

Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

Coloured covers/  
Couverture de couleur

Covers damaged/  
Couverture endommagée

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

Cover title missing/  
Le titre de couverture manque

Coloured maps/  
Cartes géographiques en couleur

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

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

Bound with other material/  
Relié avec d'autres documents

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

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

Coloured pages/  
Pages de couleur

Pages damaged/  
Pages endommagées

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

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

Pages detached/  
Pages détachées

Showthrough/  
Transparence

Quality of print varies/  
Qualité inégale de l'impression

Continuous pagination/  
Pagination continue

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

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

Title page of issue/  
Page de titre de la livraison

Caption of issue/  
Titre de départ de la livraison

Masthead/  
Générique (périodiques) de la livraison

Additional comments:/  
Commentaires supplémentaires:

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

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

PAGE

MISSING

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

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

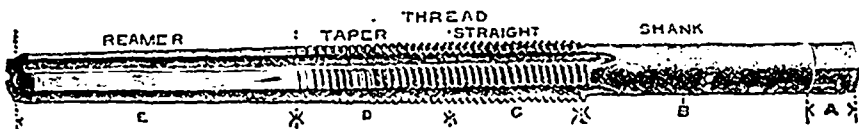
**THE GOLDIE & McCULLOCH CO.,**  
LIMITED

GALT, Ont., Canada.

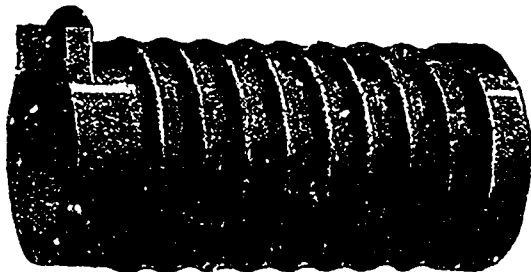


**WE MANUFACTURE**  
*STAY BOLT TAPS*, all diameters and lengths up to 91 inches.  
*SPINDLE STAY BOLT TAPS* and *TAPS for Screw Machines*, and *TAPS for all uses*.  
Regular and Full Mounted Reece and Derby Plates, Bicycle and Machinists' Plates, etc., etc.

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



# MORISON Suspension Furnaces

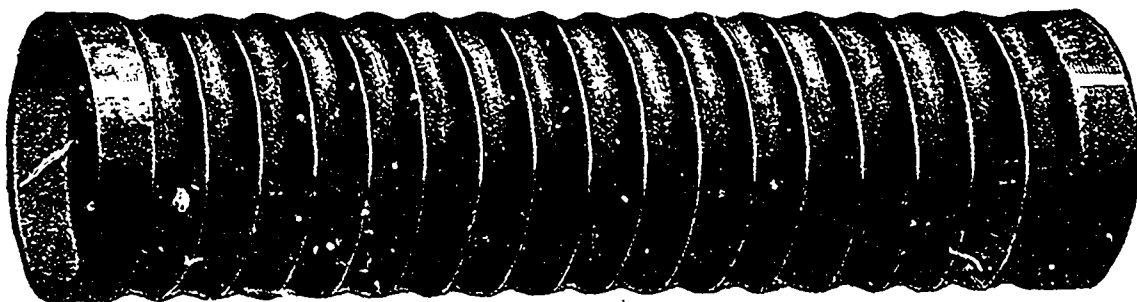


**For Land and Marine Boilers**

With Plain Ends or Flanged to any required shape.

Uniform Thickness, Easily Cleaned, Unexcelled for Strength, Unsurpassed for Steaming Capacity.

*The universally satisfactory record of "THE MORISON" proclaims it the best furnace made.*



MANUFACTURED BY

**THE CONTINENTAL IRON WORKS,** WEST AND CALYER STS., BOROUGH OF BROOKLYN, New York  
Near 10th and 23rd Street Ferries.  
Sole Canadian Agent—MR. GEORGE HOLLAND, M. C. Soc. C. E., P. O. Box 529, MONTREAL

# 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. 100 King W., TORONTO.

## CANADA IRON FURNACE CO., Limited

Montreal, Radnor and Three Rivers

Manufacturers of the well-known

## "C.I.F." Three Rivers Charcoal

Suitable for Car Wheels, Cylinders  
and Fine Castings, where the ut-  
most strength is required.

## Pig Iron

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

Offices: Canada Life Insurance Building, MONTREAL.

## STRUCTURAL STEEL

Angles  $\frac{1}{2}$ " to 6".

Beams 4" to 24".

Channels  $\frac{1}{2}$ " to 15".

Plates—sheared and universal.

In stock for

IMMEDIATE SHIPMENT.

See Stock List.

THE  
BOURNE-FULLER CO.  
IRON, STEEL,  
PIG IRON,  
COKE.  
Cleveland, Ohio.

# THE NOVA SCOTIA STEEL & COAL CO.

MANUFACTURERS OF

LIMITED

## BRIGHT COMPRESSED STEEL SHAFTING

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

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

## RAILWAY AND ELECTRIC RAILWAY CAR AXLES

## FISH PLATES, SPIKES AND TRACK BOLTS

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

## ..HEAVY FORGINGS A SPECIALTY..

## "FERRONA" PIG IRON, For Foundry Use.

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

Head Office—NEW GLASGOW, NOVA SCOTIA

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

# NORTHERN ALUMINUM CO., LIMITED

Shawinigan Falls, P.Q. Business Office Pittsburgh, Pa.

## ALUMINUM

INGOTS—SHEETS—TUBING, ETC.

*Aluminum Stamped, Cast, Spun Articles of any Description to Order.*

ALUMINUM WIRE and CABLES (BARE OR INSULATED) for Electrical Conductors.

## NICKEL

THE CANADIAN COPPER COMPANY.

# NICKEL FOR NICKEL STEEL

THE ORFORD COPPER COMPANY.

**WRITE US FOR PARTICULARS AND PRICES.**

General Offices: 43 Exchange Place, NEW YORK.

## FIRE NOTICE

We are pleased to inform our customers that the fire on March 3rd did not destroy any of our works except the tower used in painting Screen Cloth. All other departments have been and are running as usual. Orders for Screen Cloth will be filled promptly from stock in Hamilton and Montreal.

**THE B. GREENING WIRE CO., LIMITED**

THE order for all the Babbitt Metal for the battleship "Nebraska" has been placed with the Syracuse Smelting Works. There is likely to be some hot fighting, but not any hot boxes.

Always specify  
**MANGANESE ANTI-FRICTION METAL**  
to avoid trouble.

**Syracuse Smelting Works**  
New York. Montreal. Seattle.

As our methods become known the popularity of our Policies increase.

LET US EXPLAIN TO YOU.

The  
**Canadian Casualty and Boiler Insurance Company**

22-24 Adelaide St. East  
TORONTO.  
A. M. WICKENS, Chief Engineer. A. G. C. DINNICK, Mang. Director.  
Phone Main 4091.

Advertise in THE CANADIAN MANUFACTURER.

# PITTSBURGH COAL COMPANY

**Miners and Shippers**

OF

**YOUGHIOGHENY  
GAS and PITTSBURGH  
STEAM COAL**

Manufacturers of

**HIGH GRADE COKE**

Loading and Fueling Docks at all Ports on the  
Great Lakes.

GENERAL OFFICES:

**PITTSBURGH, PA.**

JOHN BYRNE, Chairman of the Board.  
FRANK SULLIVAN SMITH, II. S. HASTINGS, Auditor.  
Acting President. G. H. JONES, Genl. Sales Agent.

## THE SHAWMUT COAL & COKE CO.

**BITUMINOUS COAL**

**COKE**

General Office. ANGELICA, N.Y.  
C. L. LATHROP, Agent.

Pennsylvania Office: **ST. MARYS, PA.**

Sales Office: J. D. FERGUSON,  
1110 Prudential Building, Canadian Sales Agent,  
BUFFALO, N.Y. HAMILTON, ONT.

**Annual Capacity of Mines  
1,500,000 tons.**

**Annual Capacity of Coke Ovens  
100,000 tons.**

**Operating 2,500 Coal Cars.**

# JULES G. HOFFMAN

**Miner and Shipper  
COAL---COKE**

PROMPT SHIPMENT via Buffalo and Detroit.

<b>Youghiogheny Gas and Steam</b>	<b>Pittsburg No. 8</b>
<b>Hocking</b>	Pocahontas
<b>Cambridge</b>	Smithing
<b>Coke</b>	Canal
Foundry. Furnace. Domestic. Gas House.	

Lake or Rail Shipments.

General Offices: 421-422-423 Hammond Bldg.,

**DETROIT, - - MICH., U.S.A.**

— THE —

## O.W. SHIPMAN COMPANY

*Thirty years on the "Firing Line"*

**DETROIT, MICH.**

We still lead in the exportation of coal to Canada.  
Your order for a trial car of our high-grade **YOUGHIOGHENY  
COAL** is respectfully solicited.  
We can supply you promptly and at the lowest prices with any  
grade of coal produced—except poor coal.

Write us at DETROIT, MICH., or our  
Canadian Representative,  
**JOHN BROWNLEE, at Galt, Ont.**

## Wake Up, and See What's Doing!

You will be Surprised at our Low Prices under  
Yearly Steam Contracts for

**Genuine Thacker**

(The Strongest of West Virginian Steam Coals)

**COAL**

The Best Product of the Pittsburg No. 5 Field.

We have exclusive Mine Sales Agency and can Make  
the Prices and Deliver the Goods. Come!  
let's figure together.

**E. A. SKAE, - - DETROIT, MICH.**

H. T. WILSON, Manager.

R. J. SINCLAIR, Sales Agent.

THOS. CHRISTIE, Canadian Sales Agent.

# THE H. T. WILSON COAL COMPANY

1321-1322 Majestic Building, - DETROIT, MICH.

## "Red Jacket" Coal

MINED IN WEST VIRGINIA.

The Best Bituminous Coal for Steam and Domestic Purposes.

Has a tough and blocky structure.  
Smallest percentage of fine coal.  
Low in ash and sulphur and no clinkers.  
Not subject to spontaneous combustion.  
Nothing better for malleable iron works.  
One of the strongest steam coals.

RED  
JACKET  
COAL

COMPARATIVE HEAT UNITS PER POUND OF COAL.  
Anthracite—See "Steam," published by Babcock & Wilcox Co., 13,985.  
"RED JACKET"—Determined by 50 weeks' test at Cincinnati Edison Plant, in 1901-2, the daily use of the coal tested being two hundred tons, 13,600.

BOILER TEST OF THE CINCINNATI EDISON CO., OF CINCINNATI.

Water apparently evaporated under actual conditions per pound of coal, 10 1/2 lbs.  
Equivalent evaporated from and at 212 degrees per pound of combustible pounds, 12:33.

We also handle Pocohontas Coke. Correspondence solicited.

H. K. WICK, President.

## H. K. WICK & CO.

W. D. WARD, Secy. and Treasurer.

(INCORPORATED)

MINERS AND SHIPPERS OF

## Bituminous Coals

Pittsburgh,  
Youghiogheny,  
Brier Hill, Smithing,  
Mercer & Butler County Coals.

Rooms 64 and 65  
Erie County Savings Bank Bldg.,

400 INDIVIDUAL CARS

**BUFFALO,**  
N.Y.

# COAL

## JAS. H. MILNES & CO.

# COKE

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

Head Office: 86 KING ST. EAST

TORONTO.

Docks: Esplanade, Foot of Yonge

F. M. BOYNTON, President

## F. M. BOYNTON, INC.

E. M. SANDS, Treasurer.

BUFFALO, N.Y.  
PITTSBURG, PA.

# Youghiogheny Coal

Write Buffalo, N.Y. Office for Prices.

SUPERIOR SMITHING.

# COAL

Highest  
Quality

EGG, - STOVE, - CHESTNUT,

Pittsburg Lump, Mine Run, Slack,  
Smithing Coal,  
American Gas House Coke,  
Prepared Coke,

Car Load Lots Direct from Mines.

Prompt Shipment. Close Prices for Cash.

HAMILTON, ONT. THOS. MYLES' SONS

EGG, - STOVE, - CHESTNUT.

# COAL

## EDWARD T. SAWYER

MINER & SHIPPER

## STEAM & GAS COALS

From Kanawha, Hocking and Fairmont Mines

## PURITAN SMITHING COAL

Shipments direct from mines to all points in Canada

Write for Prices

COLUMBUS, OHIO.

# COKE

# MADE IN CANADA



**WIRE ROPE**

WE CARRY A LARGE STOCK  
OF HIGH GRADE WIRE ROPES

—FOR—

HOISTING, ELEVATORS,  
HAULAGE, GUYS, ETC.

ALSO

COMPLETE LINE OF BLOCKS,  
CLIPS, THIMBLES, Etc.



**WIRE ROPE**

## DOMINION WIRE ROPE CO., LIMITED

MONTREAL

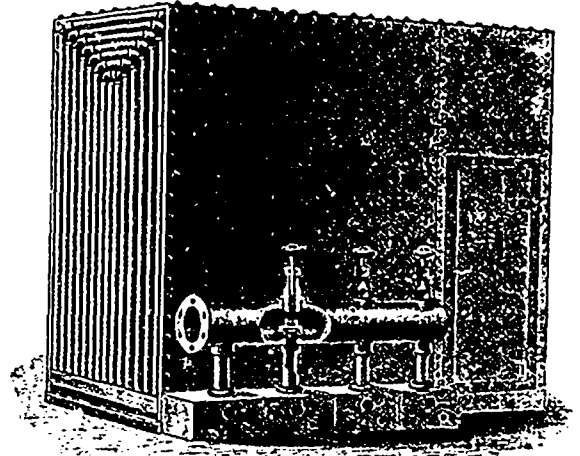
## Improved Hot Blast Heating and Ventilating System (Patented 1804)

FOR DRY ROOMS OF EVERY DESCRIPTION, BUILDINGS OF ALL SIZES AND FOR ALL PURPOSES, but chiefly used at present in **Factories, Hospitals, Churches, Theaters, etc.**

This Heater will give **50% more heat with a given heating surface than any other on the market.**

—For prices and particulars write—

**McEachren Heating & Ventilating Co.,**  
GALT, ONT., CANADA.

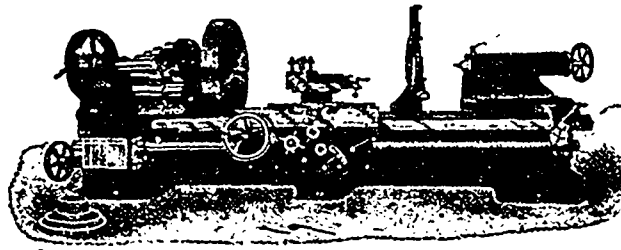


## The Canada Machinery Co., Limited

MANUFACTURERS OF

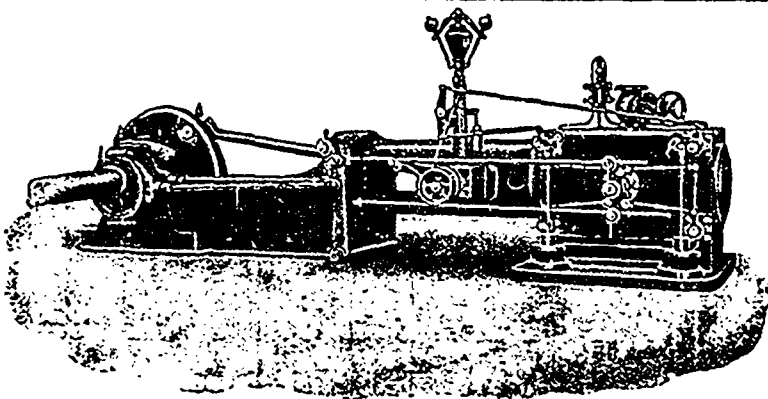
SARNIA, ONT.

Engine Lathes from 16-inch Swing up. Bed of all lengths. Also Planers, Shapers, Drills, Slotters, and other Machine Shop Equipment and Special Machinery of all kinds.



OUR 42-INCH ENGINE LATHE.

Punches, Shears, Bulldozers—Power, Foot and Drop Presses of all sizes and descriptions. Also machinery for manufacturing Cans, Pieced Tinware and other sheet metal goods



## CORLISS STEAM ENGINES

Our type of Corliss Engine is distinguished by good design, superior workmanship and high efficiency.

Medium and Heavy Duty Patterns.  
Cross and Tandem Compound.  
Condensing and Non-Condensing.

New Bulletin in preparation. Send your name for a copy if interested.

**THE JENCKES MACHINE CO., LIMITED**

52 Lansdowne St. - SHERBROOKE, QUE.



# PORTLAND CEMENT

**Samson Brand. Magnet Brand.**

Made at SHALLOW LAKE, ONT.

**THE OWEN SOUND PORTLAND CEMENT CO., Limited**

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

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

Correspondence invited.

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.

# Albert Manufacturing Co.

MANUFACTURERS OF THE WELL-KNOWN

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

HILLSBOROUGH, N.B., CANADA.

# DOVER FIRE BRICK COMPANY.

MANUFACTURERS OF

**"DOVER" FIRE BRICK "BUCKEYE"**

—Locomotive Tile and Ground Fire Clay—

Unexcelled for Furnaces, Rolling Mills, Brick and Pottery Kilns, Glass Works, Gas Plants, Foundries, and all places where good Fire Brick is required. WRITE US FOR PRICES.

General Office:  
CLEVELAND, OHIO.

Canadian Agents:  
ONTARIO LIME ASSOCIATION, TORONTO, ONT.

Pittsburgh Office:  
805-806 Frick Building.

# DUNBAR FIRE BRICK CO.

Manufacturers of High Grade FIRE CLAY and SILICA BRICK for Heating and Malleable Iron Furnaces, Glass Works, Cement Works—also Bee Hive and By-Product Coke Ovens, Brick and shapes of all kinds.

Pittsburgh Office : 1504 Arrott Building.

Office and Works : Dunbar, Pa.

**Quality, Price, Delivery**—These are the questions considered in the purchase of your supplies of Fire Brick, not only for new construction, but for repairs as well. We are prepared to furnish the very highest grade of silica and fire brick for all furnace practice, coke ovens, lime and cement kilns, boiler settings, and for every other purpose requiring a highly refractory material. We have seven plants operating in four counties of two states on three competing Trunk lines, with a daily capacity of a quarter of a million, and are better prepared to serve your wants than any other manufacturers in the business. Our quality is unsurpassed, our prices reasonable, and we are in position to make prompt shipment over any line at low rates. Your patronage is respectfully solicited.

General Office—BOLIVAR, PA.  
Pittsburgh Office—912 Park Bldg.

**REESE-HAMMOND FIRE BRICK CO.,**

Works—Curwensville and Bolivar, Pa.  
Fairmont, West Virginia.

# "Beech Creek" FIRE BRICK

STRICTLY HIGH GRADE

MADE ONLY BY

**PENNSYLVANIA FIRE BRICK CO.,**

LOCK HAVEN, PA., U.S.A.

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

*Difficult Shapes a Specialty.*

Send for Catalogue and Prices.

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

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

**C. H. VOGEL**

A. M. Can. Soc. C.E.  
**OTTAWA, CAN. ENGINEER**  
 Surveys, Plans, Specifications and Supervision  
**WATER POWER**  
**PAPER, PULP and SULPHITE FIBRE MILLS**

**K. L. AITKEN**

**Consulting Electrical Engineer.**  
 161 Bay Street, Toronto.  
 Long Distance Phones { Office, Main 142.  
 { Res., Main 481.  
 Successor to

THE ELECTRICAL SUPERVISION SOCIETY

**T. A. MORRISON & CO.**

202 St. James Street. MONTREAL

New and Second Hand Contractor's Plant.  
 Stone Crushers, Concrete Mixers, Rock Drills,  
 1 Baldwin L.C. R. Standard Gauge Locomotive,  
 35 tons, cylinder 14 x 22, 110 S.P.  
 30 Dump Cars, Narrow Gauge, 24 yards.  
 Boilers, Engines, Steam Shovels, etc.

**DR. GEO. ARCHBOLD, M. A.,****TECHNICAL CHEMIST**

PRESCOTT, ONT.

Dr. Archbold is technical advisor to three of the  
 oldest firms in U.S.A. Terms on application.

**E. VON DER OSTEN & CO.**

Consulting Engineers

Industrial Plants. Waterworks.  
 Lighting and Power Plants.  
 Sewerage and Sewage Disposal.  
 Garbage Reduction Plants.  
 Municipal Improvements.

Roucesvalles Ave. and High Park

Boulevard,

TORONTO, ONT.

**RODERICK J. PARKE**

A.M. AMER. INST. E.E.  
 A.M. CAN. SOC. C.E.

**CONSULTING ENGINEER**

Janos Building, TORONTO  
 Long Distance Telephone.

**TO MANUFACTURERS:** - Advice and specifications covering Industrial Applications of Electricity—Lighting—Power Transmission—Factory Power Distribution—Steam Plants.

TESTS—REPORTS—VALUATIONS.

**Savage Mountain Fire Brick Company**

FROSTBURG, MARYLAND, U.S.A.

41 Years at Making **HIGH GRADE FIRE BRICK**

We are increasing our plant one-third and solicit new accounts.

Elmer E. Mellick,  
 1420 Chestnut St.,  
 Philadelphia, Pa.

**The Stone-Block Co.**  
 CLEVELAND, O.

**FIRE BRICK**

SILICA FIRE CLAY  
 ALUMINITE  
 SILICA CEMENT

MACHESITE BURNT MACHESITE

Our factories are the most complete in the country. Located in Pennsylvania, Ohio, and Kentucky—and controlling the largest known bodies of Refractory materials for different work. Operated by experienced managers. We manufacture material for all heat work—second to none.

Capacity over 200,000 Brick and Special Shapes per day. Write for catalogue.

**T. T. SIMPSON**

A.M. Amer. Inst. E.E. A.M. Can. Soc. C.E.

**Consulting Engineer**

55 Sparks Street,  
 OTTAWA.

Electrical Machine Design.

Plans and Supervision of Electric  
 and Hydraulic Plants.

**HORACE F. EVANS**

EXPLORER and GEOLOGIST

Having made a careful examination of the Thompson, Bonaparte and Nicola divisions of Yale District, British Columbia, is prepared to furnish investors and intending investors with reliable reports on the occurrence of metalliferous ores, also Coals, Lignite Coal and Lignite within the district indicated.

Having made a careful examination of the Cold Water Coal Beds of the Nicola Valley and Hat Creek Country, very dependable reports on the character of these Coals and Lignites will be furnished to investors and others. These examinations have extended over many years and the value as well as extent of the coal measures will be given.

Regular Address, ASHCROFT, B.C.  
 Cable and Tel. Address, "Callor," Ashcroft, B.C.

**ROBERT W. HUNT & CO.**

Bureau of Inspection, Tests and Consultation.

66 Broadway, New York; 1121 The Rookery,  
 Chicago; Monongahela Bank Bldg., PITTSBURGH;  
 Norfolk House, Cannon St., E.C. LONDON.

Inspection of Rails and Fastenings, Cars, Locomotives, Pipe, etc.; Bridges, Buildings and other Structures. Chemical and Physical Laboratories. Reports and estimates on properties and processes.

**JOHN J. GARTSHORE**

33 Front St. W., Toronto.

**Rails and SUPPLIES,**

Now and Secondhand,

For RAILWAYS, TRAMWAYS, Etc.  
 Old material bought and sold.

**Do You Use CRAYONS?**

Ours are made by Cotton Mill Men, who know what the ingredients should be.

Ours will wash off the goods in process of manufacture without leaving a stain.

**LOWELL CRAYON CO., - LOWELL, MASS.**

Original Makers. Samples Sent.

**U. S. A. Eagle**

Brass Miner Lamps

Pat. Mar. 29, '01—No. 756151.

Burns paraffine or oil.

Manufactured by **JOHN ANTON & SON, Monongahela, Pa.** Price list mailed on application.

**MOTORS**

FOR ALL CIRCUITS.

**Direct or Alternating**

Phone Main 4227.

**THE ELECTRIC ENGINEERING AND SUPPLY COMPANY**

St. Hilaire Station, One, Canada.

Established 1873. Telephone Main 1889.

**THOMAS HEYS & SON**

CHARLES H. HEYS, Manager.

**CHEMICAL and MINING EXPERTS.**

Analyses of all commercial products, etc. Plans and reports on mines and mining locations.  
 114 Bay Street, TORONTO, ONT.

**THE DELANO-OSBORN ENGINEERING CO.****Consulting Engineers** LIMITED

Civil, Mechanical and Electrical Engineering, Power Plants, Manufacturing Establishments. Inspections, Tests and Reports.

Manning Chambers, TORONTO, ONT.

**CHARLES G. SHEPARD,**

**PIG IRON & COKE.**  
 401 ELLICOTT SQUARE, BUFFALO, N.Y.

**H. D. PETRIE**

Barrister, Solicitor, Notary

Spectator Building,  
 HAMILTON, ONT.

Companies Incorporated.  
 Commercial Law and Collections.

**NEFF & POSTLETHWAITE****CHARTERED ACCOUNTANTS**

26 Wellington St. East, TORONTO

Phone Main 1880.

Audits and Investigations a Speciality.

**PATENTS**

TRADE MARKS, Etc.

**HANBURY A. BUDDEN**

NEW YORK LIFE BUILDING,  
 MONTREAL.

**S. DILLON - MILLS****MINING EXPERT**

Mining Properties examined and developed, reports furnished. Twenty years experience in Furnace and Mining Work.

588 HURON STREET. TORONTO

**WIRE MACHINERY**

Contractors' and Builders'  
**PLANTS**

Complete or in Part.

**WIRE MILLS****CHAIN FACTORIES**

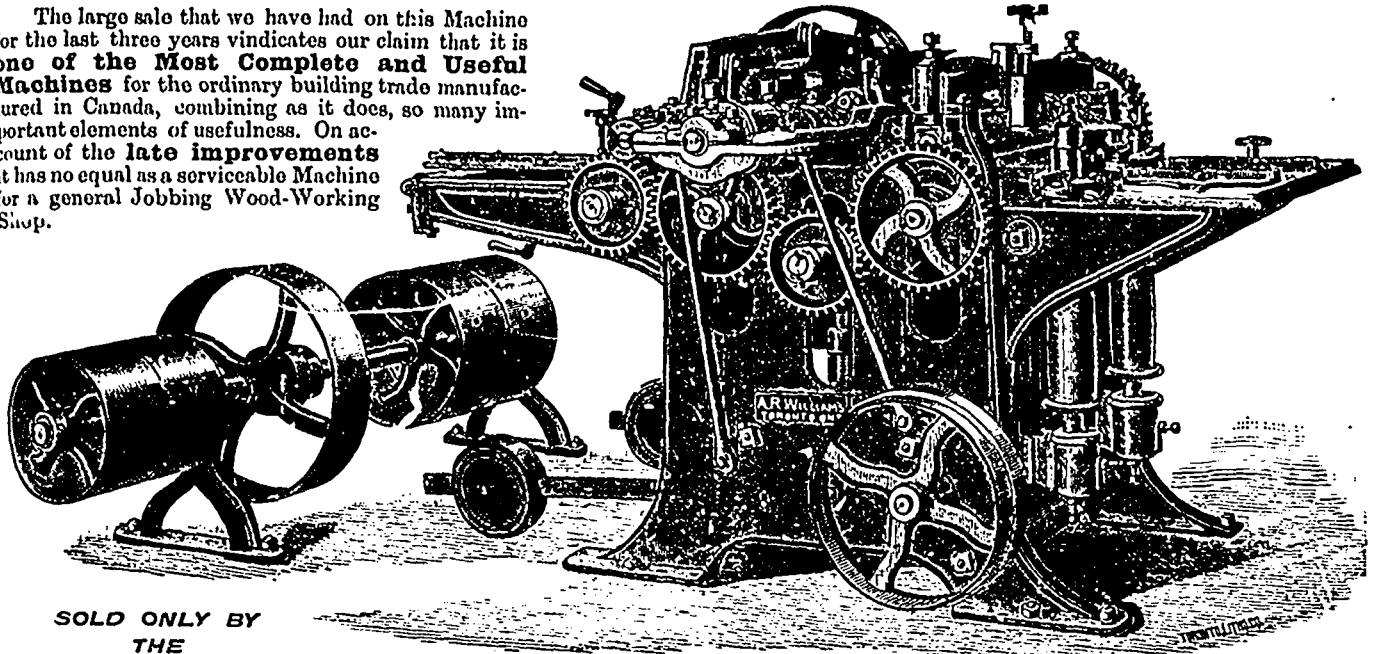
Sewer Pipe Factories,  
 Clay Working Machinery.

**THE TURNER, VAUGHN & TAYLOR CO.,**  
 Cuyahoga Falls, Ohio, U.S.A.

Write for estimates.

