Vancouver syndicate is applying for a charter and subsidy at the present session of Parliament. . . . Passing a narrow strip of the coast range, the proposed route goes through 150 miles of the Bulkley and other valleys of the best agricultural lands in the Province. The whole distance to Teslin Lake is about 400 miles, and the route is claimed to be much easier than that over which Mackenzie & Mann planned to go at the first of the Klondike rush. This country contains not only big mining districts, but large wheat-land areas. The promoters will ask for a subsidy to assist in financing the building of the line, or else that the Government take it over as a public utility—action in either case of great value to this city and to Canadian trade.

NORTH-WEST CANADA.—The Dominion Government has issued a census bulletin, which gives statistics as to agriculture in Alberta, Assiniboia, and Saskatchewan, which united compose the North-West Territories. The total area of these territories is 190,963,117 acres, and only 6,569,064 acres are occupied as farms. Of this area, 75.99 per cent. is unimproved. Field crops, exclusive of hay, occupy 53 per cent. of the improved land, but only a fair beginning has been made with fruit trees and vegetables. The area of land in wheat, oats, barley, rye, corn, peas, potatoes, and other field roots in 1891 was 194,773 acres. The increase at the end of the last decade was 694,073 acres, or 333 per cent. The production of home-made butter is nearly twice as much as ten years ago, and in the interval ten butter factories were put into operation.



STITCHED Cotton Duck Belting

SUPERIOR TO ALL OTHER BELTING

—FOR—

Agricultural Machinery, Cement Mills, Cotton and Woolen Mills, Paper Mills, Pulp Mills, Electric Powers, Flour Mills, and all other classes of Machinery.

Superior in Tensile, Strength, Pliability, Weight, Freedom from Stretching.

Manufactured by

Use our "MAPLE LEAF" **DOMINION BELTING CO., Limited** Bolt Dressing. **HAMILTON, ONT.**

51 Lime St, LONDON, E.C., ENG. BLAGDEN, WAUGH & CO.,

Telegraphic Address: "PHENOLATE."

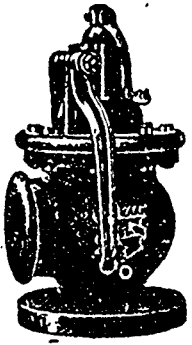
—SOLE AGENTS FOR—

THE DOMINION TAR & CHEMICAL CO., Limited, Works at Sydney, Cape Breton, CANADA.

Manufacturers of Pitch (Roofing and Target); Creosote (Dead Oil); Carbolic, Naptha, Desinfectants, Refined Tar.

Also Naphthalines (all qualities); Cyanides (Prussiates of Potash and Soda) and Ammonia Salts.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



A VALVE YOU CAN RELY ON
SEND FOR PRICES

CROSBY STEAM APPLIANCES EXCEL

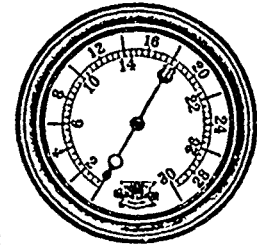
Steam Engine Indicators.
Recording Gages.
Revolution Counters.
Pressure and Vacuum Gages.
Lubricators, etc.



Stationary and Marine Valves.
Water Relief Valves.
Blow-off Valves.
Globe and Angle Valves
Single Bell Chime Whistles.
SEND FOR CATALOGUE

CROSBY STEAM GAGE and VALVE CO.
BOSTON, NEW YORK, CHICAGO, LONDON

A TRUTHFUL GAGE IS THE ONLY GOOD GAGE



CAMEL BRAND
BALATA
RUBBER

Linen Fire Hose,
Water and Steam Hose,
Packings, Etc., Etc.

THE STANDARD



GOLD WATER PAINT

WEATHER PROOF, FIRE PROOF
WHITE AND COLORS.

MILL SUPPLIES

Lubricating Oils and Greases
PAINT, PAINT OILS, ETC.

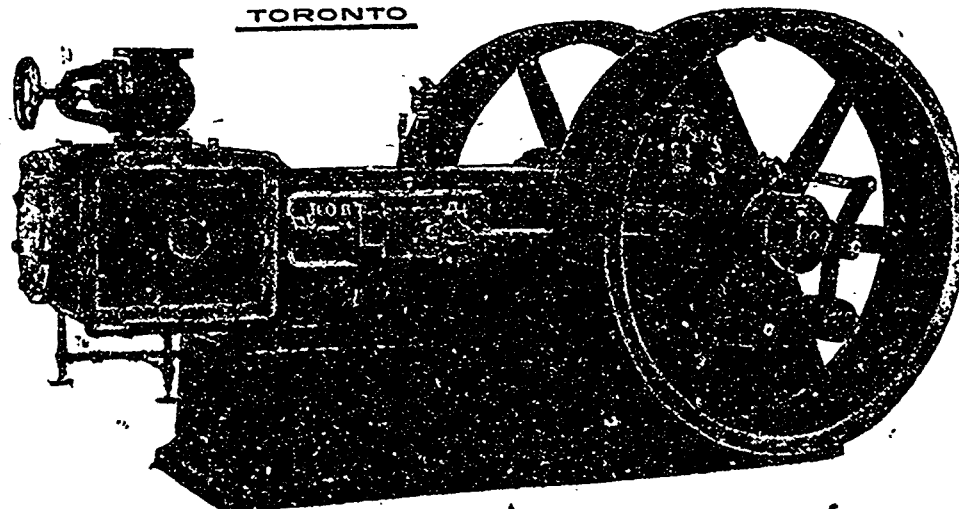
W. A. FLEMING & CO.

Montreal and St. John, N.B.

The A. R. Williams Machinery Co.,

LIMITED, MANUFACTURERS IMPORTERS AND DEALERS

TORONTO



—IN—
Engines, Boilers
Iron Machinery
Tools
Wood-Working
Machinery

—AND—
**GENERAL MILL
MACHINERY and
SUPPLIES**

OUR NEW BELL PATENT HIGH SPEED AUTOMATIC ENGINE

Write for.....
**CATALOGUE and
QUOTATIONS**

When writing to Advertisers kindly mention **THE CANADIAN MANUFACTURER.**

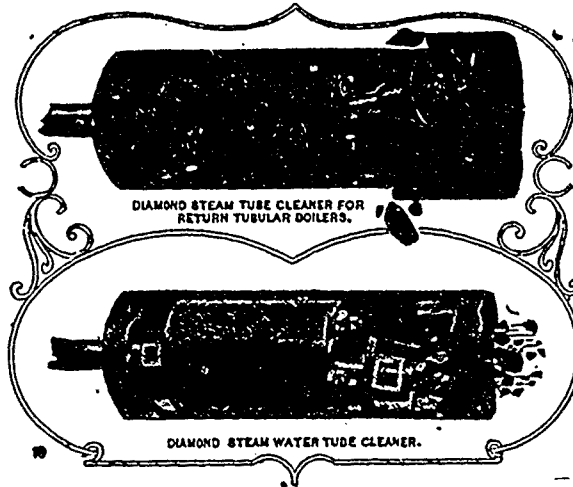
"Diamond" Steam Tube Cleaner

THE ORIGINAL AND ONLY CLEANER MANUFACTURED.

SENT ON TRIAL.



It will save from
20 to 60% in fuel.
Will preserve life
of boilers. Will
prevent explosion
or accidents.

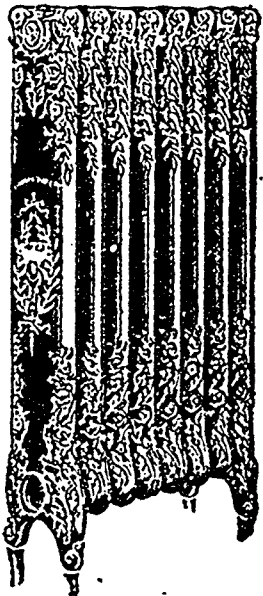


Beware of Imitators...

