

Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

- |  |  |
|--|--|
| <input type="checkbox"/> Coloured covers/<br>Couverture de couleur   | <input checked="" type="checkbox"/> Coloured pages/<br>Pages de couleur  |
| <input type="checkbox"/> Covers damaged/<br>Couverture endommagée  | <input checked="" type="checkbox"/> Pages damaged/<br>Pages endommagées  |
| <input type="checkbox"/> Covers restored and/or laminated/<br>Couverture restaurée et/ou pelliculée  | <input type="checkbox"/> Pages restored and/or laminated/<br>Pages restaurées et/ou pelliculées                    |
| <input type="checkbox"/> Cover title missing/<br>Le titre de couverture manque   | <input checked="" type="checkbox"/> Pages discoloured, stained or foxed/<br>Pages décolorées, tachetées ou piquées |
| <input type="checkbox"/> Coloured maps/<br>Cartes géographiques en couleur   | <input type="checkbox"/> Pages detached/<br>Pages détachées  |
| <input type="checkbox"/> Coloured ink (i.e. other than blue or black)/<br>Encre de couleur (i.e. autre que bleue ou noire)   | <input checked="" type="checkbox"/> Showthrough/<br>Transparence   |
| <input type="checkbox"/> Coloured plates and/or illustrations/<br>Planches et/ou illustrations en couleur  | <input checked="" type="checkbox"/> Quality of print varies/<br>Qualité inégale de l'impression                    |
| <input checked="" type="checkbox"/> Bound with other material/<br>Relié avec d'autres documents  | <input type="checkbox"/> Continuous pagination/<br>Pagination continue   |
| <input checked="" type="checkbox"/> Tight binding may cause shadows or distortion<br>along interior margin/<br>La reliure serrée peut causer de l'ombre ou de la<br>distorsion le long de la marge intérieure  | <input type="checkbox"/> Includes index(es)/<br>Comprend un (des) index  |
| <input type="checkbox"/> Blank leaves added during restoration may appear<br>within the text. Whenever possible, these have<br>been omitted from filming/<br>Il se peut que certaines pages blanches ajoutées<br>lors d'une restauration apparaissent dans le texte,<br>mais, lorsque cela était possible, ces pages n'ont<br>pas été filmées. | Title on header taken from: /<br>Le titre de l'en-tête provient:   |
| <input type="checkbox"/> Additional comments: /<br>Commentaires supplémentaires:   | <input type="checkbox"/> Title page of issue/<br>Page de titre de la livraison                                     |
|  | <input type="checkbox"/> Caption of issue/<br>Titre de départ de la livraison                                      |
|  | <input type="checkbox"/> Masthead/<br>Générique (périodiques) de la livraison                                      |

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

10X	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

**THE QUEEN CITY OIL CO. LIMITED, LUBRICATING AND REFINED OIL**

SAMUEL ROGERS, President.

TORONTO.

REFINED

MACHINERY - EGYPTIAN COTTON

PATENTS

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

Vol. 45.

TORONTO, DECEMBER 5, 1902.

No. 11

**ELEVATORS**

...AND...  
**Conveying Machinery**

OF EVERY DESCRIPTION

**WILLIAMS & WILSON**

320 St. James St.  
MONTREAL

**RUBBER GOODS OF ALL KINDS.**



61 and 63 FRONT ST. WEST, TORONTO.

**Brass and Malleable Iron CASTINGS**

ROUGH OR FINISHED

**McKinnon Dash & Metal Works Co.**

ST. CATHARINES, ONT.

**COPPER WIRE**

FOR ELECTRIC TRANSMISSION.

**The Wire and 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, ONT.

Registered Solicitor of Patents Notary Public; Member of the Canadian Manufacturers' Association

HEAD OFFICE  
TEMPLE BUILDING  
TORONTO  
OFFICES  
OTTAWA  
AND  
WASHINGTON, D.C.

281-288 CONGRESS ST., - BOSTON, MASS.

**PATENTS Fetherstonhaugh & Co.**  
TORONTO MONTREAL OTTAWA WASHINGTON

**JOHN J. KELLER & CO. INCORPORATED**

104 and 106 MURRAY ST., NEW YORK

BOSTON  
PROVIDENCE**Importers and Manufacturers**PHILADELPHIA  
ATLANTA

SOLE AGENTS FOR

**ANILINE COLOR & EXTRACT WORKS**FORMERLY JOHN R. GEIGY, BASEL, SWITZERLAND,  
AND GRENZACH, GERMANY.**ANILINE COLORS, DYESTUFFS,****DYEWOODS AND SUMACH EXTRACTS**

Canadian Representative—T. D. WARDLAW, 29-33 Melinda St., Toronto

**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.

**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.**SELBY & YOULDEN**

SOLE MANUFACTURERS IN CANADA OF

CELEBRATED

**"CARROLL" PROPELLOR WHEELS**MARINE ENGINES and BOILERS, CAPSTANS,  
STEERING GEARS, DOUBLE and SINGLE DRUM HOISTING  
ENGINES.Mill and General Boiler and Engine Repairs  
promptly attended to.**KINGSTON FOUNDRY,** SELBY & YOULDEN,  
KINGSTON, ONT. Proprietors.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

**ANILINES****St. Denis Dyestuff and Chemical Co.,**

(A. POIRRIER), of Paris, France.

Manufacturers of

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

A Complete Assorted Stock of the above always on hand.

**W. T. Benson & Co.,**

Sole Agents for Canada.

164 St. James St., MONTREAL

**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, cerundum, 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.

**CANADA IRON FURNACE CO., LIMITED**

Montreal, Radnor and Three Rivers

Manufacturers of the well-known

**"C.I.F." Three Rivers Charcoal Pig Iron**Suitable for Car Wheels, Cylinders and Fine Castings,  
where the utmost strength is required.UNSURPASSED IN STRENGTH BY SWEDISH, RUSSIAN  
OR AMERICAN CHARCOAL IRON.

Offices: Canada Life Insurance Bldg., Montreal.

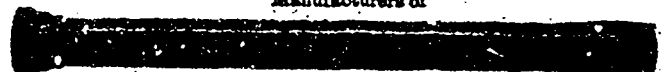
**MONTREAL PIPE FOUNDRY CO.,**

SUCCESSORS TO

(Limited)

**DRUMMOND-McCALL PIPE FOUNDRY CO.**

Manufacturers of



"Specials," Hydrants, Valves, Etc.

OFFICES: - - - Canada Life Building,  
MONTREAL

## THE WHEELLOCK ENGINE

Simple, condensing and compound. Is hard to surpass in construction, efficiency, economy and simplicity. Write for particulars. If you desire a high speed, we make the **DEAL**. This is the standard of excellence in a high speed engine.

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

The **GOLDIE & MCGULLOCH CO.**

LIMITED

GALT, ONT., 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.

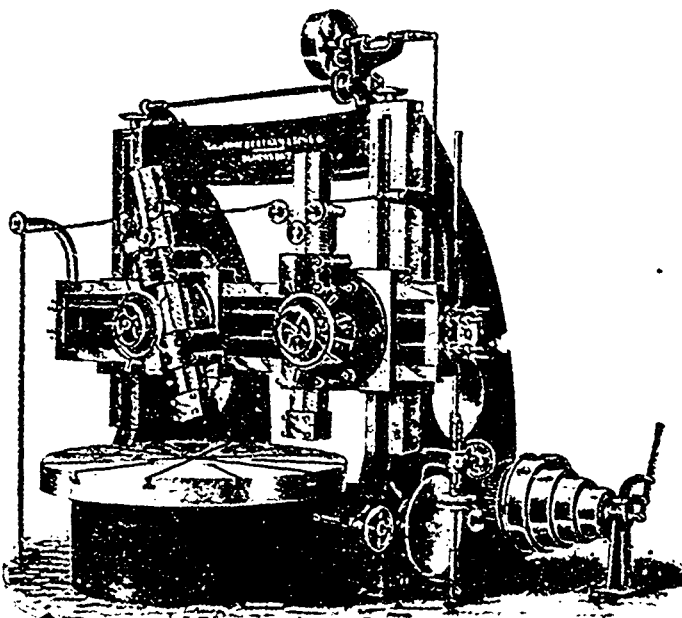
Refineries at **SARNIA** and **PETROLIA, CANADA.** Merchandising Branches at:

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.

## MACHINE TOOL EQUIPMENT

Get ready to handle all the business that is coming your way.

There is nothing to wait for if you need a Boring Mill



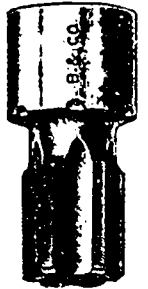
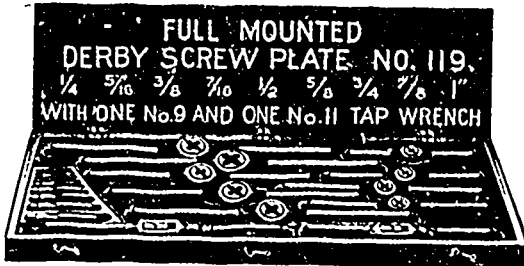
As we can supply you a mill that will admit 37" up to one that will admit 18 ft. in diameter. Our mills have won the unqualified approval of Boring Mill Users everywhere.

They meet the most exacting requirements as to quality and quantity of production, wide range of feeds, quick changes, each head entirely independent in all its movements, are some of the things that contribute to their success. Their proportions are such as to stand the strain of long continued hard use.

As regards the quality and efficiency of our mills and the satisfaction they are giving, our reputation alone should satisfy you on that point, but we are not laying back on our oars and depending on our reputation to sell our machines. It is the combination of 40 years of experience in machine tool building with the ability to embody every up-to-date feature that is really an improvement, and above and beyond that to leave severely alone all freak devices that make some machine tools more fit for a museum than a machine shop, that enables us to keep the best shops in the country equipped with our machinery.

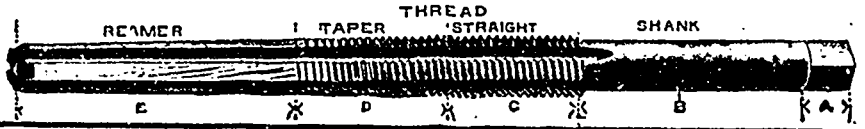
It will pay you to write us for special circulars and descriptive matter

**THE JOHN BERTRAM & SONS CO.,**  
DUNDAS, ONT. LIMITED



WE MANUFACTURE  
STAY BOLT TAPS, all diameters and lengths up to 94 inches.  
SPINDLE STAY BOLT TAPS and TAPS for Screw  
Machines, and TAPS for all uses.  
Regular and Full Mounted Reece and Derby Plates, Bicycle  
and Machinists' Plates, etc., etc.

**BUTTERFIELD & CO.,**  
Rock Island, Que.



# THE NOVA SCOTIA STEEL & COAL CO.

MANUFACTURERS OF

LIMITED

## BRIGHT COMPRESSED STEEL SHAFTING

FROM 1/2 TO 6 INCHES IN DIAMETER. GUARANTEED STRAIGHT AND TRUE TO WITHIN 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.**

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

Head Office—NEW GLASGOW, NOVA SCOTIA

# GALT Machine Knife Works

**PETER HAY,**



**GALT, ONT.**

Manufacturers of Every  
Description of.....

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



BARK  
KNIVES  
PULP  
KNIVES  
RAO  
KNIVES  
Etc., Etc.



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



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

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

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

**PURE ALKALI**

48% and 58% (Light and Heavy)

**BLEACH<sup>g</sup> PWD.**

35% to 37%. (Hardwood Casks)

**CAUSTIC SODA**

60% to 77%.



TRADE MARK.

Winn & Holland,  
MONTREAL,  
Sole Agents for Canada.

**SODA CRYSTALS**

Lump and Crushed. Bris. and Bags.

**CON<sup>CTD</sup> SAL SODA**

DOUBLE STRENGTH

**BICARBONATE SODA**

ABSOLUTELY PURE

Also for Mineral Water Manufacturers.

The Wellington Mills, *LONDON, ENG.*  
**GENUINE EMERY**

Oakey's Flexible Twilled Emery Cloth.  
Oakey's Flint Paper and Glass Paper.  
Oakey's Emery Paper, Black Lead, Etc.

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

Manufacturers **JOHN OAKEY & SONS, LIMITED,** Wellington Mills,  
Westminster Bridge Road, London, Eng.

Inquiries should be addressed to

**JOHN FORMAN,** 650 CRAIG ST., MONTREAL

**HAMILTON COTTON CO.,**  
*HAMILTON, ONTARIO.*

**Yarn Manufacturers,**  
**DYERS AND BLEACHERS.**

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

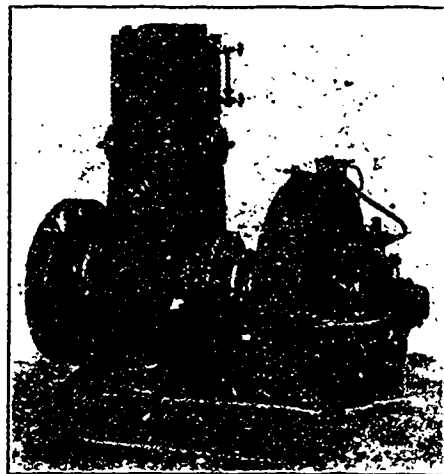
**Twines, Lampwicks, Webbing, Etc.**

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

**DARKNESS vs. LIGHT**

Everyone has this problem to solve at this season,

let us help you by supplying an  
up-to-date Electric Plant.



**CANADIAN GENERAL ELECTRIC CO.,**  
LIMITED.

HEAD OFFICE:

**TORONTO, - ONTARIO**

DISTRICT OFFICES:

MONTREAL. HALIFAX. OTTAWA. WINNIPEG. VANCOUVER. VICTORIA. ROSSLAND.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

# ALBERT MANUFACTURING CO.

MANUFACTURERS OF THE  
WELL-KNOWN

"HAMMER BRAND"

## Calcined Plaster

AND

Patent Rock Wall Plaster

HILLSBOROUGH, N. B.,  
CANADA.

## 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

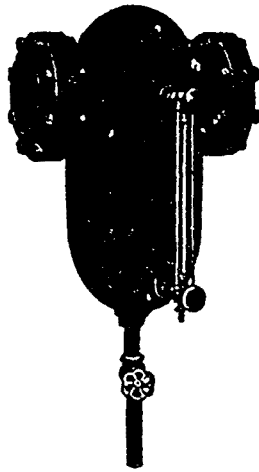
GEO. S. KILBOURN, Sec'y-Treas.  
Correspondence invited.

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

Send for Catalogue and Price  
List to



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



## "Steam Separators that Separate"

THE . . .  
**WEBSTER SEPARATORS**

are sold on this guarantee; no sale, if they do not leave less than one per cent. of moisture in the issuing steam.

Write for Catalogue.

**DARLING BROTHERS, - "Reliance Works," Montreal.**

**A. KLIPSTEIN & CO., 122 PEARL STREET  
NEW YORK.**

HAMILTON, ONT.-24 Catharine St. N. MONTREAL-17 Lemoine St.

## Anilines, Dyestuffs & Chemicals

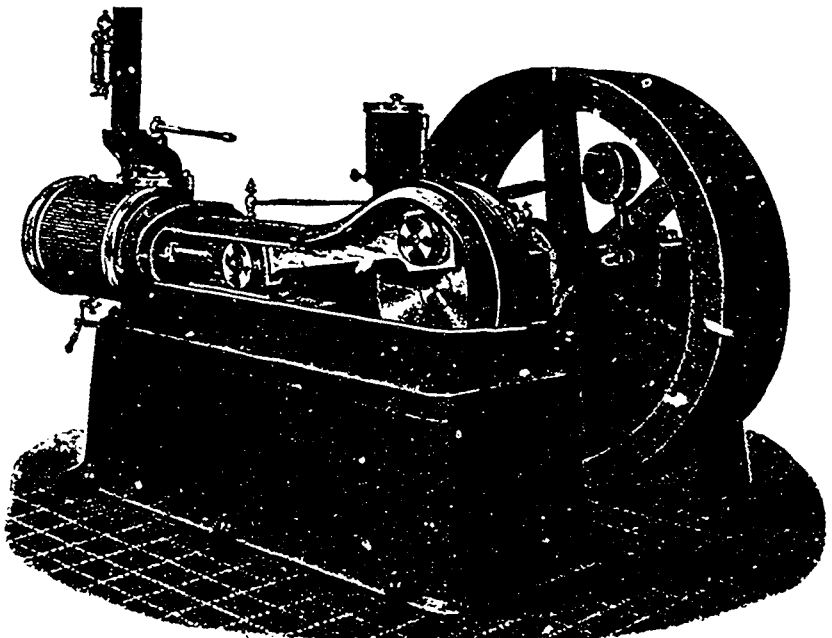
SPECIALTIES:

*Fast Colors for Wool and Cotton.*

ALSO FULL LINE OF DIRECT COTTON COLORS.

BRANCHES: { BOSTON 233-5 Congress St. | PHILADELPHIA 50-52 N. Front St. | CHICAGO 136 Kinzie St. | PROVIDENCE 13 Mathewson St.

**- - SAVED \$25 PER MONTH - -**



A CUSTOMER SAYS: - "We find the 100 horse power engine bought from you very satisfactory. The saving in fuel is about \$25 per month over the engine we were running before."

**ROBB ENGINEERING CO., LIMITED,  
AMHERST, N.S.**

Agents (WILLIAM McKAY, 19 McKenzle Crescent, - - - TORONTO.  
WATSON JACK & CO., 7 St. Helen Street, - - - MONTREAL.

# 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.

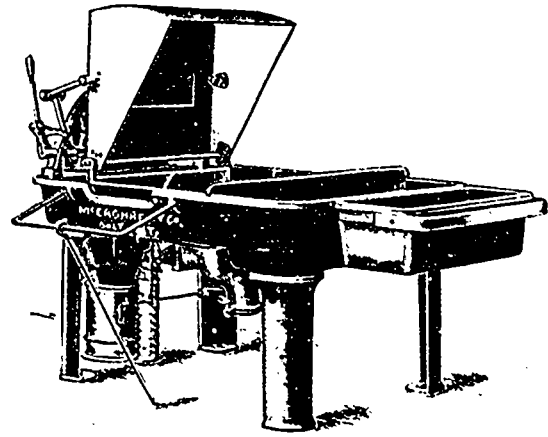
Atlanta, 47 North Pryor Street.

Montreal, 86-88 Youville Square.

# 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

## The B. GREENING WIRE CO., Limited



MANUFACTURERS  
OF



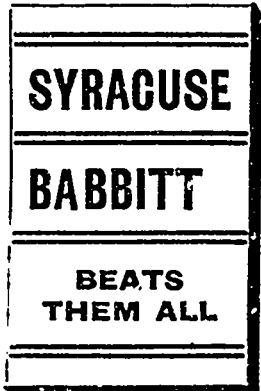
Lang's Patent Wire Ropes  
For Colliery and Mining Use.

WIRE ROPE of every Description  
and for all purposes.

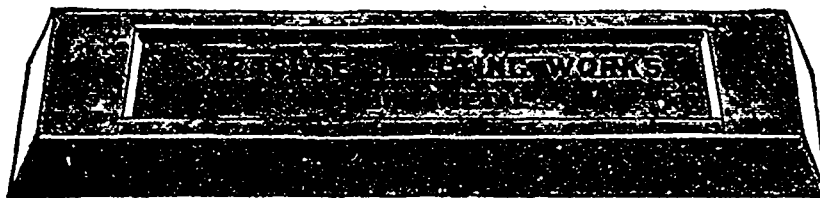
HAMILTON, ONT.  
and MONTREAL, QUE.

# 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  
SCRAP



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

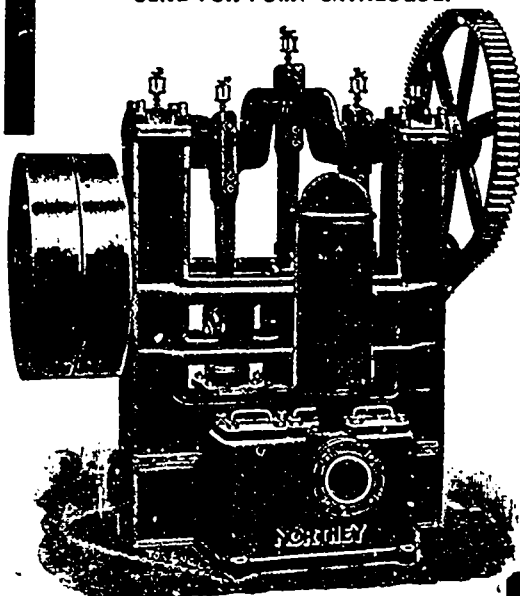
When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



**THE 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

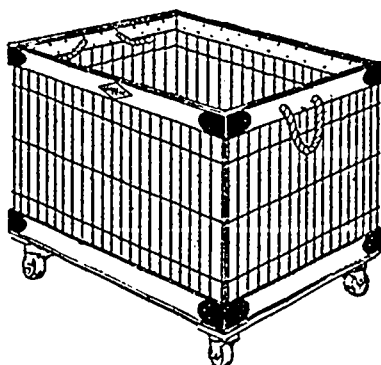
"For all Duties"

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.

SEND FOR ILLUSTRATED BOOKLET 1000 KING ST. SUBWAY

**THE Northey Company Limited, Toronto**



## WIRE-WOVEN-WOOD TRUCKS

FACTORY and WAREHOUSE

Three Rows Galvanized Wire Weaving. All Wood Parts Seasoned Elm. Frames Reinforced with Inside strips and steel trunk corners. With or without Rope Handles, as desired.

**PATENT ROLLER BEARING WHEELS**

Can be had, with Four Swivels, or Two Stationary and Two Swivel Wheels, as desired.

WRITE FOR CATALOGUE.

**WIRE-WOVEN-WOOD MFG. CO.**

Our No. 4 T—\$3.20 Each.

91 Richmond Street West,

TORONTO, CANADA.



## 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 36

Index to Advertisers ..... Page 42

J. J. CASSIDY, Editor and Manager

**THE CANADIAN PORTLAND CEMENT INDUSTRY.**

The growth of the Portland cement industry throughout the world during the last few years has been remarkable, and no country has it made greater strides than in Canada.

Following is a list of Portland cement factories which were in operation in Canada during the whole or a part of 1901, with the approximate annual capacity of each while in operation :

	Barrels.
1. Owen Sound Portland Cement Co., Shallow Lake, Ont. ....	120,000
2. Canadian Portland Cement Co., Strathcona and Marlbank, Ont. ....	225,000
3. Imperial Portland Cement Co., Owen Sound Ont. ....	30,000
4. Hanover Portland Cement Co., Hanover, Ont..	40,000
5. Crescent Portland Cement Co., Longue Point, Que .....	30,000
<b>Total .....</b>	<b>445,000</b>

NOTE.—The Imperial and the Crescent Works were in operation about six months only during 1901.

Mr. Thomas W. Gibson, Director of the Ontario Bureau of Mines, in his 1901 report, says that in that year the works of the Canadian Portland Cement Co., the Hanover Portland Cement Co. and the Owen Sound Portland Cement Co. were in operation, but that the Imperial Portland Cement Co., formerly the Georgian Bay Portland Cement Co. did not operate during that year.

Following is a list of Portland cement works in operation during the whole or a part of 1902, with their approximate capacity of production :

	Barrels.
1. Owen Sound Portland Cement Co. ....	150,000
2. Canadian Portland Cement Co. ....	275,000
3. Imperial Portland Cement Co. ....	50,000
4. Hanover Portland Cement Co. ....	50,000
5. Crescent Portland Cement Co. ....	90,000
6. Lakefield Portland Cement Co., Lakefield, Ont. ....	125,000
7. Sun Portland Cement Co., Owen Sound, Ont. ....	25,000
8. Grey & Bruce Portland Cement Co., Owen Sound, Ont. ....	25,000
9. National Portland Cement Co., Durham, Ont. ....	25,000
<b>Total .....</b>	<b>815,000</b>

NOTE.—The Imperial was in operation six months; the Crescent and the Lakefield, ten months; the Sun, and the Grey & Bruce, three months, and the National, one month.

Following is a list of works now in operation with estimated capacity of production of each for 1903 :

	Barrels.
1. Owen Sound Portland Cement Co. ....	150,000
2. Canadian Portland Cement Co. ....	425,000
3. Imperial Portland Cement Co. ....	100,000

**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 and Appliances, Machinery Dealers and Steam Fitters' Supplies, all Hardware Dealers, Cotton, Woolen, Knitting and Yarn Mills, Pulp and Paper Mills, etc., in Canada.

4. Hanover Portland Cement Co. ....	50,000
5. Crescent Portland Cement Co. ....	90,000
6. Lakefield Portland Cement Co. ....	200,000
7. Sun Portland Cement Co. ....	100,000
8. Grey & Bruce Portland Cement Co. ....	100,000
9. National Portland Cement Co. ....	300,000

Total ..... 1,515,000

NOTE.—The actual production of these nine works will probably not exceed 1,000,000 barrels.

Following is a list of works reported as now being in course of construction, and which will probably be manufacturing cement in 1903 with the approximate annual capacity of production of each :

	Barrels.
10. Raven Lake Portland Cement Co., Raven Lake, Ont. ....	175,000
11. Superior Portland Cement Co., Orangeville, Ont. ....	175,000
12. Ontario Portland Cement Co., Blue Lake, Ont. ....	175,000
13. Colonial Portland Cement Co., Warton, Ont. ....	300,000

Total ..... 825,000

Companies which contemplate erecting works in the immediate future, and their annual capacity of production :

	Barrels.
14. International Portland Cement Co, Hull, Que. ....	300,000
15. Western Portland Cement Co., Morden, Man. ....	300,000

Total ..... 600,000

From these showings it will be seen that the annual capacity of Canadian works for the production of Portland cement—works now in operation; works under construction, and works in contemplation and which will probably be in operation in the near future, reaches a total of 2,940,000 barrels per year, but it is thought that the actual annual production of these will not average more than 1,500,000 barrels.