# 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

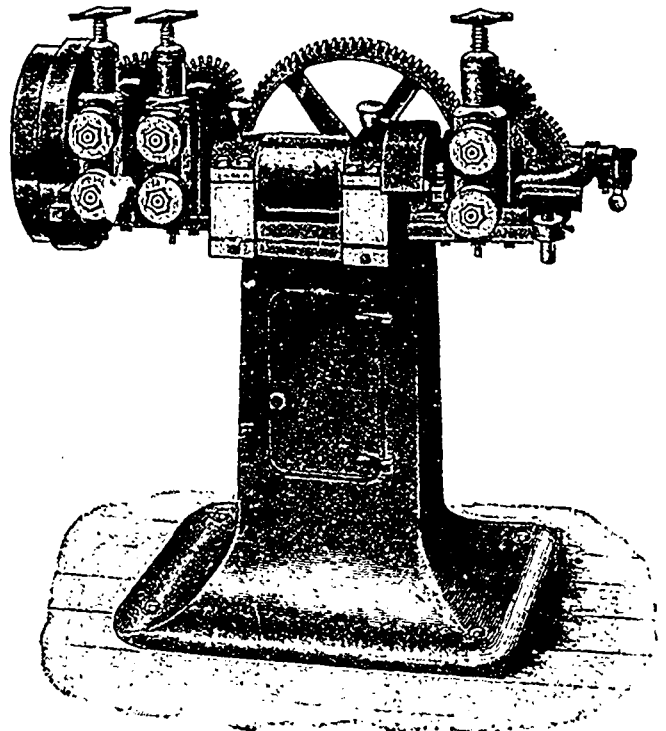
**ENGINES, BOILERS AND MILL MACHINERY SUPPLIES**

## Dowel Machines

Will turn 60  
Lineal Feet  
per Minute.

**Made in Three Sizes**

SEND FOR CATALOGUE.



Manufactured  
by . . . .

**C. H. COWDREY MACHINE WORKS**  
FITCHBURG, MASS.

AGENT  
**H. W. PETRIE**  
TORONTO, ONT.

# Hot Blast Heating Systems

— FOR —

Factories, Mills, Schools,  
Colleges, Hospitals, Etc.

PERFECT VENTILATION AT AN EVEN TEMPERATURE.

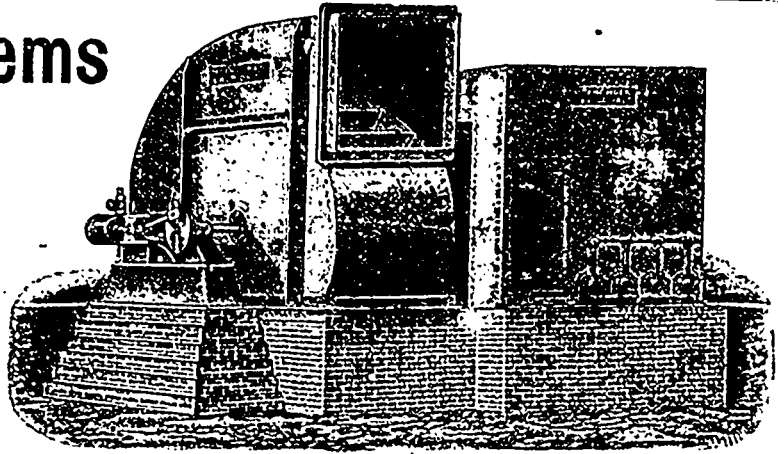
Write for prices and particulars to

## SHELDON & SHELDON

GALT, - - ONT.

FORMERLY

McEachren Heating & Ventilating Co.



# Petrie's Machinery Depot

**ENGINES AND BOILERS**

**MACHINE TOOLS**

**WOOD-WORKING MACHINERY**

**SAW MILLS**

**ENGINEERS' AND MILL MEN'S**

**SUPPLIES**

UP-  
TO-  
DATE

NEW STOCK  
LIST  
Issued  
Monthly.  
Ask for one.

**AGENTS FOR**

London Machine Tool Co.  
Cincinnati Milling Machine Co.  
Cincinnati Planer Co.  
Cincinnati Shaper Co.  
Cincinnati Upright Drills.  
Lodge & Shipley Lathes.  
Hickford Radial Drills.  
Sebastian Lathe Co.  
B. F. Barnes & Co.  
Automatic Machine Co.  
Cattin Keyseater.  
Bremer Punch & Shears.  
The National Machinery Co.  
Schuchart & Schutte.

American Grinding Machines.  
Morris Machine Works.  
C. H. Dutton Co.  
Taber Pump Co.  
Sturtevant and Buffalo Blowers  
and Fans.  
American Machinery Co.  
Fox Machine Co.  
West Side Band Saw.  
Dain Hay Presses.  
The Cleveland Automatic Ma-  
chine Co., Cleveland, Ohio.  
The Laurie Engine Co., Montreal.  
Potter & Johnson.

**H. W. PETRIE**

Adjoining  
Union Station.

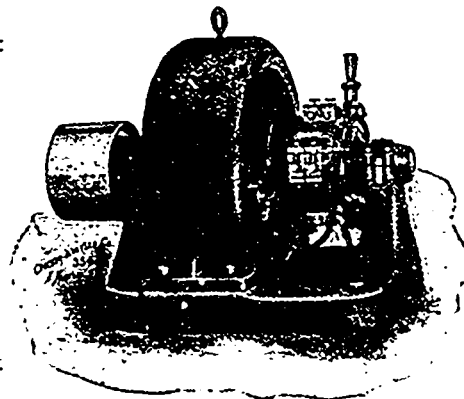
**TORONTO**

Prices and Descriptions of NEW AND SECOND-HAND  
MACHINES on Application.

# CROCKER-WHEELER COMPANY

MANUFACTURERS AND ELECTRICAL ENGINEERS.

Direct  
and Alternating  
Current  
Apparatus.



Send Us  
Your  
Specifications.

Address all Communications to

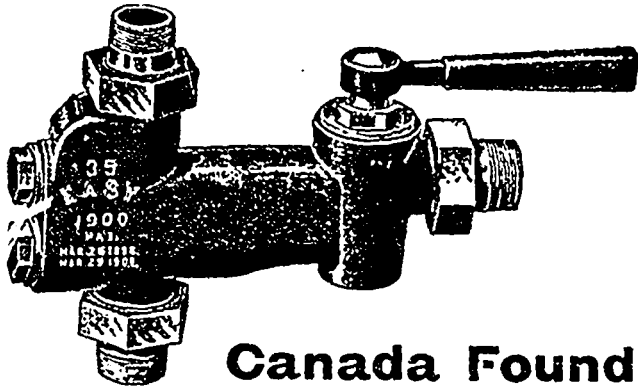
## THE PACKARD ELECTRIC CO., Limited

MONTREAL.

ST. CATHARINES.

WINNIPEG.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



## Easy Double Tube Injector

*Simple in Construction  
No Moving Parts  
No Complicated Valves  
Not Restricted by Temperature*

SEND FOR BULLETIN No. 22.

### Canada Foundry Company, Limited

Head Office and Works, TORONTO, ONT.

DISTRICT OFFICES— Montreal. Halifax. Ottawa. Winnipeg. Calgary. Vancouver. Rossland.

## EUGENE F. PHILLIPS ELECTRICAL WORKS

MONTREAL - CANADA - TORONTO LIMITED

**Bare and Insulated Electric Wire**  
Electric Light Line Wire, Incandescent and Flexible Cords,  
**Railway Feeder and Trolley Wire**

Americanite, Magnet, Office and Annunciator Wires,  
Cables for Aerial and Underground Use.

LONG-DISTANCE PHONE 1103.

The **Electrical Construction Company of London, Limited**  
32-40 Dundas St., London, Can.

Perfection TYPE **DYNAMOS and MOTORS**

Multipolar or Bipolar, Direct-Connected or Belted.

**OVER 1500** OF OUR MACHINES IN USE.

We contract for complete installations, including wiring of factories.

We repair machines of any make.

Descriptive matter and estimates furnished on application.

Branches at **Vancouver, Winnipeg, Toronto, Montreal, Halifax**

**W**E can supply you with Metals of all kinds.

We also buy Metals of all classes.

Consult us before buying or selling.

**SYRACUSE SMELTING WORKS**  
MONTREAL.  
NEW YORK. SEATTLE.

## VOLTA ELECTRIC REPAIR WORKS

D. McCRECOR JOHNSTON, Proprietor.

86 Adelaide Street West,  
TORONTO.

OUR SPECIALTY:

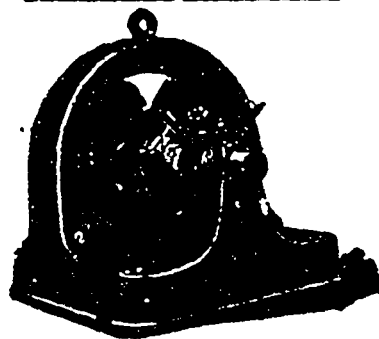
## ELECTRICAL APPARATUS

OF ALL KINDS

REPAIRED and RECONSTRUCTED.

LONG DISTANCE TELEPHONE  
MAIN 4118.

## TORONTO and HAMILTON ELECTRIC CO.



### MOTORS and DYNAMOS

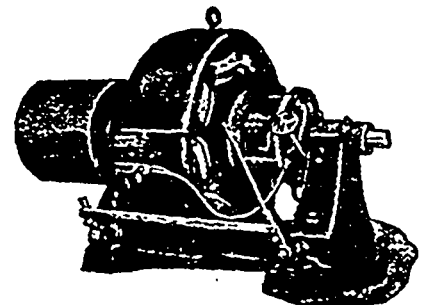
MODERATE and SLOW SPEED OF HIGH EFFICIENCY.  
EITHER BELTED OR FOR DIRECT CONNECTION.  
REPAIRS PROMPTLY EXECUTED ON ALL ELECTRICAL APPARATUS.

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

## The Jones & Moore

ELECTRIC CO., Limited

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.**

**ENGINES AND BOILERS  
HOISTING ENGINES  
LOCOMOTIVE TENDERS  
SHIPS, YACHTS AND TUGS**

**THE BERTRAM ENGINE WORKS CO., LTD.**  
Bathurst and Niagara Sts.,  
... TORONTO ...

**Engineers' Supplies** Textile Supplies,  
CHESTERTON'S. Banding, Belting,  
Laundry and Oils, Grease and  
Finishers' Sizings,  
Starches and Stationers' and Shoe  
Pastes, Gums and Cements.  
Transmission and Textile Machinery  
for Cotton and Wool.

**ALFRED HAWKSWORTH**  
MILL ENGINEER—GENERAL FURNISHER  
551 St. James Street, - MONTREAL.

**EXPANDED**

The highest type of modern fireproof construction is  
Concrete reinforced with EXPANDED METAL.

**FLOORS -- ROOFS -- WALLS**

Write for Catalogue and Prices.

**EXPANDED METAL AND  
FIREPROOFING CO., LIMITED**  
100 King Street West, TORONTO.

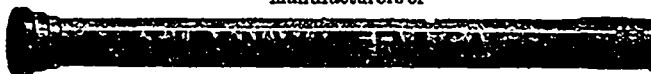
**METAL**

**MONTREAL PIPE FOUNDRY CO.,  
LIMITED**

SUCCESSORS TO

**DRUMMOND-McCALL PIPE FOUNDRY CO.**  
(Limited)

Manufacturers of



"Specials," Hydrants, Valves, Etc.

Offices: - - - **Canada Life Building,  
MONTREAL**

**THE WELLINGTON MILLS  
LONDON, ENGLAND.**

**Genuine Emery**

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

Manufacturers

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

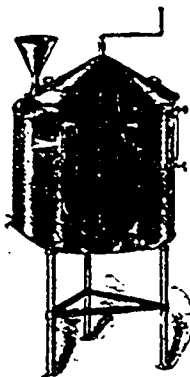
**JOHN OAKEY & SONS, Limited**

Wellington Mills, Westminster Bridge Road, London, England.

Enquiries should be addressed to

**JOHN FORMAN, 650 Craig St., Montreal.**

**The WETMORE Patent Glue Heater**



All progressive manufacturers in the  
United States are using it. On the  
market since 1901.

No tariff. Made in Windsor. Sold by  
**A. R. WILLIAMS MACHINERY CO.**  
Toronto, Ontario.

We give you **30 Days' Free Trial**  
and if it does not convince you in that  
time that it will pay for itself in a year,  
send it back.

**The Advance Machinery Co.,**  
19-23 So. Huron Street,  
TOLEDO, OHIO.



**THE UNDERWOOD**

**Manufacturers**

Throughout CANADA  
have unanimously  
decided in favor of the  
**VISIBLE UNDER-  
WOOD Typewriter.**

**Why?**

Because the Underwood is the only successful invoicing  
and tabulating typewriter that has stood the test.

**United Typewriter Co., Limited, - Toronto, Canada**

**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.

# COAL SCREENS

## FOUNDRY RIDDLES

### SIEVES of all kinds

**WE MAKE THEM!**

THE

# GEO. B. MEADOWS

Wire, Iron & Brass Works Co., Limited  
117 King St. West, TORONTO, Canada

## THE REDUCTION OF LABOR IS INSURED BY THE JEFFREY SYSTEM

— OF —

### COAL AND ASH HANDLING



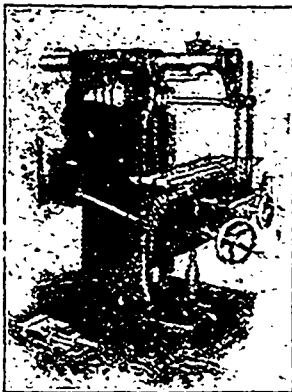
In Power House shown a Pivoted Bucket Conveyor and Traveling Chute for feeding stokers are features.

SPECIFICATIONS AND ESTIMATES PROMPTLY FURNISHED FREE  
WITH CATALOGUES ON  
ELEVATING, CONVEYING, POWER-TRANSMITTING.

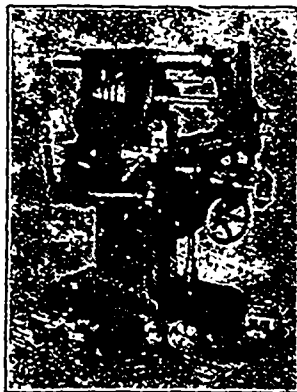
THE JEFFREY MFG. CO., COLUMBUS, OHIO, U.S.A.  
TORONTO AGENTS—A. R. WILLIAMS MACHINERY CO.  
MONTREAL AGENTS—WILLIAMS & WILSON.

# BECKER-BRAINARD MILLING MACHINES

FOR RAPID PRODUCTION.



No. 3 Plain Gear Feed  
Milling Machine.



No. 2 Universal Gear Feed  
Milling Machine.

Complete line of Horizontal and Vertical  
Millers to meet every requirement.

WRITE FOR CATALOGUE.

BECKER-BRAINARD MILLING MACHINE CO.,  
HYDE PARK, MASS. U.S.A.

Branch Office: THE BOURSE, PHILADELPHIA, PA.

## McNaull Economic Water Tube Boiler

Is adapted to every purpose requiring  
a boiler.

It is very economical in fuel, and will  
save its cost in a very few years, in this  
one particular.

The floor space occupied is small com-  
pared to other boilers.

It possesses absolute safety, is simple  
of construction, and the cost for repairs  
is practically nothing.

Write Dept. M. for catalogue.

THE WM. HAMILTON MFG. CO., Limited  
Peterborough, Ont.

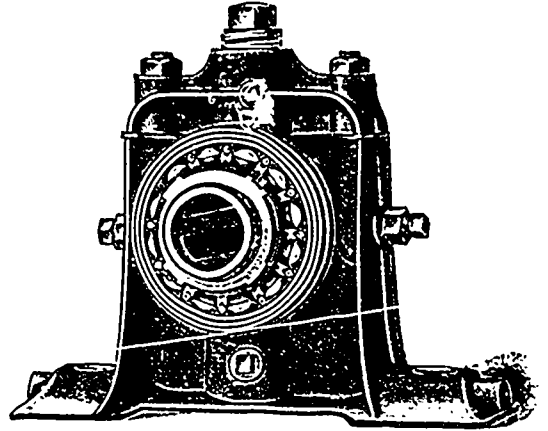
"The shafting runs clean without using oil, consequently saving oil, and no drippings, and as near as we can figure we are making a saving of 25% on fuel by using these bearings."

THE SYLVESTER MFG. CO.,

Per R. SYLVESTER, President,  
Lindsay, Ont.

## THE CHAPMAN Double Ball Bearing

A BEARING THAT SAVES POWER



How much power are you wasting on your line shafting?  
Are you using the old-fashioned journal bearings?  
Then from 15% to 50% of your entire power is wasted in friction on your shafting.  
The average cost of steam power is \$50 per h.p. per year.  
At 20% loss on a 100 h.p. plant means a loss of \$1,000 per year.  
We have shown an average saving of 20% of the entire power.  
Over 100 Canadian factories are now equipped with CHAPMAN DOUBLE BALL BEARINGS.

Catalogues and Full Information Furnished on Request.

**THE CHAPMAN DOUBLE BALL BEARING CO. OF CANADA, LIMITED**

Office—89 Scott St., Factory—89 Pearl St., TORONTO.

**IRON**

Bars in Flats, Rounds, Squares,  
Ovals, Half-Ovals, Half-Rounds  
and Bands.

Also Wrought Washers.  
Good Quality—Prompt Shipment.

**LONDON ROLLING MILL CO.**  
LIMITED  
LONDON, CANADA.

**STEEL**

When you are wanting any Electrical Supplies

Such as **TELEPHONES,**

**ARC LAMPS,**

WRITE

**DYNAMOS, Etc.**

**JOHN FORMAN, - 708-710 Craig Street, Montreal**





ESTABLISHED IN 1880.

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.

**SUBSCRIPTIONS:**

Canada and United States \$1.60 per year. All other Countries in Postal Union ten shillings sterling, including postage.

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

Classified Index ..... Page 46  
 Index to Advertisers ..... Page 53

**A WORD TO OUR READERS!**

The line at the bottom of our advertising pages requests you when writing to Advertisers, to mention The Canadian Manufacturer. Compliance with the request costs nothing, but would mean a great deal to us. As the manufacturer usually grades the salary of his salesman according to the value of the orders he turns in, so the advertiser values space according to inquiries received. The only way for this journal to receive full credit for sales influenced is for our readers, when writing to advertisers, to kindly mention The Canadian Manufacturer.

**A VALUABLE BOOK.**

The Report of the Department of Trade and Commerce for the fiscal year 1904, contains the report of Mr. F. C. T. O'Hara, Superintendent of Commercial Agencies, in which reference is made to the value of the Industrial Blue Book, published by M. J. Henry.

Mr. O'Hara says:—"During the past year there have been distributed more than 500 copies of the Industrial Blue Book to all parts of the world. This was accomplished through the commercial agents, and many were mailed directly from the department. This work is the most comprehensive of the kind published in Canada, and contains the names and addresses of all the manufacturers of Canada. It was placed in the hands of the more important British Consulates in Europe, and the United States, Mexico and South America, besides being placed in all the largest Chambers of Commerce in Europe and Japan. In acknowledging the receipt of the work the British Consuls were highly gratified, and without exception all expressed their pleasure and willingness to do all in their power to help Canadian trade."

This valuable and important publication—the Industrial Blue Book—which contains the names and addresses of every important manufacturing concern in Canada, and a description of the goods they produce, can be had from THE CANADIAN MANUFACTURER, Toronto, price \$5, or 21 shillings sterling, with 25 cents or one shilling additional when sent by registered mail or express.

**AS TO CEMENT.**

A meeting of a number of cement manufacturers was held in Toronto, a few days ago, including representatives from most of the large concerns in Ontario and Quebec, at which a delegation was appointed to wait upon the Finance Minister at Ottawa, to ask for an increase of duty on imports of cement. The delegation waited upon the Minister, placed their views before him, and was told that the matter would receive due consideration.

At the Toronto meeting it was shown that large quantities of American cement was being "dumped" on the Canadian market at prices at which Canadian makers could not compete, and at prices considerably lower than those at which cement was sold in the United States, the desire being that

the Government increase the duty from 12½ cents per hundred pounds, as now, to 17½ cents, thus affording adequate protection to the Canadian industry.

There are but few articles enumerated in the Canadian tariff upon which duties are levied otherwise than upon an ad valorem basis, one of the exceptions being that upon Portland cement, the duty upon which is specific, at the rate of 12½ cents per hundred pounds. It may be, and no doubt is, distasteful to Canadian manufacturers to find themselves undersold in the home market by their American competitors, but it does not seem that the dumping clause of the tariff can in any way affect the traffic; and it is irrelevant to the matter to show that in a recent transaction in Hamilton an American concern captured a fifteen thousand barrel contract for cement, paying full duty on the article, at a price less than any Canadian could afford to offer. If, however, the duty of 12½ cents per one hundred pounds is not sufficiently high to afford adequate tariff protection to the home industry, it is evidently the duty of the Government to increase it to 17½ cents as requested by the Canadian makers.

The variety of uses to which cement is now being put is increasing in proportion to the increasing activity in industrial pursuits which now characterize all sections and portions of Canada. It is stated that seventeen different cement manufacturing concerns were represented in the delegation which recently waited upon the Finance Minister, and no doubt there are many other similar concerns in full accord with those represented; but while all these are working to their utmost capacity to meet the current demands for cement, it is impossible for them to do so; and if there is to be a diminution of imports of cement the capacity of existing works must be greatly enlarged, or additional works be put in operation. As recently shown in these pages, the imports of Portland cement into Canada in the fiscal year ending June 30, 1904, were valued at nearly a million dollars—to be exact, \$995,017, of which American cement met the demand to the value of \$510,718. Fuel is a large item in the cost of making cement, and we are not aware of any Canadian concern which does not use bituminous coal, the duty upon which is 53 cents per short ton, a burden from which American concerns are exempt. Why should Canadian manufacturers be compelled to shoulder this burden?

## WEIGHTS AND MEASURES.

The British Weights and Measures Association have sent us a copy of a circular which they have recently published in which is given comparisons of the population, areas and trades of the inch and the metre-using countries of the world. The publication is timely in view of the fact that there are those who are in favor of the universal adoption of the metric, or decimal system, and who are urging the Government of the countries who cling to the old style, to abandon it in favor of the new.

The brochure gives a diagram which shows the relative population of the metre-using and the inch-using countries. The figures from which the diagram is based are those given in evidence before the Select Committee of the British House of Commons, on whose findings the Metric Bill of 1897 was passed. The total population of the metric countries, as given to that Committee, was 445,296,003. This has been corrected by omitting Mauritius, Greece, Finland, Norway and Sweden, Turkey, and Japan, and by deducting from the Spanish Dependencies the population of those countries taken from them during the Spanish-American war. The list also gives a population of 6,258,800 for Italian Dependencies; which appears to have been a mistake, and is put down at 700,000. The total omission amounts to 106,000,000.

The reasons for the omissions are as follows:—Mauritius: An old French colony, but now English. The metre never got there. Their measure of Pied de Rois is being rapidly supplanted by English measures. Greece: English Consul reporting to Foreign Office, says, "Metric system tried by Government, but not by traders." United States Consul says, "Metric system adopted in 1836; rests a dead letter with the people." Finland: Now under Russia, whose measures have been introduced. Norway and Sweden: The metric system was introduced here some 20 years ago, but the measures still used are largely local, with a mixture of English inches and feet, and metres. The Swedish Government for many years prohibited the importation of any but metre and half-metre rules, but eventually had to give way to the public demand for the two-foot. Turkey: Foreign Office Consul says, "Metric system introduced in 1836; only affected Constantinople. Five years given for the people to adopt it. Though the old measures, etc., were confiscated the attempt to make the metric system compulsory failed. A subsequent effort to introduce the kilogramme was abandoned." Japan: The metric system is legal in Japan, but not in use outside scientific work. In dockyards and in manufacturing establishments the English inch is used, and local measures for internal trade.

The three chief countries which have not adopted the metric system are the United States, the Russian Empire and the British Empire. The population of the United States, as shown in the diagram, is alone equal to the combined population of two of the metre-using countries. The population of the Russian Empire, equals 25 metre-using countries. The British Empire has a total population of 356,000,000 against the 339,000,000 of the countries said to have adopted the metric system. The measures of the British Empire, the Russian Empire, and the United States are all based on the English inch.

Comparing the area of the inch-using and metre-using countries of the world, the former overwhelmingly predominates. In connection with that large part controlled by the English-speaking race, it is of the greatest importance to remember that its measures are identical for manufacturing and for commercial purposes, and that the English yard, as

used in San Francisco, is identical with the yard used in Sydney, and the English pound used in Toronto is identical with that used in the Transvaal. Throughout the Empire there is only one standard of length used—the yard, and one standard of weight—the pound, and these are the standard which have been in use ever since the time of the Magna Charta, which declared there should only be "one weight and one measure throughout the realm."

While the greater power of the European continent may be indicated as metre-using, we are not aware of any one country on that continent but what also uses measures and weights either identical with or of a similar character to the English inch, foot and pound. Such measures are their old local measures, and are used largely to-day in French factories, German machine shops, and Danish dairies. Take the case of Holland as a typical example. The metric system was introduced here 90 years ago, but still they use the Amsterdam, Friesland, and Rhineland feet, and have added to them metres and half-metres and English feet, the latter now predominating over all others combined. Then take the testimony of a French textile manufacturer, himself a metricite, who, writing to the French press, says "We are as much in the anarchy of weights and measures for the textile industry as at the time of the Revolution. After having established the metric system, is it not truly ridiculous that, more than 110 years later we should be still using the English yard, the old French pound, the denier of Montpellier or of Milan, and the ancient aune. Note also, that whilst I speak here only of France, I could say as much of all Europe." Further, take the latest Austrian work (published in 1905) on textile calculations. The author begins by stating: "The English system of numbering is made the basis for the work, the French and metric systems being only included for purposes of comparison." In the rules given for calculations we find the warp calculated by the Vienna inch, the weft by the centimetre, and the weight by the English pound. The length of the cloth is in metres, the weight of it in English pounds, and the width of it in Paris inches! In a German publication, also of recent date, the rules provide for the reeds being gauged by the French line; the counts per 340 English yards, and the picks per French line. The warp is calculated in metric grammes per English hanks and extended at a price in German marks per English pound. The weft is calculated per 100 metres of cloth, from picks per French inch, width in French lines, and weight in metric grammes, finally being priced in German marks per English pound. But this must be simple compared with the metric system, for a proposition the German Reichstag in the Autumn of 1902 to introduce that system was defeated on the grounds that it would throw the German textile industry into "ungodly disorder." Spanish and Italian textile handbooks all tell the same tale.

A close study of the whole subject of weights and measures elucidates the fact that in no country where the metre and its derivatives have been thrust on the people have such measures made their way on their merits. The only effect has been to make confusion worse confounded.

## ONTARIO BUREAU OF MINES.

No department of the Provincial Administration has more fully justified its creation than the Bureau of Mines, which has now been in existence for thirteen years. During that period there has been remarkable development of the mineral production of the Province, and there is now going on in many parts of the country, particularly in northern Ontario, an amount of preliminary work which presages a still more

extraordinary advance. The mere recital of the fact that the value of Ontario's mineral products in 1891, when the bureau was established, aggregated \$4,705,000, compared to \$12,370,000 in 1903, is a striking indication of the usefulness of the bureau, for to the efforts of its officers much of that development has been due. But an idea of the amount of work devolving upon them and the efficient manner in which they are aiding in the development referred to cannot be obtained from a mere mention of such figures as those quoted. The bureau is more than an office where claims may be filed, and whence reports of conditions at the working mines are issued. It is in the real sense of the word a "pioneer" department of the Government. The work of its officials includes the exploration of the mineral-bearing areas, especially in the northern and western parts of the Province, and in making known their geological and mineralogical characteristics by means of maps and reports, by studying and describing typical or valuable occurrences of ores or minerals, by investigating new methods and processes of extracting metals or treating ores and minerals, by collecting and publishing statistics showing the progress of the various branches of the industry, by inspecting the working mines and seeing that the regulations for securing the safety of miners are observed.

To bring the means of cheaply and effectively testing the quality and extent of any mineral deposit within the reach of all, the bureau is provided with two diamond drills, which are loaned out to those desiring their use, the Government bearing 35 per cent. of the cost of operation. These drills are at work practically all the time, summer and winter, and have proven an efficient aid in the development of the mining industry.

The Provincial assay office established at Belleville is another branch of the bureau that has proved an invaluable aid to prospectors and others wishing to ascertain the value of their finds, the necessary assays and analyses of ores or minerals being made at the lowest possible cost.

Another helpful feature is the local agencies of the bureau which have been established in the mining regions, where maps and records of granted and ungranted lands may be consulted free of charge and application made for mining lands.

Summer mining classes are held yearly under the auspices of the bureau, at the principal mining centres, where instruction is given in mineralogy, elementary geology, etc. These classes are in charge of professional men, well acquainted with the practice as well as the theory of the things they teach, and are highly appreciated by and exceedingly popular among prospectors and miners.

Another important and comparatively new feature is one by which the services of the Provincial Geologist, is at the disposal of parties wishing to have their properties examined and reported upon, or desiring expert advice concerning the best methods of developing or working them. In this way at small cost owners of mines or prospectors get the assistance of experience and technical knowledge, thus enabling them to avoid costly mistakes or misplaced expenditure.

Special attention is given by the bureau to questions of prime importance, such as the investigation of the Province's resources in iron, nickel and copper, or in the raw materials for structural work, such as limestone and clay, and to the question of anative fuel supply. Monographs have been issued, or are in preparation, dealing with matters of this nature, vital not only to the mineral industry of the Province, but to its general prosperity and welfare and to the retention of its place as the premier Province of the confederation.