A few users of
Diamond Cleaner:—

Hamilton Steel & Iron Co.,
Hamilton, Ont.
Canadian Woolen Mills, Toronto, Ont.
Dominion Paper Co., Montreal, Que.
Canada Furniture Manufacturers,
Toronto, Ont.
McKinnon Dash & Metal Works Co.,
St. Catharines, Ont.
Winnipeg Electric Street R.R.,
Winnipeg, Man.
Montreal St. R.R. Co., Montreal, Que.
Colonial Bleaching & Printing Co.,
Montreal, Que.
Hay & Company, Woodstock, Ont.
Dominion Bridge Co., Montreal, Que.
G. Cartor Sons Co., St. Marys, Ont.
Stratford Gas Co., Stratford, Ont.
Horden Paper Mills, Merriton, Ont.

POWER SPECIALTY COMPANY,
BRIDGEBURG, - Ont., Canada.



WARM UP YOUR

Buildings

WITH

"Safford Radiators"

They are the triumph of the century.
In demand the world over.

Made in countless sizes and every possible shape,
and in a variety of styles, plain and ornamental, suffi-
cient to suit the most exacting.

Send for Catalogue on
up-to-date Heating.

THE DOMINION RADIATOR CO., Limited,

TORONTO

HEAD OFFICE, - - DUFFERIN STREET

The
Central Ontario Power Co.
LIMITED
OF PETERBORO, ONT.
OFFER ELECTRICAL POWER
To Manufacturers
AT LOW RENTALS

The Municipal Corporation also offer Special Inducements for
Manufacturers to Locate.

Peterboro, with a population of 15,000, is seventy miles east of Toronto on main line of the Canadian Pacific Railway, the Grand Trunk Railway, and the Trent Valley Canal; and through its unequalled facilities has lately secured several immense industries, both Canadian and American.

Apply to **J. ALEXR. CULVERWELL,** - Managing Director,
PETERBORO, or 1 Toronto St., TORONTO

IF YOU ARE INTERESTED IN

Free Site
Tax Exemptions
Cheap Power
Reasonable Labor
Ready Material
Low Freights
Unexcelled Export Facilities

and a location
within easy reach of
half Canada's
population,

WITH
GUY TOMBS, G. F. & P. A. Great Northern Ry. of
Canada, QUEBEC, CAN.

For Manufacturing Purposes

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.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

WORMER'S

LIST OF

SECOND-HAND.. MACHINERY
Bargains

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

- | | |
|---|--|
| <p>Lathes
12 x 5 Reed
12 x 6 Prentice
13 x 6 P. & W. with taper
13 x 5 Blaisdell
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</p> <p>Turret Lathes
14 in. Pratt & Whitney
18 x 6 Universal, Lodge & B.
16 in. Warner & Swasey
16 in. Jones & Lamson
16 in. Pratt & W.
18 in. Hendey</p> <p>Scrow Machines
14 in. Garvin
15 in. Garvin
14 in. Warner & Swasey
No. 2 Pratt & Whitney</p> <p>Boring Mills
60 in. Bickford, 3 heads
60 in. Niles, 1 head</p> <p>Drills
No. 5 Plain Rad., Al'd Box
15 in. Lauer, adj. table
12 in. two-spindle adj., Foot-
-burt
36 in. Snyder</p> <p>Planors
24 x 24 x 5 ft. Geneva Ma-
-chine Co.
14 ft. Plato Planer, Sellers
16 in. x 12 in. x 21 in. Brad-
-ford
21 x 18 x 5 Planer
30 x 30 x 10 ft. Gleason</p> <p>Milling Machines
No. 2 Lincoln, P. & W.</p> | <p>Shapers
6 in. Boynton & Plummer
13 in. dbl. hd. trav., Sellers
18 in. Traverso Hd. Shaper
15 in. Hendey
30 in. Fox
10 in. Fitchburg</p> <p>Hammers
25 lb. Poppet Drop
25 lb. Hernton, power
50 lb. Baudry
750 lb. Tretthway
250 lb. Bell, steam
1000 lb. Board Drop Hammer,
Merrill, steam</p> <p>Presses
125 ton Wheel Press
P 222 Foot Ferracuto</p> <p>Miscellaneous
No. 3 Clomont vert. Wood
Boring Machine
4 in. Swaging Machine, Good-
-year, also Dayton
14 in. Keyseater, Mitts &
-Merrill
No. 1 L. X. L. Pipe Cutter
1 to 4 in. Power Pipe Cutter,
Armstrong
52 in. Foot Power Squaring
Shear, Niagara
42 in. Power Squaring Shears,
Niagara
14 in. Double Head Bolt Cut-
-ter, Adams
Wire Former
Horizontal Keyseater
50 in. Auto. Gear Cutter
No. 1 Universal Grinder,
Diamond
14 in. Power Riveter, Adt.
14 in. Schlenker Bolt Cutter
18 in. x 7 ft. 6 in. Lead Rolls
5 in. Whitton Centering Dis-
-cines
No. 1 Garvin Hor. Tapping
Machine
36 in. Semi-Automatic Gear
Cutter, G. & E.
4 in. Cutting-off Machine,
accelerated speed, Hub-
-bard & Rogers
Cock Grinder, Warner & S.
No. 4 Fox Multiple Tube
Cutter
Power Marking Machine</p> |
|---|--|

SEND FOR NEW STOCK LIST No. 13.

C. C. WORMER MACH'Y CO.
68 Woodbridge St.,
DETROIT, MICH.

Patent for Sale

Now 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, 16 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.**

THE CANADIAN MANUFACTURER

J. J. CASSIDY, Manager.

PUBLISHED TWICE A MONTH.

Devoted to the Industrial Interests of Canada.

\$1.50 a Year. Sample Copies Free.

Advertising Rates on application.

Canadian Manufacturer Publishing Co., Limited,
TORONTO, CANADA.

DO IT NOW

Manufacturers wishing to be
represented in

MANITOBA

Would do well to
communicate with

DAVID PHILIP, Manufacturers' Agent

References
Furnished.

185 Lombard St., WINNIPEG, MAN.

RICE LEWIS & SON, LIMITED

HARDWARE and METAL

BAR IRON, STEEL, BOILER PLATE TUBES

MACHINIST TOOLS, PIPE FITTINGS

PIPE VICES.

COMPLETE STOCK OF STOCKS AND DIES.

STILLSON AND TRIMO WRENCHES. STEAM PIPE.

Corner King and Victoria Streets, - TORONTO

FIRE PROTECTION

FIRE HOSE—Cotton Rubber Lined.

FIRE HOSE LINEN—Unlined.

FULL STOCK CONSTANTLY ON HAND.

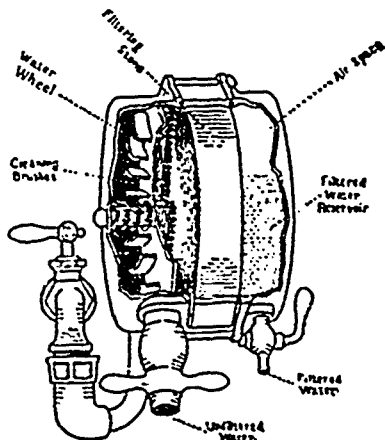
"GENUINE OAK" BELTING

— MILL SUPPLIES —

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

YOU WILL CONTROL

The Filter Business in your Town
if you secure this Agency



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

THE ROTA FILTER

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

It never requires cleaning—IT CLEANS ITSELF.

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

Sample to any address on receipt of \$10.00.

You take no chances, we guarantee the goods.

SOLE MANUFACTURERS

ROTA FILTERS, Limited, - Windsor, Ont.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

CLASSIFIED INDEX.

Abrasives.

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

Air Compressors

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

Air Reservoirs.

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

Aluminum

Syracuse Smelting Works, Montreal.

Angles, Beams and Girders

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

Announcing Boxes.