Considering this truly remarkable growth of the Canadian Portland cement industry, it is interesting and to the point to take into account the importation into Canada of foreign made Portland cement, which was in 1901 about 555,000 barrels, and in 11 months of 1902 about 435,000 barrels; from which it will be seen that the consumption of the article in Canada in 1902 of both domestic and foreign, was about 2,000,000 barrels.

If we have made any errors in giving the estimated outputs or capacities of the different Portland cement works in Canada, or if we have omitted any of them, we would be very glad to be so informed.

As pointed out by Mr. Gibson in his report, Portland

cement is not only a material of construction, for its use is by no means confined to the erection of buildings in the ordinary sense of the term. The employment of cement has of late years been extended in a multitude of directions, and it has been found capable of satisfactorily replacing not only clay products and stone, but also wood and iron for many purposes. In almost every variety of public works, such as canals, dams, breakwaters, piers, bridges, conduits, etc., cement plays a highly important part; and in the construction of buildings it is no longer restricted to foundations and floors, but finds much favor with architects especially in large modern steel structures for embedding beams and girders to give additional strength, prevent oxidization, and guard against the destructive effects of warping in case of fire. In the construction of such buildings as grain storehouses, the durability and imperviousness to moisture of cement walls renders it exceedingly useful. For roofing tiles, sewer pipes and culverts, for decorative and art purposes; for the manufacture of hollow building blocks; for foundations for barns and for a hundred other uses, cement has come to stay.

In Canada, particularly in Ontario, the raw materials of cement—shell marl and clay—are found on every hand, though of course only those deposits conveniently situated with reference to transportation facilities can at present be used to advantage. With plenty of marl and clay, and with a prosperous and energetic community such as Canada to afford a home market for the product, it would be surprising indeed if the cement industry had not permanently established itself in this country. The first Portland cement manufactured in commercial quantities in Canada was in 1891, when the production in Ontario was 2,033 barrels valued at \$5,082; while in 1901 the production was 350,660 barrels, valued at \$563,255. An industry which in eleven years shows such a record of growth gives unmistakable proof of being native to the soil; and the outlook, as we have shown, is for still further advancement.

#### PREVENTION OF INDUSTRIAL WAR.

One of the most interesting addresses ever made in Canada relating to labor questions was that recently delivered in Toronto by Sir William Mulock, Postmaster-General of Canada, who is also Minister of Labor. Referring to the Department of Labor, which he considered a most important branch of the public service, Sir William said that few recent events had better served to illustrate the connection between capital and labor on the one hand and national well-being on the other, than the recent dispute between the mine-owners and their workmen in the anthracite coal fields of Pennsylvania, and which is at the present time the subject of adjudication by a commission appointed by the President of the United States. Great as has been the loss occasioned, not only to the parties immediately concerned, but to the public generally of this country as well as in the United States, this great industrial conflict may not have been without its compensations, if it has served to throw into bolder relief the national as well as social significance of some of the phases of the labor problem. Of these phases two at least can hardly have escaped the notice of even the most indifferent observer.

In the first place, it has shown the importance to the general public, as well as to the parties more directly concerned, of the preservation of harmonious relations between employers and employees, and, in the second place, no less clearly the need of some effective means of maintaining these harmonious relations. When the United States Mine Worker's Union on May 15 last declared a general strike

of the workers in the coalfields of Pennsylvania, few people other than those financially interested in the operation of the mines gave much thought to the significance of the step which had been taken. Such a thought as that every person, rich or poor alike, whether engaged in industrial, professional or other pursuits, or in no pursuits at all, should be affected not only in a social but also in a financial way, was one too remote for contemplation. Yet as a matter of fact, it has not been the possibility of such a situation but rather its actual realization which has brought this strike so prominently to the attention of all classes. At first this realization was but faintly appreciated. Local dealers had still on hand supplies of coal with which the needs of their customers for the time being at least could be supplied. Our long summer made us indifferent to the remote possibility of winter being at hand and the strike still unsettled. To few of us, indeed, did it occur that our comfort or happiness in any way depended upon the relations between the owners of the Pennsylvania coalfields and their employees. It was only when coal merchants were no longer able to meet the demands of their customers; when industries were threatened with enforced cessation of work, and the progress of the autumn reminded of the rapid approach of winter, that the public became aroused in defence of itself and demanded the adoption of a practical plan for the restoration of industrial peace.

Five months after the strike had been declared, a board of arbitration was constituted by the President of the United States, and accepted by both parties as a tribunal for inquiring into and settling the matters in difference. Why, it may be asked, could this step not have been taken at the outset? Why a reference to a board of arbitrators after the expiration of nearly half a year and not before? Why no public voice to appeal to public opinion before rather than after the strike? It is perhaps impossible to say whether the existence of a properly constituted board of arbitration, to which either party might have appealed before the strike, would have afforded means of finally settling all questions in dispute; but one is warranted in believing that an investigation and award by a properly constituted board would have solved the difficulties and prevented the strike. If so, then the absence of the necessary machinery for the constitution of such an industrial court clothed with the necessary powers was responsible for the strike.

Canada has advanced beyond that point. The act constituting the Department of Labor, which was assented to in July, 1900, was an act framed specially for the prevention and settlement of trade disputes. Since its establishment the Department of Labor has been called upon on eighteen different occasions to lend its good offices to aid in the prevention and settlement of industrial disputes, and in no case where a settlement had been brought about by the department, has the trouble broken out again.

It was with the belief that the Government had acted wisely in placing on the statute books an act which would aid in the prevention and settlement of industrial disputes that at the last session of Parliament Sir William was impelled to introduce a measure having the same ends in view, but which, in case of necessity demanding it, would permit of the taking of a step further in advance than what was permissible under the present act. At the time that the conciliation act was passed there was some criticism of the measure on the ground that any action under it must be purely voluntary. It was argued that in certain cases this was not likely to prove effective enough, and that there should be some element of compulsion. It was this element of compulsion

which constituted the new feature of the bill for the settlement of railway labor disputes which Sir William introduced into the House last session. It appeared to the Government that the interest of the public in the uninterrupted operation of public railways is of a nature which does not warrant the railways to fail in their duty as common carriers to the public because of any dispute with their employees, and that if the immediate parties to such dispute are unable to settle their differences the public have a right to intervene and provide the proper machinery for the settlement of such differences without the railways in the meantime ceasing operations and failing in their duty to the public.

Continuing, Sir William said:—"In this country compulsory arbitration in any form is a new departure. On introducing the measure I stated that there was no intention of pressing it to a conclusion at that session, but that the Government's desire was rather to outline a plan to be given to the public for its consideration in the hope that before next session we would be favored with such criticisms and suggestions as would enable us to formulate a measure carrying with it the endorsement of public opinion. Some criticisms have been received, the bulk of them being apparently against the measure in its entirety, and unaccompanied with suggestions favoring any system of arbitration. In view of the often-declared willingness of parties to labor disputes to have their differences adjusted by arbitration, it is, I think no doubt from oversight, that they have not as yet favored the Government with suggestions looking to a measure having for its object the establishment of a system of arbitration, and I refer to the matter now in the hope that the subject may receive that public attention which its importance demands.

"In view of the anthracite coal strike I hardly think one would be chargeable with rashness in expressing the opinion that there should be in Canada a tribunal having power to investigate industrial disputes, at least in cases of such far reaching importance as railway disputes, and disputes connected with industries of a monopolistic character, which may control the actual necessities of life. Whether such a measure should go so far as to make the award legally binding on the parties is another matter. It seems essential to the success of any such measure that it should have the moral support of public opinion, and therefore perhaps it would be better to rest its compulsory character upon that force rather than legal coercion. These, however, are views in regard to a perplexing and complex question which I present with much hesitation, and pass from the subject in the hope that they may, before the next session of Parliament, be the object of public attention and criticism, that we may be enabled if possible to make some progress towards the prevention of industrial war by rendering that violent procedure unnecessary in order to secure a fair measure of justice between all classes of employers and employees throughout the country."

Manufacturers will observe that Sir William Mulock, the Minister of Labor, is quite insistent and emphatic in his invitation that any who may be interested in the peaceable settlement of labor disputes give him their advice in the matter. His duty is to hold the scales of justice as between capital and labor—between employer and employee. Whenever there is a swerving of the scales in either direction, disastrous results are bound to ensue. Better results would follow were the Employers' Protection Association to give their time and energies to evolving a feasible method of procedure as suggested by Sir William Mulock, than by importing alien anti-labor agitators and the senseless denunciation of labor organizations.

#### A REMEDY

In his recent Toronto address Sir William Mulock, Dominion Minister of Labor, discussing the necessity of some law under which disastrous labor disputes might be avoided, or at least mitigated, alluding to the bill introduced by him at the late session of the Dominion House of Commons, which was not finally acted upon, stated that it was the desire of the Government to outline a plan to be given to the public for its consideration in the hope that before the next session he would be favored with such criticisms and suggestions as would enable him to formulate a measure which would carry with it the endorsement of public opinion. THE CANADIAN MANUFACTURER is aware of the fact that employers of labor look with suspicion upon any suggestions that labor organizations may make in the matter, and that labor organizations fight shy of any suggestions that employers of labor may make. No wonder, then, that the Minister is undecided what to do in the framing of a law which he hopes will carry with it the endorsement of public opinion. But we believe there is a plain and effective way out of the difficulty; and we suggest that the Minister include in his proposed law a provision that for the purposes in view, all labor unions and organizations be considered and treated as if they were incorporated bodies, and as such liable for all their acts, and all the acts of their officers, administrators and servants. Without such a provision, any compulsory arbitration law would be operative against a manufacturer or other employer of labor, and a trade union or members of it would have recourse to law against him if he were defeated in a case of arbitration; but not so the trade union, for, being an unincorporated body, no legal action could be maintained against it. The suit of law now pending in Toronto brought by the Metallic Roofing Co. against the Sheet Metal Workers' Union is a case in point. A union would not care to go into the boycott business very extensively if it knew that the money in its treasury could be confiscated in an adverse suit for damages against it.

#### CANADIAN PEAT FUEL.

That the manufacture of peat fuel in Canada, particularly in Ontario, is in a flourishing and growing condition, and attracting the attention of manufacturers and fuel users generally in the United States, is evidenced by a report recently made to his Government by Mr. E. N. Gunsaulus, United States Consul at Toronto. Recognizing that a good and cheap substitute for anthracite coal would prove a boon to the people of his country; and having learned that the efforts made in Canada to produce dense fuel blocks or briquettes from peat have been brought to a successful issue. Mr. Gunsaulus had made careful inquiry with a view to reporting upon the matter, and found that the practical experiments which had been perseveringly continued for some years have resulted in the economical production of a salable peat fuel highly satisfactory for domestic purposes. His report says:

Manufacturing operations on a commercial scale have been reported upon by engineers of high standing, and all agree in the opinion that methods and appliances are now available whereby peat briquettes may be produced, ready for shipment, for a maximum manufacturing cost of \$1.50 per ton, and probably for considerably less in plants of large capacity.

A number of experienced business men and Government officials concur in the engineers' conclusion, and I find that the large majority of customers are much pleased with the fuel, which, if burned with proper regard to the few simple precautions necessary to insure best results in combustion, can not fail to meet the most exacting requirements hereto-

fore expected of anthracite coal. There is, however, some difference of opinion as to the length of time a given weight of peat briquettes will burn, as compared with the same weight of anthracite; theoretically, the heat units in peat being fewer, it may be argued, it must burn out faster; but with effective control of drafts, it is surprising how nearly its lasting quality approaches that of hard coal, due doubtless to the fact that more perfect combustion is usually had in the burning of peat under ordinary conditions, the waste in burning coal certainly being greater than in peat briquettes, both fuels being fired by methods in common use.

Preeminently to two individuals (Jos. M. Shuttleworth, of Brantford, Ont., and Alex. Dobson, of Beaverton, Ont.), in association with the Peat Machinery Supply Co., Limited, of Toronto, and the Peat Development Syndicate, Limited, of Brantford, Ont., is due the success of this new industry; and it is satisfactory to note that conclusions do not rest on mere laboratory experiments, but on results demonstrated at practical plants, turning out fuel in commercial quantities.

The machinery in operation at Beaverton, Ont., is reported by the director of the Ontario Bureau of Mines as "withstanding the test of steady usage, producing sufficient fuel for the town, with some over for shipment;" and this official says further, "With this plant in successful operation, very substantial evidence is furnished of the advance of the industry to a commercial basis."

Peat fuel has been made at the property of the Peat Industries, Limited, near Welland, Ont., and at the Brunner bog, by the Stratford Peat Co., and in both cases, the permanent equipment of the plants has been wisely deferred until, by sufficiently long usage, selection can be made among the several appliances available. This end has been served by the operations of the past few months, and the coming spring, it appears, will witness very general activity in peat-fuel manufacturing in Canada.

A word of caution to intending operators may be timely. I notice many references in the public press—especially in papers published in the Western States—in regard to the formation of companies proposing to utilize peat beds, and think it would be well to give publicity to the following Canadian experiences. Fully \$400,000 has, in the course of seven or eight years, been practically wasted in futile attempts made in this line by many persons and corporations. It would appear advisable for all intending operators to confer with those in Canada, who have the advantage of thorough acquaintance with peat in its practical manipulation, before adopting untried methods or appliances. European practice, I am told, although successful, in many instances environed by special circumstances—notably cheap manual labor—can not be profitably followed on this side of the Atlantic; and the opinion of Mr. J. G. Thaulow, the Norwegian Government's peat master, sustains this conclusion. He says: "The fuel in Canada is undoubtedly made at a manufacturing cost within \$1.25 per ton, and the machinery and methods employed I regard as highly satisfactory." He could suggest nothing known in Europe as preferable, but, on the contrary, admitted the gain secured by use of the ingenious mechanical appliances used here, making unnecessary, to a very great extent, the employment of hand labor.

Another source of danger of which those approaching this new industry should be apprised, lies in the unsuitability of many peat deposits for practical use; only bogs of a depth of four feet and upward, and of considerable area, (at least 100 acres), should be selected on account of the expense of the plant. Fully as serious a danger lies in the selection of lands without regard to quality of the peat, feasibility of drainage, and accessibility to some means of transportation. All these points should be carefully considered. Mr. E. J. Checkley, of Toronto, who has been intimately connected for years with peat development in Canada, is investigating peat properties in Illinois, Wisconsin and Minnesota. He reports that the grass peats of Wisconsin appear to carry so great an admixture of alluvial substances as to make the percentage of ash too high to admit of the satisfactory use of the peat for commercial purposes; the moss peats of northern Wisconsin are much superior in quality, although further removed from large centres affording the best markets.

Feasibility of drainage is essential, as no appliances appear

to have been perfected as yet by which a submerged bog can be profitably worked. Satisfactory transportation facilities should also be treated as a potent factor in the problem.

The Canadian industry has profited by the co-operation existing among the organizations and individuals I have mentioned as interested in peat development, obviating one source of weakness arising out of attempts made by individual patentees, whose achievements usually embrace only one appliance, leaving many important steps wholly unprovided for. Every one of the many links required to complete the chain of apparatus for a complete outfit should be made sure of, before investors embark in the enterprise.

In view of the grave anxieties the fuel problem has recently excited, I am led to regard this industry as of more than passing interest, and I purpose supplying in further reports information covering the mechanism constituting a peat-fuel plant, and other points of interest as to peat fuel, peat gas, peat-moss paper, and the distillation of peat for the extraction of by-products.

#### INDUSTRIAL PEACE.

One of the most bitter arraignments of organized labor that has ever been heard in Toronto was made a few days ago by Mr. John Kirby, Jr., of Dayton, Ohio, before a well-attended meeting of the newly-organized Employers' Protection Association of Toronto. Mr. Kirby dealt most unsparingly with trade unionists and their methods, conceding to them scarcely one point, and acknowledging no ground for their existence as a body. He was extremely caustic in references to them, speaking of some of those of them who used violence as "human devils" and "union brutes," and saying that "perjury is their golden rule." Organized labor meant socialism and anarchy, it repudiated the brotherhood of man, and substituted tyranny. It recognized no sense of honor or moral obligation, and put a premium upon indolence and a barrier against energy. There was not one in 5,000 union laborers, he said, who would go into a witness box and give evidence to incriminate a fellow-unionist. Mr. Kirby said that the arbitrary and dictatorial methods employed by leaders of organized labor made it imperative that employers should adopt measures to offset the effects of such methods. Organized labor might in some circumstances be beneficial, but he could not hope that persons now living would see that result, for the unions included in their membership all manner of men, conservatives, agitators and swashbucklers, who would be sure to push their way to the front. "We are face to face with one of the most gigantic and law-defying organizations in the world," said Mr. Kirby; and asked if the manufacturers were to bow their heads in recognition of the dignity and might of the trade unions. The only remedy would be found in thorough organization of employers, whose object should be to instruct and encourage the wage-earner to dispose of his labor wherever he liked, and to protect him, which advantage he would forfeit whenever he became a member of a union."

Mr. J. P. Murray, president of the Employers' Association of Toronto, in introducing Mr. Kirby, stated that owing to the determined attitude of labor unions to dominate the situation, there existed a serious condition of affairs in Toronto, and if the present trend continued many of the large industries would find it difficult to remain in the city. The outcome of this had been the formation of the Employers' Association. The main plank in their platform was industrial peace.

Mr. P. W. Ellis, a member of the Association, moved a vote of thanks to Mr. Kirby for his most excellent and entertaining address.

According to Industrial Canada, at the organization of the

Employers' Association in October last, Mr. Murray delivered a studied address in which he pointed out some of the causes that had led up to it, and to the prevailing conditions which demanded it. Some of the subjects elaborated by Mr. Murray were:

Canadian labor unions are, for the most part, branches of alien institutions, and have aliens for leaders.

The aim of the Employers' Association is not to wage war on labor unions, but to provide an organized body of manufacturers to treat with organized labor.

When the demands of unions are reasonable the Employers' Association will assist in having these complied with. There is a place in Toronto for such an organization, and the labor unions should consider it as a step in the right direction in the adjusting of disputes which arise from time to time.

In the light of Mr. Murray's announcement of the aims and objects of his Association, the enquiry naturally presents itself why he, as president of it, should have invited and permitted such an inconsiderate agitator as Mr. Kirby to make such an exhibition of himself as he did. Mr. Murray objects to Canadian labor unions because they are branches of alien institutions and have alien leaders, but he imports an alien leader of an alien institution to instruct Canadian manufacturers how they should deal with their employes. He declares, in his studied address, that the aim of his organization is not to wage war on labor unions, but to provide an organized body of manufacturers to treat with organized labor, and illustrates his desires by importing an alien anti-labor agitator who refers to trade unionists as "human devils" and "human brutes," whose "golden rule is perjury."

A remarkable feature of the occasion was, that on the motion of a member of the Association, a vote of thanks was tendered to Mr. Kirby for what he had said, but we cannot but think that it was of an entirely perfunctory character; for it certainly did not reflect the endorsement of Toronto manufacturers who were either present or absent; and it is to be regretted that no one of them saw fit to so inform Mr. Kirby.

#### A. RAILWAY COMMISSION.

The most important question likely to engage the attention of Parliament during the coming session will be the establishment of a railway commission. A year ago, says *The Globe*, the Government gave a virtual pledge of such legislation by the introduction of a bill late in the session. It was not intended to push the measure at the time, its introduction being a means of putting the matter prominently before the public and calling forth expressions of opinion from leading publicists, as well as from those directly interested or having special knowledge of the complicated question of railway transportation. The existing machinery, consisting of the Railway Committee of the Privy Council, is clearly inadequate for the necessary work of regulating rates and adjusting differences between the railways and their patrons. That fact is now generally acknowledged and requires no argument. Under existing conditions abuses are certain to develop, and redress cannot be obtained except by tedious processes, involving much loss of time and heavy expense. The Government have undertaken the work in a thoroughly practical manner, and, through the investigations of the commissioner, Prof. S. J. McLean, are well informed not only as to the defects and evils which have developed under the present system, but in regard to the experience of the American Federal and State authorities in the practical work of reform. The success of every important industry in the Dominion is dependent on the railway service, and, while competition is keen and the margins of profit narrow, adverse

discrimination in freight rates may mean the difference between success and failure. It is essential that Canadian shippers should receive as favorable treatment as their American competitors shipping over Canadian railways, and the removal of this long-standing grievance will be one of the first duties of the proposed commission.

Prof. McLean's report has made it clear that Canadian producers are subjected to unfair charges. A memorial presented by the Canadian Manufacturers' Association showed that the rate on paper from Holyoke, Mass., to Vancouver by the Canadian Pacific Despatch was \$1.05 per hundred weight, while from East Angus, Que., it was \$1.33, and from Toronto \$1.20. On carload shipments of mineral wool from New York to Nelson, B.C., the rate was \$1.38 per hundred weight, and from Toronto \$1.98. From Pittsburg, Pa., the rate on corrugated iron to Vancouver, B.C., was 90 cents per hundred weight, and from Toronto to the same point \$1.25. A complaint with regard to the minimum weight for car lots shows how easily discrimination may be practised under forms apparently equitable. The minimum weight for a car lot of woodenware, both in Canada and the adjacent States, is 20,000 pounds. But larger cars are furnished across the line, so that the American manufacturer pays for the freight actually shipped, while the Canadian shipper pays for 20,000 pounds on a car, that may not hold more than 14,000 pounds. On freight consigned to central points in Canada similar methods were found to be in force. The charge from Toronto to London on steel shafting was 27 cents per hundred weight, and from Boston to London only 24 cents. The rate on iron valves and hydrants from Walkerville to London was 15 cents per hundred weight, and from Detroit 11 cents. To Toronto the rate was 13 cents from Detroit and 20 cents from Walkerville; while to St. John, N.B., it was 35 cents from Detroit and 45 cents from Walkerville. Rates from British ports were found to be equally unfair to Canadian industries. On carpets the rate from Liverpool to Vancouver was \$2.60, and from Toronto to the same point \$2.85. The rates on hemp carpets in bales showed still greater discriminations. From Toronto to Winnipeg the charge was \$1.82, and from Liverpool to Winnipeg \$1.09. To Vancouver the charge was \$1.20 from Liverpool and \$2.75 from Toronto. On wool, clothing and hosiery the rate from Toronto was \$1.82 to Winnipeg and \$2.85 to Vancouver, while from Liverpool it was \$1.96 to Winnipeg and \$2.40 to Vancouver. The rate to Vancouver on oilcloth was \$1.70 from Toronto and \$1.58 from Liverpool. When the Liverpool freight tariff to the West was compared with that from Montreal, similar discriminations appeared, the rate on cutlery to Vancouver being \$1.85 from the former city and \$2.75 from the latter. These are among the worst cases that could be cited, but they show the imperative need of some efficient means of regulating freight rates. The farmers, stock raisers and fruit growers have similar complaints to make regarding the disadvantages they suffer in comparison with American competitors who ship over Canadian lines. That a railway commission is necessary to the success of Canadian industry can no longer be denied, and a great amount of work is already awaiting the new tribunal. Once it is established and in working order, it is safe to predict that neither the railways nor their patrons will wish to return to the continuous complaints, agitations and disputes of the present system.

The charge for cable messages from all points in Canada to all points in Australia and New Zealand over the new established Pacific cable is 56 cents per word, every word to be counted.

## CANADIAN INDUSTRIAL CENTRES.

## BRANTFORD, ONT.

The rapid industrial development of Brantford, Ont., during the past decade or two has been sufficient to place this enterprising city in the first rank among Canada's manufacturing centres, and what has already been accomplished along these lines gives some evidence of the bright future in store for Brantford. Its location on the Grand River is such as to afford abundant water-power thus insuring the utmost economy in this important factor in the manufacturing industries. Brantford is also well provided for with regards to railway facilities, being reached by both the Canadian Pacific and Grand Trunk Railways.

Brantford's industrial development began with the formation of the Harris Co. many years ago, and to-day the outgrowth of that concern, now the Massey-Harris Co., is one of Brantford's very large industrial establishments. No concern has added more to Brantford's reputation as a manufacturing centre than the Waterous Engine Works Co. whose products are in wide use all over Canada, and in the United States, England, Australia and many other countries. The Waterous engine has a world wide reputation, and the same may be said of the various other products of this company. The immense plant of the company is one of the most thoroughly equipped in Canada, and we may say that it is surpassed by but few if any similar plants in the United States. The company employs the most skilled workmen in all the details of its work, hence the enviable reputation gained for its products.

Another progressive manufacturing establishment which has done much toward building up Brantford is the Cockshutt Plow Co. which is operating its large plant to its full capacity. The Goold, Shapley & Muir Co. is a large manufacturer of wind engines, gas and gasoline engines and a varied line of iron and steel products. The company operates a large and thoroughly equipped plant and is constantly making improvements which are necessitated by its growing business. Still another of Brantford's enterprising manufacturing concerns is the Bailey Cutlery Co. who product is well known all over Canada. In the recent death of its manager, Mr. Lambert, this company suffered a severe loss, Mr. Lambert being not only an expert in his line but also one of the best known of Canadian manufacturers.

The Canadian business of the Pratt & Letchworth Co., of Buffalo, N.Y., is centered at Brantford, where they operate an immense plant which is about to undergo many additional improvements. The Canada Cycle & Motor Co. also have an extensive plant at Brantford. The Brant Brass & Iron Co. operates a well equipped foundry, and Brantford contains a number of other iron and steel and other manufacturing interests.