In this connection the excellent annual reports of the bureau are deserving of particular notice and commendation. They are complete in all necessary details, and absolutely reliable. They are in constant and active demand not only in this Province and throughout Canada, but in the United States, Great Britain and Europe.

The mining laws of Ontario are fair and liberal, having been framed with a view to encouraging the prospector, and on the other hand to discourage the acquiring and holding of mineral lands for mere speculation. They provide that all Crown lands shall be open for prospecting, except such as are withdrawn therefrom in the public interest, for instance, in order to secure the preservation of valuable forests; and offer a free grant of 40 acres to the discoverer of valuable mineral five miles distant from any known deposit of a similar kind.

The price of mining lands is \$2 to \$3.50 per acre, according to the distance from a railway, and whether or not the territory has been surveyed by the Crown.

Development work is required at the rate of \$1 per acre during the first two years and \$1 per acre during each of the next five years, or the labor may be done during a shorter period. In the option of the applicant, a lease may be taken on payment of \$1 per acre for the first year and 15 cents to 30 cents per acre for the remainder of the term of ten years, at the expiration of which, if the conditions of the lease have been fulfilled, a grant will issue to the lessee free from any further condition or qualification.

In territory set aside as a mining division, miners' licenses are issued, entitling the holders to stake out claims of 22½ or 40 acres in size, and to retain them on working conditions. Similar regulations are in force respecting unsurveyed territory.

The greatest area which may be granted to any individual in one year is 320 acres of land, containing the same class or kind of ore or mineral within a radius of fifteen miles in any county or district. To companies, syndicates or partnerships the maximum area is 640 acres.

Stringent regulations are provided in the Mines Act to protect the lives and insure the safety of working miners, and no females, nor boys under fifteen years, can be lawfully employed in any mine.

Special encouragement is given to iron mining, and payments up to \$25,000 per annum may be made out of the iron mining fund by way of bounties on iron ore produced and smelted in the Province. Payments on this account have aggregated about \$110,000.

It is worth noting that to provide facilities for educating and training mining engineers, special grants are made to the School of Practical Science, Toronto, and the School of Mining, Kingston, where regular courses of instruction for this purpose are given.

#### RECIPROCITY IN COAL.

At the November meeting of the Mining Society of Nova Scotia held in Halifax, Mr. W. C. Milner addressed the Society, by invitation, on the above subject, and pointed out at the beginning that forty Boards of Trade in Ontario had adopted a resolution recommending the abolition of duties on coal in Canada. They took the view that Montreal was a natural dividing line between the market served by Nova Scotia mines and that by the United States coal producers; that the territory west of Montreal as far as Winnipeg belonged to the latter, and that irrespective of the existing duty, this western district was actually supplied with coal from Pennsylvania, Ohio and West Virginia, whereas from

Montreal to the sea-board was supplied from Nova Scotia. Western consumers declared that the rate of freight between Pennsylvania and Montreal (between \$3 and \$4 per ton) was sufficient to keep United States coal out of the Montreal market and to give Nova Scotia the control of that market without the aid of a duty; and also that the proximity of lake cities to the Pennsylvania coal regions was such that Nova Scotia coal operators had not been able during twenty-five years to establish a trade in the lake region. Mr. Milner held the view that there was only two large new markets to which the Nova Scotia coal trade could be directed—the Ontario and the New England. He quoted figures as to distance and comparative rates of freight from the Sydney mines to New England and Ontario points, showing the large difference in favor of the New England market. The latter, he said, could be made available by the abolition of duties, while the Ontario market could only be reached by low freighting and by increasing, perhaps doubling, the present duty against American coal. The aggregate duty paid by western consumers now is\* \$1,900,000, and they are not satisfied to continue to pay it, inasmuch as it did not give the market to the Nova Scotia producer. He mentioned that in New England, Nova Scotia coals would be in competition with West Virginia soft coals, and that American coal being mined so much cheaper than Nova Scotia coal it would be necessary, in order to compete successfully, to reduce the cost of production in this country. He concluded by stating that it was necessary for the market of Nova Scotia coal to be enlarged in some direction if the development of our coal mines was to be continued.

Hon. R. Drummond said that a large amount of American coal was imported into Montreal by water, in bond, and re-shipped for the use of passenger liners. He did not believe there was much opportunity in the New England market, even if the duty was removed. There were special conditions in 1902 due to the anthracite strike which explained the importations of Nova Scotia coal that year, but this year the only coal going to New England would be to the New England Gas & Coke Co., and a contract of 75,000 tons for the Boston & Maine Railroad. He thought it would require as much expenditure on the part of our coal owners to push trade in New England as it would to deepen the canals. Mr. Drummond said that he was aware that we had pretty nearly reached the end of our tether. Old Country coal had been shut out this year and would likely be shut out for good. The increase of our markets should be equal to 400,000 tons per year. Of the big companies, the Cumberland Railway & Coal Co. was the only one which favored reciprocity, and that was not with respect to their general output, but to the surplus of slack. Mr. James Ross, President of the Dominion Coal Co., was sanguine of being able to send coal into Ontario, and he intends to build a class of steamers suitable for the canals. Mr. Drummond pointed out in conclusion that there might not be much profit in the proposed shipments to Ontario, but in order to do anything in New England it would be necessary for some company to spend some millions of dollars on terminal facilities. The profit in this direction was also doubtful.

Professor Sexton said that Nova Scotia may have something still to fear from the Erie canal on account of the proposition to increase it two or three times its present capacity. A lot of anthracite coal already goes via the canal to Montreal.

\*The duty paid upon imports of coal into Canada in 1904 was \$2,211,860.  
—Editor.

#### EDITORIAL NOTES.

United States Consul James C. McNally, at Liege, Belgium, reporting to his Government, says:

Some of the journals in Belgium, deploring the trade conditions here in certain lines, are encouraged to hope that manufacturers will be forced to compete in other countries. To extend their markets they are advised to specialize on products offering extra advantages. It is alleged that Belgian manufacturers of agricultural implements have entered into serious competition with Americans in what the latter term their own market (Canada), and have succeeded in placing products in greater quantities than have the Americans, heretofore thought to excel in that line.

In the issue of THE CANADIAN MANUFACTURER of January 20, last, was a statistical statement regarding certain imports into Canada in 1904 which, under the heading "Agricultural Implements," included a list of 21 articles of that description, valued at \$2,934,594, of which \$2,911,120 came from the United States, and \$21,842 from Great Britain, the imports from all other countries amounting to only \$1,632. In fact, according to the Trade and Navigation returns, from which our facts are taken, no imports whatever of agricultural implements in 1904 were received from Belgium.

The Dominion Coal Co., have decided that the time has come to invade the Toronto and other Ontario markets, thus contesting with the American coal companies the very profitable field in Ontario. If the experiment succeeds, no longer will the American concerns enjoy the virtual monopoly they have held so long. Canadians will be interested in this matter, and manufacturers in Ontario should be sufficiently alive to the importance of the undertaking to give the Dominion Coal Co. all the encouragement possible. If these markets are won for the Canadian concern it will mean a large increase to the output and greatly enlarged pay-rolls for the men dependent upon the success of the Canadian mines, to say nothing of the increased opportunities for transportation lines. The company will employ a special line of boats to handle the freight from Montreal to Toronto, and in addition will erect large coal elevators in the harbor of Montreal, and Toronto will be used as a large distributing point for the province of Ontario.

"Made in Canada" is a cry which politicians use with more or less effect on certain occasions, and it would be all right to do so if practise and precept were in accord. But such is not always the case. Incident upon the spectacular opening of the Ontario legislature was the coming into prominent notice of a most excellent "Made in Canada" orator as Speaker of the House, and in describing the event we are told that "the new silk gown and broadcloth clothes for the Speaker were passed through the customs recently. Being of an "official" type they were made in London. The hat is of the usual three-cornered variety." Many of the voters who enabled Mr. Speaker to reach the proud eminence he now occupies were tailors and hatmakers, but it seems that none of them were considered competent to make silk gowns, broadcloth clothes and hats "of the three-cornered variety" to please his fastidious tastes. It is this sort of flunkeyism that makes one weary.

Hon. W. J. Hanna, Provincial Secretary, was elected member of the Ontario legislature by the votes of Canadians. One of his first official acts was to appoint Mr. L. E. C. Thorne, an American accountant, to investigate the accounts of the Department of Prisons and Asylums so that upon his report the minister could inform himself of the details of expenditure regarding the institutions under his control. Mr. Thorne had been recommended to Hon. Mr. Hanna as an expert, and the fact that he was an American enabled him, it was thought, to approach his task without any political bias. The respectability and capability of Mr. Thorne is not in question, neither is the necessity for the work he was called upon to perform. But it was a mistake to pass by the hundreds of equally competent Canadian accountants and give the job to a foreigner; and it is insulting to suggest that no Canadian accountant could be found who could investigate the books free from political bias.

# MACHINERY AND ENGINEERING.

## WATER SUPPLY BY COMPRESSED AIR.

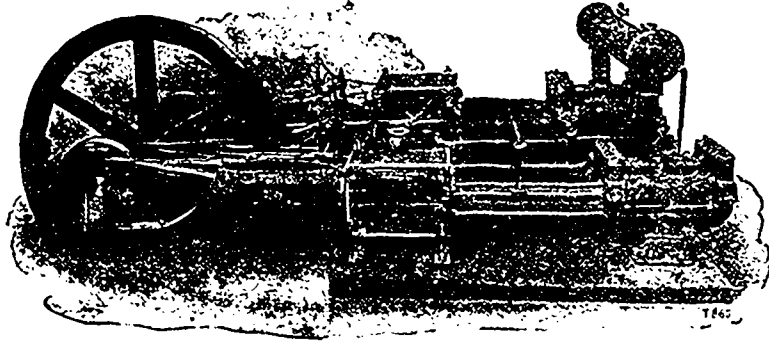
The water supply of Los Angeles, California, has in the past been received by gravity, only a few higher parts of the city being supplied by pumping into the mains. The growth of the city, however, has made an additional supply necessary, and a pumping plant is to be installed in the southwestern part of the city near Slauson Junction, where wells have been bored to water bearing strata, lying 60 to 200 feet below the surface. As these wells are too deep to permit of their operation by pumping engines located on the surface, and as it would be commercially impracticable to pump them by deep well pumps with long plunger rods, and, again, very costly to excavate pumping stations underground near the water level, it has been decided to operate them with compressed air, which offers the further advantages of aerating and cooling the water and permitting one central plant to operate all the wells scattered over a half mile stretch. The system adopted is the air-lift, in which compressed

The water in the wells at present stands about 60 feet below the surface, but, as has been found in irrigation work in California, the ground level of subterranean water supplies is apt to be lowered considerably by continuous pumping, and the compressor has therefore been designed to pump, if necessary, from a much lower level, being guaranteed to deliver 2,000 cubic feet of air per minute against a pressure of 100 pounds. The contract for the compressor was awarded to the Baker Iron Works, of Los Angeles, who are local agents of the Laidlaw-Dunn-Gordon Co., of New York city, manufacturers of pumping and air-compressing machinery. The machine which will be installed is of the same type as the one furnished by this company to supply all the compressed air used at the St. Louis Exposition. The air valves of this compressor are different from those of other compressors in that they combine the quietness and high-speed qualities of mechanically-moved valves with the elasticity of poppet discharge valves, the valves being controlled by what is known as the Cincinnati air-

constant pressure, while if one of the air pipes should break, the speed governor would prevent the engine from running above a certain speed.

## WATER PURIFICATION.

The Wm. B. Scaife Sons & Co., Pittsburgh, Pa., have appointed Mr. Eben Dowie, of Montreal, Canadian agent for their water purifying and water softening systems. This company are the manufacturers of the well known "We Fu Go" and "Scaife" systems of water purification, and their plants are now in use throughout the United States and in many of the British colonies, including a plant for the Dominion Iron & Steel Co., at Glace Bay, N.S. THE CANADIAN MANUFACTURER has lately been publishing some practical articles on boiler insurance, water purification, etc., and in this connection it will be of interest to Canadian manufacturers to enquire into the systems above mentioned. This is another important departure in guarding against explosions, and damage to boilers by the use of impure water, and like the other improved methods and appliances described in previous issues, is an important feature in placing steam power users in safety against danger from explosions and damage to boilers from objectionable mineral substances in feed water.



PUMPING AND AIR COMPRESSING MACHINE.

air is forced through one pipe down to the bottom of the well where it discharges under the mouth of another pipe reaching to the top of the well, and emptying into the reservoir. The bubbles of air issuing from the first pipe enter the mouth of the second, but do not fill it completely, as a large amount of water is carried in between the bubbles. For this reason, the weight of water within the second pipe is less than that in an equal cross section of the well exterior to the pipe. The pressure of the water in the well, therefore, is greater and forces the mixture of air and water in the pipe to rise constantly, and as the bubbles of air are continually supplied at the bottom, this process goes on without intermission, the mixture of air and water discharging at the top of the well in a practically constant stream. The air, as it rises toward the top, expands, thereby returning the work which was expended in its compression, and as in expansion the temperature of air is greatly reduced, it serves at the same time to cool the water.

In the present case, the twelve wells will discharge into a common reservoir, from which the water will be forced by a pumping engine into the city water

main. The Los Angeles machine will be of the two-stage type, that is, the air will be partly compressed in a large cylinder, after which it will pass through a cooler, where its temperature will be reduced by passing over tubes containing cold water, to a high-pressure cylinder, where the compression will be completed. The steam engine driving the compressor and forming, in reality, a part of it, the steam cylinders working on the same piston rods, is also compounded, the steam expanding first in a high-pressure cylinder, after which it passes to a receiver, where it is dried and reheated by high-pressure steam in pipes, after which it finishes its expansion in the low-pressure cylinder. The steam is then condensed in a surface condenser and returned to the boiler through reheaters by the boiler-feed pumps. The entire machine is supplied with oil from one central tank and the oil going into the steam cylinders is afterwards removed by a separating device placed in the exhaust pipe. The automatic governor controls both the pressure of the air delivered and the speed of the engine; that is, if the consumption of air is reduced by the shutting off of wells, the engine slows down, maintaining a

## THE ECO MAGNETO WATCHMAN'S CLOCK.

The Eco Magneto Clock Co., 620 Atlantic Ave., Boston, Mass., have sent us a brochure, fully illustrated, having reference to the Eco Magneto Watchman's Clock, manufactured by them.

Its great value to all employers of labor in factories, workshops, warehouses, etc. where watch has to be maintained at all hours is evident; in fact such an apparatus is absolutely essential.

The efforts of property owners, insurance companies, and others, to secure immunity against loss by fire, have resulted in the more general employment of watchmen, and in the introduction of watchmen's clocks as a means of insuring the faithful performance of their duty.

There are many more or less complicated watchmen's electric clocks in the market, but generally none of them fulfill all the requirements of a perfect watchman's clock. To meet these requirements, a clock should be simple in construction, not liable to get out of order, impossible to tamper with, and easily set up and run by persons possessing no knowledge of electricity. Electric clocks operated by a battery are a constant source of trouble and expense, even to an electrician, and a mystery to others.

In the Eco Magneto Watchman's Clock, the battery is wholly dispensed with, and use made of a permanent magnet instead, by which the watchman generates at each station electricity sufficient to operate the clock. There is nothing to get out of order, and no electrician is needed for adjustment or repairs.



## 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 in these pages, and to every concern in Canada interested in any manufacturing industry whatever, this interest extending to supply houses also.

The Richelieu Hotel, Ottawa, was destroyed by fire March 15. Loss about \$5,000.

The brush and hat factory of Meakins & Sons, Hamilton, Ont., was destroyed by fire recently. Loss about \$55,000.

The Hamilton Cataract Power Co., Hamilton, Ont., have acquired the Hamilton, Grimsby & Beamsville electric railway.

The ratepayers Gananoque, Ont., have granted a loan of \$15,000 to the Sampson Bolt Co., of that place.

A by-law has been passed at Nanpance, Ont., to assist W. A. Carson, Belleville, Ont., to establish a canning factory at the former place.

A new bridge will be erected at Forester Falls, in the township of Ross, Ont., at a cost of about \$1,200.

London, Ont., will submit a by-law to the ratepayers to raise \$100,000, to encourage new industries to locate there.

Mr. A. Angstrom, marine architect, has made some important changes in the plans of the palatial new steamer which will be constructed by the Canadian Shipbuilding Co., for the Niagara Navigation Co., at Niagara-on-the-Lake. The length of the proposed vessel, which will be of steel construction, has been increased from 315 to 317 feet over all. She will have a 36-foot beam on the hull, with eight-foot guards, giving a deck beam of 52 feet. This arrangement is practically new in propelled steamers, the few exceptions being seen in the New York's excursion fleet, of which she will much resemble the Manhattan. No name has yet been decided upon. She will have a speed of 24½ miles an hour, and a capacity for 2,000 passengers. The tonnage of the steamer has not yet been made up, but the cost of the vessel will be \$285,000. With weathered oak cabin work, bay windows and green leather upholstering, the interior will present something new in marine architecture.

The Belleville Portland Cement Co.'s works at Point Ann, Ont., have commenced operation.

Mr. Jas. Gayley, first vice-president of the United States Steel Corporation, visited the town of Port Colborne, Ont., in connection with the establishment of a Canadian Steel plant. For further information apply to R. R. Matthews, Port Colborne.

The Massey-Harris Co., Toronto, will erect a four story brick addition to their factory at a cost of \$125,000.

The Eagle Knitting Co., Hamilton, Ont., have purchased a site for the erection of their new factory.

The Smith's Falls Malleable Castings Co., Smith's Falls, Ont., will greatly enlarge their works.

Messrs. Mark Fisher & Sons, Co., Toronto, have commenced the construction of their five-story warehouse building.

The St. Mary's Falls Paper Co., Sault Ste. Marie, Ont., recently incorporated, will erect a large mammoth mill for the manufacture of print paper.

R. Harwood's saw-mill, near Speedside, Ont., was destroyed by fire March 27. Loss about \$2,000.

The city council of London, Ont., are considering the establishment of an abattoir in that city.

A company has been organized at Toronto Junction, Ont., with a capital of \$50,000, to manufacture sand and lime brick, etc. For further information apply to the mayor.

The Canadian Bearings, Ltd., Hamilton, Ont., recently incorporated, with a capital of \$400,000, have acquired the James machine shop, and will be in a position to manufacture roller bearings in a few weeks.

The Canadian Shovel & Tool Co., Hamilton, Ont., recently organized, with a capital of \$250,000, will erect a factory building at a cost of \$100,000.

The Eureka Planter Co., Windsor, Ont., have purchased a site in Woodstock, Ont., upon which they will erect a new factory. When the building is completed the company will remove their plant from Windsor.

The Geweikschaft Deutsche Nickel Gesellschaft der Grubenvoistand, a German mining company, who have a newly invented plan for treating copper-nickel ores, have applied to the Bureau of Mines at Ottawa, for information to enable them to secure mineral areas in the Sudbury, Ont., district.

The Wetmore Patent Glue Heaters, which have only been on the market for three years, are now in use in nearly every country where glue is used, and every one that has been sent out has been shipped under a positive binding guarantee that it would save its cost in a year in the saving of glue, time, labor and steam. Mr. J. A. Taggart, president of the Advance Machinery Co., manufacturers of the Wetmore glue heaters, has made a special study of the glue problem, with the result that they are able to offer the above guarantee. These goods are made in Canada, by the A. R. Williams Machinery Co., Toronto.

J. J. Stone, will erect a hotel at Fort Frances, Ont., at a cost of about \$25,000.

The Dodge Mfg. Co., Toronto, have received a large order for machinery from the Grand Trunk Railway Co., to be installed in their new million bushel grain elevator, at Windmill Point, near Montreal.

The Strathpeffer Co., incorporated with a capital of \$200,000, will erect an apartment house in Hamilton, Ont.

The Dominion Brass Works, Port Colborne, Ont., bought two months ago by Mr. D. McGillivray, of that place, have again been sold to Messrs. Iveson & Sherlock, Toronto.

Mr. H. C. McBride, London, Ont., has prepared plans for the new Trinity Methodist Church, at Berlin, Ont.; the German Evangelical Church, Waterloo, Ont.; and the Christian Church, at Poplar Hill, Ont.

The ratepayers of Peterborough, Ont., will vote on a by-law to raise \$25,000, to build a new central fire hall, install a new fire alarm system, and to purchase a chemical engine.

Mr. C. H. Nicholson, Sarnia, Ont., traffic manager of the Northern Navigation Co., visited Toledo, Ohio, recently, relative to the plans of the company for planning a new line of passenger steamers on the Toledo-Georgian Bay route during the coming season.

Messrs. Wm. R. Perrin & Co., Toronto, manufacturers of hydraulic screw and filter presses, etc., have purchased a site 150x100 feet, and will erect a large new factory here.

The Niagara Frontier Bridge Co., Niagara Falls, Ont., will erect a bridge across the Niagara River, between Niagara Falls and Lewiston.

Mr. J. R. Booth, Hull, Que., is considering the erection of a power plant in Ottawa at a cost of \$250,000, also a sulphide mill at a cost of \$500,000; and paper-mills to cost about \$1,000,000.

The Menzie Wall Paper Co., New Toronto, Ont., will erect a large storehouse.

Messrs. Gum & Co., produce dealers, Wingham, Ont., will rebuild their warehouses, which were destroyed by fire last fall.

The Western Foundry Co., Wingham, Ont., will erect a large warehouse.

The Empire Elevator Co., Winnipeg, Man., will erect another large elevator at Fort William, Ont. It will have a capacity of about 2,000,000 bushels.

The Myles Coal Co., Hamilton, Ont., will erect a new warehouse building six stories high.

The Ottawa Milling Co., Ottawa, will erect a new malting plant, with a capacity of 600 bushels of malt per day.

The Home Bank of Canada, will erect a new bank building in Toronto. Beaumont Jarvis, is the architect.

The Niagara Navigation Co., Toronto, have awarded the contract for the erection of their new steamer to the Canadian Shipbuilding Co. It will be built at Niagara-on-the-Lake.

The Michigan Central Railroad Co., will build a tunnel under the Detroit River, between Windsor, Ont., and Detroit, Mich.

The Imperial Export Co., Toronto, have just secured a large contract for school desks for the city of Durban, South Africa. These desks are to be

manufactured by the Canadian Office & School Furniture Co., Preston, Ont.

Messrs. Walker Bros., Orillia, Ont., will erect a new foundry 94x30 feet, for the manufacture of gasoline engines, etc.

Thirty-five more locomotives will be ordered by the Pere Marquette system, at a cost of about \$560,000. The new engines will be divided into five of the Atlantic type for passenger purposes, twenty of the big ten-wheeled combination variety, which can be changed from passenger to freight work at short notice, and ten switch engines.

The H. W. Corney Co., Toronto, have been incorporated with a capital of \$40,000, to manufacture carpets, mattresses, etc. The provisional directors include P. E. Hambly, W. D. Earngey, and A. K. Butchart, Toronto.

The Canada Stationery Co., Toronto, have been incorporated with a capital of \$25,000, to manufacture stationery, etc. The provisional directors include J. J. Seitz, W. H. Shaw, and A. H. Moore, Toronto.

The Peterborough Boiler & Radiator Co., Peterborough, Ont., have been incorporated with a capital of \$40,000, to manufacture boilers, radiators, heaters, etc. The provisional directors include E. F. Mason, A. Parker, and R. G. Sturgeon, Peterborough.

The International Oil & Gas Co., Ingersoll, Ont., have been incorporated with a capital of \$200,000, to operate oil and gas wells, etc. The provisional directors include A. Campbell, R. L. Aldrich, and A. MacLaren, Detroit, Mich.

The White & May Co., St. Mary's, Ont., have been incorporated with a capital of \$75,000, to manufacture hardware, etc. The provisional directors include J. White, W. H. May, and E. W. White, St. Mary's.

Messrs. Hiram Walker & Son, Walkerville, Ont., will erect a large distillery at a cost of about \$300,000.

The Ontario Dock Co., Toronto, have been incorporated with a capital of \$100,000, to construct docks, wharves, etc. The provisional directors include J. S. Lovell, Wm. Bain, and R. Gowans, Toronto.

The Thunder Bay Contracting Co., Port Arthur, Ont., have been incorporated with a capital of \$50,000, to carry on a dredging business, to construct dry docks, etc. The provisional directors include W. F. Langworthy, Thos. Fisher, and G. H. Rapsey, Port Arthur.

The Malta Vita Pure Food Co., a United States incorporation, have been licensed to manufacture malt foods, cereal foods, etc., in Ontario, with a capital of \$25,000. F. Denton, Toronto, is their attorney.

The Taylor-Forbes Mfg. Co.'s japa-ning building, at Guelph, Ont., was damaged by fire April 3. Loss about \$1,500.

The Hagersville Light & Fuel Co., Hagersville, Ont., have been incorporated with a capital of \$40,000, to produce natural gas for light, heat and power purposes. The provisional directors include

D. J. Almas, S. W. Howard, and J. C. Ingles, Hagersville.

The Simplex Engine Co., Toronto, have been incorporated with a capital of \$150,000, to manufacture steam and gas engines, motor carriages, etc. The provisional directors include V. L. Rice, H. L. Rodgers, and G. C. Edwards, Toronto.

The Stratford Brick, Tile & Lumber Co., Stratford, Ont., have been incorporated with a capital of \$40,000, to manufacture brick, tile, lumber, etc. The provisional directors include C. S. Keller, J. Keller, and J. D. Monteith, Stratford.

The Tuckett Cigar Co., Hamilton, Ont., have increased their capital from \$150,000, to \$300,000.

The Toronto Jewellery Mfg. Co., Toronto, have been incorporated with a capital of \$20,000, to manufacture jewelry, watches, etc. The provisional directors include W. G. Kent, J. Westly, and L. M. Beam, Toronto.

The recent fire in the works of the B. Greening Wire Co., at Hamilton, Ont., on March 3, was not as serious as was at first supposed. It did not destroy any of the works except the tower used in the process of painting screen cloth, and we are advised that all orders for screen cloth are being promptly filled from stock in Hamilton and Montreal. All other departments of the company's works are being run as usual.

The National Acme Machinery Co., Cleveland, Ohio, have lately installed some new brass working machinery in the plant of the Jas. Morrison Brass Mfg. Co., Toronto, and that of the Packard Electric Co., St. Catharines, Ont.

The Canadian Drawn Steel Co., Hamilton, Ont., informs us that they have secured a site in that city, and are proceeding with the erection of a main building, 300x60 feet. Their plant will be of the most modern description, capable of turning out 500 tons of finished drawn steel per month, and they expect to be manufacturing by July of this year. They will make a specialty of drawn steel shapes and sections, and drawn shafting, which they will guarantee to be of the best material, absolutely accurate as to size and of perfect finish. All the machines will be driven by electric power supplied by the Cataract Power Co., and raw material will be obtained wherever possible from Canadian mills. The company is a purely Canadian one, 7 per cent. of the capital being held by people living in Hamilton.

The Guelph Worsted Spinning Co., Guelph, Ont., have increased their capital from \$40,000, to \$200,000.

The Carbonating Apparatus Co., a United States incorporation have been licensed to manufacture soda-water tanks, fountains, etc., in Ontario, with a capital of \$40,000. N. F. Davidson, Toronto, is their attorney.

The Toronto Woolen Machinery, Ltd., Toronto, have been incorporated with a capital of \$40,000, to manufacture woolen, cotton, textile, and other machinery. The provisional directors include

L. Bredannaz, J. Bredannaz, and A. Bredannaz, Toronto.

The Battle Creek Health Food Co., Toronto, have been incorporated with a capital of \$30,000, to manufacture cereal foods, druggists' supplies, etc. The provisional directors include H. Powell, G. J. VanNostrand, and A. J. VanNostrand, Toronto.

The Western Development Co., Toronto, have been incorporated with a capital of \$1,000,000, to carry on a coal mining business, to manufacture cement, etc. The provisional directors include J. W. Mitchell, R. Armstrong, and C. W. Fleming, Toronto.

The McPhee Automatic Signalling Co., Toronto, have been incorporated with a capital of \$100,000, to acquire the McPhee Automatic Railway Signalling device, and to manufacture same. The provisional directors include J. C. Kelly, H. W. Bickell, Toronto, and T. McVeity, Ottawa.

Messrs. Myott, Son & Co., Toronto, have been incorporated with a capital of \$10,000, to manufacture crockery, glassware, etc. The provisional directors include H. C. Bedlington, J. G. Strong, and W. R. Williams, Toronto.

The E. N. Moyer Co., Toronto, have been incorporated with a capital of \$150,000, to manufacture school and church furniture, supplies, etc. The provisional directors include E. N. Moyer, Halifax, N. S., J. W. Softly, Winnipeg, Man., and S. Moyer, Toronto.

The Hamilton Bridge Works Co., Hamilton, Ont., have increased their capital from \$250,000 to \$500,000.

The Nanor Automobile Co., Toronto, have been incorporated with a capital of \$200,000, to manufacture automobiles, motors, motor boats, etc. The provisional directors include A. G. Ronan, G. A. Ronan, and Wm. Bullock, Toronto.