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

Announcing Muffles and Furnaces.

Turner, Vaughn & Taylor, Cuyahoga Falls, Ohio

Antimony

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

Anvils and Vices.

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

Architects

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

Assayers.

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

Axles

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

Babbitt Metal

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

Bar Iron and Steel

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

Boiling and Supplies

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

Bobbins

Wilson Bros. Bobbin Co., Liverpool, England.

Boiler Tube-Cleaners

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

Bolt Taps

Butterfield & Co., Rock Island, Que.

Brass

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

Brass Foundries

Hamilton Brass Mfg. Co., Hamilton, Ont.
Meadows, Geo. B. Wire, Iron & Brass Works Co., Toronto.
McDougall, R. Co., Galt, Ont.
McKinnon Dash & Metal Works Co., St. Catharines, Ont.

Bridges.

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

Building Iron and Steel

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

Builders' Materials

Albert Mfg. Co., Hillsboro, Ont.
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.
Garshore, John J., Toronto.
Metallic Roofing Co., Toronto.
McEachren Heating & Ventilating Co., Galt, Ont.
Owen Sound Portland Cement Co., Owen Sound Ont.
Rico Lewis & Son, Toronto.

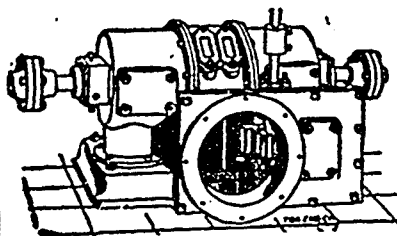
Canada Plates

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

CLASSIFIED INDEX.

(CONTINUED).

- 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.
Hico Lewis & Son, Toronto.
Montreal Pipe Foundry Co., Montreal.
- Cement**
Canadian Portland Cement Co., Deseronto, Ont.
Owen Sound Portland Cement Co., Owen Sound, Ont.
- Cement Machinery.**
Wontz, R. F. Engineering Co., Toronto.
- Chain Making Machinery**
Turner, Vaughn & Taylor, Cuyahoga Falls, Ohio.
- Channols**
Bourne-Fuller Co., Cleveland, Ohio.
Leslie, A. C. & Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Samuel, M. & L. Benjamin & Co., Toronto.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.
- Charcoal Pig Iron**
Canada Iron Furnace Co., Montreal.
Deseronto Iron Co., Deseronto, Ont.
- Chemicals and Dye Stuffs**
Bellhouse, Dillon & Co., Montreal.
Benson, W. T. & Co., Montreal.
Brunner, Mond & Co., Northwich, England.
Cassella Color Co., New York City.
Keller, John J. & Co., New York City.
Kilpstein, A. & Co., New York City.
McArthur, Cornillo & Co., Montreal.
Winn & Holland, Montreal.
- Chemists**
Archbold, Dr. Geo., Prescott, Ont.
Hoys, Thos. & Son, Toronto.
Metallurgical Laboratory, Pittsburg, Pa.
Wontz, R. F. Engineering Co., Toronto.
- Clay Working Machinery.**
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.
- Coal and Coko**
Milnes, James H. & Co., Toronto.
- Coal Cutting Machines**
Jeffrey Mfg. Co., Columbus, Ohio.
- Coal Tipples.**
Jeffrey Mfg. Co., Columbus, Ohio.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.
- Coll Chains.**
Greening, B. Wire Co., Hamilton, Ont.
Leslie, A. C. & Co., Montreal.
- Conveying Machinery**
Dodge Mfg. Co., Toronto.
Jeffrey Mfg. Co., Columbus, Ohio.
Perrin, William R. & Co., Toronto.
Stevens, Alfred J., Toronto.
- Copper Materials**
Greening, B. Wire Company, Hamilton, Ont.
Samuel, M. & L. Benjamin & Co., Toronto.
Syracuse Smelting Works, Montreal.
Wire & Cable Co., Montreal.
- Corrugated Iron and Steel.**
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.
- Corundum.**
Canadian Corundum Wheel Co., Hamilton, Ont.
Hart Emery Wheel Co., Hamilton, Ont.
- Corundum Wheels.**
Canadian Corundum Wheel Co., Hamilton, Ont.
Hart Emery Wheel Co., Hamilton, Ont.
Hico Lewis & Son, Toronto.
- Covers.**
McCullough-Dalzell Crucible Co., Pittsburg, Pa.
- Crayons**
Lowell Crayon Co., Lowell Mass.
- Crucibles**
Dixon, Joseph, Crucible Co., Jersey City, N.J.
McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Samuel, M. & L. Benjamin & Co., Toronto.
Syracuse Smelting Works, Montreal.
- Crucible Caps and Nozzles**
McCullough-Dalzell Crucible Co., Pittsburg, Pa.
- Crucible Covers and Stoppers**
McCullough-Dalzell Crucible Co., Pittsburg, Pa.



Horizontal Type.

"LITTLE GIANT" TURBINE
....FOR ALL PURPOSES....

HORIZONTAL AND VERTICAL
BUILT IN 44 SIZES.

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

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

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

THE EUGENE F. PHILLIPS ELECTRICAL WORKS

MONTREAL, CANADA (LIMITED)

BARE and INSULATED ELECTRIC WIRE

ELECTRIC LIGHT LINE WIRE,
INCANDESCENT AND FLEXIBLE CORDS,

RAILWAY FEEDER and TROLLEY WIRE

RUBBER-COVERED, MAGNET, OFFICE AND
ANNUNCIATOR WIRES.

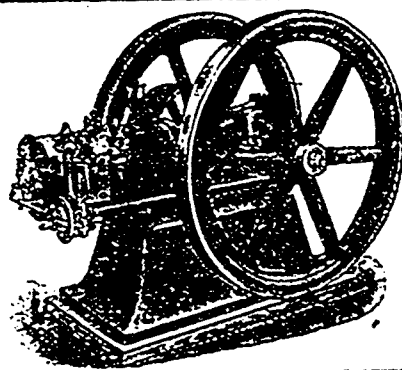
CABLES FOR AERIAL and UNDERGROUND USE.

GASOLINE ENGINES

3 to 21 Horse Power.

Write for prices and descriptive matter.

The Dominion Motor & Machine Co.,
50 Esplanado St. East,
TORONTO.



THE Export Merchant Shippers' DIRECTORY

OF GREAT BRITAIN AND IRELAND.

PRICE, - 15s. 6d. Net.

1. Alphabetical List of Exporters, giving Places of Shipment and class of goods shipped.
2. Index to Export Section, giving alphabetical list of goods with names of shippers.
3. List of Trade Marks.
4. Alphabetical list of Manufacturers, according to their trades and towns.

THIRTY-SEVENTH
YEAR OF
PUBLICATION.

LONDON:

DEAN & SON, Limited, 160a Fleet St., E.C.

A decided difference in the Coal Bill

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

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

Robb Engineering Co., Limited

AMHERST, N. S.

AGENTS: WILLIAM McKAY, 19 McKenzle Crescent, TORONTO.
WATSON JACK & COMPANY, 7 St. Helen St., MONTREAL.

"Capitol" Cylinder

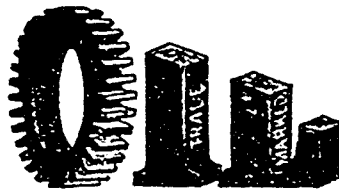
"RENOVN" ENGINE

"ATLANTIC" RED

RELIABLE WELL-KNOWN BRAND

ALL ORDERS PROMPTLY FILLED

THE QUEEN CITY OIL CO. LIMITED
SAMUEL ROGERS, Pres. TORONTO, Canada.



HAMILTON COTTON CO.

HAMILTON, ONTARIO

YARN DYERS and BLEACHERS

Manufacturers.

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

TWINES, LAMPWICKS, WEBBINGS, Etc.

Dyeing of all Colors, Including GENUINE FAST BLACK.