The Chalkcraft Screw Co. is one of Brantford's old and well known industries. The Brantford Screw Co. has just been formed to take over this concern and to continue the business on an enlarged scale. The company is capitalized at \$150,000, and will make improvements to the plant which will double its capacity and make it one of the most complete of its kind in Canada.

The Brantford Stoneware Mfg. Co., manufactures all kinds of stoneware and earthenware. Scarfe & Co. are well known manufacturers of varnishes, and the Brantford Varnish Co., recently organized, will engage in a similar line. The Brantford Electric & Operating Co. engages in electrical work.

The Brantford Plating Co. which some time ago succeeded

the Brantford Silver Co., is rapidly building up a large business in electro plating and similar work, and has engaged in the manufacture of a number of metal specialties.

The Ontario Portland Cement Co., is another Brantford industry which is fast getting into shape and one which is destined to become a factor in its line. Wide-awake Brantford capitalists early recognized the coming importance of the Portland cement industry, and as a result this company was organized and is rapidly completing an immense plant which will be ready for operation within a few months.

The interest attached to the fuel industries during the past few months has resulted in a renewed effort to turn to the uses of modern industry the immense peat deposits about Brantford. The Brantford Peat Products Co., formed some time ago, has secured large tracts of peat bogs, and has already made encouraging progress in the work of marketing this fuel. The operations of the company are now being conducted on a large scale, improved machinery and modern methods entering into the work. This work is of such importance that United States Consul Gunsulus, at Toronto, has made it the subject of a special report to his government, his article being reproduced in another column of this journal. Altogether Brantford possesses many advantages, as judged from an industrial standpoint, and its future in the varied manufacturing industries is not at all problematic.

## EDITORIAL NOTES.

The Washburn-Trosby Milling Co., Minneapolis, Minn., have bonded its Humboldt mill in that city to grind nothing but Canadian wheat. The bond demanded by the United States customs officials is for \$50,000. The custom heretofore prevailing was to ship the grain of the Canadian North-West, bonded, through the United States to Liverpool. The grinding of the grain in Minneapolis, instead of in England, will create a great saving in the expense of transit to Europe. A bond of \$30,000 has also been given by the Great Eastern Elevator Co., Minneapolis, for the storage in that city of Canadian oats. This grain eventually will be ground into oatmeal entirely for export business.

Homer Yergan, of Indianapolis, Ind., aged 19, has been sent to the reformatory for two years for stealing. He arranged the theft so that he would be caught. He said that he had long wanted to learn a trade, because his education was so limited that he could not hope to make a living in any other way. Whenever he applied for work he found that the rules of the labor unions shut him out and he could not find employment. He went to Chicago and several other places, but he could not get work in any shop to learn a trade, although he offered to bind himself for a term of years. "I will be glad to go to the penitentiary," he said to-day, "for I will be put to work at some trade and will learn it, too." The young man evidently does not appreciate the blessings of the restrictions of trades unions.

THE CANADIAN MANUFACTURER has frequently called attention to the importance of trained practical chemists for industrial establishments. In another column allusion is made to a discussion on this subject recently had in this city by some of the professors of the Toronto University, the School of Practical Science, and other gentlemen connected with the Canadian Section of the Society of Chemical Industry of Great Britain; and Prof. W. R. Lang, of the University, has promised to give us a summary of the addresses made at the meeting alluded to, and other Professors will write some articles bearing on the subject, all of which will appear in due time in these pages.

The tariff is a live, burning, political question in Canada to-day. It won't be ignored, and it can't be suppressed.

## 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 telephono, or a telegraph line is being constructed; or a saw mill, a woolen, cotton, or knitting mill; or if any industrial establishment has been destroyed by fire with a probability of its being rebuilt, our friends should understand that possibly there may be something in the event for them. Do you catch on to the idea?

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

The town of Seaforth, Ont., has voted a loan of \$10,000 to Mr. John Dick, of Toronto, to operate the defunct Seaforth Woolen Mills.

J. J. Turner & Co., Peterboro, Ont., the well-known manufacturers of tents and awnings, are making numerous shipments to the United States, as well as enjoying a large trade throughout Canada.

The Oxford Woolen Mills, Co., Oxford, N.S., has increased its capital to \$150,000, and will erect an additional plant.

The North End Wood Working Co., St. John's, N.B., has been formed to take over the business formerly conducted by A. O. Mabee; capital \$20,000; incorporators, Rupert G. Haley, J. F. Gregory and W. H. Murray.

The Montrose Paper Co., Thorold, Ont., has been granted an Ontario charter. The company has purchased a site, and is preparing to erect a plant at that place. W. G. Finley and G. B. Burson, of St. Catharines, are at the head of the company.

The Poulin Lumber Co., Ottawa, has been incorporated, and will engage in all branches of the lumber industry, and will also develop extensive water power.

The Sturgeon Falls Pulp Co., Sturgeon Falls, Ont., propose a further expenditure of \$2,000,000 in plant and machinery,

making the total expenditure \$3,000,000. They will stop exporting pulp, and will manufacture paper for the English market.

The Belgo-Canadian Pulp Co., Shawinigan Falls, Que., is making extensive shipments of dry and wet pulp to Europe.

The Bella Coola Pulp & Paper Co., Tacoma, Wash., has been incorporated with a capital of \$10,000 to manufacture pulp. The company has secured 125 sections of land heavily covered with spruce timber in British Columbia.

The Canada Lumber & Timber Co. has been formed in Victoria, B.C., with a capital of \$50,000.

John McLennan, Syracuse, N.Y., has purchased 181 square miles of valuable timber land located on the Pentecote River in the Province of Quebec, and will establish large pulp mills. The purchase includes the timber limits and mill properties formerly owned by the Gaynon Brothers, of Quebec. There are several mills already established along the Pentecote River, and more are to be built. The timber and properties are reported to be among the best in the Province of Quebec, and the shipping facilities are unusually good.

The furniture factory and saw mill of E. Matheson & Co. at Thompson, Cumberland County, N.S., has been destroyed by fire.

The large paper plant of Kilgour Bros. at Beauharnois, was destroyed by fire last week, entailing a loss of \$50,000. The plant will be rebuilt at once.

The Burtis Co. of Munising, Mich., has decided to move to Thessalon, Ont., and is making preparations for the establishment there of a large sawmill plant.

A strong company of capitalists have purchased the Canada Veneer Works at London, Ont., and will enlarge the premises for an organ factory. They expect to employ fifty hands before the end of January. Messrs. Manning, of Clinton, and Sherlock, of London, are the chief promoters of the company.

D. R. Fraser & Co., Edmonton, N.W.T., is erecting a new stationary saw mill at their timber claim, fifty miles up the river from that town. The bulk of the machinery is now on the ground, and the balance will be forwarded at once.

The tobacco factory of the T. B. Riley Co., Charlottetown, P.E.I., was destroyed by fire last week; loss about \$30,000.

The contract for the building of the Point Ellis Bridge across Victoria Arm at Victoria, B.C., has been awarded to the Victoria Machinery Depot, which will build the superstructure for \$65,000, the bridge to be completed in ten months.

The Canada Bank of Commerce, Toronto, is making quite an extensive addition to their building on King street. The rear portion of the lot fronting on Melinda street is to be utilized for the erection of a one-story building, to be used as a printing and stationery office. A substantial addition is also to be made to the main building.

Application for a charter is being made by the Brantford, Ont., Screw Co., which has been formed to take over the business of the Chalcraft Screw Co., of that city. The new company will have a capital stock of \$150,000. The plant which the company will take over at present employs about sixty workmen. It will be thoroughly overhauled and equipped with the most improved machinery, and its output will be doubled. The directors are E. S. Gould, Lloyd Harris, Franklin Gross, and John Muir.

The Guelph, Ont., Light & Power Co. has accepted the city's offer of \$155,000 for their plant.

## Pneumatic Tools and Appliances ARE GREAT MONEY SAVERS.

Air Hoists,  
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.

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

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



The D. F. Jones Mfg. Co., Ganonque, Ont., proprietors of the St. Lawrence Works, has recently completed important additions to its plant whereby its output has been increased 50 per cent. New power machinery has been installed, and considerable other machinery has been added. The company manufactures shovels, spades, and similar products.

A company headed by A. F. McLaren, M. P., of Stratford; Dr. David Jamieson, M. P. P., of Durham, and others, is preparing to erect a large Portland cement plant at Winnipeg. The company will be identified with the Cowham Syndicate which at present operates a number of Portland cement plants in the United States, and who is now installing a plant at Durham, Ont.

The Grey and Bruce Portland Cement Co., of Shallow Lake, Ont., has applied for permission to increase its capital stock from \$100,000 to \$500,000.

The Sherwin-Williams Paint Co., Cleveland, Ohio, is equipping all its works for electric power distribution. It recently purchased for the Cleveland works three alternating-current generators of 150 k. w., 120 k. w. and 75 k. w. capacity, respectively, and about 500 h. p. in induction motors, which will be used to drive all the paint and varnish-making machinery.

The Scioto Fire Brick Co., Sciotoville, Ohio, is extremely busy, and is now running two turns. The company is shipping considerable product to Canada.

The Toronto Fire Brick Co., has been incorporated with a capital stock of \$60,-

000. Provisional directors, Andrew Miscampbell, Sault Ste. Marie, Ont., T. W. H. Leavitt, and John Ayleng, Toronto.

The Canadian Shipbuilding Co., Toronto, has been incorporated with a capital stock of \$1,000,000 with George A. Cox, William McKenzie, Frederic Nichols, W. R. Brock and W. D. Matthews as provisional directors.

The Inland Lakes Transportation Co., with head-office at Collingwood, Ont., has been incorporated with a capital of \$1,000,000, to put a new line of steel steamers on the route between Georgian Bay and Lake Superior ports. The directors include J. J. Daley and Michael Straus, Chicago; F. A. Bassett and A. A. Bond, Collingwood, Ont.; Henry Pedwell, Thornbury, Ont.; James Murphy, Meaford, Ont.; F. V. Clisdell, J. R. Bond and J. W. Curry, Toronto.

A company headed by W. A. Green, Waterloo, Ont., has been formed for the manufacture of collars and cuffs. A plant employing 50 workmen will be erected.

The Standard Carbolite Lighting Co., Toronto, has been formed and will engage in the installation of acetylene gas lighting plants. The company has its machine now on exhibition in the Saturday night building. R. S. Neville, Toronto, is president of the company.

The Thompson Mfg. Co., St. Johns, N. B., has been formed by Joseph Thompson, D. J. Purdy, C. E. L. Jarvis and others with a capital of \$40,000, and will erect and operate a foundry and machine shop at that place.

The city of Niagara Falls, N. Y., has granted the Ontario Power Transmission Co., Niagara Falls, Ont., a franchise to convey their power lines into and through the city and do business within the city limits. The power company agrees to have 5,000 h. p. in use in the border city within three years. By this agreement, if they have no customers they will have to build a factory of their own to use this amount of power or forfeit their franchise. They also agree to have available 1,000 h. p. for municipal purposes.

The Rapid City, Man., Power, Light & Woolen Mfg. Co. is applying for a charter. The business to be carried on is to acquire water power on the Little Saskatchewan river, to build dams, erect poles, string wires and to transmit power and light. The capital stock of the company is \$25,000.

The Restigouche Foundry & Supply Co., Campbellton, N. B., has been incorporated with a capital of \$100,000. The incorporators include W. J. Duncan, Alex. McLennan, and Alex. E. Alexander.

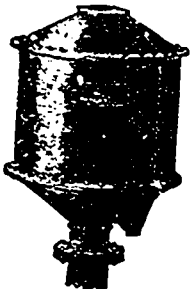
The Canadian Electro-Chemical Co. has applied for permission to increase its capital from \$100,000 to \$300,000.

An Ontario charter has been granted to the Little Rock Consolidated Mining and Development Co.; capital \$1,000,000; head office, Toronto. E. W. Bailey, and others, Buffalo, N. Y.

The Quatsino Power & Pulp Co, Victoria, B. C., has been incorporated with a \$200,000 capital.

## IN JUDGING THE BURT EXHAUST HEAD

don't think that its only economy is in the saving of repair bills for rotting roofs and spattered walls. There's a saving as well in fuel and water.



GENTLEMEN.—We have had one of your Burt Exhaust Heads in operation now about three weeks and will say that it is giving good satisfaction. The way we use it we believe that it will soon pay for itself in two months time in the saving of fuel, and then we have absolutely no waste water on the roof or around the engine room.

Very respectfully,  
VAN ALSTYNE COTTON OIL CO.,  
Van Alstyne, Texas.

Buying is not risking. Get our booklet first and afterwards order an Exhaust Head on approval.

### THE BURT MFG. CO.,

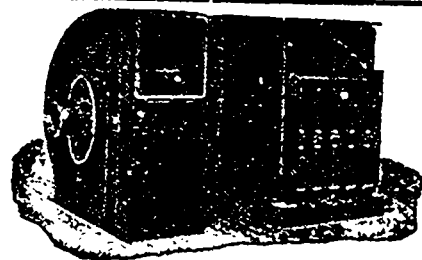
Largest Mfrs. of Oil Filters in the World.

AKRON, OHIO, U.S.A.

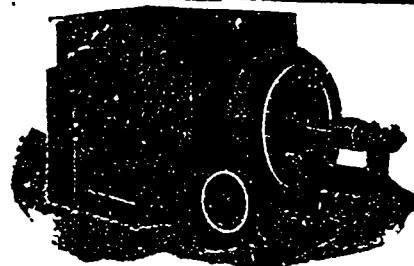
A complete stock carried by the  
FAIRBANKS CO., - Montreal.

## 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.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

The Hatch Electric Smelting and Refining Co. of Ontario has been incorporated; capital \$500,000; head office, Parry Sound, Ont. Edward Hatch, Detroit, Mich., and others.

The Walkerville Water Co., Walkerville, Ont., capital \$100,000, has been formed. The provisional directors are: E. C. Walker, Walkerville, Ont.; F. A. Walker, James H. Walker, Detroit, Mich.

The Corporation of Colonial and General Agencies has been formed to acquire the business of the European Exporters Association of Toronto.

The Northwestern Pulp Wood & Paper Co. has been incorporated at Victoria, B.C., capital \$200,000.

The Crows Nest Pass Lumber Co., Crows Nest Pass, B.C., has been formed; capital \$100,000.

The Riviere Ouelle Pulp & Lumber Co. has been incorporated at St. Pacome, Que., has been incorporated with \$100,000 capital, to manufacture lumber, etc. The

incorporation includes Hon. John Sharp-ler, William Power, and R. E. Smith.

The Niagara-Welland Power Co., St. Catharines, Ont., has applied for a Dominion charter through their solicitor, J. S. Campbell.

The Winding Ledge Power & Boom Co., Edmundson, N.B., through their sol-icitors, Messrs. Stevens & Lawson, have applied for a Dominion charter, and will develop power and construct booms in the St. Johns River.

The Nicola, Kamloops & Similkameen Coal & Railway Co., Toronto, at present incorporated under the laws of British Columbia, has given notice that it will apply for a Dominion charter.

The Beatrice Mines, Limited, has been formed at Victoria, B.C.; capital \$500,000.

The Rosella Hydraulic Mining & Devel-opment Co., Victoria, B.C., has been in-corporated with a capital of \$200,000.

The Lula Island Gas & Oil Co., British Columbia has been formed, capital \$500,000.

The New York and Canadian Copper Co., Kingston, Ont., has been incorpor-ated with capital \$1,000,000. The pro-visional directors are: W. G. Pollock, Cleveland, Ohio; P. L. Kimberley, Sharon; B. W. Folger, Henry Folger, F. A. Folger, Kingston, Ont.

A company with a capital of \$6,000,000 has been formed at St. Johns, N.B., to take over the various manufacturing and other interests of the Gibson Co. These properties include the Canadian Eastern Railway, the Marysville cotton mills, bush works, lumber interests, etc.

The International Rubber Co., Mon-treal, has been incorporated with \$50,000; incorporators, A. V. Roy, Montreal, W. W. Allen and others, New York, N.Y.

A. G. Campbell, Sherbrooke, Que., has been granted a Canadian patent for a mechanical process of dying ores, etc.

James Elliott, Wingham, Ont., has been granted a Canadian patent for a clay pulverizer and separator.

**CAMEL BRAND** ..... **BELTING**  
**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 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,  
 Telephone Main 1379.

TORONTO, ONT.

SALES  
 AGENTS

ST. LAWRENCE PORTLAND CEMENT CO.,  
 2664 Notre Dame St. W.

Telephone Main 3987.

MONTREAL, QUE.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

The Alexander Gibson Railway & Mfg. Co., Marysville, N.B., will be incorporated with \$6,000,000 capital. The company will also control a number of flour mills.

Messrs. Innes & Hill, Hartney, Man., are preparing to enlarge the plant and increase the capacity of their roller mills. Mr. James Innes of the above firm is interested in locating a new mill at Deloraine, Man.

The Grand Trunk Railway system has just placed five more of the new 2,000 series coaches in operation on the system, and, if anything, they surpass in artistic workmanship, in completeness of detail and in their appointments, in finish, anything of the kind that have hitherto been seen on any railway. These coaches were turned out by the Grand Trunk shops, Point St. Charles, and reflect the highest credit on Canadian skill and workmanship. They are equipped with all the modern devices for safety, and the interior is finished and upholstered in very handsome style. The cars are heated by steam and lighted by gas. The ventilating arrangements are ample and satisfactory, and everything about the coaches wears an air of ease and elegance. The coaches are 62 feet long, accommodate 68 passengers and have a smoking room with accommodation for 14 passengers.

The Dominion Railway and Canal Department is making arrangements to light the Welland Canal by electric lights. Nearly four hundred lights will be required.

An order-in-council has been issued by the Ontario Government authorizing the Sturgeon Falls Pulp Co. to dam Lake Tamagami for the purpose of securing a more regular water supply. The water rights of others are conserved, and the work must be carried out in such a manner as the Government engineer may approve. With the certainty of a regular and ample water supply, the company will be able to utilize to the fullest extent the enormous additional plant now being rushed to completion, and in February next they expect to be turning out paper, and will not afterwards sell any more pulp, except to complete contracts. Recently the company had offers of orders for large quantities of paper from New York, and the additional two million dollar buildings and plant now nearing completion will have to be still further added to in the coming summer.

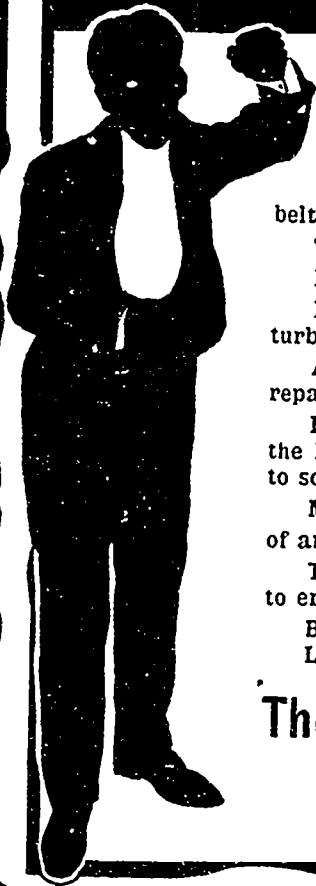
During the eleven months of the current year there was an increase of over 50 per cent. in the value of building operations in Toronto, as compared with the same period last year. The total this year was \$3,647,158, and last year \$2,-

373,958. The operations for November showed a falling off. The total was \$200,965, as compared with \$409,710 for November last year. The decrease was due largely to the fact that in November last year permits for three large buildings, aggregating nearly \$200,000 were issued.

Reports on the operations of the dredge J. Israel Tarte, just issued by Mr. A. Gobeile, Deputy Minister of Public Works, shows that during the month of October, the dredge removed more than 600,000 yards of material, and its capacity will likely be raised to 1,000,000 yards per month. The dredge was built for the Dominion Government by the Polson Iron Works of Toronto, and is a splendid example of what Canadian enterprise and industry, under the guidance of expert men, can accomplish.

Mr. Jonathan Ellis, of Port Dover, Ont., the well-known manufacturer of knit goods, whose works were some time since absorbed by and now operated by the Penman Mfg. Co., of Paris, Ont., is exploiting a company with large capital to establish a knitting factory in Hamilton, Ont. Mr. Ellis, it is reported, has purchased the premises in Hamilton formerly occupied by the Howel Lithographing Co., which is to be converted into the knitting factory.

# FRICITION CLUTCH LOGIC



**T**HERE can be no question as to the superiority of the Friction Clutch for general line shaft service.

It is superior to tight and loose pulleys for many reasons.

It saves wear and tear on belts as well as saving power, for the belt movement is stopped at the line shaft.

The Dodge Split Friction Clutch is the only split clutch made.

In fact it is the perfect clutch. It is unquestionably the best clutch made.

Easily erected, it saves money—as the shafting does not have to be disturbed to put into place.

All parts are interchangeable and every part is easily reached, so that repairs can be easily and quickly made.

Incidentally it has been found in many cases that the cost of repair to the Dodge Split Friction Clutch has been but one quarter the cost of repair to solid clutches.

Making the ultimate cost of the Dodge Split Friction Clutch the lowest of any clutch made.

The Dodge Split Friction Clutch is of perfect balance, is simple and easy to erect and easy to adjust.

Buy the Dodge and secure the highest quality in Friction Clutches.

Let us send you the booklet, "How Good People Speak of It."

**The Dodge Manufacturing Co. of Toronto,**  
**TORONTO LIMITED**

The Canada Corundum Co., with head offices at Toronto, who own and operate the well known Craig Crystal Corundum mines of Ontario, is experiencing a heavy demand for its product, both in Canada and the United States as well as in England and other countries. The product of the company is now used by all the Canadian manufacturers of abrasive wheels and by most of the important concerns of this kind in the United States. The head offices of the company, in charge of Mr. B. A. Craig, are now located in the Traders Bank Building, Toronto.

The Nott Bicycle Factory at St. Catharines, Ont., which reverted to the city a couple of years ago, upon the company failing to fulfil their agreement with the city, has been acquired by the Lamb Wire Fence Co. for \$10,000 in 20 annual instalments.

Petrolea has experienced considerable of a building boom this year and among the important industries recently started is the Milner Petrolea Wagon Co. who have erected a large plant on a specially desirable location in the town between the Grand Trunk Railway and Michigan Central Railway, the latter road making direct connections with the Canadian Pacific. The building was commenced early in May and is now in full running order. The equipment of machinery is as complete as can be found in any factory, and under the experienced direction of Mr. Milner, who has been so

long and favorably known in the wagon building business, everything has been done to secure economy and efficiency. For the present the company's intention is to confine their output to standard wagons, trucks, sleighs, and carts and they are now in a position to fill orders in these lines.

The hammer shop of the axe department and the fitting, finishing and polishing rooms of the spring department of the Ganonoque Spring & Axle Co., Ganonoque, Ont., were damaged by fire last week to the amount of \$12,000.

A new gymnasium building costing about \$80,000 will probably be erected by McGill University, at Montreal.

It is likely that the firm of M. J. Wilson & Sons, of Smith's Falls, Ont., manufacturers of harness, etc., will remove to Ottawa.

The A. C. Thompson Co., of North Sydney, N.S., has purchased the plant of the Lunenburg Foundry Co., at Lunenburg, N.S. As soon as the buildings of the new foundry of the Thompson Co. are completed at North Sydney the machinery and patterns of the Lunenburg plant will be removed to that place. The transfer of the machinery will be made in January.

D. S. Perrin & Co., London, Ont., manufacturers of confectionery, etc., will erect a three-story brick addition 120x30 feet to their factory.

The new Dodge coal hoist at Rondeau, Ont., has just been completed at a cost of \$35,000. It was installed by the Dodge Coal Storage Co., of Philadelphia, Pa. The steamer Orion, of Kingston, Ont., with a thousand tons of coal from Cleveland, Ohio, was the first to be unloaded by the hoist. This hoist is the largest piece of coal-lifting machinery on the continent outside of Pennsylvania, and will materially assist in reducing the cost of coal to manufacturers along the line of the Lake Erie and Detroit River Railway. It is built entirely of steel, the tower standing 60 feet above the level of the water. It is the company's intention to have erected a fleet of boats built especially for the coal trade next season.

Swift & Co., of Chicago, are to spend \$200,000 in enlarging their Hamilton pork packing premises, which will then be probably the largest packing plant in Canada.

The General Distilling Co., Toronto, has taken out a permit to erect a five-story brick distillery and still in this city to cost \$30,000. The company will manufacture spirits from sugar beets.

Some good specimens of copper ore are on exhibition at the Ontario Bureau of Mines which had been brought in from newly-discovered copper deposits at Bancroft, in North Hastings County, Ont. This is the first copper found in that district. It has been pronounced by experts an excellent sample.

**STURTEVANT SYSTEM**

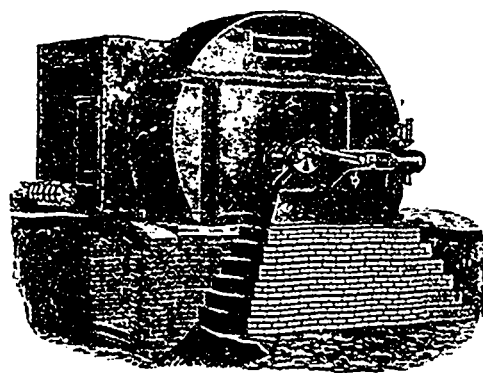
---

**HEATING AND VENTILATION**

---

*Centralized blower plant.  
No scattered steam piping.  
Utilizes exhaust steam.*

---



---

157

---

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

**TOOL STEELS**

of all grades and tempers, for all purposes.