The Canadian Drawn Steel Co., Hamilton, Ont., have been incorporated with a capital of \$150,000, to manufacture finished iron and steel products, etc. The provisional directors include F. N. Beegle, E. C. Rebeske, and J. A. McMahon, Beaver Falls, Pa.

The Dominion Thread Mills, Ltd., Toronto, have been incorporated with a capital of \$150,000, to manufacture yarns, threads, textile fabrics, etc. The provisional directors include S. P. Biggs, R. A. L. Biggs, and H. J. Crawford, Toronto.

The Walter Nicholls Motor Boat Co., Toronto, have been incorporated with a capital of \$25,000, to manufacture boats, launches, motor vehicles, machinery, etc. The provisional directors include W. N. Nicholls, F. Nicholls, and A. Angstrom, Toronto.

The Lee-Hodgins Co., Pembroke, Ont., have been incorporated with a capital of \$50,000, to manufacture incubators, power wheels, agricultural implements, etc. The provisional directors include T. W. Lee, R. J. Hodgins, and P. White, jr., Pembroke, Ont.

The Cash Buyers Tailoring Co., Toronto, have been incorporated with a

capital of \$50,000, to manufacture clothing, wearing apparel, etc. The provisional directors include I. M. Dales, H. J. Dingman, and A. E. Scott, Toronto.

The Canada Iron & Foundry Co., Hamilton, Ont., have increased their capital from \$150,000 to \$500,000.

Messrs. Simon Bros., Ltd., Warton, Ont., have been incorporated with a capital of \$100,000, to manufacture furniture, building material, etc. The provisional directors include J. L. Simon, A. Simon and D. Widmeyer, Warton.

The Mageau Leblanc Lumber Co., Chapleau, Ont., have been incorporated with a capital of \$40,000, to manufacture lumber, etc. The provisional directors include Z. Mageau, J. E. Serre, and O. Laberge, Sturgeon Falls, Ont.

The Maestro Piano Co., Toronto, have been incorporated with a capital of \$40,000, to manufacture pianos, pipe organs, etc. The provisional directors include E. Garratt, A. E. Ridgway, and E. C. Charles, Toronto.

The Brampton Pressed Brick Co., Brampton, Ont., have been incorporated with a capital of \$50,000, to manufacture bricks, tiles, sewer pipes, etc. The provisional directors include W. J. Packham, J. MacHoover, and C. R. J. Packham, Brampton.

The Dymond Gas & Engine Co., Toronto, have been incorporated with a capital of \$1,000,000, to manufacture gas engines, machinery, etc. The provisional directors include J. Dymond, A. A. Wighton, and R. J. Goudy, Toronto.

The Wire-Woven-Wood Mfg. Co., Woodbridge, Ont., have been incorporated with a capital of \$40,000, to manufacture wire-woven-wood baskets, boxes, etc. The provisional directors include J. G. Hallett, F. Bath, and D. Lamont, Toronto.

The Detroit & Dominion Oil Co., a United States incorporation, have been licensed to carry on a mining, refining, and oil manufacturing business in Ontario, with a capital of \$1,000,000. A. R. Bartlet, Windsor, Ont., is their attorney.

Messrs. McKeough & Trotter, Ltd., Chatham, Ont., have been incorporated with a capital of \$100,000, to manufacture saw-mill, hoop and stave machinery, engines, boilers, castings, etc. The provisional directors include S. Trotter, J. F. McKeough, and R. Gray, Chatham.

Messrs. A. E. Long & Co., Toronto, have been incorporated with a capital of \$40,000, to manufacture paper boxes, jewelers' findings, stationery, etc. The provisional directors include A. E. Long, P. C. Soules, and L. I. Morris, Toronto.

The Horticultural Publishing Co., Toronto, have been incorporated with a capital of \$30,000, to carry on a publishing business. The provisional directors include H. Jones, Augusta, Ont., W. H. Bunting, St. Catharines, Ont., J. H. Dunlop, Toronto.

The Canadian Street Car Advertising Co., Ltd., Toronto, have been incorporated with a capital of \$60,000, to acquire the business of the Canadian Street Car Advertising Co. The provi-

sional directors include W. J. Carrique, D. McA. Coughlin, and Z. Gallagher, Toronto.

The Southern Cotton Oil Trading Co., a United States incorporation have been licensed to manufacture cotton seed oil, vegetable oils, etc., in Ontario, with a capital of \$10,000. W. A. Reynolds, Toronto, is their attorney.

The Dairyman Publishing Co., Toronto, have been incorporated with a capital of \$30,000, to carry on a publishing business. The provisional directors include R. G. Murphy, Elizabethtown, Ont., J. R. Dargavel, Crosby, Ont., and E. Kidd, North Gower, Ont.

The Collingwood Shipbuilding Co., Collingwood, Ont., have been incorporated with a capital of \$1,000,000, to build ships, vessels, etc., and manufacture boilers, and machinery. The provisional directors include Thos. Long, H. S. Osler, and W. B. Raymond, Toronto.

Messrs. Brown & Co., St. Mary's, Ont., have been incorporated with a capital of \$40,000, to manufacture doors, sashes, furniture, builders' supplies, etc. The provisional directors include Geo. Brown, M. Tevlin, and D. Baird, St. Mary's.

The Georgian Bay Shook Mills, Ltd., Midland, Ont., have increased their capital from \$40,000, to \$80,000.

The Alexandra Palace Co., Toronto, have increased their capital from \$100,000, to \$150,000.

The Union Stock Yards Co., Toronto, have increased their capital from \$400,000, to \$500,000.

The Pittsburg Gold Dredging Co., Peterborough, Ont., have been incorporated with a capital of \$300,000, to carry on a gold mining business. The provisional directors include Wm. Hamilton, M. Smith, and W. H. Mupro, Peterborough.

The Lambton Creamery Co., Petrolia, Ont., have been incorporated with a capital of \$50,000, to acquire the Lambton Creamery, and to manufacture butter, cheese, etc. The provisional directors include Wm. English, J. E. Armstrong, and G. M. Carey, Petrolia.

The Big Dipper Mining & Milling Co., Peterborough, Ont., are applying for incorporation with a capital of \$2,500,000, to carry on a mining business in Frontenac County. Those interested are S. Sager, Peterborough, president; J. M. Fletcher, Buffalo, N.Y., vice-president; and J. A. Jamieson, Myers' Cave, Ont., superintendent.

The Vulcan Soot Cleaner Co., Dubois, Iowa, are considering the establishment of branch works at Hamilton, Ont.

Messrs. W. O. Johnson & Bros., Cedar Rapids, Iowa, have received the contract for building the Hamilton, Ancaster & Brantford Electric Railway. The line is to be completed to Brantford by September 1.

The congregation of the Gospel Tabernacle, at Hamilton, Ont., will erect a new church building at a cost of about \$25,000.

The Araprior Board of Trade is petitioning the Ontario Government to grant assistance towards building an iron or steel bridge to replace the present bridge at Clay Bank, Ont.

The Guelph Foundry Co., Guelph, Ont., are applying to that city council for a site to enlarge their premises. They will erect a moulding shop 600 feet long.

The Canadian Pacific Railway Co.'s station at Almonte, Ont., will be enlarged and improved.

The Ontario Bureau of Mines, Ottawa, have received a report of the discovery of two additional rich deposits of cobalt silver ores along the line of the Temiskaming Railway.

The Canada Glue Co., Toronto, recently incorporated, will probably erect a glue factory in Guelph, Ont.

A company composed of Peterborough, Ont. capitalists, have been organized to erect a hotel with 100 rooms at Eel's Creek, Ont. R. H. Jackson, Peterborough, is interested.

The Brunswick-Balke-Collender Co., Toronto, will erect a new factory for the manufacture of billiard tables.

The Lockton House, Lockton, Ont., was destroyed by fire, March 28.

The Eastern Methodist Church, Deseronto, Ont., was destroyed by fire, March 25. Loss about \$3,000.

The cooper factory of G. S. Kingdon, Peterborough, Ont., was destroyed by fire March 27. Loss about \$4,000.

The flour mill of Alex. Dobson, Beaverton, Ont., was destroyed by fire March 19. Loss about \$40,000.

The St. James Episcopal church, Orillia, Ont., was destroyed by fire March 19. Loss about \$20,000.

The warerooms of Tudhope & Co., carriage and implement dealers, Orillia, Ont., were destroyed by fire March 20.

The Durham furniture factory, Durham, Ont., was destroyed by fire March 23. Loss about \$50,000.

Beck's box factory, London, Ont., was damaged by fire to the extent of about \$500.

Dr. Sheard, Toronto, has recommended to the local board of health the erection of a hospital, to cost \$30,000, for the treatment of patients suffering from contagious diseases.

The McClary Mfg. Co., London, Ont., will erect a patternmaking building at a cost of \$10,000.

The ratepayers of Chatsworth, Ont., have voted favorably on a by-law granting \$4,000 for cement sidewalks.

The Guelph, Ont., city council, have granted \$23,000, for additions and improvements to the Collegiate Institute, that city.

The Department of Railways and Canals, Ottawa, have arranged for the opening of the Welland Canal on April 24. The St. Lawrence and Quebec canals will be opened on May 1.

The Lake Superior Pulp & Paper Co., Sault Ste. Marie, Ont., have, by contracts, disposed of the entire output of the pulp



mills for 1905, in the United States, instead of, as formerly, a good portion of it going to England.

An ingot of silver which weighs eighty pounds and is worth some \$350, gives an idea of the richness of the deposits of that mineral in Ontario. It is to be seen in the office of Mr. Thomas Gibson, Director of Mines, Toronto, and came from the Trehewy mine, situated near Cobalt Station on the Temiskaming line. The ingot is twenty-five inches in length, twelve inches in width, and two inches thick, and it is practically all silver. Since the mine was opened eighteen months ago, there has been taken out half a million dollars' worth of ore. Five openings are being worked, and in addition to the silver a large amount of cobalt has been found. Other veins of silver have recently been discovered in the same district and indications are that these will prove very rich in ore.

The Department of Marine and Fisheries, Ottawa, have purchased the steel steamer Seguin from the Parry Sound Lumber Co., Parry Sound, Ont., and will use her as a lighthouse supply boat. Her foredeck will be fitted with a powerful crane, strong enough to handle the largest gas buoy. The Seguin was built at Toronto in 1890, and measures 556 gross tons. She is 207 feet in length and 34 feet beam.

The earnings of the Toronto Street Railway continue to grow with considerable rapidity. The earnings for March this year totalled \$207,013.72, against \$183,613.18 last year. This increase of \$23,400.54 is the more remarkable in view of the fact that in March of 1904 the railway had the benefit of the Easter holiday traffic. The returns to the city will show a slight increase over these figures, because the company only reckon the fare box figures, while the city calculates all tickets sold during the month as well as the cash fares. The city's percentage will be \$32,000 or a little over. Without counting transfers the company earned during the past month about 4,770,000 passengers.

The Thornton & Douglas Co., Stratford, Ont., manufacturers of clothing, etc., are considering the removal of their works to Hamilton, Ont.

The Lake of the Woods Milling Co., Keewatin, Ont., have commenced work on extensive improvements to their plant. A new power house of concrete and iron 50 x 48 feet, will be built in which four new water wheels will be placed. These will drive dynamos with a capacity of 500 h.p. The power will be used to run the machinery in the elevator and the barrel and stave factories. Four electric motors will operate the elevator and one will be placed in the stave factory.

The rail mill of the Lake Superior Corporation, Sault Ste. Marie, Ont., has made a new record by blowing ninety-three heats in twelve hours, or a total of 362 tons in half a day. This is at the rate of 742 tons of steel rails in twenty-four hours. The capacity of the plant was figured for 500 tons a day, and this is an

increase of 50 per cent. over the nominal capacity.

The Eagle Knitting Co., Hamilton, Ont., have purchased a site upon which they will erect a new factory.

The Grey & Bruce Cement Co., Owen Sound, Ont., are installing a third steam boiler of 150 h.p. capacity, also a cooling rotary cylinder 40 feet in length.

The largest locomotive ever turned out of the Kingston works left the Canadian Locomotive Works yards a few days ago. It was built for the Inter-colonial Railway and weighs 116 tons.

Oil has been discovered on the farm of Wm. Angus, near Windsor, Ont. Active drilling operations will be commenced at once.

On report of the Minister of Marine and Fisheries the Richelieu & Ontario Navigation Co. have received permission from the Ottawa Government to change the names of the undermentioned vessels, of the port of Montreal, as follows: The "Algerian" to the "Cornwall," "Bohemian" to "Precott," "Canada" to "St. Irene," "Cultivateur" to "Varenes," "Corsican" to "Picton," "Saguenay" to "Chicoutimi," "Virginia" to "Tadousac," "Spartan" to "Belleville."

An application to the legislature for power to raise by debenture \$86,000 for additional land and new buildings at Lansdowne park for the Central Canada Exhibition Association has been decided upon by the Ottawa city council.

An American syndicate headed by Wm. J. Allison, New York city, will establish steel plate and iron works in Morrisburg, Ont.

The prospectus of the Central Ontario Power Co., Limited, of which Mr. J. A. Culverwell is managing director, appears in this issue. Attention is directed to the high standing of the gentlemen who are directors, and of those who are mentioned as some of the shareholders; also to the strong endorsements of the property and possibilities of the company in the reports of the engineers, Messrs. Ross & Holgate, of Montreal, and R. J. Parke, Toronto. It will be noticed that Mr. H. N. Kittson, president of the Hamilton Board of Trade, is one of the directors of the company, as are Frank Turner, Esq., C.E., Dr. E. T. Adams and W. Vanduzen, Toronto, and J. A. Culverwell, Esq., Port Hope. The reports indicate that the Burleigh Falls power is one of the cheapest and easiest developable in Canada.

The Burrow, Stewart & Milne Co., Hamilton, Ont., will erect a four-story addition to their stove foundry at a cost of about \$15,000.

The Government steamer and ice-breaker Montcalm, has been doing excellent work in the interest of the early spring navigation to Montreal by breaking up the ice formation at Cape Rouge, in the narrow part of the St. Lawrence channel, some seven miles above Quebec. This ice formation generally holds until late in the spring, and retards navigation west of Quebec sometimes as late as May 1.

The Canadian Rubber Co., Montreal, have been awarded the contract for the supply of 5,000 feet of hose for the Montreal Fire Department.

Capitalists of London, England, are planning to erect a \$3,000,000 hotel in Montreal, an option on the site having been already obtained. The new building is to be ten stories high, of heavy steel and stone construction. It will be known as the Alexandra Hotel. S. A. Finley, architect of Montreal, is now in London in connection with the project.

The building occupied by Jos. Ward & Co., provisions, Loynachan & Scriver and the Canadian Dairy at Montreal, was destroyed by fire April 1. Loss about \$60,000.

A fire occurred in Montreal April 1, which destroyed the building occupied by the following firms:—Canada Truss Factory; Bunting, Gillis & Co., wholesale paper dealers; J. Cohen & Co., wholesale clothing; Abbey Effervescent Salt Co.; N. Tourangeau & Co., manufacturers of trusses; L. E. & A. F. Waters, printers, and the Royal Dye Works. Total loss about \$65,000.

A steel bridge now under construction over the St. Lawrence River at Quebec, is a remarkable structure. The weight of this bridge will be about 35,000 tons. Its span of 1,800 feet crosses the entire St. Lawrence River at such a height as not to interfere with navigation, and will be the longest in the world, the Forth bridge in Scotland being 1,710 feet long, the Brooklyn bridge 1,680 feet, and the new East River bridge in New York 1,600 feet. There have been manufactured by the Phoenix Bridge Co., Phoenixville, Pa., to date, and partly shipped to the site of the bridge, about 10,000 tons of steel. It will take about two more years to complete the structure. The masonry piers are entirely finished, and the temporary false works, of steel, are now in place on the south shore, upon which erection will begin at the opening of spring this year. The 1,800 feet of steel bridge work between the piers will be erected without any false work in the river. The bridge is to be 80 feet wide over all, carrying a double-track railroad, a double track trolley and highway, and two sidewalks. Many novel features have been adopted in the design and manufacture of this bridge. The total length of the bridge will be 3,300 feet; length of channel span, 1,800 feet; ship clear headway, 150 feet above highest tide; height of cantilever towers, 360 feet above the river. The Phoenix Bridge Co. are the contractors for the superstructure.

Messrs. Benning, Barsalou & Co., Montreal, have been incorporated with a capital of \$20,000, to manufacture smallwares, etc. The provisional directors include M. Barsalou, E. Barsalou and J. B. N. Chabot, Montreal.

The St. Lawrence Wagon Co., Montreal, have been incorporated with a capital of \$75,000, to manufacture tools, implements, wagons, etc. The provisional directors include Jas. Meldrum, Wm. Meldrum and W. A. Harper, Montreal.

The Interprovincial Vinegar Co., Montreal, have been incorporated with a capital of \$10,000, to manufacture vinegar, pickles, etc. The provisional directors include W. D. L. Wilson, Toronto, A. Robitaille, Quebec City, and J. Carsley, Montreal.

The Martel-Stewart Co., Montreal, have been incorporated with a capital of \$45,000, to manufacture advertising devices, signs, shades, etc. The provisional directors include S. H. Martel, L. W. Smith and L. L. Martel, Montreal.

Brophy Cains, Limited, Montreal, have been incorporated with a capital of \$500,000, to manufacture dry goods, etc. The provisional directors include Thos. Brophy, F. L. Cains and G. L. Cains, Montreal.

Messrs. Meldrum Bros. Limited, Montreal, have been incorporated with a capital of \$250,000, to acquire the business of Meldrum Bros. and to carry on a cartage and forwarding business. The provisional directors include Jas. Meldrum, Wm. Meldrum and J. W. Meldrum, Montreal.

Edmund Eaves, Limited, Montreal, have been incorporated with a capital of \$90,000, to manufacture watches, clocks, jewelery, etc. The provisional directors include J. L. Eaves, E. Eaves and A. A. Eaves, Westmount, Que.

Messrs. Alfred Hawksworth & Sons Co., Montreal, have been incorporated with a capital of \$20,000, to acquire the business of Alfred Hawksworth and to manufacture engineers' supplies, textile supplies, etc. The provisional directors include Alfred Hawksworth, F. Hawksworth and W. Hawksworth, Westmount, Que.

The Ontario Wind Engine & Pump Co. Toronto are opening a branch at Montreal, having leased a large commodious warehouse and office there where the requirements of their Quebec patrons will be more thoroughly attended to. They were the successful tenderers for a 75,000 gallon steel water tank on a steel tower 105 feet high, to be erected for the new factory of the Canada Car Co., Montreal, which has to be completed by June 3. With their Montreal and Winnipeg branches, in addition to the Toronto head office, they should be in a position to take care of all the trade placed in their hands.

The St. Maurice Construction Co., Montreal, have been incorporated with a capital of \$100,000, to carry on a contracting and construction business. The provisional directors include Hon. R. Mackay, W. J. Henderson and H. Murray, Montreal.

The Canadian Trenton Potteries Co., St. Johns, Que., have been incorporated with a capital of \$60,000, to manufacture pottery, earthenware, etc. The provisional directors include W. S. Hancock, J. A. Campbell, Trenton, N.J., and W. A. Campbell, St. Johns, Que.

The Lindman Mfg. Co. of Canada, Montreal, have been incorporated with a capital of \$50,000, to manufacture trusses, artificial limbs, surgical appliances, etc. The provisional directors include B. Lind-

man, W. Walker and E. McLea, Montreal.

The Argus Publishing Co., Montreal, have been incorporated with a capital of \$10,000, to carry on a publishing and printing business. The provisional directors include H. Dalby, J. Carleton and T. F. Tupholme, Montreal.

The Quebec Railway, Light & Power Co., Quebec City, will build a dam across the Montmorency River. The dam will be 90 feet in height, 12 feet wide at the top and 65 feet wide at the bottom.

The Laurie Engine Co., Montreal, will re-equip their works with new machine tools. They will devote all their energy to manufacturing and will withdraw from the mill supply business.

Messrs. P. D. Dods & Co.'s paint warehouse at Montreal, was destroyed by fire March 30.

The warehouses of the Standard Shirt Co., the Star Iron Co., and C. H. Smith, paper manufacturer, were destroyed by fire March 27. Loss about \$75,000.

Messrs. Wener Bros. clothing factory at Montreal, was damaged by fire March 18. Loss about \$25,000.

The Canadian Northern Railway Co., Montreal, are building five extensive bridges of steel at the different crossings of the Saskatchewan River, at a total cost of about \$1,500,000.

The Molsons Bank, Montreal, will erect a branch banking building in St. Henri, Que.

The Montreal Paper Co., are installing machinery in their new mill at Point Rouge, Que.

Messrs. Ford & Co., Glenford, Que., will install papermaking machinery in their new mill.

The Ruggles-Coles Engineering Co., New York, have ordered from the Robb Engineering Co., Amherst, N.S., a 350 h.p. Corliss engine and two 175 h.p. boilers for the cement works being built at Sydney, N.S.

The Economic Construction Co., Toronto, are endeavoring to secure a franchise from the City of Sydney, N.S., for the erection of a gas plant to cost about \$60,000.

A meeting of prominent business men was held at Halifax, N.S., a few days ago and a company to be known as Shipbuilding & Investment Co., was organized with a large capital for the purpose of constructing steel ships, etc. The company have already secured a site of about fifty acres on Dartmouth side of the harbor, where the works will be established. The directors include Mr. Hunter of the firm of Swan & Hunter, steel shipbuilders, Newcastle-on-Tyne, and G. S. Campbell, Geo. Stairs, and J. A. Johnson, Halifax. It is said that the city of Halifax has agreed to pay a premium of \$200,000 and the Provincial Government another \$100,000 to the company, besides which the Colonial Government has promised a subsidy of \$6 per ton for every vessel built by the concern.

Captain J. A. Farquhar, Halifax, N.S., has succeeded in floating a company for the erection of a steel dockyard at North

Sydney, N.S. The concern is capitalized at \$250,000.

The Robb Engineering Co., Amherst, N.S., have established a branch works at South Framingham, Mass., where they will manufacture their special Mumford boiler and the Robb-Armstrong engine for United States customers. The plant taken over at South Framingham covers nine acres, and is well equipped with machinery, tools, etc.

The Dominion Iron & Steel Co., expect to be rolling rails by June of this year.

The A. C. Thompson Co., will establish a nail factory at North Sydney, N.S., with a capacity of about 75,000 or 100,000 kegs per year. The raw material will be purchased from the Dominion Iron & Steel Co.

The Restigouche Lumber Co. have been organized to operate a large wood-working factory at Dalhousie, N.B. The Robb Engineering Co., Amherst, N.S., have received the order for the steam plant.

The St. John Railway Co., St. John, N.B., will install a pump with a capacity of 500 gallons per minute in their power house, for fire protection.

A. S. Rendall, St. Johns, Nfld., and several Sydney, N.S. capitalists have purchased the marine railway at North Sydney. They will install a new plant and will reconstruct the cradle which has been out of use for some time.

The Electro-Manganese Co., will erect ferro-manganese works at Grand Falls, N.B., and will also operate an electric railway from Campbellton to a point near the main border at a total cost of about \$3,000,000. B. E. Kingman, New York City and F. E. Sayles, Providence, R.I., are interested.

Messrs. D. Fraser & Sons, Fredericton, N.B., will erect a shingle mill at Cabincau, N.B., to have fourteen shingle machines, and also one at Baker Brook, N.B., to have ten shingle machines.

The Mowry Safety Nut Co., St. John, N.B., have been incorporated with a capital of \$250,000, to manufacture bolts, nuts, etc. The provisional directors include D. C. Clinch, R. W. W. Frink and C. W. Brannen, St. John.

An English syndicate have made an offer of £650,000 for the property of the New Brunswick Petroleum Co., St. John, N.B., of which H. R. Emmerson is the head. The company will consider the proposition. It is proposed to expend about \$500,000 to improve and extend the business if the deal is consummated.

Mr. D. W. Robb, president of the Robb Engineering Co., Halifax, N.S., states that their fiscal year has been a record one, with sales aggregating about half a million dollars, a large part of which was drawn from the Canadian North-West, the company having supplied Calgary, Edmonton, Moose Jaw, Red Deer, Lethbridge, Wetaskiwin, in fact no less than ten towns west of the great lakes with steam plants for electric lighting, water works and other purposes. This, in addition to the large orders coming from the Cana-

dian Pacific Railway for their shops at Montreal and Fort William, Ont., gave them a larger volume of work than they had ever carried on in any previous year. The company have just moved into their new machine shop which will give them increased facilities and larger capacity for work. It is provided with electric cranes, and motors for driving the various machines. A branch of the Intercolonial Railway runs into the shop so that the engines after being tested and packed are delivered on the cars without hand labor.

The Muuro Wire Works, New Glasgow, N.S., are building a branch factory at Winnipeg, Man., and have placed an order for the necessary steam plant with the Robb Engineering Co., Amherst, N.S.

The Canadian Co-operative Co., Winnipeg, Man., have been incorporated with a capital of \$20,000. The provisional directors include A. Atkinson, C. H. Forrester and J. McVicar, Winnipeg.

The Robb Engineering Co., Amherst, N.S., are building two 125 h.p. boilers for the Lethbridge Electric Co. Lethbridge, Alberta.

The McDonald-McMillan Co., Winnipeg, Man., have increased their capital from \$150,000, to \$1,000,000.

The Trades Hall Co., Winnipeg, Man., incorporated with a capital of \$50,000, have acquired the building of the Bricklayers and Masons International Union No. 1, and will greatly improve and enlarge same.

The Empire Importing & Jobbing Co., Winnipeg, Man., have been incorporated with a capital of \$50,000, to manufacture boots, shoes, hats, caps, etc. The provisional directors include S. H. Narovlansky, M. I. Marron, and J. Udow, Winnipeg.

The Norris Implement Co., Winnipeg, Man., have been incorporated with a capital of \$100,000, to manufacture machinery, engines, farm implements, etc. The provisional directors include J. R. Norris, G. E. Norris and T. L. Metcalfe, Winnipeg.

The Swedish Canadian Publishing Co., Winnipeg, Man., have been incorporated with a capital of \$20,000, to carry on a printing and publishing business. The provisional directors include J. M. Florell, M. P. Peterson and J. Johnston, Winnipeg.

The Brandon Times Publishing Co., Brandon, Man. have been incorporated with a capital of \$40,000, to carry on a publishing and printing business. The provisional directors include B. D'Arcy Wallace, J. Fanbury, and C. King, Brandon.

The North American Investment Co., Winnipeg, Man., have been incorporated with a capital of \$500,000, to erect buildings, etc. The provisional directors include J. Hogg, A. Reid and W. H. Sproule, Winnipeg.

Messrs. J. Y. Griffin & Co.'s pork packing establishment at Winnipeg, Man., was destroyed by fire March 29. Loss about \$30,000.

Messrs. Haug Brothers & Nellerhoe Co., Winnipeg, Man., have been incor-

porated with a capital of \$100,000, to manufacture machinery engines, agricultural implements, etc. The provisional directors include I. J. Haug, N. A. Nellerhoe, Fargo, Dakota, and L. J. Haug, Winnipeg.

The Winnipeg City Council have decided to install a high pressure water system, for fire protection only, at a cost of about \$350,000.

Messrs. Prince Bros.' departmental store at Battleford, N.W.T., was destroyed by fire March 28. Loss about \$30,000.

Messrs. Dalton & Co.'s hardware warehouse at Wellwood, Man., was destroyed by fire March 28.

The Bank of Toronto are negotiating for a site to erect a bank building at Winnipeg, Man.

A new Provincial Medical College will be erected in Winnipeg, Man.

A new high school building will be erected in Neepawa, Man.

The Canadian Pacific Railway Co.'s bridge across the South Saskatchewan River was swept away by an ice jam March 27.

The ratepayers of Indian Head, N.W.T., will vote on a by-law to raise \$140,000, to install waterworks, sewerage and an electric system in that town.

The Skeena Development Syndicate, have been incorporated with a capital of \$25,000, to carry on a mining, smelting and milling business.

The Silver Peak Mining & Milling Co., have been incorporated at Victoria, B.C., with a capital of \$50,000, to carry on a mining and refining business.

The Pioneer Coffee & Spice Mills, Ltd. Victoria, B.C., have been incorporated with a capital of \$50,000, to acquire the business of the Pioneer Coffee & Spice Mills and to manufacture coffees, teas, spices, etc.

The J. L. Marstrand Co., Vancouver, B.C., have been incorporated with a capital of \$25,000, to acquire the business of T. Marstrand and to manufacture roofing paint, cement, sewer pipes, etc.

The Continental Power Co., have been incorporated at Victoria, B.C., with a capital of \$50,000, to carry on the business of a power company.

The Ladysmith Hardware Co., Ladysmith, B.C., have been incorporated with a capital of \$25,000, to acquire the business of C. C. Muir and to manufacture hardware, tinware, etc.

The Bowman Lumber Co., have been incorporated at Victoria, B.C., with a capital of \$1,000,000, to manufacture lumber, etc.

The Boundary-Elkhorn Mining Co., have been incorporated at Victoria, B.C., with a capital of \$200,000, to carry on a mining, smelting and refining business.

The Northern Mines, Limited, have been incorporated at Victoria, B.C., with a capital of \$50,000, to carry on a mining, milling and smelting business.