ADVERTISE IN THE CANADIAN MANUFACTURER

RATES ON APPLICATION

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

CLASSIFIED INDEX.

(CONTINUED).

- Detective Agencies**
Noble's Dominion Detective Agency, Toronto.
- Dies**
Hamilton Stamp & Stencil Works, Hamilton, Ont.
Dies (Socket, Sewer Pipe and Tile-Clay) Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.
- Directories**
Dean & Son, London, E. C., England.
Kolly's Directories, Limited, Toronto.
- Draw Benches (Wire)**
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.
- Drills**
Bortram, 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.
- Duct and Shavings Separators**
Buffalo Forge Co., Buffalo, N.Y.
McEachren Heating & Ventilating Co., Galt, Ont.
Sturtevant, B. F. Co., Boston, Mass.
- Electric Mine Locomotives**
Jeffrey Mfg. Co., Columbus, Ohio.
- Electrical Supplies**
Canadian General Electric Co., Toronto.
Electrical Construction Co., London, Ont.
Forman, John, Montreal.
Jones & Moore Electric Co., Toronto.
Kay Electric Dynamo & Motor Co., Toronto.
Packard Electric Co., St. Catharines, Ont.
Phillips, Eugene F., Electrical Works, Montreal.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.
Worth & Martin, Toronto.
- Electro-Plating**
Brantford Plating Co., Brantford, Ont.
- Elevators**
Canadian Otis Elevator Co., Toronto.
Darling Bros., Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
- Emery and Emery Wheels**
Canadian Corundum Wheel Co., Hamilton, Ont.
Forman, John, Montreal.
Hart Emery Wheel Co., Hamilton, Ont.
- Engineers (Cement)**
Wentz, R. F. Engineering Co., Toronto.
- Engineers (Chemical)**
Hoys, 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., Deschamps, 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.
- Engineers (Mechanical)**
Carrier, Iain & 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)**
Hoys, Thos. & Son, Toronto.
Metallurgical Laboratory, Pittsburg, Pa.
Mills, S. D., Toronto.
- Engineers and Contractors**
Jeffrey Mfg. Co., Columbus, Ohio.
Scalle, Wm. B. & Sons Co., Pittsburg, Pa.

CLASSIFIED INDEX.

(CONTINUED).

Engines and Boilers

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

Engravers

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

Exhaust Heads

Burt Mfg. Co., Akron, Ohio.
 Darling Bros., Montreal.
 Power Specialty Co., Buffalo, N.Y.

Factory Sites

Canadian Office & School Furniture Co.,
 Preston, Ont.
 Central Ontario Power Co., Peterboro, Ont.
 Great Northern Railway of Canada, Quebec, Que.
 Sweeney, James J., North Tonawanda, N.Y.
 Williams, H. H., Toronto.

Files

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

Financial

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

Filters

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

Fire Brick

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

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

Galvanizing

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

Galvanizing and Tinning Machinery and Furnaces (Clay.)

Turner, Vaughn & Taylor Co., 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.
 Key Electric Dynamo & Motor Co., Toronto.
 Phillips, Eugene F., Electrical Works, Montreal.
 Toronto & Hamilton Electric Co., Hamilton, Ont.

Government Notices

Commissioner of Crown Lands of Ontario.
 Factory Inspectors.
 Mineral Lands of Ontario.
 Minister of Agriculture.

Grinding Machinery

Hart Emory Wheel Co., Hamilton, Ont.

ALEX. GARTSHORE, President. J. G. ALLAN, Sec.-Treas. J. B. THOMSON, Vice-Pres. and Gen. Mngt.

THE GARTSHORE-THOMSON PIPE & FOUNDRY CO. Limited

CAST IRON PIPE

3 in. to 60 in. diameter.

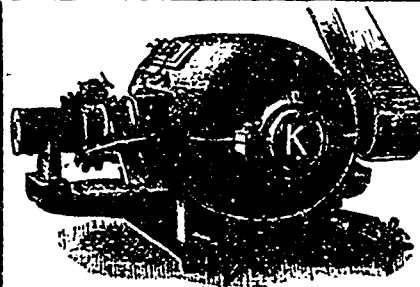
For Water, Gas, Culverts and Sewers

Special Castings and all kinds of

FLEXIBLE AND FLANGE PIPE.

WATER WORKS SUPPLIES

HAMILTON, ONT.

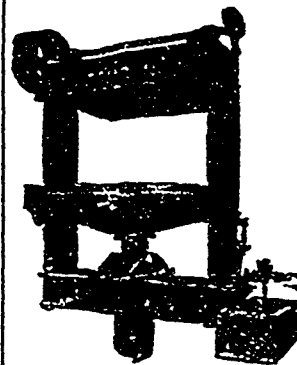


Special Attention Given to Electrical Repairing.

THE KEY ELECTRIC DYNAMO & MOTOR COMPANY, Limited

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

MULTI-POLAR MOTORS.
 BI-POLE MOTORS.
 ALTERNATING CURRENT MOTORS.
 INDUCTION MOTORS.
 DYNAMOS for Incandescence and Arc Lighting.
 DYNAMOS for Electro-plating and Electrotyping.
 ELECTRIC CONTROLLERS for Elevators.
 ELECTRIC ORGAN BLOWERS.



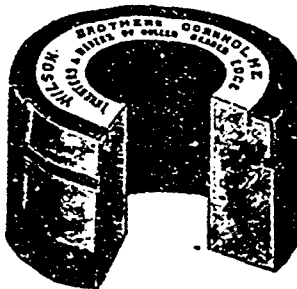
HYDRAULIC PRESSES For All Purposes

SEND FOR CATALOGUE AND PRICES

WILLIAM R. PERRIN & COMPANY

TORONTO, - CANADA

ESTABLISHED 1823



WILSON BROS. BOBBIN CO. (1900) LIMITED

46 GOLD MEDALS AND DIPLOMAS

HIGH CLASS WORKMANSHIP.

SEVENTY YEARS' REPUTATION.

BOBBIN AND SHUTTLE

MANUFACTURERS

Telegrams—"NUGGET, LIVERPOOL"

A B O AND A 1 CODES.

Address—
**Cornholme Mills,
 GARSTON, - LIVERPOOL, ENGLAND**

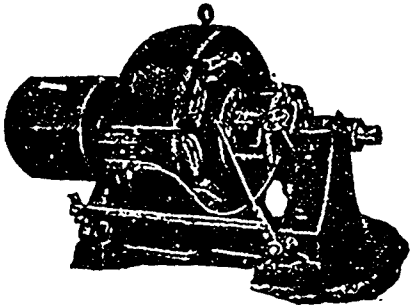
BRANCH WORKS—ST. HELENS

OFFICE AND SHOWROOMS—

14 Market Place, Manchester, Eng.

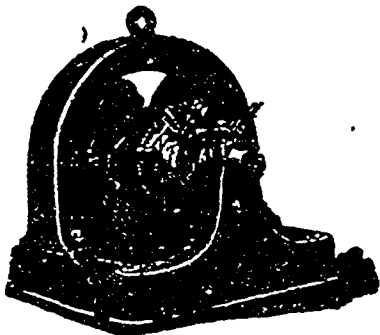


**The Jones & Moore
ELECTRIC CO.
ELECTRICAL CONTRACTORS**



DYNAMOS, TELEPHONES, SLOW SPEED MOTORS, MOTORS, SUPPLIES, DIRECT CONNECTED DYNAMOS. We manufacture Direct Current Machinery in all sizes and for any purpose.
20 and 22 ADELAIDE W., TORONTO.

**TORONTO and HAMILTON
ELECTRIC CO.**



MOTORS and DYNAMOS

MODERATE and SLOW SPEED OF HIGH EFFICIENCY. EITHER BELTED OR FOR DIRECT CONNECTION. REPAIRS PROMPTLY EXECUTED ON ALL ELECTRICAL APPARATUS.