**ENGLISH AND AMERICAN**

Best Results Guaranteed

3

*For sizes in stock, see pages 24-25 of our monthly stock list.*

---

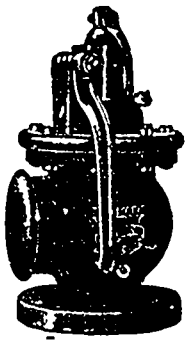
**THE BOURNE-FULLER CO.**

---

**IRON, STEEL and PIG IRON.**

---

**Cleveland, O.**



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.

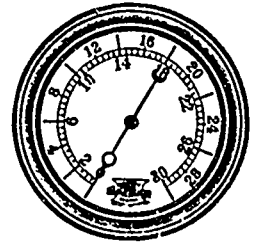


Stationary and Marine Valves.  
Water Relief Valves.  
Blow-off Valves.  
Globe and Anglo Valves  
Single Bolt Chime Whistles.

SEND FOR CATALOGUE

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

A TRUTHFUL GAGE  
IS THE  
ONLY GOOD GAGE



The Dominion Iron & Steel Co., has completed arrangements whereby a fleet of steamers will be established to carry Swedish iron ore for its furnaces, and Cape Breton coal will be carried to Sweden as a return load.

The International Rubber Co., of Montreal, has been incorporated with a capital of \$50,000.

The Manitoba Cement Co., of which J. A. Hunter of the Merchants National Bank, Winnipeg, Man., is manager, are preparing to erect a large cement plant in Manitoba. The company is capitalized at \$1,000,000.

A \$750,000 hotel will be erected at Niagara Falls, Ont. The plans are being prepared by Wm. M. Aiken, of the New York Bureau of Building. The financial agent of the enterprise is Mr. Harry Symons, of the Union Life Insurance Co., Niagara Falls.

The Grey & Bruce Portland Cement Co., of Shallow Lake, Ont., has been given power to increase its capital stock from \$199,000 to \$500,000.

The James Smart Mfg. Co., Brockville, Ont., has arranged for new quarters for their Winnipeg house which will be located in the new Orange Hall Building.

The collieries at New Campbellton, C.B., are now enjoying the largest output in their history. The company has this year shipped considerable of their output to Boston.

The Nova Scotia Steel & Coal Co., New Glasgow, N.S., are making big preparations for a large output next year. The company has already chartered a fleet of seventeen steamers for next season's operations. Next year will see

great activity both at Sydney Mines and North Sydney.

The Empire Coal & Tramway Co. has been formed at Maccan, N.B., with a capital of \$190,000, to engage in coal mining and in the manufacture of manganese at that place. The incorporators include D. J. Patrick, of Maccan, N.B.; A. E. Brown, of St. Johns, N.B.; and W. J. Welden, of Monckton, N.B.

Mr. W. G. Miller, provincial geologist, has lately been looking over the working mines in North Western Ontario, Canada.

The output of coal of the Alberta Railway and Coal Co. for the year ending June 30 last was 148,059 tons, a decrease of 23,597 tons as compared with the previous year.

The C. M. Underhill Coal Co., Buffalo, N. Y., has opened an office in the McKinnon Building, Toronto, in charge of Mr. Thomas Whisker. For many years this company has enjoyed a large trade in coal and coke in Canada, and the opening of the Toronto office will greatly facilitate the Canadian business of the company.

The Dominion Coal Co. sent 1,200,000 tons of coal to the St. Lawrence market this season.

The woolen mills property of the Western Canada Woolen Mills Co. at Medicine Hat, N.W.T., has been purchased by a local company, who will hold it pending the starting of some suitable industry.

The Marconi wireless telegraph station at Table Head, Glace Bay, is being equipped as speedily as possible for service. There are over two hundred men at work. Money is not being spared in the equipment of the station.

The Canadian Woolen Mfg. Co., St. Hyacinthe, Que., has been formed, and will acquire the property of the Canada Woolen Mills Co., of that place.

The Canada Co-operative Machinery Co. is being organized and will probably locate at Niagara Falls, Ont. Dr. Orouyatekha and others, Toronto, are interested.

The plant of the Stratford Peat Fuel Co., near Stratford, Ont., was destroyed by fire last week, the machinery being completely wrecked; loss \$10,000.

The Iarrigan factory of J. S. Henderson, Parrshoro, N.S., was burned last week; loss \$40,000.

The Dominion Iron & Steel Co. has purchased the manganese deposits on the Magdalen Islands about 50 miles distant from Sydney, C.B., and the deposits will be developed at once.

The Rat Portage Lumber Co., Rat Portage, Ont., sustained a loss of \$300,000 by fire last week. Half a dozen steam boats and 15,000,000 feet of lumber were destroyed.

An order from King Edward for electrical machinery will be filled by the Westinghouse shops at East Pittsburgh, Pa. His Majesty requires a gas engine and dynamo plant to be used for charging his automobiles at Sandringham Hall, Norfolk. The Westinghouse Co. has also recently booked contracts aggregating \$1,000,000, for electrical equipment of British collieries.

The new engineering building at Queen's College, Kingston, Ont., was recently built at a cost of \$35,000. Equipment to cost \$15,000 will soon be installed.

# the Central Ontario Power Co., Limited

OF  
PETERBORO, ONT.

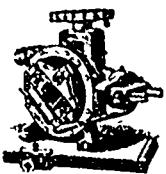
Offer Electrical Power **TO MANUFACTURERS** at Low Rentals

*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

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



**A**RMSTRONG'S PIPE THREADING AND CUTTING OFF MACHINES,  
 For Hand or Power.  
 Save Time and Labor. Capacity from 1/4 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.



A new beet sugar factory will probably be located at Whitby, Ont. Mr. Howard Annes and others of that place are at the head of the project.

The Ontario Linseed Co. is preparing to erect a large plant at Owen Sound.

The Goderich Organ Co. will rebuild its plant at Goderich, Ont., that town having promised inducements to the company to remain there.

The Ogilvie Milling Co. will erect a flour mill at Fort William, Ont., which will have a daily capacity of 1,500 barrels and an elevator with a capacity of 500,000 bushels.

W. N. Manning, Clinton, Ont., and J. F. Sherlock, London, Ont., will erect an organ factory in London, Ont.

The Grand Trunk Railway has decided to enlarge its locomotive shops at Stratford, Ont., to such an extent as to make them the largest locomotive department of the company west of Montreal. At present there are 700 men employed in the shops, and the enlargement will permit of the employment of about 300 more.

The work of removing the old parliament buildings in Toronto preparatory to the erection of a new freight station by the Grand Trunk Road is now in progress. The plans for the new station have been prepared by Mr. F. L. Somerville, resident engineer of the G. T. R. at Toronto and the contracts will be awarded in the near future.

Large additions are being made to the pulp mill at Chicoutimi, Que., and in a very short time the manufacture of paper is to be commenced.

William B. Kelso, of Syracuse, N.Y., representing the American syndicate which has purchased the extensive lumber limits of the Gagnon Bros., at Pentecost River, Que., has recently visited the limits to select a site for the construction of saw and pulp mills. The company has a capital of \$500,000, and intends to manufacture pulp, deals, box shooks, etc., all the year round, and ship their produce during the season of navigation by their own steamer to American ports on Lake Ontario.

C. W. Morrison, representing two New

York syndicates which propose to erect pulp mills in Newfoundland, states that within a year or two Newfoundland would become the great pulp producing country of the world. New York companies which Mr. Morrison represents have secured options on areas of some 1,500 square miles in extent.

It is said that Mr. F. H. Clergue will develop the power at Kakabeka Falls, 22 miles from Port Arthur, Ont. The Falls are 110 feet high and have a great estimated capacity. Both Falls and adjacent land belong to the Clergue capitalists. At one time a company of Minneapolis people had possession of them, but their projected development in the early nineties was prevented. E. S. Jenison took up the idea of producing power from the Falls, but not until Mr. Clergue and his associates had secured the property. Mr. Jenison sought the right to open a canal through the Clergue land, and, after some litigation, carried his point. His scheme to supply Fort William and Port Arthur with power did not come to fulfillment.

The R. McDougall Co., Galt, Ont., are issuing a new discount sheet to the trade making revised prices on all lines of pumps. It will be to the advantage of all users of this line of goods to secure a copy if it has not already come to hand. Special and general catalogues are at all times ready to be sent free on request.

The Penman Mfg. Co., Paris, Ont., has completed the installation at its No. 2 mill of a 200 h.p. Wheelock engine furnished by Goldie & McCulloch Co., Galt, Ont.

Parkin & Somerville, machinists, Hamilton, Ont., are installing the elevators in the new building of the Hamilton Whip Co. The company has also secured other similar contracts.

The Morton Co., of Toronto, manufacturers of tags, etc., report a large sale of their well-known product. The company is also experiencing a heavy demand for its automatic duplicating book, which is now widely used by merchants, manufacturers, railroads, express companies and in all lines of business.

Roderick J. Parke, Temple Building, Toronto, has been appointed consulting

engineer by the McClary Mfg. Co., of London, Ont., and will have charge of the construction work of their large plant about being erected.

The firm of Jas. Dougall & Sons, of Bonnybridge, Scotland, of which Mr. R. E. H. Buckner of Toronto is sales agent, has just delivered a cargo of 2,400 tons of firebrick to the Nova Scotia Steel & Coal Co. for use in the new blast furnaces to be erected at Sydney Mines and North Sydney.

The Tower Canadian Oiled Clothing Co., with head office at Toronto, has been incorporated with a capital stock of \$100,000, to acquire the Canadian business of the A. J. Tower Co., of Portland, Me., and the Canadian Oiled Clothing Co., of Toronto. The provisional directors are W. S. Barker, W. R. Evans, R. F. Herriek, Samuel Henderson and E. E. Henderson.

The Niagara Falls Concentrating Co., of Niagara Falls, N.Y., has been licensed to do business in Ontario, as manufacturers of essential oils, extracts, fruit juices and proprietary articles. Ontario capital, \$40,000. Ontario representative, A. M. Colquhoun, Niagara Falls, Ont.

The Griffiths-Dixon Co., Toronto, has been incorporated with a capital stock of \$40,000, to acquire and continue the business heretofore conducted by W. A. Griffiths & Co., manufacturers of dental supplies, etc.

Littlejohn & Vaughan, Toronto, has been incorporated with a capital stock of \$40,000, to acquire the electrotyping business heretofore carried on by J. E. B. Littlejohn.

The name of the Ontario Farmers Cordage Co., of Brantford, Ont., has been changed to the Brantford Cordage Co., Limited.

The Manitoba Milling Co., are building a 25,000 bushel elevator at the Canadian Northern Railway station, seven miles south of Neepawa, Man.

The Woodburn Milling Co's old mill site and power plant at Woodstock, Ont., has been purchased by Oliver Phelps, of Beachville, Ont., who will build an up-to-date feed mill.

# PIG IRON.

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

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

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

The J. Hoodless Furniture Co., Hamilton Ont., has been incorporated with a capital stock of \$40,000, to manufacture furniture, house furnishings, etc. The provisional directors are Adelaide Hoodless and G. T. Tuckett, of Hamilton, and Samuel Merner, of Waterloo, Ont.

The Canadian Launch Works, Ltd., with head office at Toronto, has been incorporated with a capital stock of \$40,000, to manufacture all kinds of boats, motor vehicles, motors, engines, etc. The incorporators includes M. M. Whittaker, John Hendry and A. T. Southam.

The Clifton Hotel Co., Niagara Falls, Ont., has been incorporated with a capital stock of \$500,000. It is understood that it is the intention of the company to erect a fine hotel at Niagara Falls upon the site occupied by the Clifton Hotel, which was destroyed by fire several years ago. The provisional directors are W. B. Rankin, of Niagara Falls, N.Y., J. R. Smith, of Buffalo, N.Y., and Charles Crosby, of Pittsburg, Pa.

The National Petroleum Co., Petrolia, Ont., has been incorporated with a capital stock of \$40,000, to produce and manufacture petroleum, salt, etc., head office at Guelph, Ont.; provisional directors, G. A. McGillivray, London, Ont.; William McLachlan and A. W. Alexander, Guelph, Ont.

The plans of the Grand Trunk Road for its transcontinental line which have been made public during the past week or so give some idea of the vast railway development certain to occur in the

North-West during the next few years. But that is not the only part of Canada which is to be the scene of important railway development. In every province in the Dominion numerous railroad lines are now under construction. These are necessitated by the wonderful industrial development now under way in nearly every part of the country.

Edwin Housey, the well-known manufacturer of gas and gasoline engines and the inventor of the Housey gas and gasoline engine, has removed to 815 Queen street W., Toronto, where he has fitted up a complete plant for the manufacture of gas and gasoline engines.

The Hurlbut Co., Toronto, has been incorporated with a capital stock of \$20,000, to take over the business of C. M. Hurlbut & Son, as manufacturers of infants' soft soled shoes and leather goods.

The capital stock of the McKinnon Dash & Metal Works Co., St. Catharines, Ont., has been increased from \$400,000 to \$700,000.

McAlpin Consumers' Tobacco Co., Toronto, has been incorporated with a capital stock of \$500,000 to acquire the business heretofore conducted by the McAlpin Tobacco Co. and the Consumers' Tobacco Co.

G. Strevel has secured a contract from the Canadian Northern Railway to cut 250,000 ties during the coming winter. His camps will be located at Banning, Ont., about 50 miles east of Fort Frances.

A new lumber railway connecting with the Parry Sound branch of the Canada Atlantic Railway was completed a few days ago. It is 15 miles in length and runs from Whitney Station on the Canada Atlantic to Lake Opeongo, connecting the St. Anthony Lumber Co's mill at the station and its limits bordering on the lake. The construction of this road makes a saving of about 50 miles in the transportation of logs, and a big reduction naturally in the time consumed. With the completion of the road, work on which was started 15 months ago, the lumber company will be able to operate its mill all the year round. Two log trains a day will be run, assuring a steady supply. The road cost \$200,000.

Ritchie's flour mill at Strathcona, Alberta, N.W.T., was damaged by fire to the amount of \$1,000 on November 25.

A sash and door factory is to be started at Lethbridge, Alberta, N.W.T. Mayor Oliver is one of the interested persons.

The Renfrow Roller Mills, Renfrow, Ont., has let the contract for the machinery for the new plant. The new mill will have a capacity of 200 barrels and will be equipped with a complete Gyrator system. They will also build a 50,000 bushel elevator.

Geo. Reid, of Dunnville, Ont., has let the contract for a new mill of 50 barrels capacity, and will also put in a buckwheat mill.

Work has been commenced on the superstructure of the new Canadian Pacific elevator at Fort William, Ont.

# JAS. DOUGALL & SONS

LIMITED

Bonnyside Fire Clay Works,  
Bonnybridge, Scotland

BONNYSIDE

Trade Mark.

DOUGALL

Trade Mark.

ALL KINDS OF

MANUFACTURERS OF

**Silica and Fire Bricks** for Steel and Iron Furnaces, Coke Ovens,  
Gas, Glass and Chemical Works.

**Best Scotch Ganister** for Steel Furnaces and Foundries.

**STOPPERS, NOZZLES and LINERS** for Steel Pouring Ladles.

Our goods have been, and are in use by all the leading Steel Works, Forges, Iron Foundries, Glass and Chemical Works and Gas Companies. Reports from these and some leading Canadian customers on application.

Direct shipments by quickest routes on lowest through rates to all Canadian points. Quotations promptly given on receipt of specifications.

WRITE FOR ILLUSTRATED CATALOGUE.

Sales Agent { **R. E. H. BUCKNER,**  
TORONTO



**J. N. TALLMAN  
& SONS**  
**Brass Founders**  
**Solder and**  
**Babbitt Mfrs.**  
 ...HAMILTON, ONT.

The Ogilvie Flour Mills Co., will locate its new flour mill at Fort William, Ont., and will build a 1,500 barrel mill and a 500,000 bushel elevator at that place.

The McAllister Milling Co., Peterborough, Ont., is remodeling its mill and increasing the capacity to 300 barrels.

**TRAFFIC INCREASE ON SOO CANALS.**

An analysis of the traffic of the Soo canals, prepared by Mr. Geo. Johnson, Dominion statistician, shows that the total freight carried by the two Soo canals, Canadian and United States, during the month of October last, was 4,618,291 tons. This is 443,746 tons more than were carried in October, 1901, and 1,428,998 tons more than the quantity carried in October, 1900.

Of the total 4,618,291 tons carried by the two canals, the Canadian "Soo" carried 604,713 tons, which exceeds the

freight carried in October, 1901, by 250,330, and that in October, 1900, by 261,781 tons.

The total east-bound freight carried by the two "Soos" in October last was 4,023,083 tons, of which the Canadian canals share was 525,015, or 13.03 per cent., against 3,518,200 tons, or 7.86 per cent. in October, 1901, and against 2,675,894 tons, or 9.77 per cent. in October, 1900.

The total west-bound freight carried by the two "Soos" in October last was 590,208 tons, of which 79,698 tons were carried by the Canadian Soo, or 13.50 per cent., against 77,839 out of a total of 656,345 tons, or 11.86 per cent. in October, 1901, and against 81,403 out of a total of 513,399 tons, or 15.85 per cent. in October, 1900.

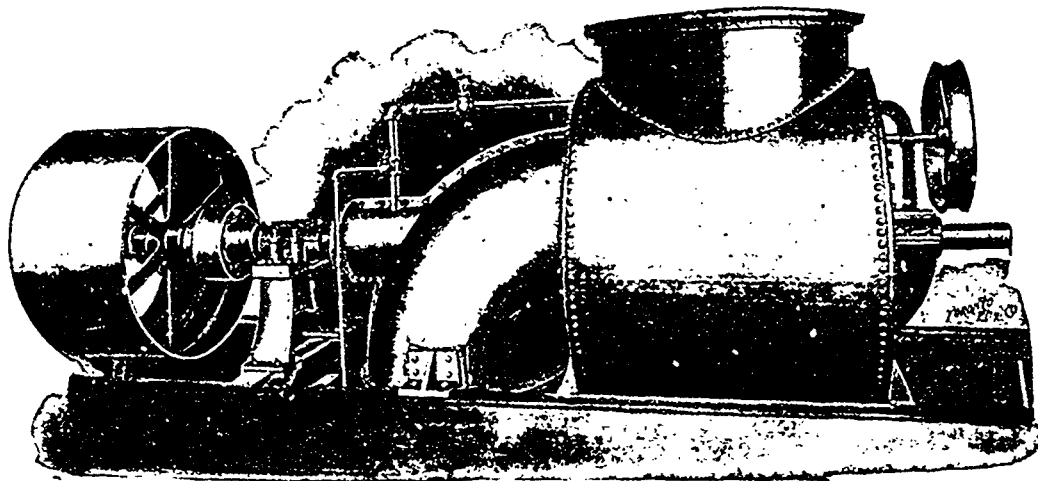
The registered tonnage of vessels using the Canadian "Soo" during October last, was 617,749 tons, an increase of 325,833 tons, compared with October, 1901, and of 237,737 tons compared with October, 1900.

The number of passages made through the Canadian canal in October last was 620, an increase of 37, compared with October, 1901, and 162, compared with October, 1900.

Taking the seven months of the present and two previous seasons, the total freight carried east and west by the two canals was 1902, 30,931,216 tons; 1901, 24,543,610 tons, and 1900, 23,090,766 tons. Thus 1902 shows a gain of 6,387,606 tons, compared with 1901, and of 7,840,450 tons, compared with 1900.

The total freight carried by the Canadian "Soo" in the seven months of the three years is:—1902, 3,979,290 tons; 1901, 2,514,145 tons; 1900, 1,844,426 tons; gain, 1902 over 1901, 1,438,147 tons; gain, 1902 over 1900, 2,134,864 tons.

Compared with the United States "Soo" and Canadian, together for the seven months, the Canadian canal carried 12.86 per cent. of the total freight in 1902; 10.24 per cent. in 1901, and 7.99 per cent. in 1900.



The above engraving represents a style of setting sometimes adopted in connection with our

**CROCKER PATENT TURBINE**

Under some conditions it is particularly well adapted to Pulp or Paper Mill use, also for operating Belt Driven Dynamos in Street Railway and Lighting Plants.

Remember, we undertake contracts for complete plants, built and installed, thus insuring to the purchaser uniformity, perfect adaptation of parts, and a single responsibility to be considered.

Our Bulletin No. 200 will interest owners of water power and prospective users. Free on request.

**THE JENCKES MACHINE CO.,**

28 Lansdowne Street,

SHERBROOKE, QUE.

**BRANCH OFFICES**

51 York St., Toronto.  
 Halifax, N.S.

18 Victoria Sq., Montreal.  
 Rosland and Greenwood, B.C.



# COAL JAS. H. MILNES & CO. COKE

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

The registered tonnage of vessels going through the Canadian canal in the seven months of each year is 1902, 3,923,499 tons; 1901, 2,122,509 tons; 1900, 2,008,191 tons, showing a gain of 1,800,990 tons in 1902 over 1901, and of 1,915,308 tons over 1900. The per cent. of Canadian tonnage to total of the two canals for the seven months is:—1902, 14.14 per cent. 1901, 9.95 per cent.; 1900, 9.90 per cent.

## CALIFORNIA EXCURSIONS.

The Chicago, Union Pacific and North-Western Lines are selling round trip excursion tickets at low rates to principal California points, the route of the famous "Overland Limited" the finest trans-continental train. Less than three days to California. Write for "Overland" booklet and "California Illustrated" to B. H. Bennett, general agent, 2 East King street, Toronto, Ont.

## CANADIAN FORESTRY.

The official report of the third annual meeting of the Canadian Forestry Association, is exceedingly interesting and contains a great deal of practical information on a subject about which too little is known, and to which too little attention is given by the general public. The immense possibilities of our northern forest resources are shown by the following extract from the paper by Mr. Thos. Southworth, Director of Forestry for Ontario:

"Although we have at present only 2,634,000 acres in forest reserves I do not think it unreasonable to expect that ultimately the Crown forest of Ontario will comprise fully 25,000,000 acres, a State forest larger than is possessed by any other country I know of. What a forest of this size, owned by the people as a whole, will mean to the revenue of the Province when placed under scientific control and systematically worked is difficult to conjecture. Already, with our wasteful methods, and when only a small part of this territory is being operated, the Province receives in revenue about \$1,000,000 per year, and that this sum could be enormously increased under the conditions referred to, no one, I

think, will entertain any serious doubt. The composition of this vast forest is such as to make it the most valuable in the world. While it contains a large quantity of spruce and birch, the paper and furniture woods par excellence, it is the natural habitat of the most valuable tree of them all—the lordly white pine, the tree that has already been so largely the cause of the unique position occupied by the Province of Ontario in being a country without a debt, and where the people are not subject to any direct tax for State purpose."

The papers are valuable and interesting, and the illustration are excellent, showing the lumbering industry in all its phases.

## A NEW BLACKSMITH'S FORGE.

The Canada Foundry Co., Toronto, have recently developed a semi-portable cast iron forge, made in two sizes, which they believe will fill a want which has long existed for a large forge of a portable nature.

This forge consists of a strong cast iron fire box mounted on three substantial legs, a heavy cast back plate surmounted by the usual wrought iron bonnet, and smoke stack. A hinged flap is fastened on the side furthest from the operator, which serves to protect a small fire, and also the next smith when a number of forges are placed in a row. A removable plate is placed across the centre of the fire box, separating the fire from the coal hopper.

When a large shaft or other work of that nature is to be placed in the fire, sections of the two sides of the fire box may be removed, thus allowing the metal to descend into closer proximity to the hottest fire above the tuyere iron.

Attached to the back of the forge proper is the water box, through which the tuyere iron passes, the contents of the box forming a water jacket around the tuyere in the fire box. On the side of the water box is a lever attached to a sliding valve governing the supply of air.

This forge may be quickly installed and readily moved, as it may be placed on the floor in any convenient spot where connections may be made to air-blast and smoke stack.

It has been the aim of the makers to develop a neat, compact, self-contained and portable forge for large work at a reasonable price. It is made in two sizes.

## PULP WOOD RESOURCES OF LABRADOR.

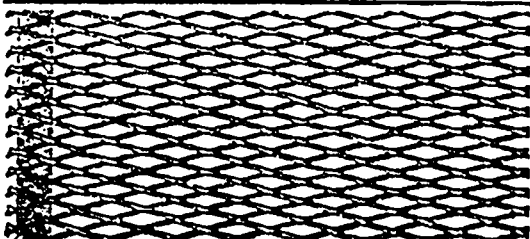
Alfred Dickie, president of the Grand River Pulp & Paper Co., of Labrador, says there is a world of pulp wood in that country, and he considers it a better timber region than Newfoundland.

He says: "There is a great lumber belt stretching from Labrador to the Rocky Mountains, and it only requires a railway or two to develop it. Canada would then have the greatest lumber country in the world. I have great faith in this industry, and, although there are forests that are rapidly being depleted, there are still great stretches of virgin timber lands. The Grand River Pulp & Lumber Co., which controls 300 square miles on the Hamilton and Grand rivers in Labrador, have now a portable saw mill which can saw 3,000,000 feet, and in the spring a permanent mill will be erected, which will saw 12,000,000 feet and the company intend to erect large pulp mills, and a hitherto unknown country will throb with industrial activity. The Hamilton River is as large as the St. John and may produce nearly as good results."

## CONCRETE AND EXPANDED METAL CONSTRUCTION.

This valuable contribution to the literature of concrete steel construction by Spencer B. Newberry, Sandusky, Ohio, was read before the recent annual meeting of the Associated Expanded Metal Companies at a dinner given to them in Chicago and attended by many leading engineers and architects.