Messrs. Jas. Stark & Sons, Ltd., Vancouver, B.C., have been incorporated with a capital of \$100,000, to manu-

facture drygoods, etc., and to acquire the business of James Stark & Sons.

The Standard Furniture Co., Ltd., Vancouver, B.C., have been incorporated with a capital of \$50,000, to acquire the business of the Standard Furniture Co.

The South-East British Columbia Land & Oil Co., Rossland, B.C., have been incorporated with a capital of \$375,000, to carry on a mining, smelting and refining business.

The statement of the approximate valuation of the mineral production of British Columbia for 1904 shows an increase over that for 1903 of all minerals, except copper. The largest metallic increase must be credited to lead, which shows about \$800,000 advance over 1903. This is primarily due to assistance received from the Dominion Government in the shape of a bounty, but is also somewhat due to appreciation in the market price of the metal.

The Vancouver Lumber Co., Vancouver, B.C., are preparing plans for the extension of their buildings and plant to allow of doubling their present output of 100,000 feet of lumber daily.

The Central Hotel, at Ladysmith, B.C., was destroyed by fire March 21. Loss about \$5,000.

J. H. Todd & Sons and William Mun- sic, Victoria, B.C., will construct a new cannery at Esquimalt, B.C.

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

New machinery to the value of over half a million dollars has been ordered and will be installed during the next few months in a number of mines in the Rossland and Slocan districts in British Columbia. The Velvet mine at Rossland is putting in new concentrators and stamps that will cost \$45,000. At the Cliffe mine in Rossland about \$30,000 is to be expended in a thirty-stamp mill to increase the output; \$12,000 is being expended by the Spitzee mine at Rossland in compressors and machine drills.

The Sparwood Lumber Co., Sparwood, B.C., have been incorporated with a capital of \$35,000, to manufacture lumber and to erect a saw mill.

The Interior Power Co., have been incorporated at Victoria, B.C., with a capital of \$25,000, to construct and operate electric works, power houses, etc.

The Second Relief Mining Co., have been incorporated at Victoria, B.C., with a capital of \$500,000, to carry on a mining, smelting and refining business.

The Wilmot Lumber Co., have been incorporated at Victoria, B.C., with a capital of \$200,000, to manufacture lumber, etc.

The Export Lumber Co., have been incorporated with a capital of \$100,000, to manufacture lumber, timber, etc.

The relatively small but very complete forge shop equipment recently installed by the B. F. Sturtevant Co., Boston, Mass., for the Enterprise Mfg. Co., Philadelphia, Pa., is typical of the advance in forge shops methods. The blast is furnished by an electrically driven fan arranged for suspension from the ceiling

where it will occupy no valuable space. A special electric exhaust fan positively draws away all smoke and gases from the fires, with the result that the room is kept clear and fresh as any other part of a manufacturing plant.

## ELECTRICITY.

Electrical machinery and appliances of all kinds, electrical power plants and other progress in the electrical industries will be noted here.

The Town of Milton, Ont., has retained Mr. K. L. Aitken, Toronto, as their Consulting Engineer, in connection with the rebuilding of their electric light plant. A new power house will be built, and machinery consisting of boilers, engine, generator, and switchboard, installed. In all probability, the system of distribution will be materially changed.

The Okanagan Telephone Co., Vernon, B.C., have been incorporated with a capital of \$5,000, to install a telephone system in that city.

The locks of the Lachine canal will be operated by electrical machinery. The work will be done by the Dominion government under the direction of Mr. Ernest Marceau, superintendent of the Quebec canals.

Grading on the Toronto & Hamilton Electric Railway will commence about May 1. The electric towers are now in place. Construction work will begin simultaneously at both ends of the line. About a dozen bridges will be required.

The Mackenzie & Mann syndicate have secured extensive franchises for electric railways in and around the city of Monterey, Mexico, and it is anticipated that franchises for power and light will also be secured. Mr. E. H. Keating, former manager of the Toronto Railway Co., has been appointed manager and engineer, and received instructions to proceed immediately with the construction of the first section of the railway. Mr. Keating will reside in Monterey.

Surveying parties are being sent out by the Ontario Electrical Development Co., Niagara Falls, Ont., to locate routes to Western Ontario for Niagara power cables.

The town of Collingwood, Ont., is considering the advisability of building an entirely new electric plant, adding to the supply of light and furnishing power for sale, involving a cost of about \$35,000. This would double the capacity of the present system.

The Ottawa City Council have decided to buy out the Consumers' Electric Co. of that city, for \$200,000. In this way the city will guard against the creation of any monopoly of electric lighting interests such as is contemplated in the bill of the Ottawa Electric Light Co., now before Parliament. The borrowing power being sought for from the Ontario Legislature by the City Council will enable the necessary funds to be provided.

City Engineer Rust, has given a somewhat detailed estimate of the cost of a civic electric plant, for the city of To-

ronto. The cost of installation of an underground system would be \$638,000. The expense of operation would be \$40 a lamp, and other charges would be interest and depreciation \$38.30, and insurance \$2 per lamp, making an aggregate annual cost of \$80.30 per lamp, compared with \$74.82, the cost of each light under the present agreement with the Toronto Electric Light Co. An overhead circuit would reduce the cost per lamp per annum, to \$71.30.

Sir Wm. VanHorne is one of the incorporators of the Grand Falls Power Co., which has been granted incorporation in New Brunswick. The company propose to construct and operate factories for the manufacture of mechanical and ground wood pulp, sulphite, paper, cardboard, paper materials and lumber; to develop and dispose of light, heat and power, and to navigate vessels on the St. John River. Sir William's associates are Senator Redfield Proctor, of Vermont, R. B. Angus and Ernest Alexander, Montreal, H. H. McLean, St. John, N. B., F. C. Patridge, Vermont, and F. R. Kimbley, New York. Capital stock \$200,000.

The City Council of Kingston, Ont., is desirous of acquiring the Kingston Street Railway, and Mr. W. H. Cross, accountant, of Toronto, has recently been in Kingston inspecting the books of the company on behalf of the City Council with a view to suggesting what price should be paid. It is rumored that Mr. Cross will report that the property of the company is worth something over \$200,000.

The nineteenth annual report of the Commissioners of the Niagara Falls Park says that the area of the park has grown, by the addition of crown lands and lands acquired by purchase, from 196 to its present extent of 787 acres. The amount expended in acquiring the whole property, from 1887 to the present time, was \$463,871.60, and this, with the totals for permanent improvements on capital account, interest on debentures and general maintenance, makes an aggregate expenditure to Dec. 31, 1904, of \$31,351,139.50. Receipts for power development franchises, sale of debentures, tolls and sundry resources for the year mentioned aggregated \$1,328,679, showing an excess of expenditure over receipts, for 18 years, of \$22,460 50. The report refers to the franchises granted for privileges within the park, and show that for these franchises the following sums have already been paid to the commission: Electric Railway, \$132,500; photograph and other privileges, \$103,700; Canadian Niagara Power Co., \$224,577.78; Ontario Power Co., \$110,000; Electrical Development Co., \$30,000; total, \$620,777.78. The annual revenue now assured to the park is \$81,200. This will increase yearly, and with growing demand for electrical energy, is expected to amount within the next five years to over \$200,000 per annum.

The Provincial Telephone Co., Andover, N.B., have been incorporated with a capital of \$10,000, to operate a telephone system. The provisional directors

include D. Fraser, Fredericton, N.B.; H. S. Gibson and J. F. Tweedale, Gordon, N.B.

The city council of Calgary, N.W.T. took final action in establishing municipal ownership of the lighting plant of that city a few days ago, when tenders were opened, and R. S. Kelch, Montreal, was designated as a consulting engineer to determine which of the bids made should be considered the most economical. The climax came after the most strenuous objection from the Calgary Lighting & Water Power Co., which had steadily offered to reduce their price of light since the municipal ownership idea was advanced. The civic committee reported in favor of accepting a compromise with the private company and abandoning, at least for five years, the civic project. This was rejected. Competent engineers have declared that Calgary can install for \$60,000 the plant required for both domestic and street lighting.

The executive committee of the Merchants' Association, of the city of New York, which has been investigating bills pending before the Legislature of that state to permit the further diversion of the Niagara River, have passed the following resolution:—"Resolved, that in the opinion of the Merchants' Association no further present diversion of the waters of the Niagara River should be permitted, that an amendment to the constitution of this State limiting such further diversion be at once prepared and submitted to the Legislature for action, and that there be also submitted to the Legislature a concurrent resolution praying that the President of the United States move for a treaty with Great Britain for international limitation of the further diversion of the waters of the Niagara River."

A comprehensive plan for the conversion and development of water power at the Chaudiere has been prepared by Messrs. John and William Kennedy, hydraulic experts, Montreal. The main thing suggested is the construction of a new dam above the Chaudiere Falls of crescent shape and so fitted up with stop logs as to regulate the flow of water. The cost of this and other improvements would be about \$250,000. A consolidation of all the hydraulic interests at the Chaudiere is looked for.

"Church Lighting by Electricity" is the title of a handsomely illustrated brochure just issued by the Nernst Lamp Co., Pittsburg, Pa. A perfect halo of light is thrown upon the subject of efficient and satisfactory lighting of churches by the Nernst system, regarding which subject the book tells us: "The problem of lighting a modern church most effectively involves the consideration of efficiency, artistic effects and the character and strength of the illumination desired. Efficiency is not solely dependent upon the actual economy of the illuminant itself; the location of the light, source and the general scheme of lighting have far more influence upon the ultimate efficiency or economy of the complete system than one would ordinarily suppose. No matter how efficient a lamp may be in current consumed per candle power, if it

is so placed that its rays shine into the eyes of the congregation, not only is discomfort occasioned by the resulting eye-strain, but the blinding effect produced on the retina causes surrounding objects to appear dimly lighted in comparison, and leaves the impression of inadequate illumination. Such are the defects of a system wherein the lamps are placed on low-hanging chandeliers and wall brackets."

The International Nickel Co. will drive their blowing engines by electric motors. Three of these, of 500 h.p. each have been ordered from the Allis-Chalmers-Bullock, Ltd., Montreal.

#### THAT ELECTRIC MERGER.

A few days ago a Toronto evening paper published a lengthy yarn to the effect that a "tremendous electric merger" was in contemplation by which electric and steam railways, steamboats, bridges, ferries, etc., in and near Toronto, were to come under the control of a syndicate, in which the New York Central Railroad, and Mr. Frederic Nicholls, of Toronto, were concerned. Mr. Nicholls wrote a letter to that paper in which he says:

I regret that the accuracy of the information was not inquired into before publication, as the names of several companies of which I am the executive head were freely used. In brief, however, I may state that I am not acting for the New York Central, nor have they applied for any rights or privileges, nor have I had any communication with them whatever. Neither was the money for the purchase of the Royal Canadian Yacht Club property paid in New York, the purchase having been made by myself for a company that is being incorporated as the Ontario Dock Co., Ltd., to provide wharfage accommodation for the Canadian Lake & Ocean Navigation Co., and the Niagara, St. Catharines & Toronto Navigation Co., owing to the city's policy in declining to lease wharfage for a longer term than one year.

If your reporter had asked me for information I should have been pleased to have told him frankly that the Electrical Development Co., are purely Canadian; that every dollar of their capital has been purchased by Canadians, and that so long as I am connected with it will it continue to be operated as a distinctly Canadian enterprise.

The right-of-way for the transmission line from Niagara to Toronto was surveyed in such a manner that a railway can be constructed between its lines and steel towers. A somewhat less expensive right-of-way might have been located if railway gradients had not been sought, but as the patrolling of the line is an important feature it was believed that if we could induce one of the existing railway systems to consider a line over the right-of-way we would have a means of rapid patrol by hand-car, in the same manner that the Cataract Power Co. uses the Grand Trunk Railway, and the Shawinigan Power Co., the Great Northern Railway.

Failing to interest the existing roads, for the reasons given, that they have all

the facilities they at present require, I succeeded in organizing the Toronto & Hamilton Railway, which acquired by lease from the Power Co., the right to construct a line of railway along their right of way, thus reducing the interest charge to the Power Co. The Railway Co. also agrees to purchase from the Power Co. the electric power required to afford facilities for patrolling their pole line system by hand-car, and to grant transportation to their officials and workmen.

The Niagara, St. Catharines & Toronto Railway Co., is a totally separate and distinct enterprise from either of the others, their only relation being that they will become a considerable customer of the Power Co., my energies being directed to the building up of the business of the Power Co., wherever possible for the purpose of increasing their output, and thereby reducing the cost so that it may be able to offer power to consumers throughout the Western Peninsula, at prices which will command a ready market.

All of these companies are controlled by Canadians, and no negotiations of any kind have been entered into with any corporation or person for relinquishing control by the present owners.

#### FUEL.

For names of fuel dealers see "Coal and Coke" in Classified Index.

The fuel supply question is a most important one to Canadian manufacturers. The information published in this department will keep the readers posted on sources of production.

The coal trade is the key to the industrial situation. When the manufacturing industries are prospering, then coal is in demand and all branches of business life show activity. When coal is in small demand it indicates stagnation in other industries and in general business. As iron used to be the industrial thermometer, so coal has now grown to be the indicator of business conditions. When coal prospers, all prosper; when coal suffers, all suffer in sympathy with coal. Coal is the index to business.

The Dominion Coal Co., Montreal and Glace Bay, N.S. have recently placed an order with Allis-Chalmers-Bullock, Limited, Montreal, for eleven New-Ingersoll coal cutters. The company have already 175 of these machines in operation.

The H. T. Wilson Coal Co., Detroit, Mich., inform us that during last year they enjoyed a good trade in Canada for their well known "Red Jacket" coal, the shipments during the year amounting to more than 25,000 tons.

Among the American coal operators who are extending their trade into the Canadian market is Edward T. Sawyer, Columbus, Ohio, who controls the output of several West Virginia and Ohio mines. The West Virginia coal of this company is known as Magic Wonder and is a superior steam coal analyzing as follows: Moisture, 1.43; volatile matter, 33.28; fixed carbon, 62.33; ash, 2.25; sulphur,

0.70; and B.T.U., 14.69. Mr. Sawyer also handles Coalburg, Ohio, steam and domestic coal and other Ohio coals.

Captain Crawford, who was master of the steamer Turbina last year, has been engaged to superintend the bringing to Toronto from Nova Scotia of the Dominion Coal Co.'s shipments of coal, which, it is said, will amount to about 100,000 tons the coming season.

The Dominion Coal Co. are installing an Ottumwa box car loader at their wharf at Montreal. This is one of the portable pattern arranged to be moved quickly by its own traction power to the different bins.

The grocers of Wilmington, Del., engage in the coal business in a small way by delivering it to their customers in paper bags holding 22 pounds each. This coal formerly went to the purchaser in bulk, the grocers obtaining their supply from the local dealers, but the Charles Warner Co., one of the leading coal firms, recently conceived the idea of placing it in paper bags for the convenience of the grocer and the consumer, and this trade is now one of the regular features of their business.

Preliminary work of construction of Mackenzie & Mann's 200,000-ton coal dock, to be located on the McIntyre River, between Fort William and Port Arthur, Ont., has been commenced. The dock will be completed in time to handle fall shipments.

The Canadian Pacific Railway Co., are experimenting with the anthracite coal which they are producing at their new mines at Banff, Alberta. They have equipped one of their passenger locomotives with a fire-box designed to burn this grade of fuel, and if the reports of its utility as a locomotive fuel are favorable, it will probably displace bituminous coal to a large extent on the Canadian Pacific lines in the North-West, for use on passenger trains at least.

A new fuel successfully tested at Muncie, Ind., has been invented by Jacob Smith, a glass worker. It is said to possess more heat units per pound than either coal or wood. It can be manufactured and sold at a profit for half the cost of coal, and it does not smoke except when a strong draft is used. Its success as a fuel for domestic uses was determined some time ago, but not until recently, when it was used beneath an engine boiler, was its value for manufacturing demonstrated. The fuel is made largely from the refuse of the pulp mills, of which there are a number about Muncie. Each mill turns out thousands of tons of refuse annually. The refuse, a combination of soda and lime, is mixed with crude oil, and the finished product resembles putty. It may be cut with a spade and thrown into a furnace or beneath a boiler. No kindling is necessary, for a match touched to it will light readily, the material burning with an intense heat. There are no clinkers, and the ashes remaining after the fire has burned down may be made into a new compound for which Mr. Smith has another use. A bushel basketful of the fuel beneath a sixteen horse power



engine at a Muncie factory kept steam up for eight hours. It is manufactured as a plasterer makes his mortar. The Patent Office has called it the Smith fuel.

Since it has been definitely announced that a sale was consummated between the Rogers Coal Co., Hamilton, Ont., and James Gillies, speculation has been rife as to what territory Mr. Rogers will now turn his attention to. Alfred Rogers, who is a son of Elias Rogers, of Toronto, one of the largest importers of coal in Canada, surprised everyone with the manner in which he corralled the business of Hamilton. Stepping into that city a stranger, he took over a small retail yard doing a minor business. The Rogers Coal Co. now control fully one-half of the entire anthracite and bituminous tonnage of the city, which is one of the largest manufacturing centres in Ontario, and they have erected this year in Hamilton, one of the most modern coal-handling plants in this territory. It is generally understood that Mr. Rogers will return to Toronto and associate himself with the Elias Rogers Co. there, or go into the wholesale hard and soft coal business throughout Western Canada. The articles of sale call for a transfer of the property April 1. All of Mr. Rogers' friends unite in wishing him the greatest of success in whatever undertaking he may launch. James Gillies is conducting coal businesses at the present time in both Preston and Hespeler, Ont., both of which he will retain.

The Bulkley & Telkwa Valley Coal Co., have been incorporated at Victoria, B.C., with a capital of \$1,000,000, to carry on a coal mining business and to manufacture coke, oil, etc.

Mr. E. F. Henchey, formerly of the Western Pennsylvania Fuel Co., and in charge of the Buffalo office of the company, is now general manager of the Kilbuck Coal Co., Pittsburgh, Pa., who have mines in the Monangahela field. Mr. E. F. Hartland, who was also with the Western Pennsylvania Fuel Co., is secretary of the Kilbuck Coal Co., who will make a strong effort to secure Canadian trade.

Bituminous coal of an excellent quality, has been discovered within a few miles of Port Haney, and only thirty miles from Vancouver, B.C.

The Dominion Coal Co. expects to ship about 3,100,000 tons of coal this season, or about three or four hundred thousand more than last year.

In spite of the coal duty the Dominion Coal Co. are still disposing of from 700,000 to 800,000 tons annually in New England.

It is announced that coal of good quality will be plentiful in the Yukon during the present year. The Alaska Coal & Coke Co. have opened a seam at Royle's Landing at the mouth of Washington Creek, forty miles below Eagle on the Yukon. This seam is of a good coking quality and is from five to fifteen feet in thickness.

The Canadian Pacific Railway Co. have been making experiments on one of their locomotives with the burning of the

anthracite coal coming from their new colliery near Banff, N.W.T. So far as the tests have gone they have proved satisfactory, and it is probable that the company will use anthracite coal to a very great extent on their Western lines in the future.

The British Columbia Bureau of Information have issued in pamphlet form the report of Mr. J. H. Gray, civil engineer, on the Bulkley Valley country. He reports that in the valley of the Telkwa River, several seams of a good quality of bituminous coal have been proved and reports that some seventy-five square miles have been applied for by coal mining or development companies.

The Dominion Coal Co., Glace Bay, N.S., are making important improvements to their shipping piers. The Canadian General Electric Co., Toronto, have been given a contract to supply a power house and apparatus at the piers for lighting the same and furnishing power for winches, etc. The loading chutes, hitherto operated hand winches, will hereafter be worked by Denton hoists, reducing the time from twenty minutes per chute handled to about one minute.

A telegram from Victoria, B.C., says: Profiting by experience in the Crow's Nest, Hon. George A. Cox and others interested in Crow's Nest Pass Coal Co., have taken time by the forelock and have acquired a big block of coal lands in the Telkma Valley, which lies south of the Bulkley Valley, between Kitamaat and Hazelton, B.C. Half of the lands belong to F. G. Vernon, of Victoria, formerly Agent-General of British Columbia, and the other half to the Pacific Northern & Omineca Railway, in which Messrs. Vernon and Clifford, M.P.P. for Skeena, are heavily interested. It is believed that the charter of the Pacific Northern has also gone to the Grand Trunk people, the only obstacle being the expiration of the charter which was remedied a few days ago by the Legislature extending it to 1909. Mr. McEvoy, geologist of the Crow's Nest Co., visited the Telkma coal fields last fall, and his report is highly satisfactory. The coal is of high grade, and in enormous quantities.

The Dominion Coal Co.'s mines at Glace Bay, N.S., for the month of March had an output of 228,765 tons, 100,000 tons greater than for February. No. 2 colliery is now idle for repairs. The bankhead is being lowered and some new machinery is being installed.

"Speaking Coal Wise" is an instructive booklet on the production, market prices, steam values and use of coal being sent out by the Pittsburg & Buffalo Co., Pittsburg, Pa., and Buffalo, N.Y., which will interest the many Canadian users of the steam coal of this company and in fact all Canadian manufacturers who require coal and coke.

#### THACKER COAL.

Thacker coal is the product of the mines of the Thacker Coal & Coke Co., at Thacker, West Virginia. It is mined from a uniform vein of remarkable purity

—being absolutely free from slate or bone. It has perfect combustion, ignites readily and produces an intensely hot fire, with a minimum quantity of ash. For stocking purposes it is not excelled by any other bituminous coal, being but little affected by weather conditions.

Genuine Thacker is widely recognized as one of the best bituminous coals in use in the United States or Canada, and gives excellent satisfaction for either steam or domestic purposes.

In structure it bears a strong resemblance to cannel coal, being of a much harder fibre than many of the better grades of bituminous.

Mr. E. A. Skae, Detroit, Mich., is sales agent for this celebrated Thacker coal, and is prepared to make prompt shipments of it either direct from the mines or from his distributing yards at Detroit, in any of the following grades:

Domestic Lump, Steam Lump, Domestic Nut, Stoker, Nut and Slack, Run-of-mine.

### OPPORTUNITIES.

Manufacturers and others in need of machinery, supplies, etc., of any kind are requested to consult our advertising columns, and if they cannot find just what they want, if they will send us particulars we will make their wants known free of cost, and in this way secure the attention of those who may be able to supply them. No charge for publishing what is wanted nor for giving information. When writing to enquirers kindly mention The Canadian Manufacturer.

W. G. Morrow, Peterborough, Ont., is inviting tenders for the erection of a collegiate institute.

According to the vernacular papers the Department of Agriculture and Commerce proposes to establish a saw mill on a large scale for the purpose of sawing timber produced in the government forests. It is said to be the intention of the government to carry on the timber felling industry more actively than at present and to encourage the exploration of timber; but as there are no saw mills to meet the requirement, the government has decided to establish one on national account. The saw mill will be constructed in the lumber yard of the forest office at Aomori in the northern part of Japan. The boilers and other machinery required for the mill will be ordered from abroad. If the experiment proves successful, official saw mills will be established in other parts of the country.

The Secretary of the Peterborough Lock Mfg. Co., Peterborough, Ont., is inviting tenders for the erection of complete new buildings. According to plans the main building will be 175 feet by 44 feet and three stories high. The foundry will be 160 feet by 70 feet. The tenders are to be in by April 15.

C. W. Murray, Vancouver, B.C., is inviting tenders for the erection of two new school buildings in that city.

J. Rigley, secretary-treasurer, Public School District, Regina, N.W.T., will receive tenders for the erection of a

twelve-room brick and stone school building.

J. D. Atchison & Co., architects, Winnipeg, Man., are inviting tenders for the erection of an apartment building in that city.

J. Keslo Hunter, secretary-treasurer, city of Regina, N.W. T., will receive applications for a resident civil engineer for that city.

The Board of Control, Toronto, are asking for tenders for the furnishing and erection of either a 5,000,000 or 6,000,000 imperial gallon, triple expansion fly-wheel pumping engine for water works purposes.

The chairman of the Board of Control, Toronto, will receive tenders for the supply of cast-iron water pipe for the year ending April 1, 1906, also for the supply of lumber for repairs to bridges and wharves up to December 31, 1905.

The Canada Car Co., Montreal, are inviting tenders for the machinery for the different buildings now in course of erection.

The City Engineer, Quebec city, is inviting tenders, for supply of deals, mails, stone and gully wells, and for construction of stone and brick pavements.

Robt. Clohecy, architect, Hamilton, Ont., is inviting tenders for the erection of a Catholic church in that city.

The Traders Bank, Woodstock, Ont., are inviting tenders for alterations and improvements to their banking building.

C. J. Brown, city clerk, Winnipeg, Man., is inviting tenders for the supply of 1,750 tons of water pipe.

Luis Garcia Teruel, has received from the Mexican Government a concession to erect rolling mills in the State of Oaxaca. All requisite building materials and machinery may be imported duty free.

Frederic Nicholls, Toronto, president of the Toronto & Hamilton Railway Co., will receive tenders for the grading, culverts, masonry, bridges, etc., required between Toronto and Niagara Falls, Ont.

C. J. Brown, city clerk, Winnipeg, Man., will receive tenders up to April 30, for the book binding and printing required by that city for the year ending April 30, 1906.

**PUBLICATIONS.**

The publishers of The Canadian Manufacturer solicit in advance, if possible, catalogues, circulars, and other industrial publications issued by manufacturers. We wish to review such literature, and bring the principal points to the attention of our readers.

The Wm. Hamilton Mfg. Co., Peterborough, Ont., engineers and machinists, have sent us a copy of their handsome catalogue, describing and illustrating setting machines for saw-mills, manufactured by them.

The twenty-sixth Year Book of the

American Society of Mechanical Engineers has reached us. It contains a list of officers, members, constitution, by-laws, and rules of the Society as of January 1, last. The total membership list in the United States contains the names and addresses of 2,614 persons. The total number of foreign members is 262, of which 32 are credited to Canada, 46 to England, and 4 to Scotland.

The Wellman-Seaver-Morgan Co., Cleveland, Ohio, have sent us an illustrated circular descriptive of Dewhurst patent slag ladels, and cars manufactured by them. The mechanism of these machines and the advantages to be had by their use, is fully explained both by the half-tone illustrations, and the accompanying text.

Catalogue No. 81, sent us by Allis-Chalmers-Bullock, Ltd., Montreal, relates to rock drills and mining machinery, manufactured under Ingersoll-Sergeant patents. It is devoted to illustrations and descriptions of machinery for the excavation of rock and ore, as manufactured in their works under the patents of the Ingersoll-Sergeant Drill Co., of New York, whose Canadian rights are vested in the Allis-Chalmers-Bullock Ltd. The operations of the Montreal concern are in the closest relation to the American company, and they manufacture machinery identical in design and of the same high grade of material and workmanship. Their extensive shops near Montreal, are of the most modern construction, and are equipped with the most perfect machinery made by the best tool-makers, to meet their special conditions.

An automatic feed pump and receiver is described in Bulletin B 81, issued by the Geo. F. Blake Mfg. Co., 114 Liberty Street, New York City. This apparatus is arranged to automatically pump water of condensation directly back to the boilers, and is used for draining steam coils, radiators, heaters, drying cylinders, steam jackets, etc.

The April number of "Graphite," published by the Joseph Dixon Crucible Co., Jersey City, N.J., contains many hitherto unpublished illustrations of notable bridges and buildings in different parts of the world. In fact, with this copy of Graphite before them, many people who entertain a burning desire to travel and see things could have their wishes gratified, at the same time saving traveling expenses by studying the illustrations and descriptive matter it contains. It also contains many seasonable talks regarding good paint and good painting. The thousands of specifiers and users of protective paint whose names the Dixon Crucible Co., have on their mailing list, will receive copies of this twenty-four page brochure; and there are other thousands to whom it will be sent on application.

Messrs. Venderbush & Looman, Detroit, Mich., have issued a catalogue re their new separator and metal saving device.

The Dover Fire Brick Co., Cleveland, Ohio, represented in Canada by the Ontario Lime Association, Toronto, have issued a new catalogue on their line of fire brick and shapes.

The Faber Self-Filling Fountain Pen Co., Toledo, Ohio, have issued a booklet on the advantages of their new pen.

The H. T. Wilson Coal Co., Detroit, Mich., have recently distributed a useful file bearing their well-known "Red Jacket" trade mark.

The Morris Machine Works, Baldwinville, N.Y., have sent us a copy of their new 1905 catalogue, having reference to the centrifugal pumping machines, stationery and marine engines, etc. In it they say that the machinery of this character which they make has been on the market for forty years, during which time they have built nearly 30,000 pumping outfits of different sizes and types. Some of the specialties described, and illustrated with beautiful half-tones, are, a 36-inch directly connected dry dock pumping engine with average capacity of 115,000 gallons per minute; a pair of 20-inch sewage pumping engines, built for the city of Norfolk, Va., capacity 9,000 gallons per minute; a 300 h.p. compound engine for direct connection to 24-inch vertical pumps for floating dry dock service; a pair of 32-inch dredging pump used by the United States Government in maintaining a navigable channel in the Mississippi River; a 36-inch pumping engine with capacity of 35,000 gallons per minute against a 28-foot head, etc.