**T. & H. ELECTRIC CO.
99-103 McNAB N., - HAMILTON, ONT.**

TAGS FOR MANUFACTURERS

We manufacture a complete line of Tags Strong, durable, well finished, smooth, writing surface.

PRINTED IN TWO COLORS. Write for prices.

**The MORTON CO., Limited,
46 RICHMOND ST. W.
Phone Main 2554 TORONTO**

ONTARIO WIND ENGINE AND PUMP CO. Limited
Phone Park 822
Atlantic Avenue Toronto
GALVANIZING

LONG DISTANCE PHONE 1103.

**The Electrical Construction
Company of London,
LIMITED**

32-40 Dundas St., London, Can.

Perfection TYPE **DYNAMOS**
AND **MOTORS**

Multipolar or Bipolar, Direct-Connected or Belted.

OVER 1500 OF OUR MACHINES IN USE.

We contract for complete installations, including wiring of factories. We repair machines of any make. Descriptive matter and estimates furnished on application.

BRANCHES AT Vancouver, Winnipeg, Toronto, Montreal, Halifax.

KERR'S
"COPPER-ALLOY"
DISC VALVES
ARE THE BEST FOR HIGH STEAM.
Ask Your Dealer for Them...
Catalogues Sent on Application
The Kerr Engine Co. Limited
WALKERVILLE, - ONT.

Dominion Oil Cloth Co. LIMITED

Manufacturers of **Oilcloths** of Every Description.

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

OFFICE AND WORKS:
Cor. St. Catherine and Parthenais Streets
MONTREAL, QUO.

F. W. HORE & SON, Limited, HAMILTON, ONT.
Manufacturers of **CARRIAGE, WAGON, AND SLEIGH WOOD WORK.**

CLASSIFIED INDEX.

(CONTINUED)

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.
Rice 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.
Jonckes Machine Co., Shorbrooke, Que.
Northey Co., Toronto.
Perrin, Wm. R., & Co., Toronto.
Smytho, S.R. Co., Pittsburg, Pa.
Wilson, J. C., & Co., Glenora, Ont.

Iron and Steel Specialties

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

Japans.

Berry Bros., Walkerville, Ont.

Lumps—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 Bolting

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

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

Manufacturers' Agent.

Phillip, David, Winnipeg, Man.

Metal Specialties

Brantford Plating Co., Brantford, Ont.

Metal Stamping

Empire Machine & Metal Stamping Co., Toronto.

Metallurgists.

Metallurgical Laboratory, Pittsburg, Pa.
Mills, J. D., Toronto.
Weitz, R. F. Engineering Co., Toronto.

Mica

Wickramanayaka, J. & Co., Kalutara, Ceylon, India.

CLASSIFIED INDEX.

(CONTINUED).

Mill Machinery and Supplies

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

Mineral Lands

Commissioner of Crown Lands, Toronto.

Mining Machinery

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

Motors and Dynamos

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

Novelty Manufacturers

Wc, th & Martin, Toronto.

Nozzles

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Office Furniture and Supplies

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

Oils and Lubricants

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

Oil Filters

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

Paints and Colors

Bellhouse, Dillon & Co., Montreal.
 Berry Bros., Walkerville, Ont.
 Fleming, W. A., & Co., Montreal.
 Keller, John J., & Co., New York City.
 Klipstein, A., & Co., New York City.
 McArthur, Cornelio & Co., Montreal.

Paper Manufacturers

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

Patents

Budden, Hanbury A., Montreal.
 Case, Egerton R., Toronto.
 Featherstonhaugh & Co., Toronto.

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 (Riveted Iron and Steel)

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

Hyde Water Tube Safety Boiler

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

In successful operation in every state from Atlantic to Rockies.

HYDE BROS. & CO.

PITTSBURG, PA.

R. SPENCE & CO.

HAMILTON, ONT.

FILE and RASP MANUFACTURERS AND RE-CUTTERS.

A trial order solicited. Write for terms. C. P. MOORE, PROPRIETOR.

CEYLON PLUMBAGO, Mica, Coir Floor Mats and Rugs, Coir Fibre for Mattresses, Dyewood, etc., can be had from

J. WICKRAMANAYAKA & CO.

KALUTARA, CEYLON, INDIA, cheaper than elsewhere. Correspondence solicited.

WM. BARBER & BROS.

Georgetown, Ont.

Manufacturers of.....

Book and Fine Papers.

THE.....

Toronto Paper Manufacturing Co., Cornwall, Ont.

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

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

THE PETERBOROUGH CANOE CO. LTD.
 PETERBOROUGH, Ont., Canada.
 SEND FOR CATALOGUE

THIS TRAIN COULD NOT CARRY THE SHIPMENTS FOR ANY ONE MONTH'S BUSINESS.
 IN 1885 THIS TRADE COULD CARRY OUR ENTIRE OUTPUT OF ONE YEAR.
THE EASTERN GRANITE ROOFING CO.
 IRVING BUILDING
 NEW YORK.
 THE ENORMOUS INCREASE SHOWN HERE PROVES THAT PERFECTED GRANITE ROOFING IS THE ROOFING TO USE.
 THE MOST PROMINENT COAL OPERATORS AND RAILROADS TESTIFY TO THIS BY ADOPTING IT AS THEIR STANDARD.
 Write for testimonials, photo pamphlet and samples.
 DEPARTMENT D.



ONTARIO'S MINERAL LANDS

The ungranted lands of the Crown in Ontario have an area of nearly 100 million acres. They contain many mineral belts, in which deposits of gold, silver, iron, copper, nickel, zinc, graphite, pyrites, corundum, mica, etc., have been found. Excellent ground for prospecting. Travel by canoe; railway and steam navigation in many parts. Prices of land low. No royalties. For reports, maps and mining laws, apply to

HON. E. J. DAVIS,
 Commissioner of Crown Lands, TORONTO.

Send for Catalogue and Price List to
THE JOHN MORROW MACHINE SCREW CO. LIMITED
 INGERSOLL, ONT.
 Mfrs. of Set, Cap and Special Screws, Studs, Finished Nuts, etc.

BROWN & CO.



Manufacturers of
 Square and Hexagon
HOT PRESSED NUTS.
 PARIS, - ONT.

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

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

**STENCILS,
STEEL STAMPS,
STEEL LETTERS AND FIGURES.**

**BRASS STAMPS,
RUBBER STAMPS,
STENCIL INKS.**

ALL OF THE VERY BEST

SEND TO US.

**Hamilton Stamp and Stencil Works,
HAMILTON, - ONTARIO.**

TO WOOLEN MANUFACTURERS

MESSRS. REICHE & CO.

WOOL, TOPS, NOILS, YARNS, Etc.

Represented in Canada by **BRADFORD, ENGLAND**

JAMES A. CANTLIE

22 ST. JOHN STREET, - - MONTREAL

Samples and Lowest Quotations
Promptly Supplied. Correspondence Solicited.

WE are prepared to give special bargains in
Rubber, Leather, Cotton and Elevator
Bolting—Hose, Packing, Pulleys and
Saws. Goods shipped subject to inspection.

Mail, telephone and telegraph orders promptly
attended to.

N. SMITH,

153-155 YORK ST., TORONTO.

:: PLATING ::

Gold, Silver, Nickel, Copper and Brass
Plating in any quantity.

MANUFACTURERS OF METAL SPECIALTIES

BRANTFORD PLATING CO., Brantford, Can.

All interested in South and Central
American Trade should read

**THE SOUTH AMERICAN
JOURNAL**

Founded 1863

The recognized organ of South American
interests and business in the Anglo-
Saxon World.

SUBSCRIPTION - - 25s. PER ANNUM.

Specimen copy post free; also the pamphlet,
"South America as a Field for Enterprise," giving much information with regard
to the countries, moneys, weights, measures,
mails, etc.

OFFICES

DASHWOOD HOUSE,

New Broad Street,

LONDON, E.C.; ENG.