Within the past twenty-five years new possibilities have been opened by the intelligent combination of steel and cement concrete, a type of construction which brings into play the good qualities of both materials. During the last ten years, this combination has received much scientific study, and owing to its many advantages and the improvement



## EXPANDED METAL and FIREPROOFING COMPANY, Limited

CHEAP FIREPROOF CONSTRUCTION

SUITABLE FOR FACTORIES

Write for Booklet and Prices.

Offices, 100 KING ST. WEST, TORONTO

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

and cheapening of Portland cement, has come into extensive use. In the study of the mechanics of concrete steel construction, Hyatt in England, Koonen and Mandl in Germany, Prof. J. B. Johnson and Mr. A. L. Johnson in this country, and many others, have rendered valuable service. Much light has lately been thrown on the mutual beneficial effect of steel and concrete in combination, by M. Considere in France. From an abstract of his work by Mr. A. L. Johnson, it appears that Considere found that in concrete steel beams the concrete on the tension side will sustain without rupture a distortion 10 to 20 times greater than that at which it would have failed without the steel. After subjecting the beam to 140 repetitions of loadings, giving proportional distortions  $\frac{1}{4}$  to 13 times the maximum obtainable from concrete alone, Considere cut out an annular piece of concrete around the rod, and found it free from cracks and capable of carrying nearly its normal load.

Among the many advantages of concrete steel may be mentioned cheapness, as compared with other types of massive construction, lightness, economy of space on account of thinness of walls, capacity for carrying heavy loads, ready adaptability to any desired form, speed of construction, fire-proof qualities, and safety on bed foundation material, since the structure hangs together as a whole, and when overloaded never collapses, but is only gradually deformed.

We have already noted the improvement in concrete resulting from the addition of steel; on the other hand, steel construction is supplemented by the addition of concrete or cement mortar, in combination with expanded metal, in the form of ceilings, floors and partitions, by which the steel skeleton is strengthened, protected, beautified, and converted into a habitable building.

There are two important respects in which steel construction gains by the addition of concrete; these are protection against rust and protection against injury by fire.

The rusting of iron consists in oxidation of the metal to the condition of hydrated oxide. It does not take place at ordinary temperatures, in dry air, or in moist air free from carbonic acid. The combined action of moisture and carbonic acid is necessary. Ferrous carbonate is first formed; this is at once oxidized to ferric oxide, and the liberated carbon dioxide acts on a fresh portion of metal. Once started, the corrosion proceeds rapidly, perhaps on account of galvanic action between the oxide and the metal. Water holding carbonic acid in solution, even if free from oxygen, acts as an acid, and rapidly attacks iron. In lime water or soda solution the metal remains bright. The action of cement in preventing rust is not apparent. Portland cement contains about 63 per cent. lime. By the action of water it is converted into a crystalline mass of hydrated calcium silicate and calcium hydrate. In hardening it rapidly absorbs carbonic acid and becomes coated on the surface with a film of carbonate. Cement mortar thus acts as an efficient protector of iron, and captures and imprisons every car-

bonic acid molecule that threatens to attack the metal. The action is therefore not due to the exclusion of air, and even though the concrete be porous, and not in contact with the metal at all points, it will still filter out and neutralize the acid and prevent its corrosive effect.

Opportunity to determine the condition of steel imbedded in concrete after years of exposure to air and moisture is seldom obtained. In all cases, however, in which such work has been taken up and examined, the metal has been found bright and free from corrosion, and all who have witnessed the tests agree that the preservation of the steel is remarkable. Numerous reports of American engineers and architects who have inspected steel after several years' protection by concrete show the highest satisfactory results, and recent investigations by the Prussian Minister of Public Works of concrete steel, the retaining wall on the Oberstrasse, Berlin, built in 1890, show the steel to be entirely free from corrosion.

The fire-resisting qualities of cement may be said to be a comparatively new discovery, one of the many unexpected practical applications of this valuable material which the past few years have revealed. It really seems as though manufacturers might safely go on producing more and more cement, leaving it to engineers to find new uses for the material as fast as it is offered. It is well known that Portland cement is practically infusible, and that the water with which it combines in hardening is given off very slowly under the action of heat. The surprising feature of its behavior when strongly heated is that it does not crumble, crack, warp, or scale off, as most other materials do. Even after long calcination at high temperature, it still shows considerable cohesion and adhesion to metal, resists the impact of powerful streams of water, and does not

crack under sudden cooling. On moistening with water after ignition it again hardens. Even if this last property be found unavailable for practical purposes, yet concrete exposed to fire and water is easily replaced, and its purpose is fulfilled if it protects from injury the steel work upon which the safety of the building depends.

The two principal sources from which cement concrete derives its capacity to resist fire and prevent its transference to steel are its combined water and porosity. Portland takes up in hardening a variable amount of water, depending on surrounding conditions. In a dense briquette of neat cement the combined water may reach 12 per cent. A mixture of cement with three parts sand will take up water to the amount of about 18 per cent. of the cement contained. This water is chemically combined, and not given off at the boiling point. On heating, a part of the water goes off at about 500° F., but the dehydration is not complete 900° F. is reached. This vaporization of water absorbs heat, and keeps the mass for a long time at comparatively low temperature. A steel beam or column imbedded in concrete is thus cooled by the volatilization of water in the surrounding cement. The principle is the same as in the use of crystallized alum in the casings of fireproof safes; natural hydraulic cement is largely used in safes for the same purpose.

The porosity of concrete also offers great resistance to the passage of heat. Air is a poor conductor, and it is well known that an air space is a most efficient protection against conduction. Porous substances, such as asbestos, mineral wool, etc., are always used as heat insulating material. For the same reason cinder concrete, being highly porous, is a much better non-conductor than a dense concrete made of sand and gravel or stone, and has the added advantage of lightness. In a fire the

## 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.

## 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 Union-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.

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

LONG DISTANCE PHONE.

outside of the concrete may reach a high temperature, but the heat only slowly and imperfectly penetrates the mass, and reaches the steel so gradually that it is carried off by the metal as fast as it is supplied.

Last July the Eastern Expanded Metal Co., of Boston, made a study, under the supervision of Prof. Norton, of the Massachusetts Institute of Technology, of the action of fire on heavily loaded, full-sized arches, and the large I-beams and columns used in warehouse construction. The structure tested consisted of two 20-inch I-beams, 11 feet 3 inches apart, each supported by three 8-inch I-beam posts, and connected by 1½-inch tie rods. Between the I-beams was laid a floor 11 x 17 feet 9 inches in size, of expanded metal, with 1½ inches of cinder concrete below and 6½ inches of stone concrete above, making a total thickness of 8 inches. The beams and posts were protected by 1½ inches of cinder concrete. The whole structure was surrounded by concrete walls; the end walls supported the ends of the beams. A grate 10 x 12 feet in size, was supported on concrete piers. The floor was loaded to 400 lbs. per square foot; exposed to fire 2½ hours; the fire was extinguished by water. The floor was then exposed to fire, for six hours under a load of 1600 lbs. per square foot. The temperature of the fireplace ranged from about 1300° to 1800° F. The temperature of the beams, as determined by thermal junctions in contact with their surfaces, at no time during the tests reached 250° F. On inspection, the only injury to the floor from fire and water

was found to be the formation of many fine ellipsoidal and radial cracks of slight depth. After five days loading to 1824 lbs. per square foot, and removal of the load, the total deflection of the floor was 1.8 inches. The stone concrete of the walls, and the cinder concrete of the floor, were damaged by fire and water only to the depth of about one inch. The results of the test, as stated by Prof. Norton, show that the protection of beams and posts by two inches of concrete is perfect assurance of their safety in case of fire.

One of the most striking examples of the protection of steel columns by concrete in an actual fire is found in the burning of the McMahon Biscuit Factory in Chicago, October 8, 1901. Five brick ovens, weighing 200 tons each, were supported at the height of the fourth story by steel columns surrounded by cinder concrete three inches thick, and plastered with cement mortar on Expanded Metal. The building was of heavy wooden mill construction, and with the exception of the ovens, their supports, and the portion of building beneath them, was wholly destroyed by fire. The heat around the columns was sufficient to twist and distort all unprotected steel out of all semblance to its original shape. After the fire the columns were found uninjured, and still carrying their heavy loads, with their concrete fireproofing unbroken and as good as new.

The coefficient of expansion of concrete, 1, 2, 4, by heat, has lately been accurately determined by Prof. Pence, of La Fayette, Ind., and found to be .0000055 for one degree F. This is

almost identical with that of untempered steel, which is recorded as .0000060. Observations on the firm adhesion of cement to iron, after exposure to high temperatures, indicate that at these temperatures also both materials expand about equally.

**CEMENT WORKS IN WINNIPEG.**—A. F. McLaren, M.P., of Stratford, Ont., and Dr. David Jamieson, M.P.P., of Durham, Ont., were in Winnipeg, Man., a few days ago, and in an interview with a reporter said they were there with a view to securing property on which to erect a plant for the manufacture of Portland cement. This plant, they said, would be a tremendous affair. The capitalization of the company would be one million dollars.

This will be a branch of what is commonly known as the 'Cowham cement combine' which already has a plant of a similar nature, and value at Durham, Ont., and one worth two million dollars near Atlanta, Georgia. In describing the Durham mill which is not yet completed, one of the capitalists said:

"The vast plant it may be admitted at the outset is an eye-opener to those people who have never been brought face to face with the stupendous massivity of machinery used in the manufacture of a high grade cement. The great steel smoke stack towers 185 feet without a single guy wire to hold it in position. Its base is rooted in 35 feet of solid concrete masonry. The machinery of the National Cement Co., may be described

# SHAFTING

We have the Sole Agency for Planished Shafting, Shapes, etc.

**AND CARRY STOCK OF ALL SIZES**

**PROCESS**—By one pass through the dies, the bars are brought to **EXACT DIMENSIONS** specified, and with a bright smooth surface. In the further operation of Automatic straightening they are given **AN EXCEEDINGLY FINE POLISH** by the action of planishing rolls. Bars finished by this method are very largely increased in **TENSILE, TRANSVERSE and TORSIONAL STRENGTH**, in consequence of the compression producing a considerable increase in density at and near the surface.

Large as is the consumption of these bars for power transmission shafting, its use in machine manufacture is much greater. Machine Shafts and Rods, Valve Stems, Pump and Piston Rods, Engine and Elevator Guides, Screw Rods and Bicycle Hub Stock, are a few of its many uses.

Turned Shafts are less strong than cold drawn, for the reason that the strength portion, or outside of the bar, is **CUT AWAY**. For further particulars and price, address

**LAURIE ENGINE CO. 321 ST. JAMES STREET  
MONTREAL**

as being one of the most modern type, with added inventions of their own for lessening the amount of human labor required in less up-to-date organizations.

"The system laid down by the National Co. is exclusively its own. The machinery has been specially devised, securing a gain of 50 per cent. in the saving of labor over past conditions. The old crude ways have given way to the higher intelligence and the added experience of the present. Each department has been laid on the plans and specifications of the company's trained specialists. The whole of the plant is run by electrical power generated at the company's power house, and five minutes in the switch room furnishes visual evidence of the instantaneous control possessed over each department in this vast establishment."

The mill to be built in Manitoba will be of exactly the same size, character, equipment, and capacity and Dr. Jamieson said :

"We are here on definite business. It is not a question of whether we are going to build a mill or not but simply a question of securing a most suitable location. We have in mind several and when we go back east we will have tests made of the material and after that it is merely a matter of selecting a most convenient site taking into consideration problems like those of transportation and mill site. There is no doubt in our mind that a very high grade of material can be obtained in this province and we are absolutely certain that when our plant is finished and we are producing these high grades of cement it will absolutely revolutionize building operation of the Canadian West.

"Portland cement is used extensively in all sorts of building operations and its qualities are well-known. The president of the company will be W. F. Cowan, who is also president of the Durham and southern institutions."

**NEW ONTARIO INDUSTRIES.**—Negotiations have been completed, lacking a few details, for the development of an extensive waterpower from the Koochiching Falls at Fort Frances, Rainy River district. For some time conferences have been held at intervals between the representatives of an American syndicate, headed by Mr. G. W. Backus, of Minneapolis, Minn., and the Ontario Government, looking to this end. Mr. Backus, accompanied by Senator McMullen, of Mount Forest, Ont., Mr. A. H. Royce, Toronto, and Mr. James Conmee, M.P.P., Port Arthur, Ont., waited upon the Cabinet, when a further discussion of the syndicate's plans took place. It was subsequently stated that the matter was practically closed, only a few details remaining to be decided upon. One of these is as to the nature of the tenure of the right, whether it shall be on the ordinary terms of lease or otherwise. The syndicate have already secured the privileges on the Minnesota side of the river in fee simple.

It is understood that the rights of Canada are fully protected, and that at least one-half of the 8,000 h.p. which the

stream will afford will be utilized on this side. The erection of extensive pulp, paper and flour mills is contemplated, though no pulp concession is at present under discussion. The location appears well suited for industries, being on the line of the Canadian Northern Railway from Manitoba and adjacent to the spruce forests of north-western Ontario. The fall in the Rainy River at that point is some 18 feet, and there is a considerable water-stretch above in Rainy Lake and its feeders. In the early days of Western development the construction of a lock

was begun at Fort Frances, but it was never completed. The present scheme of development involves the erection of a dam and the construction of one or more reservoirs above the falls, and the safeguarding of public rights and the protection of the surrounding country from floods formed subjects for part of the discussion. The utilization of 4,000 or 5,000 h.p. in industrial enterprises will be a decided boon to Fort Frances, which is an old Hudson Bay post, and will be a decided step in the development of that part of New Ontario.

# The Milner Petrolea Wagon Co.

LIMITED

**WE ARE  
NOW  
TURNING  
OUT...**

**HIGH GRADE  
FARM WAGONS,  
TRUCKS, SLEIGHS,**

Etc., etc.

**FACTORY EQUIPMENT UNEQUALLED  
EXPERIENCE, SKILL AND MATERIAL THE VERY BEST**

Correspondence with the Trade Solicited.

**Head Office and Factory, - PETROLEA, ONT.**

## KINLEITH PAPER COMPANY

MANUFACTURERS OF

LIMITED

**Book, Writing  
Envelope and Cover PAPERS**



AND SPECIALTIES

MILLS AND HEAD OFFICE

**St. Catharines, Ont.**

**EDWARD FINLAY**

MANAGING DIRECTOR.

### "GENUINE OAK" BELTING

More SOLID LEATHER to the Foot than any belt made.

### "LANCASHIRE" HAIR BELTING

FOR EXPOSED SITUATIONS

### ENGLISH CARD CLOTHING

## D. K. McLAREN

Head Office and Factory, - MONTREAL.

Western Trade, - TORONTO STOCK DEPOT, 132 BAY ST.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

**New C.P.R. Shops.**—The contract for the blacksmith shop of the new Canadian Pacific shops at Hochelaga, has been awarded to Lessard & Harris, of Montreal. The building will be 630 feet long by 130 feet wide and will be the first of the eight shops to be constructed. The structure will be practically all steel outside of the foundations and walls. The engineers feel very proud of the plans and anticipate the shop will be the most modern and up-to-date on the continent. It will have an annex for the large forges which are to be employed for both the car and the locomotive works. The ventilating arrangements have been given especial attention and the smoke will be carried off through the roof by means of electric fans. The machinery will include immense steam hammers and travelling cranes. Electric fans will also feed the smiths' fires. This makes the eighth of the seventeen shops contracted for, five of which have gone to Lessard & Harris and three to D. G. Louis & Sons, of Sherbrooke. These include a cabinet and upholstery shop, a truck shop, a planing mill, a blacksmith shop, three car erecting shops, and one repair shop.

**UNIQUE MECHANICAL DRAFT PLANT.**—The mechanical draft feature of the Union Electric Light & Power Co's plant, which will be used for lighting the World's Fair grounds at St. Louis, will be an installation of unusual interest to engineers. The plant is to be equipped with both forced and mechanical draft

apparatus, which is unusual. A mechanical draft plant usually is either of the forced or induced draft type, but in this case both will be used. There will be 26 boilers of 700 h.p. each, equipped with automatic stokers. Fans will be used for the forced draft, and the boilers will also be operated under induced draft. The forced draft fans will be four in number, of the full housing type, size 160 inches. They will be driven by 10 x 10 vertical engines direct attached. The induced draft fans will be two in number, of a size quite in keeping with the basis upon which the Exposition is being built, the wheel diameters being so large as to be seldom met with in mechanical draft engineering. Each of these induced draft fans will be of the full housing type, size 230 inches, and will be driven by 9 x 10 double cylinder, double acting upright engines, this type being selected to secure the maximum power in limited space. The Buffalo Forge Co. is building all the fans and engines for the equipment.

**THE ENGINEERS' CLUB.**—The regular meeting of the Engineer's Club of Toronto was held on last Tuesday evening, the topic for discussion being "The Engineer's Bill." The club is arranging a social meeting for the evening of December 10. The topic for discussion for the regular meeting on Friday evening, December 19, will be "Engineering Education." The club is arranging to issue a bulletin.

**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.

879. A firm of merchants in London are open to take up a first-class lawn mower, and invites correspondence from manufacturers of same.

880. A Dublin house asks for names of Canadian dealers who can supply turkey quills in considerable quantities.

881. The addresses of some Canadian oyster merchants have been asked for by a firm desirous of obtaining samples of Caraquet and other varieties.

882. A firm importing oats in large quantities desires to be placed in touch with reliable shippers in Canada.

883. Inquiry is made by importers in London for names of Canadian producers of fruit pulp of good quality.

884. A correspondent asks to be furnished with addresses of Canadian saw millers handling white pine, and sawing small stuff. Sizes to be any length from

**A GOOD PLANER . . .**

**WILL SAVE ENDLESS WORK FOR FITTERS**

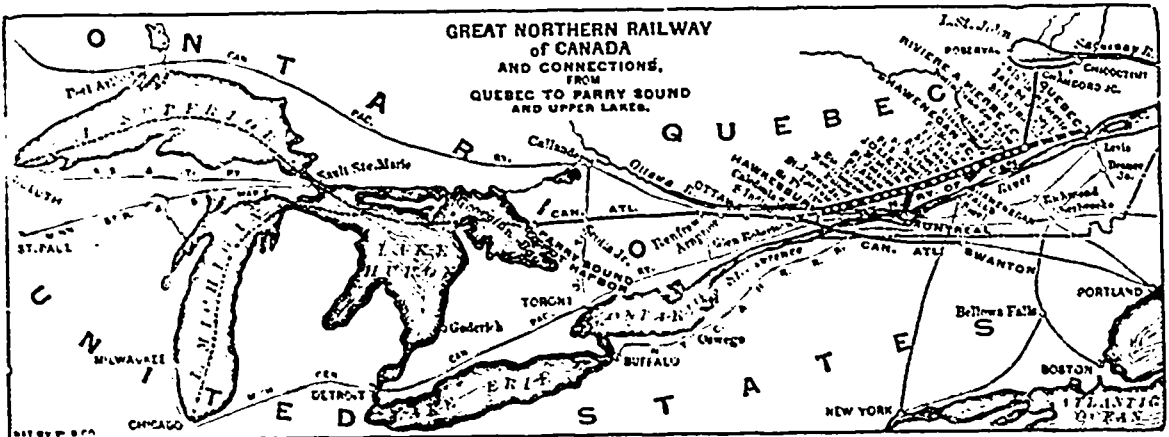
**OUR TOOLS ARE OF NEWEST DESIGN THROUGHOUT**

Power, strength, convenience and accuracy are to a high degree combined in their construction. Is such a combination interesting?

**The R. McDOUGALL Co., Limited, - Galt, Canada.**

**T**HIS Road runs through the Forests of the Laurentian Mountains, and taps the greatest water powers of the country, and is being extended to Montreal and Ottawa.

**E**XCEPTIONAL opportunities for manufacturers are offered.



When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

2 feet 2½ inches wide, 3-16 inches thick, free from knots, sap and shakes.

885. A firm of belting manufacturers in the North of England desires to hear from a first-class Canadian firm of engineers, merchants, or general merchant importers having good connection among mills, factories and steam users generally, with a view to the appointment of an agency for the Dominion.

886. A Liverpool firm of produce importers is anxious to secure a consignment agency for Canadian bacon, and wish to get into touch with a reliable packer.

887. The proprietors of certain saddle and harness preparations, boot and shoe blackings and polishes, embrocations and horse powders, are seeking to extend their business with Canada, and contemplate appointing a representative in the Dominion.

888. A firm of spinners of carpet, hosiery and coating yarns is desirous of doing a Canadian trade, and wishes to get into touch with carpet and hosiery manufacturers in Canada.

889. A London firm of general import and export merchants desires to get the representation of a few good Canadian houses whose goods are likely to sell in large quantities if properly pushed.

890. A firm of bedstead makers is open to buy wood frames, of Canadian manufacture, for wire mattresses.

891. A North of England firm is looking out for a good Canadian house which would take up the agency for a special line in cycle oils in tins, as well as Scotch glue, gelatine, etc.

**INDUSTRIAL PUBLICATIONS.**

The Bourne-Fuller Co., Cleveland, Ohio, well-known makers of plates for tanks, boilers, bridges, ships, etc., and handlers of iron, steel and pig-iron are sending to their customers a very neat and practical little letter-opener, on the handle of which are the words, "Compliments of Bourne-Fuller Co., iron, steel and pig-iron." This should be a lasting advertisement, because of the good finish which the little knife has and its utility.

The Philip Carey Mfg. Co., Lockland, Ohio, is mailing a card soliciting orders and mentioning some of the purposes for which Carey's 85 per cent. magnesia and standard asbestos coverings are used. Attention is called to the fact that the United States government uses this covering, and that it is extensively used for locomotive lagging, for steam pipes and boilers, for insulating all classes of hot and cold surfaces, for low-pressure steam and hot-water pipes, for ammonia and brine pipes, and, in fact, a covering for special as well as all ordinary purposes.

H. C. Baird & Sons, of Parkhill, Ont., have just issued an attractive wall-hanger illustrating the complete line of brick-making machinery which they manufacture.

The Whiting Foundry Equipment Co., of Harvey, Ill., has sent us their new catalogue of electric traveling cranes.

# THE ROOF

## Gets the worst of it

THERE'S no shelter for it—it shelters the rest from the force of the elements. That's why builders need very best shingles—no matter what else they stint. . . . .

### Eastlake Shingles

are absolutely Fire, Lightning, Rust and Leak proof, and easy to apply.

They've been proved long since the most reliable, perfect and long lasting kind made—galvanized or painted—the one kind that will surely satisfy you.

**METALLIC ROOFING CO., Limited**  
 TORONTO WINNIPEG MONTREAL

"The Doings of Expanded Metal," is the title of a monthly publication devoted to expanded metal, and issued by the Associated Expanded Metal Companies with which the Expanded Metal & Fireproofing Co., of Toronto is associated. This company have just issued a descriptive and illustrated catalogue detailing the merits of expanded metal for various purposes, which they will be pleased to mail upon application.

The December number of "Graphite," published by the Jos. Dixon Crucible Co., Jersey City, N.J., contains a number of interesting articles in keeping with its name.

Onward (Toronto: William Briggs, Publisher), for December 6th, is a special Christmas number, full of Christmas stories, pictures, and poems. Price, \$1.00 a hundred. For a sixteen-page paper, with twenty-nine cuts, this is a remarkably good cent's worth.

The Packard Electric Co., of St. Catharines, Ont., is sending out matter describing their Type R. Packard Transformers for use in central power plants. This new type of transformer gives an increased efficiency, and embraces other new features.

The Underfeed Stoker Co. has issued a pamphlet on "Power Plant Efficiency" containing information bearing on the Jones Underfeed Stoker.

Joseph Johnson, of 159 W. Frambes Ave., Columbus, O., has issued matter describing a new extension machine drill embodying new features, and which he is now offering.

The illustrated catalogue of the Milton Pressed Brick Co., of Milton, Ont., is a most artistic publication, and one which will be found of interest to every person interested in the building trades.

Catalogue No. 7, published by the C. O. Bartlett & Snow Co., of Cleveland, O., describes that company's elevating, conveying and general mill machinery of all kinds.

The London fence machine, manufactured by the London Fence Machine Co., of London, Ont., is described in detail in a recent catalogue. The machines are hand operated, and are shown under working conditions in the manufacture and erection of wire fencing.

Noble's Dominion Detective Agency of Toronto has issued a neat booklet outlining their work and containing numerous testimonials of their efficient services.

# MARKETS.

This Department of THE CANADIAN MANUFACTURER is devoted to the interests of the Hardware Trade.

THE CANADIAN MANUFACTURER is distributed to the Wholesale and Retail dealers in Hardware, to manufacturers of Agricultural Implements, of Iron and Wood-working Machinery, of Electrical Appliances, of Steam Engines and Boilers, to Engineers and Foundrymen, and to Dealers in Machinery and Steam Fitters' Supplies throughout Canada. There are more than 10,000 manufacturing concerns in Canada which use Steam as a Motive Power. We reach them all. Every recipient of this paper is a buyer of Hardware of one kind or another; and Advertisers will do well to bear this in mind.

Following are reports and observations relating to the markets of Canada and elsewhere, having reference to Hardware, Metals, Paints, Oils and such specialties as are usually handled by jobbers and dealers in such goods. Following these items will be found current market quotations on such goods, and the trade are requested to suggest to the publishers any improvements by which it is believed the quotations may be rendered as correct and valuable as possible.

TORONTO, December 5, 1902.

The past week has been rather quiet both in retail and wholesale circles, notwithstanding that the weather was, on the whole, more favorable, probably, than for some time past. The few slight falls of snow which have occurred have barely covered the ground, but in the city where the pavements are smooth and the frost has taken effect upon the slush which covered the ground there is no impediment to locomotion. Out of the city the snow has not improved matters much; in fact, it has not actually been detrimental. This has kept a number of customers out of the city. The retail trade is in good shape for the holiday season, and the dry goods windows have assumed the appearance so attractive to both children and grown-up people.