A recent issue of the journal of the Society of Arts, published in London, England, contains a comprehensive review of Canada as a manufacturing country. The article is written by Mr. C. F. Just, of the Canadian Government service, and is one of a series under the title "The Manufactures of Greater Britain." Mr. Just presents a mass of statistics dealing with the import and export trade of Canada, and at some length sets forth the working out of the tariff policy with its preferential provisions for the importation of British products. It is in his dealing with the diversity of the products of Canada's 15,000 factories, with their \$500,000,000 of invested capital, that the author writes at greatest length. If the information is judiciously circulated the effect should be beneficial in eliminating from the minds of many in Great Britain the deep-set impression that Canada has little to recommend her but her agricultural resources.

The London Emery Works Co., London, England, announce that the rapid growth of their business has compelled them to remove to larger and more commodious premises at Park, Tottenham, that city, which they had specially built to suit their requirements.

The Advance Machinery Co., Toledo, Ohio, are preparing a new 40-page catalogue, embracing many new and novel ideas, describing their entire line of copper appliances for the glue room.

The story of American Coals, by William Jasper Nicholls, the Am. Soc. C.E. The publishers, the J. B. Lippincott Co., Philadelphia, have sent us a handsome copy of this interesting, valuable and timely work, which treats of the origin, development, transportation and consumption of coals; as found in the

United States. It treats only of such coals, which, we are informed, is a subject of such importance as to reach the enormous value of nearly two hundred millions of dollars annually. The only reference Mr. Nicholls makes in his book to Canadian coal deposits is to say that "Canada is devoid of any traces of the coal measures, and presents a remarkable contrast to the regions by which it is surrounded. Newfoundland, New Brunswick, and Nova Scotia contain the north easterly extension of the great American fields. But as far as yet known the coal measures are more interesting to the geologist than to the economist." Of course this is an injustice to Canada, which might have been easily avoided by reference to the official publications of the Dominion, of Nova Scotia and of British Columbia.

Messrs. James Dougall & Sons, proprietors of the Bonny-side Fire Clay Works at Bonny-side, near Glasgow, Scotland, have sent us their illustrated catalogue, in which is shown a large variety of the fire clay goods manufactured by them. These works, the manufacturers of which are already widely known in Canada, and elsewhere, were erected a few years ago to develop the ganister and fire clay seams at and near Bonny-side, the ganister there existing being, we are informed, the largest known deposits in Scotland. Its highly refractory nature is rapidly introducing it into all the commercial processes of heating and smelting where exceptional heat resisting power is required, especially in steel manufacture, where it is used for pouring shoots, ladle lining, etc. This company are very large shippers to Canada of firebrick, fire clay blocks of special shapes, ganister, etc.

The Canadian Manufacturers' Association announce that initial steps are being taken in preparing for the fourth issue of the Canadian Trade Index. The publication will be issued solely in the interests of the members of the Association, and will make no reference to other manufacturers or the goods that they produce.

"The Use of Gas for Power and Heating" is the title of a handsome brochure issued by the Gas Supplies & Construction Co., Toronto. It contains a brief article pertaining to Producer Gas, its manufacture, composition and value.

The Canadian Westinghouse Co., Hamilton, Ont., have just issued circular No. 1098, relating to the Westinghouse Switchboard Indicating Instruments.

The Cassella Color Co., 182 Front Street, New York City, have sent us a sample book of dycings, on half-wool linings.

Messrs. Sadler & Haworth, Montreal and Tofonto, tanners and manufacturers of oak leather belting and lace leather, have sent us their very handsome calendar for the current year.

The National Electric Co., Milwaukee, Wis., have sent us a copy of their National Electrical Catechism, which is issued monthly. It contains some valuable information regarding technical ap-

plications of direct and alternating current electricity.

The Canada Foundry Co., Toronto, have issued Bulletin No. 26, which describes and illustrates "Air and Gas Compressors."

The Pedlar People, Oshawa, Ont., manufacturers of sheet metal building materials, etc., have issued price list No. 13, which is very complete, and of great value to anyone interested in metal roofing, siding, etc.

The British Weights and Measures Association, whose head office is at 25 Victoria Street, London, S.W., England, of which Mr. George Moores is secretary, has sent us a brochure in which the population, areas and trades of the metre-using and inch-using countries of the world are compared with other countries. The object of the Association is the defense, standardizing and simplifying of British Imperial weights and measures. There are three grades of members—Corporate, who pay five guineas per year; Supporting, who pay one guinea; and Ordinary, who pay one shilling. It will be of interest to learn that Canadian science is represented in the Association by Sir Sandford Fleming, Chancellor of Queen's College.

The fourth edition of the Canadian Newspaper Directory, giving a complete list of the newspapers and periodicals published in the Dominion of Canada and Newfoundland, with full particulars of each, has just been published by A. McKim & Co.'s newspaper advertising agency of Montreal. A feature of the directory is a set of four maps, which give in a very prominent way the names and location of every city, town and village in which a newspaper is published.

Messrs. Sheldon & Sheldon, Galt, Ont., have sent us a copy of their sectional catalogue, No. 20, relating to medium blowers and exhausters manufactured by them.

The Engineering News Publishing Co., 220 Broadway, New York, are offering two prizes amounting to \$350 for the two best papers on "The manufacture of concrete blocks, and their use in building construction." This is a subject of great importance to all technical men, to manufacturers of cement, to building contractors, bridge builders, etc., which on account of its newness, comparatively little is known. The competition will be of vast benefit to the engineering and architectural professions by making public the results of experiment and research.

#### WILTBONCO.

The merchant engineering business heretofore conducted under the firm name of Wm. T. Bonner & Co., Boston, Mass., have been incorporated as the Wm. T. Bonner Co., and will hereafter be operated under a charter granted to the concern under that name. The scope of the business will be extended to cover a much larger line of steam plant accessories than before, and more attention will be given to the manufacture of

standardized specialties for high pressure and superheated steam. A full line of cushion pressure seated control cocks, blow-off, and other valves of a new type designed by Mr. Bonner, will be manufactured in all sizes up to four inches. The general offices of the company, and the selling and manufacturing departments are combined at number 244-246-248 Summer Street, Boston, with sales office at 141 Broadway, New York. Mr. Bonner was for a number of years connected with an important Canadian concern, and was well known and highly appreciated in business circles in Toronto and Montreal.

#### AN IMPORTANT DYEING PUBLICATION.

Messrs. Leopold Cassella & Co., represented in the United States and Canada, by the Cassella Color Co., have lately brought out a second volume of "The Dyeing of Cotton and other Vegetable Fibres," as a supplement to the first volume. We announced in this paper, in May, 1903, the appearance of this earlier work, and gave a general description of its contents.

The many new additions to the list of colors and the rapid progress made in the different dyeing processes have necessitated the appearance of this supplementary volume. Like the first, it is divided into a general and a special part, the general part containing a full description of the properties and application, with dyeings on cotton serge, of all the Immedial and Diamine colors brought out by this firm since the publication of the original book; these new colors are the following:

Oxy Diamine Brown 3 G N  
 Diamine Fast Blue F F G, Pat.  
 Diamine Fast Blue F F B, Pat.  
 Diamine Fast Black F, Pat.  
 Para Diamine Black B, Pat.  
 Oxy Diamine Black J W F, Pat.  
 Oxy Diamine Black F F N, Pat.  
 Oxy Diamine Black U S, Pat.  
 Immedial Black N N Conc., Pat.  
 Immedial Black N N R, Conc.  
 Immedial Black N N G, Conc.  
 Immedial Black N B B Conc., Pat.  
 Immedial Brilliant Black B, Pat.  
 Immedial Yellow D, Pat.  
 Immedial Orange C, Pat.  
 Immedial Yellow Brown E, Pat.  
 Immedial Cutch O, Pat.  
 Immedial Cutch G, Pat.  
 Immedial Dark Brown D Conc., Pat.  
 Immedial Brown W Conc., Pat.  
 Immedial Brown R R, Pat.  
 Diaminogene Sky Blue N  
 Diaminogene Blue N B, Pat.  
 Diaminogene Blue N A, Pat.  
 Diaminogene Blue 3 R N, Pat.  
 Oxy Diaminogene O B, Pat.  
 Oxy Diaminogene O T, Pat.  
 Oxy Diaminogene E D, Pat.  
 Oxy Diaminogene E F, Pat.  
 Immedial Direct Blue J B, Pat.  
 Immedial Direct Blue O D, Pat.  
 Immedial Indone R Conc., Pat.  
 Immedial Indone R R Conc., Pat.  
 Immedial Indone R B Conc., Pat.  
 Immedial Indone B F Conc., Pat.  
 Immedial Indone B B F Conc., Pat.



Immedial Indone 3 B Conc., Pat.  
Immedial Olive B, Pat., and 3 G  
Immedial Dark Green B  
Immedial Maroon B Conc., Pat.  
Immedial Bordeaux G Conc., Pat.

In the second or special part, the application of all these new dyestuffs on loose cotton, cotton yarn, sliver, cheeses, cops and yarn in the hank in dyeing machines, on cotton warps, piece goods, hosiery; on linen yarn, linen and half-linen piece goods, ramie, jute and cocconut fibre and artificial silk, is fully covered. In this part are likewise shown several cuts of useful machines which are recommended for use in the dyeing of the various materials mentioned.

Special chapters are devoted to the dyeing of cotton fabrics containing silk effect threads and woolen effect threads or borders and the colors suitable for dyeing this class of materials are enumerated.

In short, the volume is one of the most interesting and useful lately issued in this branch of industry.

The book is now ready for distribution and any one interested may obtain a copy by applying to the Cassella Color, 182 Front Street, New York, or any of its branch offices.

## PERSONALS.

Messrs. R. F. Robinson and E. B. McKay, old and experienced newspaper men long resident in Winnipeg, and well known throughout Manitoba and the newly created provinces of Alberta and Saskatchewan, have started a press agency at 156 Garry Street, Winnipeg, proposing thereby to bring into close touch the newspaper fraternity of the older portions of Canada, and advertisers generally.

Mr. H. A. Burson, B.A., Sc. Chief Electrical Engineer of Allis-Chalmers-Bullock, Limited, Montreal, has just completed a series of addresses upon Induction Motors, of which the company makes a specialty. The authorities of McGill University, Montreal, are aware of the importance of keeping their students in the Science Courses informed upon the latest advances in the manufacturing world. For that purpose the leading specialists in different branches are invited from time to time to address the students.

Colonel Michael J. Burke, United States Consul at St. Thomas, Ont., died at the consulate in that city on March 15. Deceased was appointed consul at St. Thomas during President McKinley's first regime. He was of Irish descent, and was born in Canada some fifty years ago. He was a finished speaker, having many of the oratorical graces characteristic of the Irish race. In his earlier life, he worked for the old Montreal Telegraph Co., in Canada, and the Western Union in the United States, and while following this profession worked for several sessions in the House of Commons, at Ottawa. This experience Col. Burke has always liked to refer to. Just prior to his coming to St. Thomas he had been engaged in newspaper work in Louisville and Chicago.

The Dodge Coal Storage Co. have acquired the business of the United Telpherage Co., New York city. Communications intended for the latter company should be addressed to "The United Telpherage Department" of the Dodge Coal Storage Co., 49 Dey St., New York.

Mr. K. L. Aitken, consulting engineer, of Toronto, has recently returned from Sarnia, Ont., where he made a complete inspection of the electrical equipment of the Imperial Oil Co.

A growing tendency among those connected with our large corporations to organize for purposes of mutual improvement, is noticeable in all lines of trade. An interesting organization has just been perfected by those connected with the B. F. Sturtevant Co., Boston, Mass., the object being to consider questions of engineering and commercial interest, and to increase the mutual acquaintance of the members. Its character is well suggested by its title, THE PROGRESS CLUB. Its membership is open to all, high or low, who are in any way associated with the company. Its membership, however, is classified into Seniors and Juniors, the former including those who are twenty-one or over, who have had charge of the work of others, or who have been juniors in regular standing for three years. Control is placed in the Council, consisting of president, vice-president, secretary, treasurer, and three members at large, whose duty it is to arrange programs for the meetings, publish and distribute necessary reports of the proceedings, and generally direct the affairs of the Club. It will be a distinct purpose of the Club to associate in its membership those in the branch houses and local offices of the company, as well as those connected with the plant at Hyde Park. A very successful future is anticipated for this new organization.

Mr. G. C. Mooring, proprietor of the "Modern Machine Shop," 82 West Adelaide St., Toronto, informs us that he has purchased the good will, stock in trade, and entire plant connected with the business heretofore carried on at that place by the late W. P. Sutton. He makes a specialty of prompt repairing of all kinds of machinery—die presses, gear cutting, knife grinding, power hack saws, shafting, etc.

Mr. R. A. Donald, 22 Toronto St., Toronto, has established himself as resident director for several prominent Canadian manufacturing concerns in which he is interested, in addition to which, with a well organized force, he will conduct a fire insurance, employer's liability and accident insurance, etc., and holds the exclusive agency of the Manitoba Fire Insurance Co. Mr. Donald has been, long and favorably known in Toronto as the managing director of the Pure Gold Mfg. Co., from which he has withdrawn, and he is now the chairman of the Toronto branch of the Canadian Manufacturer's Association.

The annual meeting of the Western Ontario Good Roads Association will be held in Toronto, April 12. Arrangements for the reading of a number of papers upon matters relating to the building of

bridges and the making of good roads, and for discussion thereon have been made. Mr. James Graham, Lindsay, Ont., is president of the association, and J. E. Farewell, County Clerk, Whitby, Ont., is secretary.

A meeting was held at the Engineers' Club, Toronto, on March 23, at which Mr. K. L. Aitken, consulting engineer, presented a paper entitled "The Relation between High Tension Lines and Other Lines." A large number of members were present, and the paper was followed by an interesting discussion.

Mr. C. H. Vogel, mill and hydraulic engineer, Carleton Chambers, Ottawa, has returned from his trip to the Pacific Coast.

At an open meeting of the Institute of Chartered Accountants, Toronto, held a few days ago, an interesting and instructive lecture was delivered by Mr. C. R. W. Postlethwaite, C.A., of the firm of Jeff & Postlethwaite, chartered accountants, on the subject of "Joint Stock Company Accounts." A large and appreciative audience was present. Mr. Postlethwaite, after discussing the advantages to be derived from joint stock companies as against partnerships, dealt fully with the special features of bookkeeping required by companies, introducing a number of examples of opening entries and forms of books. At the close of the meeting a hearty vote of thanks was accorded Mr. Postlethwaite for his able lecture.

Dr. J. O. Orr, Manager of the Toronto Industrial Exhibition, who has just returned from England, says: "I saw Lord Roberts personally at his residence in London. He told me that he had been looking forward to a visit to Canada for a number of years, but this year he was comparatively free from military duties, and it gave him the greatest possible pleasure to accept the invitation to open the Toronto Exhibition. His Lordship will be accompanied by Lady Roberts.

Mr. A. B. Franklin, jr., manager of the Barney Ventilating Fan Works, Boston, Mass., was in Toronto last week, making his headquarters at this office.

A deputation representative of Canadian employers, including Messrs. J. O. Thorn, of the Metallic Roofing Co., Toronto; J. G. Merrick, secretary of the Employers' Association; G. W. Watts, of the Canadian General Electric Co.; and C. Birmingham, of the Canadian Locomotive Works, Kingston, Ont., attended the recent annual convention of the Chicago Retail Trades Association in Chicago, Ill., at which meeting the labor problem, which is said to have reached an acute stage in the United States, was discussed, and it was decided to work for more friendly relations between the labor unions and the employers, which will be mutually beneficial.

The B. F. Sturtevant Co., Boston, Mass., have acquired a substantial interest in the W. H. Blake Steam Pump Co., and are now manufacturing in the new Sturtevant works at Hyde Park, Mass., the lines of pumps, condensers, etc., previously built by the Blake Co. A number of new designs in the way of jet and surface condensers is now being

placed in the market, illustrations and descriptions of which will appear in this journal at an early day.

Mr. Henry H. Cleugh, a well-known miner and prospector in the Cariboo region of British Columbia, was in this office last week bringing with him some very excellent specimens of gold and other ores obtained in that province, among them being specimens of scheelite, discovered on Hardscrabble Creek, near Barkersville, and now on view at this office. Scheelite is a rare mineral used in the process of manufacturing very hard steel for tool purposes, armor plates, etc. Mr. Cleugh is a native of Campbellford, Ont., now on a visit to his old home, and who will in a few days return to British Columbia.

E. D. Arnaud, formerly manager of the Union Bank at Annapolis, N.S., has been appointed commercial agent at Chicago, Ill. This is the first appointment made by the Trade and Commerce Department in the United States.

In the March 17 issue of this journal was an item having reference to the last meeting of the Canadian Mining Institute, in which the name of the secretary was given as H. Morton Lamb, of Victoria, B.C. This was an error, which in the interests of the Institute we correct by mentioning that the name of the secretary is H. Mortimer Lamb, whose post office address is P.O. Box 153, Montreal, where communications for the Institute should be sent.

Mr. J. G. Jardine, formerly Canadian Trade Agent for South Africa, died at the family residence, Toronto, March 24. Mr. Jardine resigned the position he held in South Africa some months ago, owing to failing health. He was a native of Oxford, England, where he was born in 1842 and came to Canada in 1860. He was the Canadian Commissioner to the Paris Exhibition in 1900, afterwards going to South Africa.

Mr. J. E. Thropp, jr., assistant superintendent of the Duquesne blast furnaces of the Carnegie Steel Co., has accepted a position at the head of the new iron plant, partially completed, at Sydney, N.S., which is being erected by the Nova Scotia Steel & Coal Co. The company have had large works at Glasgow, N.S., for the past twenty years, but by acquiring title to 30,000 acres of the finest coking coal in Nova Scotia have deter-

mined to erect two new blast furnaces of large capacity at Sydney, in the center of the new coal fields and near the works of the Dominion Iron & Steel Co., which have contracted for their supply of coal from this field. The new works consist of two blast furnaces, one of which is completed; a steel plant of twelve furnaces and a 40-inch rolling mill, practically completed.

#### THE CANADIAN FAIRBANKS CO.

Mention has heretofore been made in these pages of the organization of the Canadian Fairbanks Co. in Montreal, and the taking over by it of the business previously conducted in that city of the Fairbanks Co. under the management of Mr. H. J. Fuller. The following facts concerning the new company have been furnished us by Mr. Fuller:

"The business of the Fairbanks Co. in Canada, including all their selling agencies, contracts, organization and warehouse stocks of goods at Montreal, Toronto, Winnipeg, Man., and Vancouver, B.C., have been purchased by Mr. Henry J. Fuller in order to re-organize it as a Canadian institution, and the business will be conducted, on and after March 16, as the Canadian Fairbanks Co., Ltd., Mr. Fuller being president and treasurer. It is his intention to very shortly begin the erection of a large plant for the manufacturing in Canada, of specialties which they have heretofore imported.

They will continue to represent the following concerns:

- The American Tool Works Co., Cincinnati, Ohio.
- The American Wood Working Machinery Co., New York City.
- The American Spiral Pipe Works, Chicago, Ill.
- The American Steam Gauge & Valve Mfg. Co., Boston, Mass.
- The Buhl Malleable Co., Detroit, Mich.
- The Brown & Sharpe Mfg. Co., Providence, R.I.
- The Bignall & Keeler Mfg. Co., Edwardsville, Ill.
- Messrs. H. A. Cole & Co., Liverpool, England.
- The Emmert Mfg. Co., Waynesboro, Pa.
- The Foster Engineering Co., Newark, N.J.
- The E. M. Dart Mfg. Co., Providence, R.I.
- The Goubeit Mfg. Co., New York City.

The H. W. Johns-Manville Co., New York City.

The Johns-Pratt Co., Hartford, Conn.

J. J. McCabe, New York City.

The Niles-Bement-Pond Co., New York City.

The Norton Emery Wheel Co., Worcester, Mass.

The Oneida Steel Pulley Co., Oneida, N.Y.

The Oster Mfg. Co., Cleveland, Ohio.

The G. M. Parks Co., Fitchburg, Mass.

The Wm. Rutherford & Sons Co., Montreal, Que.

Messrs. Randolph-Clowes Co., Waterbury, Conn.

The Reed Mfg. Co., Erie, Pa.

The Reliance Machine Tool Co., Cleveland, Ohio.

The Riehle Bros. Testing Machine Co., Philadelphia, Pa.

The Taunton Locomotive & Mfg. Co., Taunton, Mass.

Messrs. J. B. Treasure & Co., Liverpool, England.

The Warner Instrument Co., Beloit, Wis.

The Union Mfg. Co. (Chuck Dept.), New Britain, Conn.

The S. A. Woods Machine Co., Boston, Mass.

Messrs. Wilmarth & Morman Co., Grand Rapids, Mich.

The T. B. Wood's Sons Co., Chambersburg, Pa.

The Warnock Mfg. Co., Worcester, Mass.

The first move will be to remove the Montreal warehouse into new quarters at 444-446 St. James Street, on May 1 next, the old quarters on Craig Street being retained for the present as the extra space will be needed for the increase of business."

#### PATENTS GRANTED.

Messrs. Fetherstonhaugh & Co., patent solicitors, Toronto, have sent us the following list of patents recently obtained by them:

Canadian Patents—S. Meriner, Berlin, Ont., fuel economizers and smoke consumers; O. MacFarlane, Fort William, Ont., hand trucks; J. Wagner, Hamilton, Ont., automatic window and door alarms, E. Perkins, St. John, N.B., machines for swedging heads in nail blanks; E. Perkins, nail making machines, S. Toles, Galt, Ont., buck saw frames, S. Russell, Dundalk, Ont., structures for building wire fences; W. K. Bryce, Winnipeg, Man., switch rods; W. Cuthbert, St. Catharines, Ont., gas burners, J. Mills,



CANADIAN CORUNDUM WHEEL CO., - Hamilton, Ont.

Manufacturers of

**Corundum  
Wheels,  
Emery Wheels  
and  
Grinding  
Machinery**

## DRILLS AND LATHES

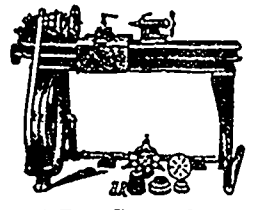


14" DRILL.

We build a full line of Upright Drills from 12 inch to 31 inch.

All sizes furnished in Gangs when so required.

Our Screw Cutting Lathes are built in both power and foot power styles.



11" FOOT POWER LATHE.

We also build a very practical Wet Tool Grinder for general shop use.

—ASK FOR CATALOGUE C.—

**B. F. BARNES COMPANY**

Ontario Agent -  
H. W. PETRIE, TORONTO, ONT.

ROCKFORD, ILL.

Brantford, Ont., matrix retainers; A. J. Hart, Montreal, fireman's signaling system; J. Harshaw, Paquette Station, Ont., abrasive tools or rasps; C. C. Park, Kamloops, B. C., and F. Gladwin, Vancouver, B.C., tire tightening device; G. Barr, Toronto, spike machines; G. E. Kingsley, Toronto, apparatus for the treatment of sulphides or other ores; W. T. Watson, Vancouver, B.C., rail sanding devices; T. McLennan, Belmont, Man., horse shoes; F. Paul, jr., Sorel, Que., air forcing mechanism; R. J. Copeland, A. E. Chatterson, Toronto, loose leaf ledger binder; R. J. Copeland, A. E. Chatterson, binders; D. McNorgan, Essex, Ont., axle lubricators; D. Chatel, St. Henri, Que., gaming machines; A. W. Robinson, Montreal, floating discharge pipes and hydraulic dredges and means for connecting the same to dredges; A. W. Robinson, apparatus for hydraulic dredging and distributing the dredged material; W. Corbett, Smith's Falls, Ont., window sills; J. H. Greenwood, Fernie, B.C., brakes for mining cars; C. McDonald, Sydney, N.S., car couplings; J. A. Balfour, Toronto, polishing compounds.

United States Patents—Wm. A. Baldwin, Smith's Falls, Ont., sulkey plow; Edward Brougham, Brandon, Man., tension device for wheels; A. J. Pattison, Toronto, motor truck; Edward J. Litt, Dublin, Ont., snow plow for railways; William A. Milne, Brown's Corners, Ont., compressing wheel for presses; Claude B. Wainwright, Vancouver, B.C., drop-keel; Fred. Lacey, Valleyfield, Que., shedding mechanism for looms; Joseph McKone, Neepawa, Ont., blower; Wm. A. Milne, Brown's Corners, Ont., tubular peat collector; Isaie Belair, Montreal, emergency door; John C. Dent and J. Dent, Sr., and Jr., Bothwell, Ont., nut-lock; Samuel Erb and W. E. Morell, Chemaunus, B.C., fire protective apparatus; John Flynn, London, Ont., car replacer; Carl K. Jansen and F. Eisbrenner, Tilsonburg, Ont., blank for forming pitchforks; Archibald Lake, Galt, Ont., lawn mower; Patrick T. Lyons, Montreal, water heater; William McGuire, Toronto, composition for brick, tile, etc.; John Scott, Hamilton, Ont., reversible marine turbine engine; Frederick L. H. Sims, Weston, Ont., acetylene gas generator.

**CALIFORNIA EXCURSIONS.**

The Chicago, Union Pacific and North Western Line runs through first-class Pullman and Tourist sleeping cars to points in California and Oregon. Personally conducted excursions from Chicago every week. Lowest rates. Choice of routes. Finest scenery. Special attention given to family parties. For maps, illustrated folders and rates, address, B. H. Bennet, General Agent, 2 East King Street, Toronto, Ont.,

**FORT WILLIAM, ONT.**

The Grand Trunk Pacific Railway Co. have decided to locate their Lake Superior terminal at Fort William, Ont. The agreement with that town is to the effect that it is to assist the company in securing 1,600 acres of land on Mission property from the Government. The company will establish their Lake Superior terminal works and offices there. The corporation are to deed the company 1,300 feet of water frontage on the Kaministiquia River, and give the railway a right of way 150 feet wide on James Street in the town.

Crucible-making has engaged our entire thought and labor for 35 years. This partly explains why McCullough-Dalzell Crucibles lead all others. Send us an order.

**MCCULLOUGH-DALZELL CRUCIBLE CO., Pittsburg, Pa.**

**The Cross Oil Filter**

reduces the cost of Oil one-half.

This one-half of a necessary expense saved you can apply to profits.

Figure up the cost of oil used at your plant and you'll find one-half represents a snug sum. Don't you think it worth while to order a Cross Oil Filter? Sent anywhere on 30 days' approval.



"The Cross Oil Filter is a great oil saver, consequently a money maker."—Itusell Engine Co., Massillon, Ohio.

**THE BURT MFG. CO.,**

LARGEST MFRS. OF OIL FILTERS IN THE WORLD,  
212 Main Street, AKRON, OHIO, U.S.A.

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

Also supplied by Oil Companies, Dealers and Power Contractors.

**DON'T  
BUILD A  
CHIMNEY**

**USE**

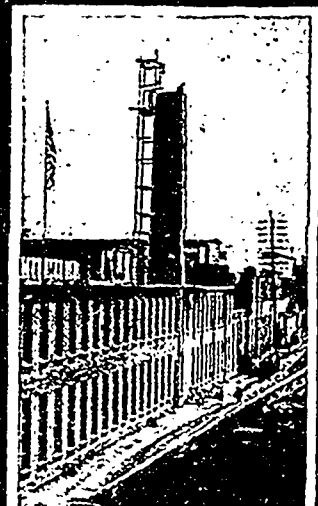
**MECHANICAL DRAFT**

**IT COSTS FAR LESS**

Is independent of weather. The fan is positive in action. Responds instantly to sudden demands for more steam. Burns cheap fuel. Costs practically nothing for operation when exhaust steam is utilized

142

**B. F. STURTEYANT & CO BOSTON, MASS.**  
NEW YORK - PHILADELPHIA - CHICAGO - LONDON



A cash bonus of \$300,000 is the financial part of the deal, to be made in three equal installments of \$100,000 each payment. Upon the company spending \$300,000 on their terminal docks and works on the Mission property, the town to pay over their first \$100,000; upon the expenditure of another \$100,000 the town to pay over their second installment, and when the company have spent \$500,000 more, and have a train running into the terminals, the town forthwith pays them the third installment. An additional bonus of \$50,000 is granted upon the company building within two and a half years a swing bridge across the river to accommodate railway traffic, electric street cars, wagons and pedestrians, the town also to have a perpetual right over the same bridge. The company are to be exempt from taxes for thirty years, excluding school taxes. The town will give the company rights to run over the several streets in the town, as laid out on the map, to connect with every industry that is, or may be in the town.

The Indian mission property comprises about 3,000 acres, one-half of which is level land, but at present sparsely occupied, and the rest is taken up by Mt. McKay, which is 1,000 feet high. The territory will be incorporated in the town of Fort William, and a traffic bridge will be erected to connect it with that town. The company will erect extensive docks along the Kaministiquia River, above the Canadian Pacific Railway docks, and will spend large sums on grain elevators, freight sheds and other things incidental

to the new terminal. The line will enter the town from the west, midway between the Canadian Pacific Railway and the Canadian Northern.

An order for three 300 kilowatt, alternating-current generators has been placed with the Westinghouse Electric & Mfg. Co. by the Barber Lumber Co., Boise, Idaho. These machines will generate current at 440 volts, which will be transformed to 23,000 volts for transmission. The necessary transformer, switchboards and lightning arresters are included in the apparatus to be furnished.