**GRAPHITE IN ELECTRICAL
INDUSTRIES.**

Graphite, which is one of the forms of carbon, and more generally known as plumbago or black lead, has come to be an important factor in electrical industries. It is a graphite crucible which is used for electrical smelting, and it is a graphite pencil or rod which is used as an electrode in the process of electrical smelting. It is graphite pulverized to an impalpable powder that is used in electrolytic work by copper smelters and others. Pure flake graphite is used for lubricating cylinders and bearings of engines and dynamos, and the same material also forms the pigment for protective paints for trolley poles, electric light poles, and roofs of dynamo plants and trolley car sheds. Graphite would therefore seem to be a very important factor in electrical industries. The demand has very greatly increased for graphite resistance rods. Unlike German silver, it is not necessary to take into account the factor of quantity. For instance, a six-inch rod one-fourth inch in diameter may be made to have one ohm resistance or 10 ohms, or 1,000 ohms, or in fact almost any resistance that the electrician may require. The only reason for changing the dimensions of such rod would be either convenience or for radiating the heat when it is necessary to carry a current of considerable quantity at high resistance. Joseph Dixon was the originator of the graphite industry, and the Dixon Co. are now the most extensive miners, manufacturers and importers of graphite in the world. They are paying particular attention to the requirements of electrical engineers, and are supplying the electrical industries with large quantities of material.

ONTARIO MINERAL OUTPUT.

The Ontario Bureau of Mines has published a statement of the output of the metalliferous mines and works in the province for the first three months of 1903. Gold ore treated was 9,688 tons; gold product, 2,692 ounces, valued at \$42,218. Nickel copper ore raised was 52,866 tons; ore smelted, 47,880 tons; nickel in matte product, 1,059 tons, valued at \$567,211; copper in matte product, 780 tons, valued at \$112,676. Copper ore raised was 9,940 tons; concentrates produced, 236 tons, valued at \$10,388. Iron ore raised was 78,789 tons, valued at \$116,620; Ontario oresmelted, 7,392 tons; foreign ore smelted, 18,349 tons; pig-iron produced, 14,357 tons, valued at \$165,656; steel produced, 1,340 tons, valued at \$29,480. Arsenic produced was 216,000 pounds, valued at \$6,264.

As compared with the first three months of 1902, the total value of production shows a decrease from \$1,256,685 to \$1,055,513. This is chiefly accounted for by the falling off in the output of pig iron, from \$397,838 to \$165,656, due to shutting down at the furnaces for repairs. Nickel rose in quantity from 1,485 tons to 1,659 tons, and in value from \$546,356 to \$567,211.

CLASSIFIED INDEX.

(CONTINUED).

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., Now Glasgow, N.S.
Rice Lewis & Son, Toronto.
Samuel, M. & L. Benjamin & Co., Toronto.
Scaife, 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.
Jonckes 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.
Jonckes Machine Co., Sherbrooke, Que.
Jones & Moore Electric Co., Toronto.
Kay Electric Dynamo & Motor Co., Toronto.
Leonard, E. & Sons, London, Ont.
Northoy Co., Toronto.
Perrin, Wm. R. & Co., Toronto.
Phillips, Eugene F., Electrical Works, Montreal.
Robb Engineering Co., Amherst, N.S.
Smythe, S.R. Co., Pittsburg, Pa.
Stevens, Alfred J., Toronto.
Sturtevant, B. F., Co., Boston, Mass.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.
Wilson, J. C., & Co., Glenora, Ont.

Presses (Tilo, Sewer Pipe, Nozzles and Sieves)

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

Purifying System (Water)

Darling Bros., Montreal.
Scaife, 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., Now Glasgow, N.S.
Phillips, Eugene F., Electrical Works, Montreal.

CLASSIFIED INDEX.

(CONTINUED).

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.

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

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.

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

Shoelac 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.
Power Specialty Co., Buffalo, N.Y.

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, McGill & Co., Montreal and Toronto.

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

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

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

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

Tags
Morton Co., Toronto.

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

Tees
Bourne-Fuller Co., Cleveland, Ohio.

CLASSIFIED INDEX.

(CONTINUED).

Textile Manufacturers
Canadian Colored Cotton Mills Co., Montreal.
Cantile, James, A., Montreal.
Dominion Oil Cloth Co., Montreal.
Hamilton Cotton Co., Hamilton, Ont.
Morris, D., Sons & Co., Montreal.
Reiche & Co., Bradford, England.
Smith Wool Stock, Toronto.
Storey, 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 Stool
Bourne-Fuller Co., Cleveland, Ohio.
Leslie, A. C. & Co., Montreal.

Trucks
Slingsby, H. C., Montreal.

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

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

Turbines
Jencks 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.
Sturtovant, 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.

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

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

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

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

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

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

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

Established 1848.

BRADSTREET'S

Capital and Surplus, \$1,500,000

Offices Throughout the Civilized World.

EXECUTIVE OFFICES,
846 & 343 Broadway, New York City, U.S.A

CORRESPONDENCE INVITED.

OFFICES IN CANADA :

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

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

The Mercantile Agency

ESTABLISHED 1841.

R G. DUN & CO.

Offices in 189 of the leading business centres of the world.

CANADIAN OFFICES

TORONTO, MONTREAL,
HAMILTON, QUEBEC,
LONDON, OTTAWA,
WINNIPEG, ST. JOHN,
VANCOUVER, HALIFAX.

W. C. MATTHEWS, Toronto,
General Manager for Canada.

COLORED CHALK CRAYONS

FOR TEXTILE MILLS,

Prevent mixing numbers, and discover imperfect work. They contain no oil or wax. Fifteen Shades. Send for circular containing samples of colors, prices, etc. ORIGINAL MANUFACTURER

LOWELL CRAYON CO.
LOWELL, MASS.

WOOD ENGRAVING PHOTO ENGRAVING HALFTONES

OR ANY CLASS OF ENGRAVING
FOR ADVERTISING PURPOSES,
CATALOGUES, MAGAZINES, &c

J. L. JONES ENG. CO.
168 BAY ST - TORONTO



NOTICE—The following are the Factory Inspectors for the

Province of Ontario:

JAS. T. BURKE, Parliament Buildings, Toronto.
JAS. R. BROWN, Parliament Buildings, Toronto.
MARGARET CARLYLE, Parliament Buildings, Toronto.

O. A. ROCQUE, Orleans, Ont.

Persons having business with any of the Inspectors will find them at the above address.

JOHN DRYDEN, Minister of Agriculture.

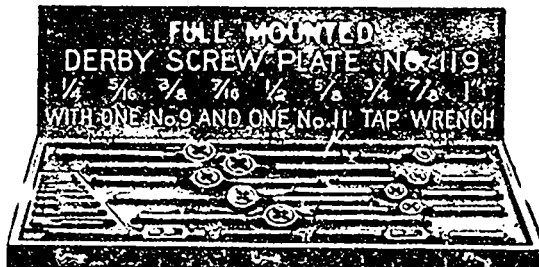
INDEX TO ADVERTISEMENTS.

Where the follo is not given the Advertisement appears at intervals.