Christmas is less than three weeks away, and the toy shops and candy and other stores which retail the wares which are in request at that season, are feeling the effect of its approach.

Navigation has now closed, to all intents and purposes, and if there are a few boats still running no freight of any consequence is being intrusted to them, as a night or so of sharp frost would freeze everything up. Consequently the activity which prevails towards the end of each season, owing to the desire to secure the low water freights, has given place to the customary lull which succeeds it.

THE TORONTO MARKET. — Prices are substantially as last reported.

Barbed Wire—\$2.67½ to \$2.90 per 100 lbs.

Binder Twine—650 ft., 15c; 600 ft., 14c; sisal, 500 ft., 11½c.

Building Paper—Dry sheathing, 35c; tar sheathing, 45c.

Bolts and Nuts—Carriage bolts, common, \$1 list, 50 per cent.; carriage bolts, full square, \$2.40 list, 55 and 10 per cent.; carriage bolts, Norway iron, \$3 list, 55 and 10 per cent.; machine bolts, all sizes, 50 and 10 per cent.; coach screws, 66½ and 10 per cent.

Cement—Canadian Portland, \$2.80 to \$3.20; Canadian hydraulic cements, \$1.35 and upwards.

Cut Nails—\$2.40 to \$2.50.

Galvanized Wire—Nos. 6, 7 and 8, \$3.20; No. 9, \$2.55; No. 10, \$3.50; No. 11, \$3.40; No. 12, \$2.70; No. 13, \$2.80; No. 14, \$3.80; No. 15, \$4.30; No. 16, \$4.55.

Green Wire Cloth—\$1.40 per 100 square feet.

Harvest Tools—60 and 10 per cent.

Horse Nails—"C" brand, oval, 40, 10 and 7½ per cent.; "M" brand, 50, 10 and 5 per cent. off; countersunk, 60 p.c.

Horseshoes—No. 2 iron shoes, light, medium and heavy, \$3.45 f.o.b.; snowshoes, \$3.70.

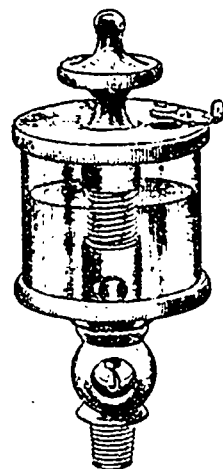
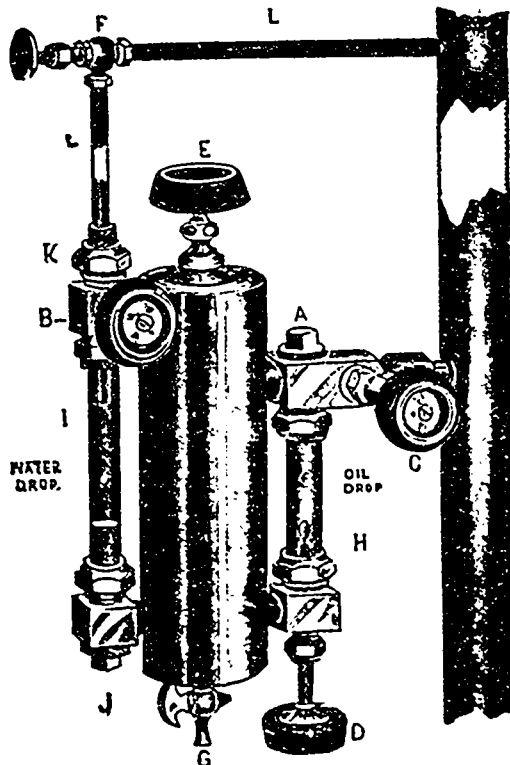
Iron pipe—Black, 1 inch, \$5.20; galvanized, 1 inch, \$7.20.

Poultry Netting—2-inch mesh, 19 w.g., 60 per cent. off the list; 2-inch mesh, 18 w.g. and heavier, 50 and 10 per cent.

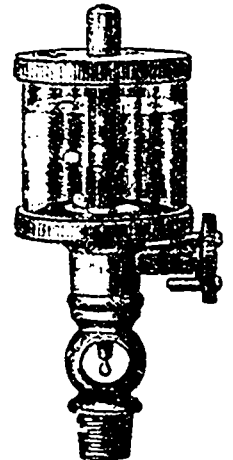
Rope—Pure Manila, 15c; sisal, 12½c; British Manila, 13c; lath yarn, 11½c to 12c.

Rivets and Burrs—Iron rivets, 60 and 10 per cent.; iron burrs, 55 per cent.;

# Sight Feed LUBRICATORS



And



## Engine Glass Oilers

OF EVERY DESCRIPTION.

# Hamilton Brass Mfg. Co. Limited

HAMILTON, ONT.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

copper burrs, 30 and 10 per cent. ; copper rivets and burrs, 45.

Smooth Steel Wire—Base price, \$2.60 per 100 lbs. ; fine steel wire, 25 per cent.

Spades and Shovels—40 and 5 per cent.

Wire Nails—Base price, \$2.50 to \$2.55

Screws—Flat head, bright, 87½ and 10 per cent. off the list ; round head, bright, 82½ and 10 ; flat head, brass, 80 and 10 per cent. ; round head, brass, 75 and 10 per cent. ; flat head, bronze, 70 per cent. ; round head, bronze, 65 per cent.

Old Material—Agricultural scrap, 60c ; machinery cast, \$14 to \$15 ; stove plate, \$10 ; No. 1 wrought, \$13 per ton ; No. 2, \$1.50 ; new light scrap copper, 8c to 8½c ; coil wire, scrap, 10c ; light brass, 5c to 5½c ; heavy yellow brass, 8c to 8½c ; heavy rod brass, 9½c ; scrap lead, 2c to 2½c ; zinc, 3c ; scrap rubber, 6½c ; good country mixed rags, 50c.

Antimony—9c per lb.

Bar Iron—Price for Common, \$2.05 up per 100 lbs.

Black Sheets—28-gauge, \$3.15 ; dead flat, 26-gauge, \$2.50.

Brass—Sheet and rod, discount 15 per cent.

Canada Plates—All dull, \$2.90 to \$3 per box ; half-polished, \$2.85 to \$3.10, and all bright, \$3.75 to \$3.85.

Copper—Ingot copper at 13c per lb., and 22c to 23c for sheet.

Galvanized Sheets—\$1.30 to \$1.50.

Lead Pipe—Discount 35 per cent.

Pig Iron—No. 1, \$23 ; No. 2, \$22.50.

Pig Tin—31c to 32c.

Pig Lead—3½c to 3½c.

Solder—Half and half, 20c ; refined, 19c ; wiping, 18½c.

Tool Steel—B. C. and black diamond, 10c to 11c.

Spelter—5c to 6c per lb.

Tin Plates—I. C., \$4.75 to \$5 ; cokes, \$1.25.

Terne Plates—\$8.50.

Tinned Sheets—7½c to 8c.

Zinc Sheets—6c to 6½c.

MONTREAL PRICES.—Following are the quotations in the principal Montreal lines corrected to date :

Bar Iron—Merchants' bar, \$1.95 per 100 lbs., in small quantities.

Black Sheets—\$2.40 for 8 and 16 gauge per 100 lbs.

Galvanized Iron—No. 28, Queen's Head, \$4.40 ; Apollo, 10½ ounces, \$4.40, and Comet, \$4.25, with 25c extra in less than case lots.

Ingot Tin—31c per lb.

Lead—\$3.25 per 100 lbs.

Terne Plates—\$7.50 per box.

Lead Pipe—7c for ordinary, and 8c for composition waste, with 37½ per cent. off.

Iron Pipe—Black pipe, ½, \$2.40 per 100 feet ; ¾, \$2.65 ; 1, \$3 ; 1½, \$3.70 ; 1 inch, \$5.25 ; 1¼, \$7.40 ; 1½, \$8.90 ; 2 inches, \$12.40 ; galvanized ½, \$4 ; ¾, \$5.05 ; 1 inch, \$7.25 ; 1¼, \$10.10 ; 1½, \$12.15 ; 2 inches, \$16.70.

Coil Chain—No. 6, 12½c ; No. 5, 10½c ; No. 4, 10c ; No. 3, 9½c ; ¼ inch, 7½c per lb. ; 5-16, \$5.05 ; 3-5, \$4.40 ; 7-16, \$4.20 ; ¼, \$4 ; 9-16, \$3.95 ; ½, \$3.70 ; ¾, \$3.65 ; 1, \$3.65. In carload lots an allowance of 10c is made.

Sheet Zinc—In cask lots, \$5.50 ; in less, \$5.75.

# "SCIOTO" FIRE BRICKS

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

LET US TELL YOU ABOUT THEM.

WE HAVE NO MIDDLE MEN.

—MANUFACTURED AND SOLD DIRECT BY—

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

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

## THE GARTSHORE-THOMSON PIPE & FOUNDRY CO. Limited

### GAST IRON PIPE

3 in. to 60 in. diameter.

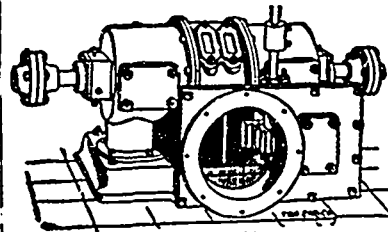
**For Water, Gas, Culverts and Sewers**

Special Castings and all kinds of

FLEXIBLE AND FLANGE PIPE.

**WATER WORKS SUPPLIES**

**HAMILTON, ONT.**



Horizontal Type.

### "LITTLE GIANT" TURBINE

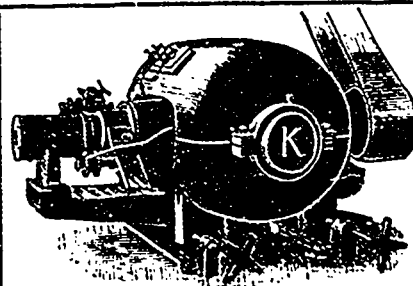
....FOR ALL PURPOSES....

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.**



Special Attention Given to Electrical Repairing.

### THE KAY ELECTRIC DYNAMO & MOTOR COMPANY, Limited

219-221 Queen St. East,

Manufacturers of — TORONTO, ONT.

MULTI-POLAR MOTORS.

BI-POLE MOTORS

ALTERNATING CURRENT MOTORS.

INDUCTION MOTORS.

DYNAMOS for Incandescent and Arc Lighting.

DYNAMOS for Electro-plating and Electrotyping.

ELECTRIC CONTROLLERS for Elevators.

ELECTRIC ORGAN BLOWERS.

## Schoellkopf, Hartford & Hanna Co., BUFFALO, N.Y.

### Aniline Colors, Dyestuffs, Chemicals

Manufacturers of

NEW YORK, BOSTON, PHILADELPHIA, PROVIDENCE, CHICAGO,

MILWAUKEE, CINCINNATI, KANSAS CITY, NEENAH, WATERTOWN.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



### Annexation Sale

I am annexing a large new warehouse to my already spacious quarters, to avoid trouble and expense of moving, a portion of the following machinery will sell at very close figures:-

**BOILERS.**

- 72" x 18 1/2" 95-3" Tubes Horizontal Tubular.
- 48" x 19 1/2" 33-3" " " " "
- 26" x 36" 15-3" " Economist " "
- 30" x 7 1/2" 22-3" " " " "
- 19" x 41" 13-2" " Vertical Petrie No. 2, Tub'l'r
- 19" x 41" 9-3" " " " " No. 1.
- 30" x 60" 51-2" " " " " Submerged " "
- 55" x 72" 120-2" " " " " " "

**ENGINES.**

- 10" x 10" Peerless Self-Oiling, Leonard make.
- 11" x 10" " " " " " "
- 11" x 13" Jewel Automatic, Dutton " "
- 10 1/2" x 16" Slide Valve, Goldie & McCulloch make.
- 50 h.p. Tandem Compound, Kelly Gaborne make.
- 14 h.p. Double Cylinder Hoisting Engine.

**GAP SCREW CUTTING ENGINE LATHES.**

- 15" x 22" x 14" Bed, Sebastian make.
- 21" x 40" x 10" " " " " " " London Tool Co. make.
- 14" x 22" x 6 1/2" " " " " " " Sebastian make.
- 25" x 42" x 20" " " " " " " London Tool Co. make.

**SCREW CUTTING ENGINE LATHES.**

- 35" x 22" Bed, London Tool Co. make, New.
- 24" x 10" " " " " " "
- 21" x 12" " " " " " "
- 21" x 16" " " " " " "
- 14" x 6" " " " " " " Porter make.
- 21" x 8" " " " " " " G. A. Crosby Co. make.

**BOLT CUTTERS.**

- No. 1 Capacity 1/4 to 1 1/2" Acme London make.
- No. 1 1/2 " 1/2 to 1 1/2" " " " "
- No. 2 " 1/2 to 2" " " " "
- No. 1 1/2 Bolt and Nut Threading Machine.

**EMERY GRINDERS.**

- Small Double Grinders with Countershaft.
- Large " " " " " " Pedestal.

Monthly Stock list and Prices sent on request.

## H. W. PETRIE,

131-33-35-37-39-41-43-45 Front St. West,  
8-10-12-14-16-18-20-22 Station Street,  
TORONTO

Established  1799.  
By Special Warrant.

## EXPORT TRADE

Canadian Merchants and Manufacturers desiring to do business with

GREAT BRITAIN, THE COLONIES or FOREIGN COUNTRIES

will do well to consult

### KELLY'S DIRECTORY

OF THE

MERCHANTS, MANUFACTURERS AND

### SHIPPERS OF THE WORLD.

(Endorsed by the British Government).

The 17th edition of which is being prepared. In addition to the Classified Trade Lists of the Importers and Exporters, Merchants and Manufacturers of the United Kingdom and all principal trading centres of the World, it gives the Customs Tariffs for every country and all classes of goods. The work contains over 4,000 pages, and gives more information than any other work published.

Highest Award, Gold Medal, Paris, 1900  
For further particulars, apply,

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.

Antimony—10c a lb.  
Timplates—\$4.25 for coke; \$4.75 to \$5.25 for charcoal.

Canada Plates—52's, \$2.70 to \$2.80; 60's, \$2.80 to \$2.90; 75's, \$2.80 to \$2.85; full polished, \$3.75; and galvanized, \$4.25 to \$4.35.

Tool Steel—Black Diamond, 8c; Jessops, 13c a lb.

Steel—Sleighshoe, \$2.20; tire, \$2.30; spring, \$3; reeled machinery, \$2.85, and toe calk, \$2.90.

Barbed Wire—\$2.90 per 100 lbs f.o.b. Montreal in less than car lots.

Horseshoes—Iron shoes, light and medium patterns, No. 2 and larger, \$3.35; No. 1 and smaller, \$3.60; snowshoes, No. 2 and larger, \$3.60; No. 1 and smaller, \$3.85; X.L. steel shoes, all sizes, 1 to 5. No. 2 and larger, \$3.45; No. 1 and smaller, \$3.70; featherweight, all sizes, \$5; toe weight steel shoes, all sizes, \$6 25 f.o.b.

Horse Nails—Discount of 57 1/2 per cent. on oval heads, and 65 per cent. on countersunk heads; C brand, discount of 40, 10, 7 1/2 per cent.

Wire Nails—\$2.55 in small lots, and \$2.50 for car lots, f.o.b. Montreal.

Cut Nails—\$2.45 for small lots, and \$2.40 for car lots.

Building Paper—Tarred felt, \$1.70 per 100 lbs.; 2-ply ready roofing, 85c per roll; 3-ply, \$1.10 per roll; carpet felt, \$2.25 per 100 lbs.; dry sheathing, 35c per roll; tar sheathing, 45c per roll; dry fibre, 50c per roll; tarred fibre, 60c per roll; O. K. and I.X.L., 65c. per roll; heavy straw sheathing, \$30 per ton; slaters' felt, 60c per roll.

Cordage—Manila, 14c per lb for 7-16 and large; sisal, 12c per lb., and lath-yarn, 11c lb.

Scythes—Cast steel, \$5; Clipper, \$6; Climax, \$6.50; concave, \$7; grain, \$10; bush., \$6.

Galvanized Wire—No. 5, \$3.70; 6, \$3.15; 7, \$3.15; 8, \$3.15; No. 9, \$2.65; No. 10, \$3.20; No. 11, \$3.25; No. 12, \$2.80; No. 13, \$2.90; No. 14, \$3.75.

Smooth Steel Wire—Bright iron and annealed on a base of \$2.60 per 100 lbs., f.o.b. Montreal, Toronto, Halifax, London, Hamilton and St. John. Net extras per 100 lbs. are as follows. Coppered wire, 60c; tinned wire, \$2; oiling, 10c; spring wire, \$1.25; best steel wire, 75c; bright, soft drawn, 15c; special hay-baling wire, 30c.

Fine Wire—The discount is 25 per cent.

Brass and Copper Wire—Discount, 52 1/2 per cent.

Fence Staples—Bright staples sell for \$2.90 per 100 lb. keg, and galvanized at \$3.25, with an extra of 25c for 25 and 50 lb. packages.

Harvest Tools—Discount of 60 per cent. and 10 per cent. off list prices for balance of 1902 and for season of 1903.

Oils and Putty—Turpentine, 76c per gal.; linseed oil, raw, 75c; boiled, 78c; Newfoundland pure prime cod, 32c; castor oil, 8 to 10c; putty, in bulk, bbls., \$1.90; in bladders, per 100 lbs., in bbls., \$2.25; bladders, in boxes, \$2.40; tins, \$2.25 to \$2.65.

Glass—First break, per 50 feet, \$2.10; second break, per 50 feet, \$2.20; per 100 feet, third break, \$4.70; fourth break, \$4.95; fifth break, \$5.20; sixth break, \$5.70; seventh break, \$6.20.

Leads and Paints—White lead, Government standard, \$5 to \$5.25; exterior, \$4.75; No. 1 grade, \$4.65; No. 2 grade, \$4.50; red lead, pure, in casks, \$4.50; in kegs, \$4.75; No. 1, in casks, \$4.25; in kegs, \$4.50; pure mixed paints, \$1.20 gallon.

BRITISH PIG IRON MARKET.—Messrs. William Jacks & Co., 49 Leadenhall street, London, E. C., England, under date of November 21, 1902, quote as follows:

Since writing you last prices have fallen further for all classes of pig iron, and to-day's quotations are as follows:

No. 1 Gartsherrie, 64/9 per ton, f.o.b. Glasgow. No. 2 Gartsherrie, 59/- per ton, f.o.b. Glasgow. No. 3 Foundry Middlesbro, 50/- per ton, f.o.b. makers wharf including dues. Nos. 1, 2, 3 Cumberland Hematite 66/3 per ton, f.o.b. Liverpool. Special analysis, 70/- per ton f.o.b. Liverpool. Refined D.T.N. Hematite in small pigs, 84/- per ton f.o.b. Liverpool.

IMPERIAL PARCEL POST.—In answer to an inquiry, Hon. Mr. Paterson, Minister of Customs, has furnished the following statement of the conditions governing the prepayment of customs duty on parcels sent from Great Britain to Canada. "When the Postmaster-General and myself were in London last summer we concluded an arrangement with the Imperial Postoffice Department, whereby the senders of parcels by post from Great Britain to Canada would be enabled to arrange for the prepayment of the customs duty payable thereon in Canada, and I expect it to go into operations in Britain in the course of a few weeks. The sender of a parcel will be required

## GALVANIZING

We are prepared to attend to all orders Promptly and Economically.

WINDMILLS, PUMPS, TANKS, Etc.  
ONTARIO WIND ENGINE and PUMP CO.  
LIMITED,  
95 ATLANTIC AVE., TORONTO.

## :: PLATING ::

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

MANUFACTURERS OF METAL SPECIALTIES  
BRANTFORD PLATING CO., Brantford, Can.



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.

to make a deposit, equal to 10 per cent. of the value of the contents, with the postoffice at the place of mailing, and also to enter into an agreement with the postoffice authorities to pay the difference if the actual duty properly payable (as determined on arrival of the parcel at its destination in Canada) be greater than the amount of the deposit. Correspondingly, I understand, a refund will be allowed if the duty is less than the deposit. I believe in addition to this deposit of 10 per cent. a small fee for handling (6d.) is charged on such parcel by the Imperial Postoffice Department. The Imperial Postoffice Department take all the responsibility upon their shoulders, and guarantee to us the payment of the full duties which may be determined upon appraisement of the parcels on their arrival in Canada. The arrangement does not involve any material change in our method of treating parcels arriving by mail from Great Britain. They will continue to be sent to the nearest customs office to the place of destination, at which office the duty will be determined and marked on a bill which accompanies parcels duty prepaid. Parcels of this class will then be handed over to the parties to whom they are addressed. The bills showing the duty payable on prepaid parcels will be forwarded by the various customs officers throughout the Dominion to headquarters, where they will be assembled and the necessary steps will then be taken to secure payment from the Imperial Postal Department."

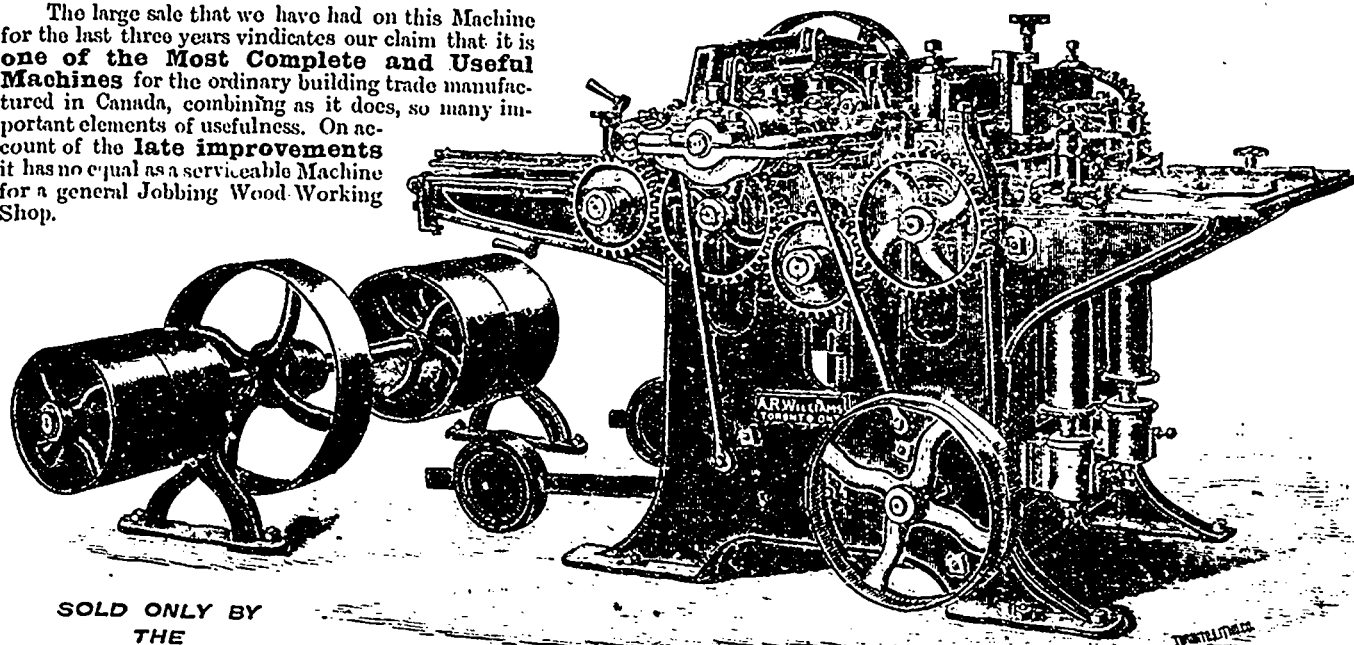
**SOUTH AFRICAN TRADE.**—Reporting to the Department of Trade and Commerce from Cape Town, October 15, Mr. J. G. Jardine, Canadian trade agent in South Africa, states that substantial reductions have been made by the Transvaal Government on the duties for foodstuffs and on the necessities of industrial production. The tariff as amended must be regarded, however, as only provisional. The desire of the Transvaal Government is ultimately to enter a South African customs union, unless it is shown that material reductions in the cost of food products, timber and woodenware, machinery, etc., are not possible under such a revised customs union embracing the whole of South Africa. A remark by Sir Gordon Sprigg is quoted as showing his sympathy with the idea of a general customs union, and Mr. Jardine states that the Natal Parliament in November will likely revise their tariff so as to harmonize with the changes in the Transvaal. The following articles are on the free list:—Agricultural implements, machinery of all kinds, cement, iron, timber (including ceiling and flooring boards), plane, tongued or grooved plane boards, unshaped and poles. Wood products are admitted at 7½ per cent. ad valorem, also manufactured wood, cotton, prints, clothing, leatherware, linen goods, furniture oil, blankets, pianos and organs, and bicycles. The returns for 1900 and 1901, Mr. Jardine says, and also for the first six months of 1902, show an unbroken

advance for British imports in South Africa, notwithstanding freight rings and United States, Australian and German competition. Whereas the British imports at Cape Colony and Natal ports and Delagoa Bay amounted in 1900 to only \$65,000,000, at the close of the present year they are expected to reach \$120,000,000. The United States is increasing its exports to South Africa in cheap and light agricultural implements, builders' hardware and tools, freight and tram cars, cycles, automobiles, boots and shoes, and foodstuffs. The commissioner at Pretoria claims that British and Canadian implement makers do not turn out the cheap kind of plows, and so they have to be got from the United States. Mr. Jardine would like to hear from Canadians on the subject.