The Marmoth Copper Mining Co., Salt Lake City, Utah, have just placed an order with the Westinghouse Electric & Mfg. Co. for a large addition to their electrical equipment. A total of nearly 800 h.p. in induction motors of different sizes, together with a motor-generator set, transformers, switchboard and three mining locomotives, is included in the order. The motors, two of which have a rated capacity of 200 h.p. each, and five of 50 h.p. each, will operate on three-phase, 2,000 volt circuits. Electrical machinery is used very extensively in mining operations, and this order is merely indicative of the progress being made in this field.

Mr. J. Obalski, Inspector of Mines for the Province of Quebec, has been appointed to take charge of the Dominion Exhibit which will be made at the Liege Exhibition next summer. This Exhibition opens in May and closes in November.

It is unusual in being held in the midst of metallurgical industries, and Mr. Obalski's appointment in charge of the Dominion's exhibit is a strong testimony to his ability.

The Advance Machinery Co., Toledo, Ohio, have just secured an order for a complete stock of their various models of glue heaters, to be shipped to a dealer with branches in various European countries. This stock is to be on exhibition at the Liege Exposition, Liege, Belgium.

### FACTORY LOCATIONS.

The following Canadian municipalities are offering inducements to secure manufacturing establishments. Inquiries should be addressed to the Mayor, Town Clerk or Board of Trade of the respective cities:

Barrle, Ont.  
 Brantford, Ont.  
 Fort William, Ont.  
 Halifax, N.S.  
 Hamilton, Ont.  
 Lindsay, Ont.  
 Orillia, Ont.  
 Peterborough, Ont.  
 Regina, N.W.T.  
 Sherbrooke, Que.  
 Toronto, Ont.

### Keystone Engineering Co.

Limited  
 84 Adelaide St. West, TORONTO, CAN.  
 Consulting and Contracting Electrical Engineers.  
 Complete Power Plants Designed and Equipped.  
 National Electric Code Standard Wiring.  
 Advisory Reports. Repairs, Alterations, Etc.  
 Phone, Main 3021.

## TO THE VARNISH BUYER

the most serious considerations are quality, reliability and uniformity, and these qualifications are of special importance to the dealer who is trying to build up a permanent varnish trade.

Berry Brothers' label or brand may be safely relied upon as ensuring the above conditions.

Our Varnishes are the safest goods to handle and the surest and most reliable goods to use.

## BERRY BROTHERS, Limited

VARNISH MANUFACTURERS

WALKERVILLE, ONT.

Write for our 100 page illustrated catalogue. Every dealer should have a copy for reference.

# "CAMEL HAIR BELTING"

**NOTICE**—Mr. Fleming having resigned the Agency for the sale of our Manufactures in Canada, we are arranging Agencies at TORONTO and ST. JOHN, N.B., for the prompt supply of

CAMEL HAIR BELTING  
CAMEL BRAND BELTING  
CANVAS HOSE  
PAPER MAKERS' FELTS  
PRINTING PADS

ADDRESSES of AGENCIES will be published as soon as possible.

Meanwhile all enquiries will receive prompt attention if addressed to

**F. REDDAWAY & COMPANY**

LIMITED

**PENDLETON,**

**Manchester, England**

# A RELIABLE INVESTMENT

Permanent and Unaffected by Tariff Changes, Etc..

OSHAWA—PETERBORO', Etc. — BURLEIGH FALLS

ELECTRIC TRANSMISSION.

The **Central Ontario Power Co., Limited**

(No personal liability—Incorporated under Ontario Companies' Act).

Authorized Capital, - \$750,000

of which is offered for sale for purchase of plant, and for development purposes— preferred stock, total issue being limited to.....	\$65,000	
Common Stock issued to owners and for bonuses on Preferred Stock and on Bonds ..	500 000	
Remaining in Treasury to provide for future requirements .....	185,000	<u>\$750,000</u>

now offer for subscription at par.

## 7% PREFERRED STOCK (CUMULATIVE).

(Total issue is limited to \$65,000. Shares \$100 each).

**A Bonus of One Share of Common Stock** (paid-up and non-assessable) will be allotted with every two shares of Preferred Stock subscribed.

**Preferred Stock** is redeemable after two years at \$110 and dividends, the Common Stock bonus to remain the property of subscribers.

\$150,000, 5 per cent. 30 year bonds, now authorized, will be issued to purchase plant, the Company having good reasons for anticipating no delay in the sale of the bonds en bloc upon the subscriptions of the Preferred Stock.

**The proceeds of the Preferred Stock is to be used exclusively for the purchase of plant and development of property.**

The consideration to the original owners for the transfer of the property, franchises, charter, rights, etc of the Company having been paid exclusively in Common Stock is an assurance of the absolute faith of the owners in the success of the undertaking and a

## Guarantee of the Security of the Preferred Stock.

With regard to dividends and security the Preferred Stock has priority over the Common Stock. No dividends shall be paid on Common Stock until after payment in full of all dividends due on Preferred Stock at the rate of 7 per cent. per annum.

**THE WESTERN BANK OF CANADA, at its Head Office, OSHAWA,**

Will receive payments for subscriptions.

### DIRECTORS.

President—FRANK TURNER, C.E., Toronto, Capitalist—Director, Canada Landed Credit and Nat. Invest. Co. Director, Economical Mutual Fire Insurance Co., Berlin.

Vice-President—EDWARD T. ADAMS, M.D., Toronto, Physician.

Directors—WHITFORD VANDUSEN, Banker, Toronto—Director, Dominion Life Assurance Co., Berlin; Director Continental Life Assurance Co.

H. N. KITSON, Hamilton—of W. H. Gillard & Co., Wholesale Grocers; President, Hamilton Board of Trade.

Managing-Director—JOHN ALX. CULVERWELL, Port Hope and Toronto—Engineer—formerly Provincial Agent, Edison General Electric Co. (Canadian District.)

**SOME SHAREHOLDERS OF COMMON STOCK.**

- TORONTO - R. S. HUDSON, Asst. General Manager, Canada Permanent Mortgage Corporation.  
 " - EUGENE COSTE, President, Canadian Institute of Mining Engineers.  
 LIVERPOOL - THOS. OGDEN, Director, Imperial Tobacco Co. (of Great Britain and Ireland), Limited.  
 PORT HOPE - COL. H. A. WARD, M.P., Barrister; HAROLD BARRETT, Flour Miller; SAM'L PURSER.  
 COBOURG - W. R. RIDDELL, K.O., Director, Crossen Car Mfg. Co. of Cobourg.  
 BOWMANVILLE - JAS. R. CODE and A. G. HOLLAND, President & Manager, John McKay Co. Barley Mills.  
 LINDSAY - R. J. MCLAUGHLIN, K.O.  
 St. Catharines—HENRY J. TAYLOR, of Taylor & Bate, Brewers.  
 " ROBERT McLAREN, President, McLaren & Co., Merchants.  
 " HUBERT E. LARKIN, of Larkin & Sangster, Hydraulic Contractors.

**PROPERTY.**

The Company has a clear title to the whole of Burleigh Falls water power, located at the Narrows between Lovesick and Stony Lakes, 18 miles north of Peterboro' on the route of the Trent Valley Canals. There is an existing Dam and an effective head of 27 feet, and flow of water which will be diverted through a natural race-way and which will yield 3,000 electric horse power during the dry season (August and September).

**ENGINEERS' REPORTS—STRONG ENDORSEMENTS.**

Surveys and reports with estimates have been made by Messrs. Ross & Holgate, Consulting Hydraulic and Electrical Engineers, Montreal,—supplemented by a report and estimate by Roderick J. Parke, Consulting Electrical Engineer, Toronto,—these firms being well-known and of the highest standing in Canada.

Their reports show that owing to the low cost of the hydraulic development the Company is in a position to deliver electric power to lake-front towns at a cost much lower than the lowest possible cost of steam power.

**COMPARATIVE COST OF DEVELOPMENT.**

Engineers' reports show that the cost of the Hydraulic development of Burleigh Falls per horse power in comparison with that of Niagara Falls, is as one to six in favor of Burleigh Falls. The advantage of low initial hydraulic cost of development is exemplified by the Shawinigan Falls power plant which while 84 miles distant from Montreal, delivers electric power to that city at a lower cost per horse-power than the cost of power developed at Montreal. The reports must indicate that the Burleigh Falls power is the cheapest developable power in Canada.

**MARKET FOR POWER.**

Within easy and economical transmission distance to Burleigh Falls is a town population of 50 000. Peterboro', Bowmanville and Oshawa alone afford an immediate market for power and lighting sufficient for the entire output of this plant as undernoted. Lakefield, Millbrook and Orono are on this line and Newcastle is just off the line. Whitby is also only 5 miles west of Oshawa. Port Hope and Cobourg can be reached by short branch line. The distance from Burleigh Falls to Oshawa, via Peterboro' and Bowmanville is about 59 miles.

The Company holds written applications for electric power from all the larger manufacturers at Oshawa, Bowmanville, Whitby, Port Hope and Cobourg, as a substitute for their steam power.

**REVENUE AND PROFITS—PER ENGINEER'S REPORT.**

A reference to the Engineering Report of Mr. R. J. Parke, shows that the hydraulic works, electrical machinery, transmission line, and local distribution lines for delivering at Peterboro' 700 h.p., at Bowmanville 600 h.p., and at Oshawa 1,200 h.p., providing for a complete and first-class plant and equipment can be installed for \$273,000. He says in conclusion: "From my personal knowledge of the extent of the steam power used and the cost of the same in these localities, I fully believe that the output of your plant can be readily sold at satisfactory prices."

"The final analysis indicates a

**"Net Annual Revenue Available for Dividends on Common Stock - \$81,300**

over and above all expenses, sinking fund, and interest on Bonds and Preferred Stock."

"In conclusion I feel justified in expressing the opinion that the results shown above fully justify an investment in the enterprise. The small capital investment required for the development of the hydraulic power at Burleigh Falls enables the electrical energy to be transmitted and sold at a much lower cost than is the case in the ordinary average hydraulic-electrical power development and transmission system. Furthermore, your enterprise seems to have the peculiar advantage of being in a position to secure other markets for power than Peterborough, Bowmanville and Oshawa, due to the likelihood of a demand arising in the near future for electric railroads, and the proximity of Port Hope and Cobourg, and Whitby and other towns within economical transmission distances."

**The Western Bank of Canada**, its Head Office, Oshawa, will receive payments for subscriptions for Preferred Stock. Cheques or Money Orders must be made payable to the order of the Bank.

Full information furnished with Pamphlet with plans and statements of manufacturers, on application to the undersigned.

**J. A. CULVERWELL**, Managing Director,

THE CENTRAL ONTARIO POWER CO., Limited,

Branch Office—Confederation Building, TORONTO.

(The right is reserved to close the subscription books at any time).

*"I would say to Steam Users—'If you want to save coal, if you want to save repair bills, if you want to prevent shut-downs, if you want to lengthen the life of your boilers, if you want to increase their efficiency—then Scale Formation must be prevented.'"*

**Tri-Sodium Phosphate** keeps boilers clean and free from scale.

For complete information about **T.S.P.** write to

**The Canada Chemical Mfg. Company, Limited, = London, Canada**

## BELLHOUSE, DILLON & CO.

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

### Logwood Crystals

The only Extract that is absolutely pure and will do the work of Chips. Manufactured where the wood is grown, by The West Indies Chemical Works, Limited, Spanish Town, Jamaica, W. I.

## CASSELLA COLOR COMPANY

(American Branch of Leopold Cassella & Co.)

ARTIFICIAL

# DYE STUFFS

**New York, 182-184 Front Street.**

**Boston, 88 Essex Street.**

**Philadelphia, 126-128 South Front St.**

**Providence, 64 Exchange Place.**

**Atlanta, 47 North Pryor Street.**

**Montreal, 86-88 Youville Square.**

## ANILINES

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

(A. POIRRIER), of Paris, France.

Manufacturers of

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

A Complete Assorted Stock of the above always on hand.

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

Sole Agents for Canada.

164 St. James St., MONTREAL

## GEIGY ANILINE & EXTRACT CO.

69 Barclay Street, NEW YORK.

BOSTON, PROVIDENCE, PHILADELPHIA, ATLANTA,  
CHICAGO, TORONTO.

### ANILINE COLORS,

Dyewood and Sumac Extracts,  
Calico Printing Specialties.

Canadian Manager:

T. D. WARDLAW,

11 Front St. East, TORONTO.

Telegraphic Address: "PRENOLATE."

51 Lime St., LONDON, E.C., ENG.

## Blagden, Waugh & Co.

—SOLE AGENTS FOR—

THE DOMINION TAR & CHEMICAL CO., Limited

Works at Sydney, Cape Breton, CANADA.

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

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



# THE NICHOLS CHEMICAL COMPANY OF CANADA, LIMITED

Head Office—222 ST. JAMES ST., MONTREAL.

Works—CAPELTON, P.Q.

MANUFACTURERS OF HIGHEST QUALITY CHEMICALS

Sulphuric, Muriatic and Nitric Acids, Glauber's Salt, Salt Cake, Mixed Acid for  
**DYNAMITE MAKERS, Etc.**

AGENTS FOR STAR and TRIANGLE BRANDS  
**BLUE VITRIOL.**

PUREST AND STRONGEST  
**PAPER MAKERS' ALUM.**

Address all Correspondence to the Head Office, - MONTREAL.



**SODA ASH**

LIGHT or HEAVY

THE MOST ECONOMICAL FORM OF SODA FOR MANUFACTURERS OF  
**GLASS, SOAP, PAPER, WOOD PULP**  
and **COLORS**, and for **PRINTERS**  
and **BLEACHERS**

**BLEACHING POWDER,**

HIGH STRENGTH, 35/37% IN  
HARDWOOD CASKS.

ALSO CAUSTIC SODA, SALSODA, CONCENTRATED SALSODA  
SALAMMONIAC, Etc.

**BRUNNER, MOND & CO., LIMITED, NORTHWICH, ENG.**

WINN & HOLLAND, Montreal, SOLE AGENTS FOR 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 oil, &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.

## Steel Roofing and Siding, \$2.00 per 100 Sq. Ft.

Painted red on both sides. Most durable and economical covering for Roofing or Siding, for Residences, Houses, Barns, Elevators, Stores, Churches, Poultry Houses, Cribbs, &c. Easier to lay and will last longer than any other covering. Cheaper than wood shingles or slate. No experience necessary. A hammer and snips are the only tools required. It is semi-hardened high grade steel. Brick or Stone Siding at \$2.00 per 100 Square Feet. Pedlar's Patent Steel Shingles at \$2.50 per 100 Square Feet. Also Corrugated Iron, Painted or Galvanized, in sheets 36 inches long. Beaded and Embossed Ceilings. V Crippled Roofing. 2000 designs of Roofing, Siding and Ceilings in all grades. Thousands of buildings through the Dominion covered with our Sheet Metal Goods making them

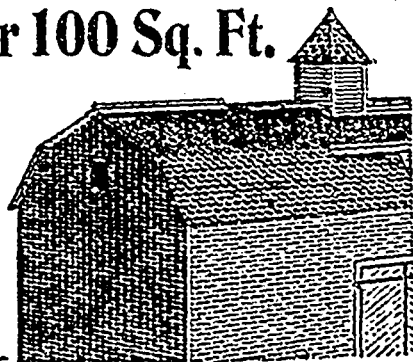
**FIRE, WATER AND LIGHTNING PROOF.**

Send in your order for as many squares (10 x 10 feet) as you require to cover your new or old building. The very best roofing for this climate. We can supply Eave Trough, all sizes, Corrugated or Plain Round, Conductor Pipes, Shoes, Elbows, Spikes, Tubes.

All goods shipped day after order is received. We are the largest concern of the kind under the British Flag. Established 1861. Capital Invested \$150,000.00.

**PEDLAR PEOPLE, OSHAWA, ONTARIO, CANADA.**

Eastern Warehouse—767 Craig St., Montreal, Quebec.



# Special Work.

Models.  
Experimental  
Work.

Special Machinery or Devices.

**DIES and STAMPINGS**  
**DROP FORGING DIES**

**THE GLOBE MACHINE & STAMPING CO.**  
977 Hamilton Street, - Cleveland, Ohio.

## COLLECTIONS

### The Canadian Law List

PUBLISHED ANNUALLY IN JANUARY.

Contains a very complete list of  
**LAWYERS and COURT OFFICIALS**  
throughout the Dominion.

Also a list of  
**BALIFFS for ONTARIO and QUEBEC.**

Together with a synopsis of the Laws of each Province,  
giving exemptions, and other information useful to the  
collection department of any Wholesale House or  
Manufacturer. Price, \$3.00. The edition is limited.

— ORDER EARLY —

**THE CANADIAN LEGAL PUBLISHING CO., - TORONTO**

BY SPECIAL WARRANT  
TO HIS MAJESTY,



AND BRITISH  
GOVERNMENT OFFICES.

In preparation 19th Edition of  
**KELLY'S DIRECTORY**  
OF THE

**Merchants, Manufacturers and Shippers**  
OF THE WORLD.

Endorsed by the British Government. Contains classified lists  
of Merchants, Manufacturers, Importers and Exporters in every  
known country in the world. For further particulars, apply—

**KELLY PUBLISHING CO.,**  
5 Beckman St., New York. Head Office: LONDON, W.C., ENGLAND.  
**Dominion Branch—70 Dunn Ave., TORONTO**  
And at Paris, Hamburg, Melbourne, Sydney, Dunedin, Cape Town,  
Bombay, Buenos Ayres, etc., etc.



If you are thinking of building a home, call on, or write.  
Phono M. 1372. R. J. EDWARDS, Architect, 18 Toronto St., TORONTO

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



Use our "MAPLE LEAF"  
Belt Dressing.

## STITCHED Cotton Belting Duck

SUPERIOR TO ALL  
OTHER BELTING

—FOR—

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

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

Manufactured by

**DOMINION BELTING CO.,**  
Limited,  
HAMILTON, ONT.

## English Card Clothing

FULL STOCK ON HAND

"GENUINE OAK"  
Leather Belting

OUR PRICES ARE LOW

## Rubber Belting

**D. K. McLAREN**

751 Craig Street, - - MONTREAL  
132 Bay Street, - - - TORONTO

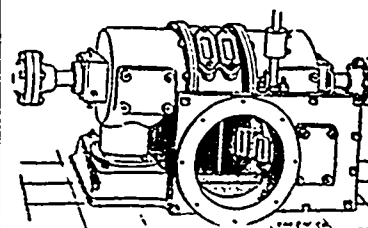


**NOTICE** The following are the Factory Inspectors for the  
Province of Ontario:

JAS. T. BURKE, Parliament Buildings, Toronto.  
ARTHUR W. HOLMES, Parliament Buildings, Toronto.  
MARGARET CARLYLE, Parliament Buildings, Toronto.  
MRS. JAS. R. BROWN, 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.



Horizontal Type.

**HORIZONTAL AND VERTICAL. BUILT IN 44 SIZES.**

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

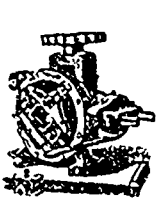
Water Wheel Governors, Machine Dressed Gearing, Pulleys, Shafts  
and Bearings.

Catalogue and Gear List mailed on application. Correspondence Solicited

**J. C. WILSON & CO., Glenora, Ont.**

"LITTLE  
GIANT"  
Turbine

FOR ALL PURPOSES



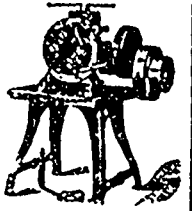
**ARMSTRONG'S PIPE THREADING AND CUTTING OFF MACHINES,**  
 For Hand or Power. Save Time and Labor.

No. 0 Machine 1/4 to 2 inches. | No. 1 Machine 1 to 3 inches.  
 No. 00 " 1 to 4 " | No. 1 1/2 " 1 to 4 "  
 No. 3 Machine 1 to 6 inches.

**Armstrong's Genuine Stocks and Dies, THE BEST WATER, GAS, AND STEAM FITTERS' TOOLS**

ALL MANUFACTURED BY

**THE ARMSTRONG MFG. CO., - BRIDGEPORT, CONN.**  
 New York Office—139 Centre St. Catalogue on Request.



# PAGE LAWN FENCE

Indestructible, Handsome, Perfect. Only 20 cents per running foot.  
 Supplied by us or local dealer.

208

**THE PAGE WIRE FENCE CO. LIMITED, Walkerville, Toronto, Montreal Winnipeg, St. John.**

## THE GRIFFIN MILL

is conceded to be the highest type of mill for Portland Cement work ever produced. 579 sold in two years to the following large Portland Cement Works in the United States and Canada:

Lehigh Portland Cement Co., Lehigh Portland Cement Co., Lehigh Portland Cement Co., Central Cement Co., Glens Falls Portland Cem. Co., Cuyaga Lake Cement Co., National Portland Cement Co., Sandusky Portland Cement Co., Newaygo Portland Cement Co., Great Northern Portland Cement Co.	Ormrod, Pa. Michell, Ind. Wellston, Ohio Coplay, Pa. Glens Falls, N. Y. Ithaca, N. Y. Durham, Ont. Syracuse, Ind. Newaygo, Mich. Marlborough, Mich. Bedford, Ind. Singried, Pa. Caledonia, N. Y. Alpha, N. J. Cementon, Pa. Struthers Furnace Co., Struthers, Ohio	Iola Portland Cement Co., Iola Portland Cement Co., Wabash Portland Cement Co., Kansas Portland Cement Co., Alma Cement Co., Aetna Portland Cement Co., Penn-Allen Portland Cement Co., Martins Creek Portland Cement Co., Wolverine Portland Cement Co., Bronson Portland Cement Co., Quaker Portland Cement Co., Diamond Cement & Litho. Stone Co., Mississippial Portland Cement Co., Belleville Portland Cement Co., Toledo Portland Cement Co., Dallas, Tex. Iola, Kan Stroh, Ind. Iola, Kansas Wellston, Ohio Fenton, Mich. Allentown, Pa. Martins Creek, N. J. Coldwater, Mich. Bronson, Mich. Sandis Eddy, Pa. Chicago, Ill. Louisiana, Mo. Belleville, Ont. Manchester, Mich.
---	--	---

Surely that is evidence enough of its great superiority over all other makes. The way it works is the reason: most work, best work, in least time, at least expense.

Illustrated catalogue shows what you need. And it is free!

**BRADLEY PULVERIZER COMPANY, 92 State St., Boston, Mass.**

# BOILERS FOR ALL SERVICES

Our shops being equipped with the latest improved machinery, we are prepared to execute orders quickly and at lowest prices consistent with first-class material and workmanship.

## RETURN TUBULAR (ALL STEEL CONSTRUCTION)



**THE JOHN McDOUGALL CALEDONIAN IRON WORKS CO., LIMITED**  
 ESTABLISHED 1852 MONTREAL, QUE. ENQUIRIES SOLICITED

Builders in Canada for "Worthington" Turbine Pumps

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

# MALLEABLE CASTINGS

ORDERS FOR LARGE OR SMALL TONNAGE IN MALLEABLE CASTINGS PROMPTLY EXECUTED.

NEWEST AND BEST EQUIPPED MALLEABLE FOUNDRY IN AMERICA. FIRE-PROOF VAULTS FOR PATTERN STORAGE.

INTERNATIONAL HARVESTER CO., OF CANADA, Limited  
HAMILTON, - ONT.

## WOOLLEN MILL For Sale

Water and steam power; one set Woollen Mill. Three story brick and stone 36 x 52 feet. Two story brick and stone addition 30 x 36 feet.

Good locality; wool plentiful.

Address.

S. M. HUTCHESON,  
PAISLEY, ONT.

## WANTED

Manufacturers contemplating changing or establishing branch factories or industrial stock companies forming, to correspond with me relative to cheap power; natural and artificial advantages that I have listed and am offering for the various municipalities, Boards of Trade, railway corporations, and individuals all over Canada. Factory sites and buildings listed and sold.

CHAS. F. ROLAND,  
ST. CATHARINES, ONT.

Exclusive in industrials.



This Fire Extinguisher works automatically and personally. It can be fastened or unfastened in a room. The picture represents in case of absence. It will extinguish fire and ring an alarm to your connection at once. The string shown can be removed. Patent for sale on easy terms. For further information address—

MICHEL MURRY,  
MORRISTOWN, N. J.

## Morris Machine Works.

BALDWINVILLE, N. Y.

MANUFACTURERS OF

Centrifugal Pumping Machinery

and Steam Engines

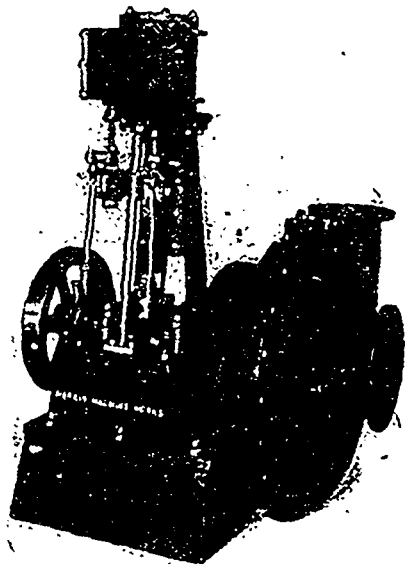
SPECIAL PUMPING OUTFITS TO SUIT  
SPECIAL REQUIREMENTS

Estimates Furnished upon Application.

H. W. PETRIE, Agent  
TORONTO, CANADA.

NEW YORK OFFICE: 39-41 CORTLANDT ST.

HENION & HURRELL, Agents  
61-63 North Jefferson St., CHICAGO, ILL.

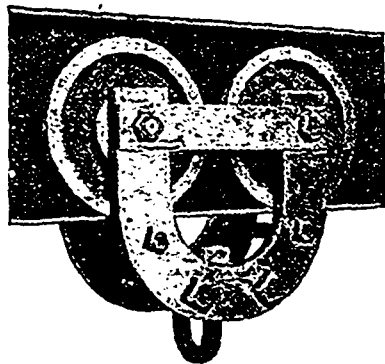


## Where Time is Valuable

RAND TROLLEYS are  
in demand.

For moving materials in foundry and shop they are invaluable.

Designed to run on "I" beams, channels, rails, or any standard section.



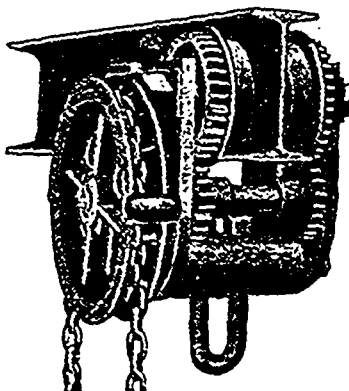
PLAIN TROLLEY

Where rapidity is required and accurate placing of load is not essential, we recommend our Plain Trolley.

For handling large loads and serving machine tools we recommend our Geared Trolleys. All sizes up to 25,000 lbs.

THE CANADIAN RAND DRILL CO.

Room 7 Imperial Bank Bldg.  
MONTREAL, QUE.



GEARED TROLLEY

## BARGAINS Money Savers—First Class.

- 2-250 k.w., 3 phase, 10,000 volt G. E. Ref. field. Al. Gen., 450 rev., 3 bearing.
- 3-100 k.w., 3 phase, 60 cycle Transformer, 10,000 x 2,500 volts.
- 1-300 k.w., 2 phase, 60 cycle, 2,400 volt Stanley Direct Connected Gen. Set
- 2-300 k.w., 3 phase, 60 cycle, 2,400 volt G. E. Direct Connected Gen. Units.
- 120-G. E. 35 h.p. Railway Motors.
- 40-Walker, 90 h.p.

Fire, Wrecking, Irrigation, Water Works, Mining Pumps, Air Compressors, Tanks, Cars, Pipe, Rail, Boilers, Eng. ex. Beams, Scales, Dynamos, Motors, Car Trucks. Our prices are of interest to close buyers.

R. B. Gorbett, 45-47 York Street, Brooklyn, N.Y., U.S.A.

— Advertise in —

THE CANADIAN MANUFACTURER.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

**WORK AND PRICES RIGHT GALVANIZING**  
 ONT. WIND ENGINE & PUMP CO. LIMITED.  
 TORONTO, ONT.

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

**W. H. STOREY & SON, Limited, Acton, Ont.**  
 Manufacturers of **FINE GLOVES and MITTS**  
 In every variety and style, **Moccasins**

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

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

**The Firstbrook Box Co. Limited**  
**PACKING CASES, DOVETAIL BOXES, Bottlers' SHIPPING CASES, BOX SHOOKS, Etc.**  
 TOP PINS, SIDE-BLOCKS & CROSS-ARMS  
 Write for prices. **TORONTO, Canada.**

**Dewar Detective Agency**  
 498 Railway Ex. Bldg.  
 4th & Chestnut St., St. Louis, Mo., U.S.A.


We are in the strike breaking business and can furnish non-union skilled labor of all kinds to break strikes in any quantity needed. Special Watchmen, with or without uniform, furnished to guard property.