Agriculture, Ontario Minister of, Toronto.	45	Expanded Metal & Fireproofing Co., Toronto.	7	Northey Co., Toronto	12
Albert Mfg. Co., Hillsborough, N.B.	7	Fatherstonhugh & Co., Toronto	47	Norton, A. O., Boston, Mass.	8
Algoma Steel Co., Sault Ste. Marie, Ont.	2	Firstbrook Box Co., Toronto	47	Nova Scotia Steel & Coal Co., New Glasgow, N.S.	4
American Steam Pump Co., Battle Creek, Mich.	27	Fleming, W. A. & Co., Montreal	35		
Archbold, Dr. Geo., Prescott, Ont.	25	Forman John, Montreal	12	Oakley, John & Sons, London, England	3
Armstrong Mfg. Co., Bridgeport, Conn.	25	Frost, W. H., Smith's Falls, Ont.	obo	Ontario Malleable Iron Co., Oshawa, Ont.	obo
Babcock & Wilcox, Limited, Montreal	ofc	Gartshore, John J., Toronto	47	Ontario Wind Engine & Pump Co., Toronto.	42
Baltic Light Co., Toronto	43	Gartshore Thomson Pipe & Foundry Co., Hamilton, Ont.	41	Owen Sound Portland Cement Co., Owen Sound, Ont.	7
Barber, Wm. & Bro., Georgetown, Ont.	9	Goldie & McCulloch Co., Galt, Ont.	3	Packard Electric Co., St. Catharines, Ont.	10
Bellhouse, Dillon & Co., Montreal	9	Great Northern Railway, Quebec City	37	Pago Wire Fence Co., Walkerville, Ont.	29
Benson, W. T. & Co., Montreal	9	Greening B. Wire Co., Hamilton, Ont.	6	Parko, Roderick J., Toronto	27
Berry Bros., Walkerville, Ont.	21	Gutta Porcha & Rubber Mfg. Co., Toronto.	ofc	Ponberthy Injector Co., Windsor, Ont.	8
Bertram, John & Son, Dundas, Ont.	3	Hamilton Brass Mfg. Co., Hamilton Ont	5	Pennsylvania Fire Brick Co., Lock Haven, Pa.	7
Big Four Bldg., Boston, Mass.	31	Hamilton Cotton Co., Hamilton Ont	40	Perrin, Wm. R. & Co., Toronto & Chicago, Ill.	41
Blagden Waugh & Co., London E.C. England	31	Hamilton Facing Mills Co., Hamilton, Ont.	obo	Peterborough Cnstr. Co., Peterborough, Ont.	43
Bourno-rulter Co., Cleveland Ohio	11	Hamilton Stamp & Stencil Works, Hamilton, Ont.	44	Phillip, David, Winnipeg, Man.	38
Bradstreet's, Toronto and New York	45	Hart Emery Wheel Co., Hamilton, Ont	4	Phillips, Eugene F., Electrical Works, Montreal.	39
Brantford Plating Co., Brantford, Ont.	44	Hay, Peter Galt, Ont.	2	Pierce, Wm. B. & Co., Buffalo, N.Y.	10
Bristol Co., Waterbury Conn	obo	Heys, Thomas & Son, Toronto	27	Power Specialty Co., Buffalo, N.Y.	36
Brown & Co., Paris, Ont.	43	Hore, F. W. & Son, Hamilton, Ont	42	Queon City Oil Co., Toronto	ofc-40
Brunner, Mond & Co., Northwich, England	9	Hyde Bros. & Co., Pittsburg, Pa.	43	Reiche & Co., Bradford, England	ofc
Buddon, Hanbury A., Montreal	27	Imperial Oil Co., Petrolen, Ont.	37	Reinhold, Fred, Mount Vernon, Ill	37
Buffalo Forge Co., Buffalo, N.Y.	11	Industrial Publication Co., New York, N.Y.	47	Rice Lewis & Son, Toronto	38
Bureau of Mines, Toronto	39	International Safety Solvent Co., Providence, R. I.	47	Robb Engineering Co., Amherst, N.S.	40
Burt Mfg. Co., Akron, Ohio	23			Rota Filters Limited, Windsor, Ont.	33
Butterfield & Co., Rock Island, Que.	46	Jeffrey Mfg. Co., Columbus, Ohio	11	Samiel, M. & L. Benjamin & Co., Toronto	25
Caldwell, W. E. Co., Louisville, Ky.	6	Jen-Kes Maching Co., Sherbrooke Que	5	Scaife, Wm. B. & Sons Co., Pittsburg, Pa.	25
Canada Foundry Co., Toronto	2	Jones & Moore Electric Co., Toronto	42	Scioto Fire Brick Co., Solotoville, Ohio	7
Canada Iron Furnace Co., Montreal	25	Jones, J. L., Engraving Co., Toronto	45	Simpson, T. T., Deschenes, Que	27
Canadian Colored Cotton Mills Co., Montreal	obo	Karch, H. W., Hespeler, Ont.	17	Slingsby, H. C. for Canada, Montreal	29
Canadian Corundum Wheel Co., Hamilton, Ont.	obo	Kay Electric Dynamo & Motor Co., Toronto.	41	Smith, N., Toronto	44
Canadian General Electric Co., Toronto	2	Keller John J. & Co., New York, N.Y.	9	Smith Woolstock Co., Toronto	47
Canadian Helms Safety Boiler Co., Toronto	17	Kelly's Directories, Toronto and London, England	29	Smythe, S. R. Co., Pittsburg, Pa.	27
Canadian Manufacturer Pub Co., Toronto	43	Kerr Engine Co., Walkerville Ont.	7	South American Trade Journal, London, E.C. England	44
Canadian Office & School Furniture Co., Pres ton, Ont.	ofc	Klipstein, A. & Co., New York, N.Y.	42	Spence, R. & Co., Hamilton, Ont.	43
Canadian Otis Elevator Co., Hamilton Ont.	7	Leonard, E. & Sons, London, Ont.	3	Stevens, Alfred J., Toronto	27
Canadian Portland Cement Co., Heseronto Ont.	31	Leslie, A. C. & Co., Montreal	25	Storoy, W. H. & Son, Acton Ont	43
Canadian Rand Drill Co., Sherbrooke, Que.	44	Lewis, Rice & Son, Toronto	9	Stratford Mill Building Co., Stratford, Ont.	31
Cantilo, James A., Montreal	ofc	London Machine Tool Co., London, Ont.	29	Sturtevant, E. F. Co., Boston, Mass.	11
Carrier, Laine & Co., Lewis, Que.	ofc	Lowell Crayon Co., Lowell, Mass.	45	Sweeney, James, Jr., North Tonawanda, N.Y.	37
Caso Egerton R., Toronto	9	Meadows, Geo. B. Wire, Iron & Brass Works Co., Toronto	43	Syracuse Smelting Co., Montreal and New York	6
Cassola Color Co., New York and Montreal	39	Metallic Roofing Co., Toronto	23	Toronto Filo Co., Toronto	29
Central Ontario Power Co., Peterborough, Ont.	25	Metallurgical Laboratory, Pittsburg, Pa.	27	Toronto & Hamilton Electric Co., Hamilton, Ont.	42
Chicago & North-Western Railway, B. H. Bennett, General Agent, Toronto.	29	Mills, S. J., Toronto	27	Toronto Paper Mfg. Co., Cornwall, Ont.	43
Commissioner of Crown Lands, Toronto	35	Milnes, J. H. & Co., Toronto	25	Turner, Vaughan & Taylor, Cuyahoga Falls, Ohio.	27
Cooper, James, Montreal	31	Mitchell, W. W., Toronto	31	United Electric Co., Toronto	obo
Cooper, James Mfg. Co., Montreal	39	Montreal Pipe Foundry Co., Montreal	2	Vogel, C. H., Ottawa	27
Cowan & Co., Galt, Ont.	25	Montreal Steel Works, Montreal	obo	Walkerville Malleable Iron Co., Walkerville, Ont.	ofc
Crosby Steam Gauge & Valve Co., Boston, Mass.	29	Morrison, T. A. & Co., Montreal	27	Wardlaw T. D., Toronto	9
Darling Bros., Montreal	33	Morrow, John, Machine Screw Co., Ingersoll, Ont.	25	Wentz, R. F. Engineering Co., Toronto	27
Dean & Son, London, E.C., England	34	Morton Co., Toronto.	42	Wekramanayaka J. & Co., Kolutara, Ceylon, India.	43
Deseronto Iron Co., Deseronto, Ont.	39	McArthur, Cornello & Co., Montreal.	obo	Williams, A. R. Machinery Co., Toronto.	35
Dixon, Jos., Crucible Co., Jersey City, N.J.	42	McCallough Dairiel Crucible Co., Pittsburg Pa.	25	Williams, H. H., Toronto	ofc
Dodge Mfg. Co., Toronto	36	McDougall R. Co., Galt, Ont.	33	Winn & Holland, Montreal.	9
Dominion Belting Co., Hamilton Ont	4	McEachren Heating & Ventilating Co., Galt, Ont.	6	Wilson Bros. Bobbin Co., Todmorden England	41
Dominion Motor & Machine Co., Toronto.	2	McKinnon Dash & Metal Works Co., St. Catharines, Ont.	ofc	Wilson J. C. & Co., Glenora, Ont.	39
Dominion Oil Cloth Co., Montreal	45	McLaren D. K., Montreal and Toronto	38	Wire & Cable Co., Montreal	ofc
Dominion Radiator Co., Toronto	43	Neff & Pastreichwarte Toronto	27	Wormer C. C. Machinery Co., Detroit, Mich.	37
Dominion Wire Rope Co., Montreal	42	Noble & Suberterive Agency Toronto	29	Worth & Martin, Toronto	27
Drummond, Met'ali & Co., Montreal, Que.	2				
Dun R. G. & Co., Toronto	12				
Eastern Granite Roofing Co., New York City					
Electric Construction Co., London Ont					
Electric Engineering & Supply Co., Montreal					
Empire Machine and Metal Stamping Co., Toronto					