**PROTECTION FOR MANUFACTURERS.**—Industrial concerns throughout the country are fast coming to recognize the necessity of some adequate system of keeping in close touch with all the inner details of their establishments. In all industrial plants where a large number of men are employed there is always more or less friction which works to the detriment of the employer. In times of strikes and labor troubles the necessity of keeping in close touch with the doings of the labor organizations is of special value. An organization which has been doing much good work along these lines is Noble's Dominion Detective Agency of Toronto. This agency, which undertakes all lines of confidential work for

## IMPROVED "ECLIPSE" PLANER, MATCHER and MOULDER

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



SOLD ONLY BY  
THE

**A. R. WILLIAMS MACHINERY CO., Limited, Toronto**

Manufacturers, Importers and Dealers in

**ENGINES, BOILERS AND MILL MACHINERY SUPPLIES**

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

manufacturers and other business concerns, has been meeting with great success, having been instrumental in ending a number of strikes in different parts of the country. This Agency was established about two years ago by Mr. Alex. F. Noble, a native of Toronto, who for many years was Superintendent for Pinkerton's National Detective Agency, and Chief Special Agent of the Great Northern Railroad.

**THE A. S. M. E.**—The American Society of Mechanical Engineers has sent us the programme for its forty-sixth annual meeting which was held at the headquarters of the society in New York, December 2 to 5. The program included the following papers: "Apparatus for Obtaining Continuous Record of the Position of an Engine Governor," J. C. Riley; "Fly Wheel Capacity for Engine Driven Alternators," Wm. Kent; "A Forty-four-Foot Pit Lathe," J. M. Barney; "Finer Screw Threads," Chas. T. Porter; "Gift Proposition for Paying Workmen," Frank Richards; "Deflection of Beams by Graphics," W. Trinks. Discussions were also held on "Smoke Consumption," "Elastic Resistance," "Oil Burners," and "Oil Tempering of Steel." The society will meet at Saratoga in 1903.

**THE EXHIBIT FOR JAPAN.**—Mr. Wm. Hutchison, Dominion Exhibition Commissioner, has about completed the collection for the Japan Exhibition, to be held in Osaka next year. These will constitute over six carloads, representing everything produced or manufactured in

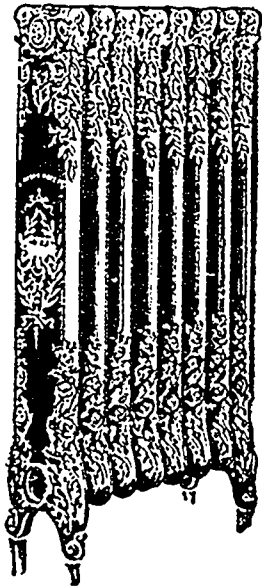
Canada. Mr. Hutchison, who will leave for Japan about the first of the new year, will take with him a complete baking outfit, for the purpose of demonstrating how Canadian flour can be manufactured into first-class bread. It is intended by practical demonstrations to show the Japanese that Canadian flour makes equally as good and better bread in some grades than the American product, which at present has the preference on the Japanese market.

**BRICK MANUFACTURERS ORGANIZE.**—The Brick Manufacturers of Ontario at a meeting held in London last week took steps toward forming an organization similar to those now in existence in the United States. The following officers were chosen: president, B. E. Bechtell, Waterloo; vice-president, Robt. J. McCormick, Warwick; secretary, Alex. Johnston, London; treasurer, Henry Jaues, Delaware; executive committee, Messrs. J. W. Cawse, London, and John Karn, Brownsville.

**SOCIETY OF CHEMICAL INDUSTRY.**—The Canadian section of the Society of Chemical Industry met in Webb's parlors, Toronto, the night of November 25 with the chairman, Prof. W. R. Lang, presiding. The principal feature of the evening was a symposium on the use of trained chemists in industrial concerns, and how the chemist may benefit the manufacturer, those taking part being Prof. Van der Linde, Mr. J. P. Murray, Dr. Smale, Dr. Ellis, Prof. Mavor, and Prof. Miller.

Papers were also read by Dr. F. B. Allan on an analysis of volcanic dust from Mont Pelee, and a summary read by the chairman of a paper prepared by Messrs. J. H. James and J. M. Nissen, of Sault Ste. Marie, on a technical analysis of ferro-nickel briquettes. The next meeting will be held in the University chemical building on December 18.

**NATIONAL IRON FOUNDERS' ASSOCIATION.**—At the convention of the National Ironfounder's Association, held in Detroit on November 20 and 21, the following Canadian officers were elected: Seventh district—C. Bermingham, chairman, Canadian Locomotive Co., Kingston, Ont.; William Angus, vice-chairman, Canada Switch & Spring Co., Montreal; Charles H. Carrier, Carrier, Laine & Co., Levis, Que.; G. W. Watts, Canada Foundry Co., Toronto; H. Cockshutt, Cockshutt Plow Co., Brantford, Ont. The following Canadian manufacturers attended the convention: Jos. Wright, Dominion Radiator Co., Toronto; C. F. Wheaton, Dodge Mfg. Co., Toronto; Geo. W. Watts and R. H. Gilmore, Canada Foundry Co., Toronto; S. H. Chapman, Ontario Wind Engine & Pump Co., Toronto; John M. Taylor, Taylor-Forbes Co., Guelph, Ont.; C. H. Carrier, Carrier, Laine & Co., Levis, Que.; Wm. Inglis, John Inglis & Sons, Toronto; F. T. Frost, Frost & Wood Co., Smith's Falls, Ont.; T. J. Drummond, Montreal Pipe Foundry Co., Montreal; Wm. Hamilton, Wm. Hamilton Mfg. Co., Peterboro, Ont.



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, sufficient to suit the most exacting.

Send for Catalogue on  
up-to-date Heating.

**THE DOMINION RADIATOR CO., Limited,**  
**TORONTO**

HEAD OFFICE, - - DUFFERIN STREET



**DON'T MENTION IT!** NO SUBSTITUTE WILL DO AS WELL

**PERFECTED  
GRANITE  
ROOFING**

Has been PROVED to be the BEST roofing and siding for Collieries, Breakers, Smelters and all Mine Buildings. Easily applied, neat appearing, unaffected by weather or gases, needs no attention, and

**LASTS FOR YEARS**

WRITE TO-DAY FOR SAMPLES AND SPECIAL PRICES

**Eastern Granite Roofing Co.,** Gerken Bldg. Suite 81-87  
NEW YORK.

**FIRE PREVENTION FOR MACHINE SHOPS.**—The writer can confidently assert, from a fairly extended observation, that there is no safe way of passing a metal boiler stack through a wooden roof. Large thimbles, asbestos backing, good ventilation, etc., are usually deemed sufficient, usually approved by insurance men, and are sometimes, but by no means always, permanently successful. The tricky nature of baked wood exposed to intermittent radiant heat is such that no man can tell whether it will ignite at all, or ignite in six months, or in ten years. The only sure method of fire prevention where a metal boiler stack passes through a roof is to make the roof all metal, or tile, or equivalent for a large section, say, about eight feet square, with the stack passing through the centre of the special section of roof.

The hazard of spontaneous combustion from shop sweepings and oily waste is probably universally understood. The use of oily waste cans and trash cans of all kinds is open to some question. Oily waste and trash cans are innocent enough if some regular system of discipline exists whereby they are regularly emptied at night. While oily waste cans are built on legs and with spring top covers for the purpose of confining any fire which may arise from spontaneous combustion material within the cans, few shopowners would deliberately care to trust one of these cans to confine such a fire as is invited every time a can full of waste or trash is left over night in the shop. Certain shops decline to use any waste or

trash cans and throw all waste out to the middle of the floor, at the same time making provision for regular cleaning particularly before nightfall. In this way all objectionable matter is wholly removed promptly. Oily waste cans are insisted on by insurance interests in some localities, and, again, are preferred by some shop managers; but caution is always needful to have the cans emptied regularly at night, and the same rule should be applied to trash boxes, bins, or carts, all of which should be of metal rather than of wood.

Any flue from a brass furnace or other closed draught passage carrying hot gases should be examined by feeling with the hand where the flue passes through the roof. It is a peculiarity of some such flues that although the hand may be placed on them without inconvenience at points relatively near the source of original heat, they may be much hotter, dangerously hot, in fact, near the free air outlet of the flue. Whether this is due to a recombustion of gases as the stream of heated gases reaches the fresh oxygen of the outer air, is left to the conjecture of those who care to meditate thereon, but it is a fact that a flue may be cool near the furnace and very hot near the roof. Such flues can be cured by lengthening them so that the hot portion or part near the outlet is carried up or away clear of all woodwork or buildings.—Albert Blauvelt in Cassier's Magazine.

THE FIRST COAL OIL BURNER.—(Sa-

turday Musings in Hamilton Spectator.)—Away back in the year 1858 the first coal-oil burner made in Canada was turned out of a little back room on John street in what was known in those days as the Elgin block. You do not hear the block called by that name now, but old timers will know where it is located. It is on John street north, between King and King William street. Robert Young, a young Scotch plumber, who had come from his native heath to Hamilton in 1854, had a plumbing shop in the room on the corner of the alley. Above him was the old Canada Christian Advocate printing office. Robert was doing business in a small way, but he had pluck and energy, and when coal-oil lamps were coming into use over in the United States he went to Philadelphia and bought a lathe and the necessary tools, and hired a German, who was an expert in making the new burners. At first he confined his business to changing the burners on camphene and burning fluid lamps, and this kept him busy, for as soon as the people saw what a great difference there was in the light and its safety over camphene and burning fluid they were quick to adopt the new method, and the story of Aladdin and his wonderful lamp, new one for old, was repeated in Bob Young's back shop on John street. The coal oil of those days was far different from the refined oil now in use; it was a heavy, black oil and emitted a disagreeable odor in burning. One of the first burners made by Robert Young did service till a few years ago,

ROCK  
DRILLS

**THE CANADIAN RAND DRILL CO.**  
**SHERBROOKE, QUE.**  
BRANCH-OFFICES IN  
MONTREAL, QUE. TORONTO, ONT. HALIFAX, N.S.  
ROSSLAND, B.O. RAT PORTAGE, ONT. GREENWOOD, B.C.  
VANCOUVER, B.C.

AIR  
COMPRESSORS  
GAS

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER

far from Hamilton, and the owner has yet the iron stand of that old camphene lamp that was transformed into a coal-oil burner. The enterprise was not a profitable one for Mr. Young, as the larger manufactories in the United States were able to undersell him because of their greater facilities. That old lathe on which the first coal-oil burner was made in Canada is now stored away with other old tools and machinery in a room over Stewart's plumbing shop, on John street. There was not much manufacturing done in Hamilton away back in the fifties, for there was no protective tariff then to justify men with small capital to run the chance of competing with larger concerns in other countries that could swoop down on the young Canadian industry and wipe it off the face of the earth. The lathe, the relic of bygone days, should be rescued from the cobwebs and dust and have a place of honor in the Dundurn park museum; and Robert Young's picture should hang over the lathe so that future generations would know the features of the man who made the first coal-oil burner in Canada.

**SOO CANAL TRAFFIC FOR OCTOBER.**—The aggregate tonnage of the American "Soo" canals for October was 3,503,068 tons east bound, and 510,510 west bound, while 525,015 tons passed eastward through the Canadian canal and 79,698 tons westward. The net registered tonnage of the vessels passing through the American canals was 3,663,448 tons and through the Canadian canal 617,749 tons. During the month 2,217 vessels locked through the American canal and 620 through the Canadian.

**RECOVERY OF TIN FROM TINPLATE SCRAP.**—B. A. Bergman, a Swedish chemist, introduces the scrap into an iron vessel filled with a solution of caustic alkali, together with a depolarizer, such as copper oxide. Electrical action sets up, the scrap is stripped and the tin goes into solution as stannate of the alkali. When a saturated solution is obtained, the tin is precipitated as oxyhydrate by means of a current of carbon dioxide. The precipitate is filtered off, dissolved in acid and tin is separated electrolytically.

## CLASSIFIED INDEX.

### Abrabives.

Canadian Corundum Wheel Co., Hamilton, Ont.  
Petric, H. W., Toronto.  
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.

### Aluminum

Syracuse Smelting Works, Montreal.

### Angles, Beams and Girders

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

### Antimony

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

### Architects

Neil, James M., Toronto.  
Parke, R. J., Toronto.

### Axles

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

### Babbitt Metal

Petric, H. W., Toronto.  
Samuel, M. & L. Benjamin & Co., Toronto.  
Syracuse Smelting Works, Montreal.  
Tallman, J. N., & Sons, Hamilton, Ont.

### Bar Iron and Steel

Bourne-Fuller Co., Cleveland, Ohio.  
Rico Lewis & Son, Toronto.  
Samuel, M. & L. Benjamin & Co., Toronto.

### Belting and Supplies

Bristol Co., Waterbury, Conn.  
Carrier, Laine & Co., Levis, Que.  
Fleming, W. A., & Co., Montreal.  
McLaren, D. K., Montreal.

### Bobbins

Wilson Bros. Bobbin Co., Liverpool, England.

### Bolt Taps

Butterfield & Co., Rock Island, Que.

### Brass

Samuel, M. & L. Benjamin & Co., Toronto.  
Tallman, J. N., & Sons, Hamilton, Ont.

### Brass Founders

Hamilton Brass Mfg. Co., Hamilton, Ont.  
McDougall, R. Co., Galt, Ont.  
McKinnon Dash & Metal Works Co., St. Catharines, Ont.  
Tallman, J. N., & Sons, Hamilton, Ont.

### Canada Plates

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

### Canoes

Peterborough Canoe Co., Peterborough, Ont.

### Card Clothing

Riley, C. E., & Co., Boston, Mass.

### Carts

Milner Petrolca Wagon Co., Petrolca, Ont.

### Cast Iron Pipe

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

### Cement

Canada Portland Cement Co., Deseronto, Ont.  
Hyde, F., & Co., Montreal.  
Owen Sound Portland Cement Co., Owen Sound, Ont.

### Channels

Bourne-Fuller Co., Cleveland, Ohio.  
Nova Scotia Steel & Coal Co., New Glasgow, N.S.  
Samuel, M. & L. Benjamin & Co., Toronto.

### Charcoal Pig Iron

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

### Chemicals and Dye Stuffs

Bellhouse, Dillon & Co., Montreal.  
Renson, W. T., & Co., Montreal.  
Blagden, Waugh & Co., London, England.  
Brunner, Mond & Co., Northwich, England.  
Keller, John J., & Co., New York City.  
Klipstein, A. & Co., New York City.  
McArthur, Cornello & Co., Montreal.  
Schoellkopf, Hartford & Hanna Co., Buffalo, N.Y.  
Winn & Holland, Montreal.  
Wright & Dallyn, Hamilton, Ont.

### Chemists

Archbold, Dr. Geo., Prescott, Ont.  
Nell, J. M., Toronto.

### Clothboard

Patent Cloth Board Co., Parry Sound, Ont.

### Coal and Coke

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

### Consulting Engineers

Parke, Roderick J., Toronto.  
Stanyon Engineering Co., Toronto.

### Convoing Machinery

Dodge Mfg. Co., Toronto.  
Perrin, William R., & Co., Toronto.  
Williams & Wilson, Montreal.

### Copper Materials

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

### Corundum.

Canadian Corundum Wheel Co., Hamilton, Ont.

### Corundum Wheels.

Canadian Corundum Wheel Co., Hamilton, Ont.  
Petric, H. W., Toronto.  
Rico Lewis & Son, Toronto.

### Crucibles

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

### Detective Agencies

Noble's Dominion Detective Agency, Toronto.

### Drills

Bertram, John, & Sons Co., Dundas, Ont.  
Canadian Hand Drill Co., Sherbrooke, Que.  
Cooper, James, Mfg. Co., Montreal.  
London Machine Tool Co., London, Ont.  
Petric, H. W., Toronto.

### Dust and Shavings Separators

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

### 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.  
Rehder Plating & Mfg. Co., Thorold, Ont.

### Elevators

Canadian Otis Elevator Co., Toronto.  
Darling Bros., Montreal.  
Williams & Wilson, Montreal.

### Emery

Forman, John, Montreal.

### Engineers (Consulting)

Electrical Construction Co., London, Ont.  
Neil, James M., Toronto.  
Parke, R. J., Toronto.  
Perrin, Wm. R. & Co., Toronto.

### Engineers (Electrical)

Canadian General Electric Co., Toronto.  
Electrical Construction Co., London, Ont.  
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, Laine & Co., Levis, Quebec.  
Electrical Construction Co., London, Ont.  
Kerr Engine Co., Walkerville, Ont.  
McEachern Heating & Ventilating Co., Galt, Ont.  
Northey Co., Toronto.  
Robb Engineering Co., Amherst, N.S.  
Solby & Youlden, Kingston, Ont.

# RICE LEWIS & SON, LIMITED,

**MACHINIST TOOLS, PIPE FITTINGS,**

**STILLSON AND TRIMO WRENCHES.**

**CORNER KING AND VICTORIA STREETS, . . . TORONTO.**

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

# Hardware and Metal

**Bar Iron, Steel, Boiler Plate Tubes**

**COMPLETE STOCK OF STOCKS AND DIES. PIPE VICES.**

**STEAM PIPE.**

**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

**TO WOOLEN MANUFACTURERS**

**MESSRS. REICHE & CO.**

WOOL, TOPS, NOILS, YARNS, Etc.

Represented in BRADFORD, ENGLAND  
Canada by

**JAMES A. CANTLIE**

22 ST. JOHN STREET, - - MONTREAL

Samples and Lowest Quotations Promptly Supplied. Correspondence Solicited.

**SMITH, CLARK & CO.**

Manufacturers' Agents,

Merchants and General Importers.

**Port Elizabeth,**

CAPE COLONY,

**SOUTH AFRICA.**

P.O. Box 402.

Cable Address: Observant.  
Codes: A1 and ABC 4th edition.

**REQUIRED.**

THE AGENCY FOR SOUTH AFRICA  
OF CANADIAN MANUFACTURES.

Advertiser carrying samples of British and Colonial goods throughout South Africa is open to arrange commissions to sell Canadian Manufactures and Produce. Ten years experience of South African requirements.

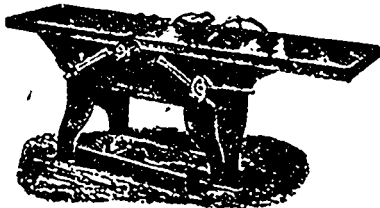
**F. G. BECKS,**

P. O. BOX 23,

PORT ELIZABETH, CAPE COLONY.

**CLARK & DEMILL**

MANUFACTURERS OF Wood Working Machinery



GALT, ONT.

Prices and description furnished on application.

**CLASSIFIED INDEX.**

(CONTINUED).

**Engines and Boilers**

Buffalo Forge Co., Buffalo, N.Y.  
Canadian Heino Safety Boiler Co., Toronto.  
Cowan & Co., Galt, Ont.  
Goldie & McCulloch Co., Galt, Ont.  
Hyde Bros. & Co., Pittsburg, Pa.  
Kingston Foundry Co., Kingston, Ont.  
McDougall, H. Co., Galt, Ont.  
Patric, H. W., Toronto.  
Robb Engineering Co., Amherst, N.S.  
Solby & Youlden, Kingston, Ont.  
Stanyon Engineering Co., Toronto.  
Williams, A. R., Machinery Co., Toronto.

**Engravers**

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

**Exhaust Heads**

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

**Factory Baskets.**

Wire-Woven-Wood Mfg. Co., Toronto.

**Financial**

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

**Filters**

Burt Mfg. Co., Akron, Ohio.  
Darling Bros, Montreal.  
Ferrin, Wm. R., & Co., Toronto.

**Fire Brick**

Buckner, R. E. H., Toronto.  
Dougall, James, & Sons, Bonnybridge, Scotland.  
Hamilton Facing Mill Co., Hamilton, Ont.  
Hyde, F., & Co., Montreal.  
Scioto Fire Brick Co., Sciotoville, Ohio.  
Stanyon Engineering Co., Toronto.

**Founders**

Buffalo Forge Co., Buffalo, N.Y.  
Canada Foundry Co., Toronto.  
Cowan & Co., Galt, Ont.  
Gartshore-Thomson Pipe & Foundry Co., Hamilton, Ont.  
Kare, G. W., Hespeler, Ont.  
Kingston Foundry, Kingston, Ont.  
McDougall, The H. Co., Galt, Ont.  
Northey Co., Toronto.  
Rehder Plating & Mfg. Co., Thorold, Ont.  
Solby & Youlden, Kingston, Ont.  
Tallman, J. N., & Sons, Hamilton, Ont.

**Foundry Facing**

Hamilton Facing Mill Co., Hamilton, Ont.

**Galvanizing**

Brantford Plating Co., Brantford, Ont.  
Ontario Wind Engine & Pump Co., Toronto.

**Gas and Gasoline Engines**

Dominion Motor & Machine Co., Toronto.  
Goldie & McCulloch Co., Galt, Ont.  
Northey Co., Toronto.

**Generators**

Canadian General Electric Co., Toronto.  
Forman, John, Montreal.  
Jones & Moore Electric Co., Toronto.  
Kay Electric Dynamo & Motor Co., Toronto.  
Phillips, Eugene F., Electrical Works, Montreal.  
Toronto & Hamilton Electric Co., Hamilton, Ont.

**Government Notices**

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

**Hardware**

Butterfield & Co., Rock Island, Que.  
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.  
McEachren Heating & Ventilating Co., Galt, Ont.  
Sturtevant, B. F., Co., Boston, Mass.

**Hoisting Machinery**

Kingston Foundry Co., Kingston, Ont.  
Solby & Youlden, Kingston, Ont.

**Hydraulic Machinery**

Darling Bros., Montreal.  
Jones Machine Co., Sherbrooke, Que.  
Northey Co., Toronto.  
Perrin, Wm. R., & Co., Toronto.  
Wilson, J. C., & Co., Glenora, Ont.

**FOR SALE**

Set of Upright Drill Patterns and Drawings, 25" can be extended to 36". Has every device of a modern tool. Something new and novel.

JOSEPH JOHNSON,  
159 W. Frambes Ave., Columbus, O.

**PORTLAND CEMENT**

HIGHEST GRADES

**FIRE BRICKS**

Describe your requirement and we will supply a fire brick in shape and quality to suit.

Mention whether you burn coal, coke, gas or oil.

**F. HYDE & CO.**

31 Wellington St., Montreal

LONG DISTANCE PHONE 1108.

**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.

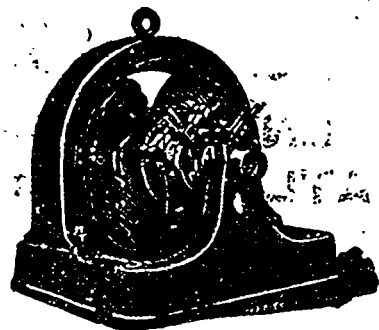
We repair machines of any make. Descriptive matter and estimates furnished on application.

BRANCHES AT

Vancouver, Winnipeg, Toronto, Montreal, Halifax.

**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 St., - HAMILTON, ONT.

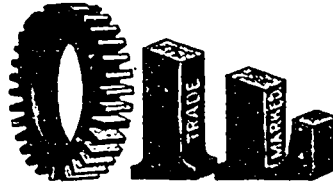
# "Capitol" Cylinder

"RENOWN" ENGINE

"ATLANTIC" RED

RELIABLE WELL-KNOWN BRAND

ALL ORDERS PROMPTLY FILLED



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

## 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.

## PACKARD TRANSFORMERS

**Transformer Supremacy**

Unquestionably the new type "R" Packard Transformer represents the greatest development yet made in transformer operation.

In actual operation it gives a higher efficiency than any other regular line of transformers.

This is but one of its strong features.

Send for the preliminary bulletin on type "R." It will tell you about some of the others.

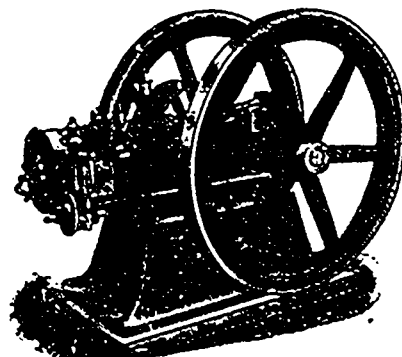
**The PACKARD ELECTRIC CO., Limited**  
ST. CATHARINES, ONT.  
EASTERN OFFICES—42 Street Railway Bldg., Montreal.

## GASOLINE ENGINES

3 to 21 Horse Power.

Write for prices and descriptive matter.

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



When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

## CLASSIFIED INDEX.

(CONTINUED).

### Importers

Smith, Clark & Co., Port Elizabeth, Cape Colony

### Iron and Steel Specialties

Armstrong Mfg. Co., Bridgeport, Conn.  
Bourne-Fuller Co., Cleveland, Ohio.  
Brown & Co., Paris, Ont.  
Dodgo Mfg. Co., Toronto.  
Karch, H. W., Hespeler, Ont.  
Laurie Engine Co., Montreal.  
McDougall, R. Co., Galt, Ont.  
Nova Scotia Steel & Coal Co., New Glasgow, N.S.  
Rice Lewis & Son, Toronto.  
Samuel, M. & L. Benjamin & Co., Toronto.

### Lamps—Electric

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

### Lathes

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

### Lubricating Oils

Imperial Oil Co., Petrolia, Ont.  
Queen City Oil Co., Toronto.

### Machinists.

Worth & Martin, Toronto.

### Machinists' Supplies

Armstrong Mfg. Co., Bridgeport, Conn.  
Butterfield & Co., Rock Island, Que.  
Goldie & McCulloch Co., Galt, Ont.  
Morrow, John, Machine Screw Co., Ingersoll, Ont.  
Petrie, H. W., Toronto.  
Worth & Martin, Toronto.