ofc outside front cover

obo outside back cover.



BUTTERFIELD & CO., Rock Island, Q.



When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

ANOTHER TARIFF EDITION

OF

The Canadian Manufacturer

Another tariff edition of THE CANADIAN MANUFACTURER is being prepared and will be published immediately after the Dominion Parliament, now in session, takes final action regarding the Canadian tariff.

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

Important changes having been made in the tariffs of both these countries in the meantime, and to meet a general demand for information, the issue of THE CANADIAN MANUFACTURER of August 6, 1897, contained complete reproductions not only of the Canadian and United States tariffs, but also, those of Great Britain and Newfoundland; and in the same issue was also published the full text of the British Merchandise Marks Act, than which no more important papers bearing upon the commercial industries of the countries named were ever produced under one cover.

After the publication of these tariffs in 1897, very important political changes occurred in both Canada and the United States, one of the most noticeable of which was the adoption by Canada of a tariff preference in favor of Great Britain; and in the issue of THE CANADIAN MANU-

FACTURER of July 6, 1900, was published complete reproductions of the Canadian tariff, including the Act providing for tariff preference in favor of British goods; the United States tariff; the British tariff, and the Newfoundland tariff, and there are thousands of offices of manufacturing and commercial concerns in Canada, United States, Great Britain and other countries in which are yet to be seen copies of that edition.

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

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

One Page.....	\$25 00
Half Page.....	15 00
Quarter Page.....	10 00

Copy and instructions for advertisements, and orders for copies of paper should be sent without delay to THE CANADIAN MANUFACTURER PUBLISHING CO., Limited McKinnon Building, Toronto, Canada.

Smith Wool-Stock Co.

219 FRONT ST. E., TORONTO.

Makers of

WOOL STOCK, SHODDIES, Etc.

The Firstbrook Box Co. Limited

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

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

JOHN J. GARTSHORE,

83 Front St. West, Toronto.

RAILWAY, TRAMWAY, and

Contractors' Supplies

METALS and SCRAP IRON

Bought and Sold.

SELF-EDUCATION FOR MECHANICS.

A Monthly Journal intended as a Guide to Correct Methods in Work and Study.
25c. A YEAR. SAMPLE COPY FREE.

Industrial Publication Co.,
16 Thomas Street - NEW YORK.

The International Safety Solvent Co.

of SAOO, MAINE, U.S.A.

Offers for sale, licenses under Canadian Patents Nos. 50,401-50,411 - 67,749-70,531 - 70,582-77,425, granted to Emile Mabrtens for the

DEGREASING and SCOURING OF WOOL

by the "Solvent Process," and will furnish drawings for the erection of plants, and will undertake the erection of plants for this purpose in Canada.

Address—THE CANADIAN MANUFACTURER, OR THE INTERNATIONAL SAFETY SOLVENT CO., Providence, R.I., U.S.A.

TO MANUFACTURERS! Do You Publish Catalogues and Circulars? Advertise in Trade Journals?

WE CAN SUPPLY YOU WITH ARTISTIC AND MECHANICALLY CORRECT

Photo Engravings, Wood Cuts, Electrotypes, Zinc Etchings

Or anything that you may desire, **FIRST-CLASS** in every particular, at Prices that Defy Competition. Ask for Estimates.

THE CANADIAN MANUFACTURER PUBLISHING CO., LIMITED, TORONTO

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

The Classified Index

Beginning on page 38 of this issue of THE CANADIAN MANUFACTURER is for the benefit of our Readers, and should be used by them.

RE TARIFF EDITION THE CANADIAN MANUFACTURER

See page 47 for particulars.

**McARTHUR,
CORNEILLE & CO.**
310 to 316 ST. PAUL ST.
MONTREAL

OILS, CHEMICALS, DYESTUFFS
AND
TANNING EXTRACTS

*Waxes, Gums, Shellacs,
Glues, Gelatines, Etc.*

CANADIAN AGENTS
FOR THE
BERLIN ANILINE CO.
BRITISH ALIZARINE CO. and
MILLER'S TANNING EXTRACT CO.

**CORUNDUM
WHEELS,
EMERY
WHEELS**
.. and ..
**GRINDING
MACHINERY**

**CANADIAN CORUNDUM
WHEEL CO.**
HAMILTON, - ONT.

**The Ontario . . .
Malleable Iron Co.**
(Limited)
...Manufacturers of...

MALLEABLE IRON Castings to Order for all kinds of

AGRICULTURAL IMPLEMENTS .
.....AND.....

Miscellaneous Purposes

—●—

OSHAWA, - - ONT.

THE UNITED ELECTRIC CO. LIMITED



MANUFACTURERS OF
**Dynamos,
Motors,
Arc Lamps**
ETC.

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

Montreal Steel Works Limited

SUCCESSORS TO—
The Canada Switch and Spring Co., Limited
MANUFACTURERS OF

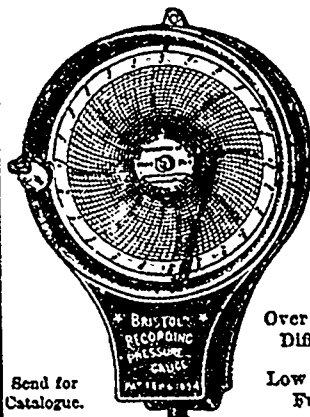
STEEL CASTINGS
(OPEN HEARTH SYSTEM)

**Springs, Frogs,
Switches, Signals**

FOR STEAM AND
ELECTRIC RAILWAYS

CANAL BANK, - POINT ST. CHARLES
.. MONTREAL ..

BRISTOL'S Recording Instruments



For.....
**Pressure,
Tempera-
ture and
Electricity.**

Over One Hundred
Different Varieties.
Low Prices and
Fully Guaranteed

Silver Medal, Paris Exposition

Send for Catalogue.
THE BRISTOL CO.
WATERBURY, CONN., U.S.A.

SMITH'S FALLS

**Malleable
Iron
Works . .**

00000

CAPACITY 3,000 TONS.

00000

WILLIAM H. FROST

PROPRIETOR,

SMITH'S FALLS,
Labor Gazette
ONTARIO, CANADA...

CARRIER, LAINE & CO.

ENGINEERS, FOUNDERS, MACHINISTS,
BOILER MAKERS AND

Montreal Branch....
147 St. James St.
Quebec Branch....

The Hamilton Railway Mill Co., Limited, Manufacturers of
HAMILTON, ONT.
Ceylon Planting Co. also Extra Fine Quality
Moulding Sand
Pipe and Box
Wires for
1898