### Machine Tools

Bertram, John, & Sons Co., Dundas, Ont.  
Petrie, H. W., Toronto.

### 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.

### Metal Specialties

Brantford Plating Co., Brantford, Ont.  
Behder Plating & Mfg. Co., Thorold, Ont.

### Mill Machinery and Supplies

Armstrong Mfg. Co., Bridgeport, Conn.  
Cooper, James, Mfg. Co., Montreal.  
Cowan & Co., Galt, Ont.  
Darling Bros., Montreal.  
Fleming, W. A., & Co., Montreal.  
Gartsch, John J., Toronto.  
Goldie & McCulloch Co., Galt, Ont.  
Hamilton Brass Mfg. Co., Hamilton, Ont.  
Hay, Peter, Galt, Ont.  
Jencks Machine Co., Sherbrooke, Que.  
Karch, H. W., Hespeler, Ont.  
Laurie Engine Co., Montreal.  
London Machine Tool Co., London, Ont.  
McDougall, R. Co., Galt, Ont.  
Morrow, John, Machine Screw Co., Ingersoll, Ont.  
Petrie, H. W., Toronto.  
Rice Lewis & Son, Toronto.  
Samuel, M. & L. Benjamin & Co., Toronto.  
Spence, R. & Co., Hamilton, Ont.  
Wilson, J. C., & Co., Glenora, Ont.

### Mineral Lands

Commissioner of Crown Lands, Toronto.

### Motors and Dynamos

Canadian General Electric Co., Toronto.  
Electrical Construction Co., London, Ont.  
Forman, John, Montreal.  
Jones & Moore Electric Co., Toronto.  
Ray Electric Dynamo and Motor Co., Toronto.  
Toronto & Hamilton Electric Co., Hamilton, Ont.  
United Electric Co., Toronto.

### Novelty Manufacturers.

Worth & Martin, Toronto.

### 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.

# J. M. NEIL

Technical Chemist

—AND—

## Chemical Engineer

FOURTEEN YEARS PRACTICAL  
MANUFACTURING EXPERIENCE  
AS CHEMIST AND WORKS MANAGER

CONSULTATIONS, REPORTS,  
DUPLICATION OF PRODUCTS,  
PROCESSES WORKED OUT,  
DESIGNS AND  
CONSTRUCTION OF SPECIAL PLANTS,  
FURNACES, ETC.

ELECTROLYTIC PROCESSES  
A SPECIALTY.

176 Roxborough St. East  
TORONTO

## The Mercantile Agency

ESTABLISHED 1841.

### R. G. DUN & CO.

Offices in 165 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.

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, monies, weights, measures, mails, etc.

OFFICES

**DASHWOOD HOUSE,**  
New Broad Street,  
LONDON, E.O.; ENG.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

## CLASSIFIED INDEX.

(CONTINUED).

#### Paints and Colors

Bellhouse, Dillon & Co., Montreal.  
Cassella Color Co., New York City.  
Fleming, W. A., & Co., Montreal.  
Koller, John J., & Co., New York City.  
Klipstein, A., & Co., New York City.  
McArthur, Cornelle & Co., Montreal.  
Schoellkopf, Hartford & Hanna Co., Buffalo, N.Y.  
Wright & Dallyn, Hamilton, Ont.

#### Paper Manufacturers

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

#### Patents

Budden, Hanbury A., Montreal.  
Case, Egerton R., Toronto.  
Fether-tonhaugh & Co., Toronto.

#### 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.

#### Pipe Threading Machines

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

#### Pipes and Tubos

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

#### Plaster

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

#### Plates

Bourne-Fuller Co., Cleveland, Ohio.  
Nova Scotia Steel & Coal Co., New Glasgow, N.S.  
Rico Lewis & Son, Toronto.  
Samuel, M. & L. Benjamin & Co., Toronto.

#### Plating

Brantford Plating Co., Brantford, Ont.  
Rehder Plating & Mfg. Co., Thorold, Ont.

#### Pneumatic Tools

Cooper, James, Mfg. Co., Montreal.  
Jencke's Machine Co., Sherbrooke, Que.

#### Portland Cement

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

#### Power—Electric and Water

Central Canada Power Co., Peterboro, Ont.  
Great Northern Railway of Canada, Quebec.

#### 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.  
Electrical Construction Co., London, Ont.  
Goldie & McCulloch, Galt, Ont.  
Jencke's Machine Co., Sherbrooke, Que.  
Jones & Moore Electric Co., Toronto.  
Kay Electric Dynamo & Motor Co., Toronto.  
Northey Co., Toronto.  
Perrin, Wm. R. & Co., Toronto.  
Phillips, Eugene F., Electrical Works, Montreal.  
Robb Engineering Co., Amherst, N.S.  
Stanyon Engineering Co., Toronto.  
Sturtevant, B. F., Co., Boston, Mass.  
Toronto & Barillon Electric Co., Hamilton, Ont.  
United Electric Co., Toronto.  
Wilson, J. C., & Co., Glenora, Ont.

#### Precious Stones

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

#### Pulleys

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

#### Pulp and Saw Mill Sites

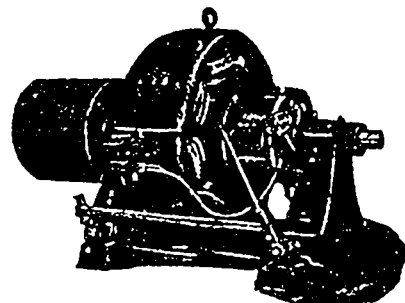
Great Northern Railway of Canada, Quebec.

#### Purifiers

Cowan & Co., Galt, Ont.  
Goldie & McCulloch Co., Galt, Ont.

## 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.

## KERR'S

## "WEBER" VALVES

ARE THE GENUINE  
VALVES OF THAT  
NAME.

ALL OTHERS  
ARE IMITATIONS.

BE SURE AND GET  
THOSE MADE BY

## THE KERR ENGINE CO.

LIMITED

WALKERVILLE, - ONTARIO

## WORTH & MARTIN, Electrical and Mechanical Contractors

—AND—

BRASS FOUNDERS and FINISHERS

Electric Supplies, Nitrous Oxide Gas  
SWITCHES and SWITCHBOARDS  
MANUFACTURED.

Dynamos and Motors

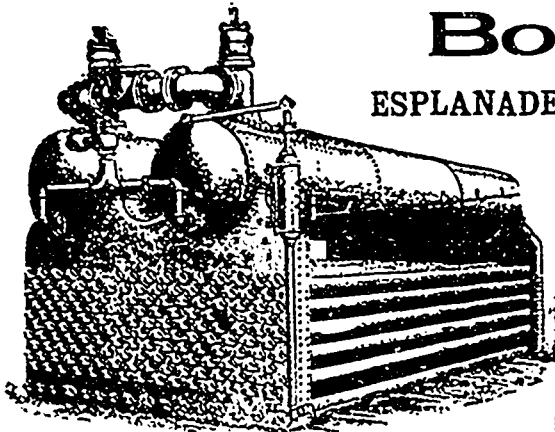
Built and Repaired. We have a well-equipped  
Machine Shop, Model and Experimental Work  
a specialty. Inventions perfected. All work  
strictly confidential. Correspondence solicited

35 to 39 ADELAIDE ST. W., TORONTO  
PHONE, MAIN 3494.



# The Canadian Heine Safety Boiler Co.

JOHN J. MAIN,  
MANAGER.



ESPLANADE (Opp. Sherbourne St.)  
TORONTO

HIGH-CLASS  
**Water Tube  
Steam Boilers..**

FOR ALL PRESSURES  
DUTIES AND FUEL

From 75 to 600 H.P. Each

**REFERENCES :**

The Toronto Electric Light Co., Limited; The T. Eaton Co., Limited; The Massey-Harris Co., Limited; The Gutta Percha Rubber & Mfg. Co.; The Wilson Publishing Co., Limited; Sunlight Soap Co., Dominion Radiator Co., Central Prison, Foresters' Temple, Toronto City Hall, Canada Bleach Co., Confederation Lst. Co. (all of Toronto, where Boilers may be seen working), also Orillia Asylum, Orillia, Ont., and LaPresse Publishing Co., Montreal.

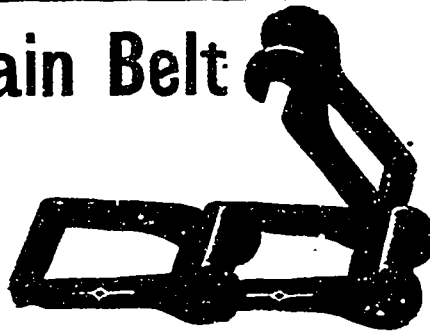
N.B.—We do not make small Boilers

## Detachable Chain Belt

AND

**CONVEYING**

**MACHINERY**



**WILLIAM R. PERRIN & COMPANY**  
TORONTO, CANADA.

ESTABLISHED 1823.

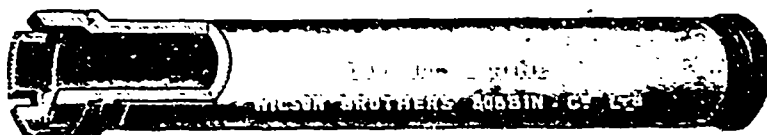
## WILSON BROS. BOBBIN CO., LIMITED

LARGEST MAKERS IN THE WORLD

46 GOLD MEDALS AND DIPLOMAS



## BOBBIN AND SHUTTLE MANUFACTURERS



Address, - Cornholme Mills, GARSTON, LIVERPOOL, ENGLAND

TELEGRAMS:  
"NUGGET, LIVERPOOL,  
ABC and AI Codes.

BRANCH WORKS—ST. HELENS  
Office and Showrooms—14 Market Place, Manchester.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

## CLASSIFIED INDEX.

(CONTINUED).

**Railroads**

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

**Railway Supplies**

Algoma Steel Co., Sault Ste. Marie, Ont.  
Canada Switch & Spring Co., Montreal.  
Gartshore, John J., Toronto.  
Nova Scotia Steel & Coal Co., New Glasgow, N.S.  
Phillips, Eugene F., Electrical Works, Montreal.

**Rivets**

Bourne-Fuller Co., Cleveland, Ohio.

**Roofing**

Eastern Granite Roofing Co., New York City.  
Metallic Roofing Co., Toronto.

**Rubber Goods**

Gutta Percha & Rubber Mfg. Co., Toronto.

**Shafting**

Bourne-Fuller Co., Cleveland, Ohio.  
Nova Scotia Steel & Coal Co., New Glasgow, N.S.  
Petrie, H. W., Toronto.

**Shear Knives**

Hay, Peter, Galt, Ont.

**Shoots**

Bourne-Fuller Co., Cleveland, Ohio.  
Samuel, M. & L. Benjamin & Co., Toronto.

**Silica Brick**

Buckner, R. E. H., Toronto.  
Dougall, James, & Sons, Bonnybridge, Scotland.

**Sleighs**

Millner Petroleum Wagon Co., Petroleum, Ont.

**Steam Gauges**

American Steam Gauge & Valve Mfg. Co., Boston, Mass.  
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.  
Northey Co., Toronto.  
Williams, A. R., Machinery Co., Toronto.

**Steam Separators**

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.  
Drummond, McCall & Co., Montreal and Toronto.

**Steel Shafting**

Darling Bros., Montreal.  
Dodge Mfg. Co., Toronto.  
Laurie Engine 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.  
Hice Lewis & Son, Toronto.  
Worth & Martin, Toronto.

**Tags**

Morton Co., Toronto.

**Toes**

Bourne-Fuller Co., Cleveland, Ohio.

**Textile Manufacturers**

Canadian Colored Cotton Mills Co., Montreal.  
Cantlie, James, A., Montreal.  
Dominion Oil Cloth Co., Montreal.  
Hamilton Cotton Co., Hamilton, Ont.  
Morrice, D., Sons & Co., Montreal.  
Parker, A. S., New Toronto, Ont.  
Reiche & Co., Bradford, England.  
Smith Wool Stock, Toronto.  
Storey, W. H., & Sons, Acton, Ont.

**Tin**

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

**Tin Plates**

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

**Tool Steel**

Bourne-Fuller Co., Cleveland, Ohio.

**CLASSIFIED INDEX.**

(CONTINUED).

**Trucks**

Millner Petrolca Wagon Co., Petrolca, Ont.  
Slingsby, H. C., Montreal.  
Wire-Woven-Wood Mfg. Co., Toronto.

**Turbines**

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

**Valves**

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

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.

**Ventilators**

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

**Wagons and Carriages**

Hore, F. W., & Son, Hamilton, Ont.  
Millner Petrolca Wagon Co., Petrolca, Ont.

**Weaving Machinery**

Karch, H. W., Hespeler, Ont.  
Mason Machine Works, Taunton, Mass.  
Riley, C. E., & Co., Boston, Mass.

**Wire and Wire Rope**

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

**Wire-Woven-Wood Baskets.**

Wire-Woven-Wood Mfg. Co., Toronto.

**Wood-Working Machinery**

Carrier, Laine & Co., Leris, Que.  
Clark & Demill, Galt, Ont.  
Cowan & Co., Galt, Ont.  
Karch, H. W., Hespeler, Ont.  
London Machine Tool Co., London, Ont.  
McEachren Heating & Ventilating Co., Galt, Ont.  
Petrie, H. W., Toronto.

**Zinc**

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

MAIN FACTORY—BRADFORD, ENG.

CANADIAN FACTORY—MONTREAL.

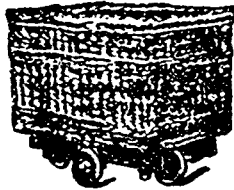
**WE BUILD**

**TRUCKS**

that sustain our reputation.

The largest truck establishment in the world.

**NOTHING BUT THE BEST.**



Spins Like a Top.

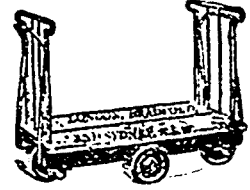
For the Warehouse, Factory, Brewery, Stores, Hospitals—in fact for every conceivable purpose—all on the famous Slingsby Patent Sliding Wheel Principle.

**HAVE YOU SEEN IT?**


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

**H. C. Slingsby for Canada**

TEMPLE BLDG., MONTREAL.



Runs oltner way.



A joint that does not and cannot leak is made by Dixon's Pipe Joint Compound. Easily upset without bending the pipe. Ask for booklet 33.

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

**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.**

**CANADIAN MANUFACTURER PUBLISHING CO., Limited, - TORONTO**

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

# INDEX TO ADVERTISEMENTS.

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

Agriculture, Ontario Minister of, Toronto.. 32	Eastern Granite Roofing Co., New York City.. 33	Northey Co., Toronto .....	8
Albert Mfg. Co., Hillsborough, N.B. 6	Eby Mfg. Co., Toronto .....	Nova Scotia Steel & Coal Co., Now Glasgow, N.S. ....	4
Algoma Steel Co., Sault Ste. Marie, Ont..... 2	Electric Construction Co., London, Ont..... 37		
American Steam Gauge & Valve Mfg. Co., Boston, Mass. .... 12	Expanded Metal & Fireproofing Co., Toronto.. 21		
American Steam Pump Co., Battle Creek Mich. ....	Fetherstonhaugh & Co., Toronto ofc	Oakey, John & Sons, London, England .....	5
Anglo-Russian Trade Messenger, Moscow, Russia. ....	Firstbrook Box Co., Toronto 13	Ontario Malleable Iron Co., Oshawa, Ont. ....	obe
Archbold, George, Prescott, Ont. 43	Fleming, W. A. & Co., Montreal. .... 17	Ontario Wind Engine & Pump Co., Toronto.. 32	
Armstrong Mfg. Co., Bridgeport, Conn 21	Forman John, Montreal... 5-8	Otis Elevator Co., Hamilton, Ont. ....	ofc
	Frost, W. H., Smith's Falls, Ont..... obe	Owen Sound Portland Cement Co., Owen Sound, Ont. ....	6
Barber, Wm. & Bro., Georgetown, Ont 43	Gartshore, John J., Toronto 43	Packard Electric Co., St. Catharines, Ont. ....	38
Becks, F. G., Port Elizabeth, Cape Colony 37	Gartshore-Thomson Pipe & Foundry Co., Hamilton, Ont. ....	Page Wire Fence Co., Walkerville, Ont. ....	43
Bellhouse, Dillon & Co., Montreal obe	Goldie & McCulloch Co., Galt, Ont. .... 31	Parke, Rodrick J., Toronto .....	obe
Ben-on, W. T. & Co., Montreal 3	Great Northern Railway, Quebec City 28	Parker, Alfred S., New Toronto, Ont. ....	43
Bertram, John & Son, Dundas, Ont 5	Greending B. Wire Co., Hamilton, Ont. .... 7	Patent Clothboard Co., Parry Sound, Ont. ....	43
Big Four Route, Boston, Mass. .... 19	Gutta Percha & Rubber Mfg. Co., Toronto.. ofc	Perrin, Wm. R. & Co., Toronto & Chicago, Ill. 40	
Bourne-ruller Co., Cleveland, Ohio 43		Peterborough Candc. Co., Peterborough, Ont. ....	6
Brad-streets, Toronto and New York. .... 33	Hamilton Brass Mfg. Co., Hamilton, Ont. .... 3	Petrie, H. W., Toronto .....	32
Brantford Plating Co., Brantford, Ont 43	Hamilton Cotton Co., Hamilton, Ont. .... obe	Phillips, Eugene F., Electrical Works, Montreal. ....	38
Bristol Co., Waterbury Conn. .... obe	Hamilton Facing Mills Co., Hamilton, Ont. .... 5		
Brown & Co., Paris, Ont. .... obe	Hay, Peter, Galt, Ont. .... 13	Queen City Oil Co., Toronto..... ofc-38	
Brunner, Mond & Co., Northwich, England 43	Hore, P. W. & Son, Hamilton, Ont. .... 13		
Budden, Hanbury A., Montreal 13	Hyde Bros. & Co., Pittsburg, Pa 37	Rehder Plating & Mfg. Co., Thorold, Ont. ....	43
Buffalo Forge Co., Buffalo, N.Y. .... 16	Hyde, F. & Co., Montreal .....	Relche & Co., Bradford, England ....	33
Bureau of Mines, Toronto 2		Rice Lewis & Son, Toronto.....	36
Burt Mfg. Co., Akron, Ohio 16	Imperial Oil Co., Petrolca, Ont..... 3	Riley, C. E. & Co., Boston, Mass. ....	ofc
Butterfield & Co., Rock Island, Que 4		Robb Engineering Co., Amherst, N.S. ....	6
	Jenckes Machine Co., Sherbrooke, Que. .... 23		
Canada Foundry Co., Toronto. .... 5	John-on, Joseph, Columbus, Ohio 37	Samuel, M. & L. Benjamin & Co., Toronto 21	
Canada Iron Furnace Co., Montreal obe	Jones & Moore Electric Co., Toronto 29	Schoelkopf, Hartford & Hannat Co., Buffalo, N.Y. 31	
Canada Switch & Spring Co., Montreal 3	Jones, J. L., Engraving Co., Toronto 43	Scioto Fire Brick Co., Sciotoville, Ohio.....	31
Canadian Colored Cotton Mills Co., Montreal. ....		Silingsby, H. C. for Canada, Montreal.....	41
Canadian Corundum Wheel Co., Hamilton, Ont. ....	Karch, H. W., Hespeler, Ont. .... 40	Smith, Clark & Co., Port Elizabeth, South Africa. ....	37
Canadian Heine Safety Boiler Co., Toronto 41	Kay Electric Dynamo & Motor Co., Toronto. .... 31	Smith Woolstock Co., Toronto .....	43
Canadian Manufacturer Pub. Co., Toronto 41	Keller, John J. & Co., New York, N.Y. .... 2	South American Trade Journal, London, E.C. England .....	39
Canadian Oilco & School Furniture Co., Pres ton, Ont. .... 13	Kelly's Directories, Toronto and London, England. ....	Spence, R. & Co., Hamilton, Ont. ....	43
Canadian Otis Elevator Co., Hamilton, Ont. ....	Kerr Engine Co., Walkerville, Ont. .... 29	Stanyon Engineering Co., Toronto & Pittsburg, Pa. ....	43
Canadian Portland Cement Co., Deseronto, Ont. .... 17	Kingston Foundry, Kingston, Ont. .... 33	Storey, W. H. & Son, Acton, Ont. ....	13
Canadian Rand Drill Co., Montreal. .... 37	Kinleth Paper Co., St. Catharines, Ont. .... 5	Sturtevant, B. F. Co., Boston, Mass. ....	19
Cantile, James A., Montreal obe	Klipstein, A. & Co., New York, N.Y. .... 5	Syracuse Smelting Co., Montreal and New York. ....	7
Carrier, Laine & Co., Lewis, Que. .... ofc	Laurie Engine Co., Montreal .....		
Carruthers, Robert, Lowell, Mass. .... ofc	Lewis, Rice & Son, Toronto. .... 39	Tallman, J. N. & Sons, Hamilton, Ont. ....	23
Case, Egerton H., Toronto. .... ofc		Toronto & Hamilton Electric Co., Hamilton, Ont. ....	37
Cassella Color Co., New York and Montreal. .... 7	Metallic Roofing Co., Toronto 23	Toronto Paper Mfg. Co., Cornwall, Ont. ....	43
Central Ontario Power Co., Peterborough, Ont. ....	Millner Petrolca Wagon Co., Petrolca, Ont. .... 27		
Chicago & North-Western Railway, B. H. Bennett, General Agent, Toron o. .... 37	Milnes, J. H. & Co., Toronto 24	United Electric Co., Toronto .....	obe
Clark & Demill, Galt, Ont. .... 37	Montreal Pipe Foundry Co., Montreal. .... 21		
Cooper, James Mfg. Co., Montreal 15	Morrow, John, Machine Screw Co., Ingersoll, Ont. ....	Walkerville Malleable Iron Co., Walkerville, Ont. ....	ofc
Cowan & Co., Galt, Ont. .... 20	Morton Co., Toronto. .... 37	Wickramanayaku, J. & Co., Kalutara, Ceylon, India. ....	obe
Crosby Steam Gauge & Valve Co., Boston, Mass. .... 20		Williams, A. R. Machinery Co., Toronto.....	33
	McArthur, Cornello & Co., Montreal. .... obe	Williams & Wil-on, Montreal. ....	ofc
Darling Bros., Montreal.... 9	McDougall, R. Co., Galt, Ont. .... 25	Winn & Holland, Montreal. ....	5
Deseronto Iron Co., Deseronto, Ont 41	McEachren Heating & Ventilating Co., Galt, Ont. ....	Wil-on Bros. Bobbin Co., Todmorden, England 40	
Dixon, Jos., Crucible Co., Jersey City, N.J. .... 41	McKinnon Dash & Metal Works Co., St. Catharines, Ont. ....	Wil-on J. C. & Co., Glenora, Ont. ....	31
Dodge Mfg. Co., Toronto 18	McLaren, D. K., Montreal and Toronto 34	Wire & Cable Co., Montreal .....	ofc
Dominion Motor & Machine Co., Toronto.. 38		Wire-Woven-Wool Mfg. Co., Toronto.....	8
Dominion Oil Cloth Co., Montreal. .... 43	Neil & Postlethwaite, Toronto 22	Worth & Martin, Toronto .....	38
Dominion Radiator Co., Toronto 34	Neil, James M., Toronto 2	Wright & Dallyn, Hamilton, Ont. ....	9
Dougall, James & Sons, Bonnybridge, Scotland. ....	Noble's Detective Agency, Toronto 34		
Drummond, McCall & Co., Montreal, Que 2			
Dun, R. G. & Co., Toronto 34			

ofc outside front cover.

obe ..out-ldo back cover.

## American Steam Gauge and Valve Mfg. Co.

BOSTON, MASS., U.S.A.

MANUFACTURERS OF

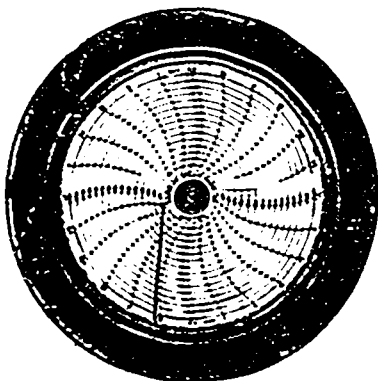
Standard Appliances for Measuring, Indicating Recording, and Governing Water, Steam, Gas, Ammonia, and all pressures. Sole Manufacturers of The THOMPSON IMPROVED INDICATOR.

HIGHEST AWARD AT PARIS EXPOSITION, 1901—The Only American Indicator to receive a Medal. The GOLD MEDAL awarded at Pan-American Exposition Gauges, Pop Valves, Indicators and Engineering Specialties

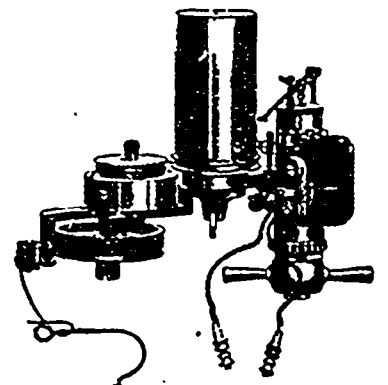
THE INDICATOR THAT MADE INDICATORS FAMOUS

Also Gauges, Clocks, Revolution Counters, Pop Safety Cylinder and Underwriters, Water Relief Valves, Recording Gauges, Pyrometers, Salinometers, and all Steam-ship Instruments. Send for New General Catalogue.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



American Pressure Recording Gauge.



American Thompson Improved Indicator with Reducing Wheel and Electrical Attachment.

**Pages Missing**