**Advertisers**

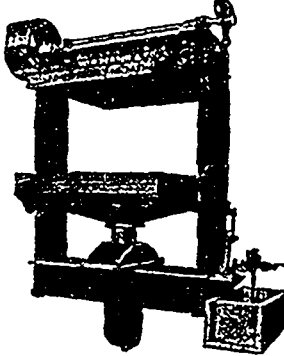
will thank you if, when you write them, you will say that you saw their announcement in

**The Canadian Manufacturer**

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



**Dixon's Pure Flake Graphite**  
 has helped to solve the most difficult problems in lubrication. Write for a free copy of  
**"Graphite as a Lubricant"**  
 a new booklet full of interesting information. Samples free.  
**JOSEPH DIXON CRUCIBLE CO., Jersey City, N.J.**  
 London Office, 26 Victoria St., London, S.W., England.




**Hydraulic Screw**  
 —and—  
**..Filter Presses..**  
**WILLIAM R. PERRIN & COMPANY, Limited**  
 Toronto, - Canada.

**FOR POWER HOUSES WARE-HOUSES** **CONVEYING MACHINERY** **FOR COAL YARDS AND DOCKS**  
 CATALOGUES AND ESTIMATES FURNISHED  
**BORDEN & SELLECK CO.**  
 ENGINEERS AND MANUFACTURERS  
 CHICAGO

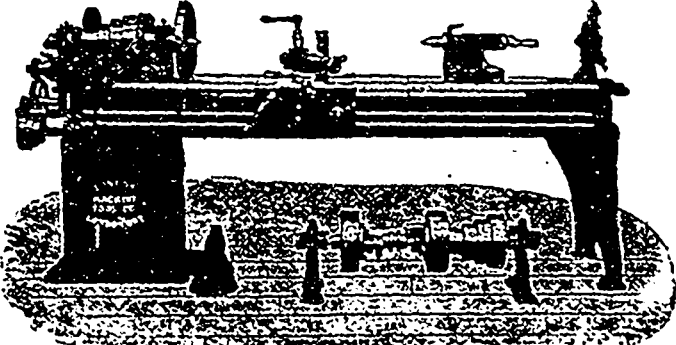
**THE MEYERCORD CO.**  
 (INCORPORATED)  
 American Manufacturers

**DECALCOMANIA TRANSFERS, NAME PLATES, TRADE MARKS AND ORNAMENTS, OPALESCENT TRANSFER WINDOW SIGNS.** Chamber of Commerce Building, CHICAGO.



**DEEP WELL PUMPS**  
 Steam Geared or Electrically Driven.  
 Deep Well Pumping Systems for Cities, Railroad, Mines, Factories, etc.  
**DOWNIE PUMP CO., Downieville, Pa., U.S.A.**

**The London Machine Tool Co., LONDON, ONT.**



**MANUFACTURERS OF GENERAL MACHINERY**  
 LATHES  
 PLANERS  
 DRILLS  
 SHAPERS  
 HAMMERS  
 BULL DOZERS  
 PUNCHES  
 PRESSES

# SCHUTTE & KOERTING CO.

12th and Thompson Sts., PHILADELPHIA, U.S.A.

CABLE ADDRESS: SCHUTTE, PHILADELPHIA.

CODES USED { A. B. C. CODE.  
WESTERN UNION TEL. CODE.



The Schutte & Koerting blowers offer a means of burning low priced fuel, such as screenings, gas works breezes and other refuse with perfect combustion, thereby making a direct reduction in cost of steam. They are used to great advantage on:

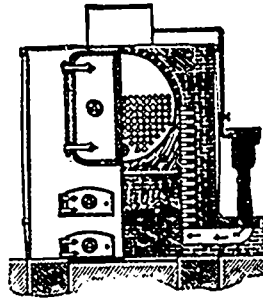
Can be actuated by steam or water jets.

1. Heating or Forging Furnaces.
2. Heating and Gas Producing Furnaces in chemical and glass works.
3. Steam Boiler Furnaces.

Ask for catalogues: Injectors, Blast Nozzles, High Grade Valves, Water Jet Condensers, Air Compressors, Exhausters, etc.

## THE FURNACE BLOWER

Attached to a Tubular Boiler.



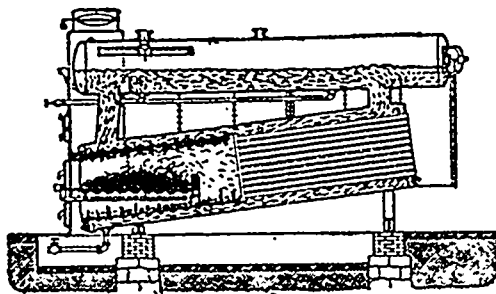
### MANIPULATION

Regulate blast with side handle.

Start and stop by opening and closing a valve in steam pipe—full.

ASH PIT.

# Reduce Your Coal Bill



Your coal bill is a large item in your expense account and if it could be reduced ten per cent. it would mean a large addition to your net profit.

The Robb-Mumford internally fired boiler will make a saving of at least ten per cent. over an externally fired boiler, and in some cases considerably more.

## Robb Engineering Co., Limited

AMHERST, N.S.

AGENTS { WILLIAM McKAY, 320 Ossington Ave., Toronto.  
WATSON JACK & COMPANY, Bell Telephone Bldg., Montreal  
J. F. PORTER, 355 Carlton Street, Winnipeg.

# CLASSIFIED INDEX.

### Abrasives

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

### Air Compressors

Allis-Chalmers-Bullock, Limited, Montreal.  
American Steam Pump Co., Battle Creek Mich.  
Canada Foundry Co., Toronto.  
Canadian Rand Drill Co., Sherbrooke, Que.  
Corbett R. B., Brooklyn, N.Y.  
Darling Bros., Montreal.  
Schutte & Koerting Co., Philadelphia, Pa.

### Aluminum

Northern Aluminum Co., Pittsburg, Pa.  
Syracuse Smelting Works, Montreal.

### Angles, Beams and Girders

Bourne-Fuller Co., Cleveland, Ohio.  
Canada Foundry Co., Toronto.  
Hopkins, F. H. & Co., Montreal.  
Nova Scotia Steel & Coal Co., New Glasgow, N.S.

### Aniline Colors and Dyewood Extracts

Bellhouse, Dillon & Co., Montreal.  
Benson, W. T. & Co., Montreal.  
Brunner, Mond & Co., Northwich, England.  
Canada Chemical Mfg. Co., London, Ont.  
Cassella Color Co., New York City.  
Geigy Aniline & Extract Co., New York City.  
McArthur, Cornellie & Co., Montreal.  
Nicholls Chemical Co., Montreal.  
Winn & Holland, Montreal.

### Annealing Muffles and Furnaces (Wire)

Leslie, A. C. & Co., Montreal.  
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

### Antimony

Syracuse Smelting Works, Montreal.

### Anvils and Vises

Hopkins, F. H. & Co., Montreal.  
Leslie, A. C. & Co., Montreal.  
Rice Lewis & Son, Toronto.

### Architects

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

### Automatic Gear Cutting Machines

Becker-Brainard Milling Machine Co., Hyde Park, Mass.

### Automobiles

Ford Motor Co. of Canada, Walkerville, Ont.

### Axles

Hopkins, F. H. & Co., Montreal.  
Nova Scotia Steel & Coal Co., New Glasgow, N.S.

### Babbitt Metal

Petrie, H. W., Toronto.  
Pittsburgh Shafting Co., Detroit, Mich.  
Syracuse Smelting Works, Montreal.

### Banks

Bank of Hamilton, Hamilton, Ont.

### Bar Iron and Steel

Bourne-Fuller Co., Cleveland, Ohio.  
Hopkins, F. H. & Co., Montreal.  
Leslie, A. C. & Co., Montreal.  
Rice Lewis & Son, Toronto.

### Belt Dressing

McLaren, J. C. Belting Co., Montreal and Toronto.  
Petrie, H. W., Toronto.  
Rossendale Belting Co., Toronto.  
Williams, A. R. Machinery Co., Toronto.

### Belt Fasteners

Bristol Co., Waterbury, Conn.  
McLaren, D. K., Montreal and Toronto.  
McLaren, J. C. Belting Co., Montreal and Toronto.  
Petrie, H. W., Toronto.  
Rossendale Belting Co., Toronto.  
Williams, A. R. Machinery Co., Toronto.

### Belting (Cotton)

Dominion Belting Co., Hamilton, Ont.  
Fleming, W. A. & Co., Montreal.  
Greay, Wm. & J. G., Toronto.  
McLaren, D. K., Montreal and Toronto.  
McLaren, J. C. Belting Co., Montreal and Toronto.  
Petrie, H. W., Toronto.  
Pittsburgh Shafting Co., Detroit, Mich.  
Reddaway, F. & Co., Manchester, England.  
Rice Lewis & Son, Toronto.  
Rossendale Belting Co., Toronto.

### Belting (Leather)

Fleming, W. A. & Co., Montreal.  
Greay, Wm. & J. G., Toronto.  
McLaren, D. K., Montreal and Toronto.  
McLaren, J. C. Belting Co., Montreal and Toronto.  
Petrie, H. W., Toronto.  
Pittsburgh Shafting Co., Detroit, Mich.  
Reddaway, F. & Co., Manchester, England.  
Rice Lewis & Son, Toronto.  
Sadler & Haworth, Montreal and Toronto.  
Williams, A. R. Machinery Co., Toronto.

### Belting (Rubber)

Greay Wm. & J. G., Toronto.  
Gutta Percha & Rubber Mfg. Co., Toronto.  
McLaren, D. K., Montreal and Toronto.  
McLaren, J. C., Belting Co., Montreal.  
Petrie, H. W., Toronto.  
Pittsburgh Shafting Co., Detroit, Mich.

# CLASSIFIED INDEX.

(CONTINUED).

## Belting and Supplies

Bristol Co., Waterbury, Conn.  
 Dominion Belting Co., Hamilton, Ont.  
 Fleming, W. A. & Co., Montreal.  
 Greay, Wm. & J. G., Toronto.  
 Gutta Percha & Rubber Mfg. Co., Toronto.  
 Jeffrey Mfg. Co., Columbus, Ohio.  
 McLaren, D. K., Montreal and Toronto.  
 McLaren, J. C. Belting Co., Montreal and Toronto.  
 Petrie, H. W., Toronto.  
 Pittsburgh Shafting Co., Detroit, Mich.  
 Reddaway, F. & Co., Manchester, England.  
 Rice Lewis & Son, Toronto.  
 Rosendale Belting Co., Toronto.  
 Williams A. R. Machinery Co., Toronto.

## Blast Furnace Brick

Dover Fire Brick Co., Cleveland, Ohio.  
 Dunbar Fire Brick Co., Pittsburgh, Pa.  
 Hamilton Facing Mill Co., Hamilton, Ont.  
 Pennsylvania Fire Brick Co., Lock Haven, Pa.  
 Queen's Run Fire Brick Co., Lock Haven, Pa.  
 Reese-Hammond Fire Brick Co., Boliver, Pa.  
 Savage Mountain Fire Brick Co., Frostburg, Md.  
 Stowe-Fuller Co., Cleveland, Ohio.

## Blowers

McEachren Heating & Ventilating Co., Galt, Ont.  
 Schutte & Koerting Co., Philadelphia, Pa.  
 Sheldon & Sheldon, Galt, Ont.  
 Sturtevant, B. F. Co., Boston, Mass.

## Boiler Compounds

Canada Chemical Mfg. Co., London, Ont.

## Boiler Inspection

Boiler Inspection & Insurance Co., Toronto.  
 Canadian Casualty & Boiler Insurance Co., Toronto.

## BOILERS (See Engines and Boilers)

### Brass Founders

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

### Brick and Bricklaying Machinery

Allis-Chalmers-Bullock, Limited, Montreal.

### Building and Paving Brick

Dover Fire Brick Co., Cleveland, Ohio.  
 Dunbar Fire Brick Co., Pittsburgh, Pa.  
 Hamilton Facing Mill Co., Hamilton, Ont.  
 Pennsylvania Fire Brick Co., Lock Haven, Pa.  
 Queen's Run Fire Brick Co., Lock Haven, Pa.  
 Reese-Hammond Fire Brick Co., Boliver, Pa.  
 Savage Mountain Fire Brick Co., Frostburg, Md.  
 Stowe-Fuller Co., Cleveland, Ohio.

### Building Iron and Steel

Bourne-Fuller Co., Cleveland, Ohio.  
 Canada Foundry Co., Toronto.  
 Expanded Metal & Fireproofing Co., Toronto.

### Builders' Materials

Albert Mfg. Co., Hillsboro, Ont.  
 Canada Foundry Co., Toronto.  
 Expanded Metal & Fireproofing Co., Toronto.  
 Gartshore, John J., Toronto.  
 Hopkins, F. H. & Co., Montreal.  
 Meadows, Geo. B. Wire, Iron & Brass Works Co., Toronto.

Metallic Roofing Co., Toronto.  
 Oris-Fenson Elevator Co., Toronto.  
 Owen Sound Portland Cement Co., Owen Sound, Ont.  
 Pittsburgh Shafting Co., Detroit, Mich.  
 Rice Lewis & Son, Toronto.  
 Sheldon & Sheldon, Galt, Ont.

### Cables

Dominion Wire Rope Co., Montreal.  
 Greening, B. Wire Co., Hamilton, Ont.  
 Phillips, Eugene F. Electrical Works, Montreal.  
 Wire & Cable Co., Montreal.

### Canada Plates

Leslie, A. C. & Co., Montreal.  
 Nova Scotia Steel & Coal Co., New Glasgow, N.S.

### Canoes

Peterborough Canoe Co., Peterborough, Ont.

### Caps

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

### Card Clothing

McLaren, D. K., Montreal and Toronto.  
 McLaren, J. C. Belting Co., Montreal and Toronto.

### Cast Iron Pipe

Canada Foundry Co., Toronto.  
 Rice Lewis & Son, Toronto.  
 Montreal Pipe Foundry Co., Montreal.  
 McDougall, John, Caledonian Iron Works Co., Montreal.

### Castings (Iron and Brass)

Greay, Wm. & J. G., Toronto.  
 International Harvester Co., Hamilton, Ont.  
 Erie Engine Co., Walkerville, Ont.  
 McDougall, John, Caledonian Iron Works Co., Montreal.

## ement Machinery

Allis-Chalmers-Bullock, Limited, Montreal  
 Bradley Pulverizer Co., Boston, Mass.  
 Greay, Wm. & J. G., Toronto.  
 McDougall, John, Caledonian Iron Works Co., Montreal.

## Chain Making Machinery

(Welded Coil Chain)  
 Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

## Gbannels

Bourne-Fuller Co., Cleveland, Ohio.  
 Canada Foundry Co., Toronto.  
 Leslie, A. C. & Co., Montreal.  
 Nova Scotia Steel & Coal Co., New Glasgow, N.S.

## Charcoal Pig Iron

Canada Iron Furnace Co., Montreal.  
 McDougall, John, Caledonian Iron Works Co., Montreal.

## Chemists

Archbold, Dr. Geo., Prescott, Ont.  
 Heys, Thomas & Son, Toronto.

## Clay Working Machinery

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

## Coal and Coke

Bourne-Fuller Co., Cleveland, Ohio.  
 Boynton, F. M., Inc., Buffalo, N.Y. and Pittsburg, Pa.  
 Brownlee, J., Galt, Ont.  
 Ferguson, J. D., Hamilton, Ont.  
 Hoffman, Jules G., Detroit, Mich.  
 Milnes, James H. & Co., Toronto.  
 Myles Thos. Sons, Hamilton, Ont.  
 Pittsburgh Coal Co., Pittsburgh, Pa.  
 Shawmut Coal & Coke Co., St. Mary's, Pa.  
 Sawyer, Edward T., Columbus, Ohio.  
 Shepard, Charles G., Buffalo, N.Y.  
 Shipman, O. W. Co., Detroit, Mich.  
 Skac, E. A., Detroit, Mich.  
 Wick, H. K. & Co., Buffalo, N.Y.  
 Wilson, H. T. Coal Co., Detroit, Mich.

## Coal Cutting Machines

Allis-Chalmers-Bullock, Limited, Montreal.  
 Canadian Rand Drill Co., Sherbrooke, Que.  
 Jeffrey Mfg. Co., Columbus Ohio.

## Coal Triples

Jeffrey Mfg. Co., Columbus, Ohio.

## Coil Chains

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

## Coke Oven Brick

Dover Fire Brick Co., Cleveland, Ohio.  
 Dunbar Fire Brick Co., Pittsburgh, Pa.  
 Stowe-Fuller Co., Cleveland, Ohio.

## Collection Agency

Petrie, H. D., Hamilton, Ont.

## Concrete Mixers

Hopkins, F. H. & Co., Montreal

## Contractors' Machinery

Allis-Chalmers-Bullock, Limited, Montreal.  
 Gartshore, John J., Toronto.  
 Hopkins, F. H. & Co., Montreal.  
 McDougall, John, Caledonian Iron Works Co., Montreal.  
 Schutte & Koerting Co., Philadelphia, Pa.

## Contractor's Plants

Allis-Chalmers-Bullock, Limited, Montreal.  
 Hopkins, F. H. & Co., Montreal.  
 Petrie, H. W., Toronto.  
 Von der Osten, E. & Co., Toronto.  
 Williams, A. R. Machinery Co., Toronto.

## Conveying Machinery

Allis-Chalmers-Bullock, Limited, Montreal  
 Babcock & Wilcox, Limited, Montreal.  
 Borden & Selleck Co., Chicago, Ill.  
 Canada Foundry Co., Toronto.  
 Greay, Wm. & J. G., Toronto.  
 Jeffrey Mfg. Co., Columbus, Ohio.  
 Link-Belt Engineering Co., Philadelphia, Pa.  
 McDougall, John, Caledonian Iron Works Co., Montreal.  
 Perrin, William R. & Co., Limited, Toronto.  
 Pittsburg Shafting Co., Detroit, Mich.  
 Rosendale Belting Co., Toronto.

## Copper Materials

Greening, B. Wire Co., Hamilton, Ont.  
 Phillips, Eugene F. Electrical Works, Montreal.  
 Syracuse Smelting Works, Montreal.  
 Wire & Cable Co., Montreal.

## Corundum Wheels

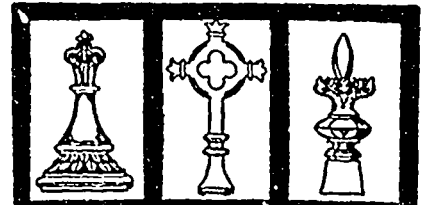
Canadian Corundum Wheel Co., Hamilton, Ont.  
 Rice Lewis & Son, Toronto.

## Cotton Banding and Rope

McLaren, J. C., Belting Co., Montreal.

## Covers

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



## GROSSES AND FINIALS

We make a most extensive variety of these ornamental lines—adaptable to all requirements of artistic finish.

Made of copper or galvanized steel in most gracefully pleasing designs—they are both reliable and economical.

A full set of illustrations shown in our catalogue.

**THE METALLIC ROOFING CO.,**  
 WHOLESALE MANFRS. LIMITED,  
 TORONTO, CANADA



Send for Catalogue and Price List to

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

**WM. BARBER & BROS.**  
 Georgetown, Ont.

Manufacturers of.....

**Book and Fine Papers.**

THE.....

**Toronto Paper Manufacturing Co.,**  
 Cornwall, Ont.

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

**Smith Mfg. Co.**

LIMITED  
 219 Front Street East, Toronto

Makers of  
**WOOL STOCK,**  
**SHODDIES, Etc.**

**R. SPENCE & CO.**  
 HAMILTON, ONT.

**FILE and RASP MANUFACTURERS**  
 AND RE-CUTTERS.

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



**"MADE IN CANADA"**

**SABLER & HAWORTH**

**TANNERS & MANUFACTURERS OF**

**OAK LEATHER**

**BELTING**

**LACE LEATHER**

**HYDRAULIC & MECHANICAL**

**LEATHER**

**LEATHER**

**FILLET**

**Factories at**

**MONTREAL**

**TORONTO**

**LEATHER LIKE**

**GOLD HAS NO**

**SUBSTITUTE**

## CLASSIFIED INDEX.

(CONTINUED).

**Orayons**  
Lowell Crayon Co., Lowell, Mass.

**Crucibles**  
Dixon, Joseph, Crucible Co., Jersey City, N.Y.  
McCullough-Dalzell Crucible Co., Pittsburg, Pa.  
Pittsburg Crucible Works, Pittsburg, Pa.  
Syracuse Smelting Works, Montreal.

**Crucible Caps**  
McCullough-Dalzell Crucible Co., Pittsburg, Pa.  
Pittsburg Crucible Works, Pittsburg, Pa.

**Crucible Covers**  
McCullough-Dalzell Crucible Co., Pittsburg, Pa.  
Pittsburg Crucible Works, Pittsburg, Pa.

**Cutter Grinding Machines**  
Becker-Brainard Milling Machine Co., Hyde Park, Mass.

**Decalcomania**  
Meyercord Co., Chicago, Ill.

**Deep Well Engines**  
American Steam Pump Co., Battle Creek, Mich.

**Detective Agency**  
Dewar Detective Agency, St. Louis, Mo.

**Dies (Socket, Sewer Pipe and Tile)**  
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

**Directories**  
Kelly's Directories, Limited, Toronto.

**Draw Benches (Wire)**  
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

**Drills**  
Allis-Chalmers-Bullock, Limited, Montreal.  
Barnes, B. F. Co., Rockford, Ill.  
Canada Machinery Co., Sarnia, Ont.  
Canadian Westinghouse Co., Ltd., Hamilton, Ont.  
London Machine Tool Co., London, Ont.  
Petrie, H. W., Toronto.  
Pittsburgh Shafting Co., Detroit, Mich.

**Drills (Pneumatic and Rock)**  
Allis-Chalmers-Bullock, Limited, Montreal.  
Canadian Rand Drill Co., Sherbrooke, Que.  
Jeffrey Mfg. Co., Columbus, Ohio.

**Drills (Twist)**  
Pittsburg Shafting Co., Detroit, Mich.

**Drop Forgings**  
Globe Machine & Stamping Co., Cleveland, Ohio.

**Drop Forging Dies**  
Globe Machine & Stamping Co., Cleveland, Ohio.

**Dry Kiln Apparatus**  
Sheldon & Sheldon, Galt, Ont.  
Sturtevant, B. F. Co., Boston, Mass.

**Dust and Shavings Separators**  
Sheldon & Sheldon, Galt, Ont.  
Sturtevant, B. F. Co., Boston, Mass.

**Dye Stuffs and Chemicals**  
Bellhouse, Dillon & Co., Montreal.  
Benson, W. T. & Co., Montreal.  
Brunner, Mond & Co., Northwich, England.  
Canada Chemical Mfg. Co., London, Ont.  
Casella Color Co., New York City.  
Geigy Aniline & Extract Co., New York City.  
McArthur, Cornsille & Co., Montreal.  
Nicholls Chemical Co., Montreal.  
Winn & Holland, Montreal.

**DYNAMOS (See Motors and Dynamos)**

**Electric Meters and Transformers**  
Allis-Chalmers-Bullock, Limited, Montreal.  
Packard Electric Co., St. Catharines, Ont.

**Electric Mine Locomotives**  
Canadian General Electric Co., Toronto.  
Canadian Westinghouse Co., Ltd., Hamilton, Ont.  
Jeffrey Mfg. Co., Columbus, Ohio.

**Electrical Repairs**  
Volta Electric Repair Works, Toronto.

**Electrical Supplies**  
Allis-Chalmers-Bullock, Limited, Montreal.  
Bristol Co., Waterbury, Conn.  
Canadian General Electric Co., Toronto.  
Canadian Westinghouse Co., Ltd., Hamilton, Ont.  
Electrical Construction Co., London, Ont.  
Forman, John, Montreal.  
Jones & Moore Electric Co., Toronto.  
Packard Electric Co., St. Catharines, Ont.  
Toronto & Hamilton Electric Co., Hamilton, Ont.  
United Electric Co., Toronto.  
Worth & Martin, Toronto.

**Elevators and Conveyors**  
Allis-Chalmers-Bullock, Limited, Montreal.  
Darling Bros., Montreal.  
Greay, Wm. & J. G., Toronto.  
Jeffrey Mfg. Co., Columbus, Ohio.  
Link-Belt Engineering Co., Philadelphia, Pa.  
Otis-Fensom Elevator Co., Toronto.

**Elevator Insurance**  
Canadian Casualty & Boiler Insurance Co., Toronto.

**Emery and Emery Wheels**  
Canadian Corundum Wheel Co., Hamilton, Ont.  
Forman, John, Montreal.  
Petrie, H. W., Toronto.

**Engineers (Chemical)**  
Heys, Thomas & Son, Toronto.  
Hunt, Robert W. & Co., Chicago, Ill.

**Engineers (Civil)**  
DeLano-Osborn Engineering Co., Toronto.  
Parke, R. J., Toronto.  
Vogel, C. H., Ottawa.

**Engineers (Consulting)**  
Aitken, K. L., Toronto.  
DeLano-Osborn Engineering Co., Toronto.  
Electrical Construction Co., London, Ont.  
Hunt, Robert W. & Co., Chicago, Ill.  
Keystone Engineering Co., Toronto, Ont.  
Marion & Marion, Montreal.  
Parke, R. J., Toronto.  
Perrin, William R. & Co., Limited, Toronto.  
Simpson, T. T., Deschenes, Que.  
Vogel, C. H., Ottawa.  
Volta Electric Repair Works, Toronto.  
Von der Osten, E. & Co., Toronto.

**Engineers (Contracting)**  
Babcock & Wilcox, Limited, Montreal.  
Canada Foundry Co., Toronto.  
Darling Bros., Montreal.  
Electrical Construction Co., London, Ont.  
Keystone Engineering Co., Toronto, Ont.  
McDougall, John, Caledonian Iron Works Co., Montreal.  
Robb Engineering Co., Amherst, N.S.

**Engineers (Electrical)**  
Aitken, K. L., Toronto.  
Allis-Chalmers-Bullock, Limited, Montreal.  
Canadian General Electric Co., Toronto.  
Canadian Westinghouse Co., Ltd., Hamilton, Ont.  
Crocker-Wheeler Co., St. Catharines, Ont.  
DeLano-Osborn Engineering Co., Toronto.  
Electric Engineering & Supply Co., Montreal.  
Electrical Construction Co., London, Ont.  
Jones & Moore Electric Co., Toronto.  
Keystone Engineering Co., Toronto, Ont.  
Marion & Marion, Montreal.  
Toronto & Hamilton Electric Co., Hamilton, Ont.  
United Electric Co., Toronto.  
Volta Electric Repair Works, Toronto.  
Worth & Martin, Toronto.

**Engineers (Mechanical)**  
Allis-Chalmers-Bullock, Limited, Montreal.  
Babcock & Wilcox, Limited, Montreal.  
Borden & Selleck Co., Chicago, Ill.  
Darling Bros., Montreal.  
DeLano-Osborn Engineering Co., Toronto.  
Electrical Construction Co., London, Ont.  
Greay, Wm. & J. G., Toronto.  
McDougall, John, Caledonian Iron Works Co., Montreal.  
Hunt, Robert W. & Co., Chicago, Ill.  
Kerr Engine Co., Waukegan, Ont.  
Marion & Marion, Montreal.  
Robb Engineering Co., Amherst, N.S.  
Sheldon & Sheldon, Galt, Ont.

**Engineers (Mill and Hydraulic)**  
DeLano-Osborn Engineering Co., Toronto.  
Hawksworth, Alfred, Montreal.  
Vogel, C. H., Ottawa.

**Engineers (Mining)**  
Heys, Thomas & Son, Toronto.  
Mills, S. D., Toronto.

**Engineers (Municipal)**  
Von der Osten, E. & Co., Toronto.

**Engineers and Contractors**  
Jeffrey Mfg. Co., Columbus, Ohio.

**Engines and Boilers**  
Allis-Chalmers-Bullock, Limited, Montreal.  
Babcock & Wilcox, Limited, Montreal.  
Bertram Engine Works Co., Toronto.  
Canada Foundry Co., Toronto.  
Canadian Heine Safety Boiler Co., Toronto.  
Corbett, R. B., Brooklyn, N.Y.  
Goldie & McCulloch Co., Galt, Ont.  
Hamilton, Wm. Mfg. Co., Peterborough, Ont.  
Hopkins, F. H. & Co., Montreal.  
Jencks Machine Co., Sherbrooke, Que.  
McDougall, John, Caledonian Iron Works Co., Montreal.  
McEachren Heating & Ventilating Co., Galt, Ont.  
Petrie, H. W., Toronto.  
Pittsburgh Shafting Co., Detroit, Mich.  
Robb Engineering Co., Amherst, N.S.  
Sheldon & Sheldon, Galt, Ont.  
Sturtevant, B. F. Co., Boston, Mass.  
Williams, A. R. Machinery Co., Toronto.

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

**Exhaust Fans**  
Sheldon & Sheldon, Galt, Ont.  
Sturtevant, B. F. & Co., Boston, Mass.



# CLASSIFIED INDEX.

(CONTINUED).

## Exhaust Heads

Burt Mfg. Co., Akron, Ohio.  
Darling Bros., Montreal.  
Sheldon & Sheldon, Galt, Ont.

## Exhausters

Schutte & Koerting Co., Philadelphia, Pa.

## Explorer and Geologist

Evans, Horace F., Ashcroft, B.C.

## Factory Sites

(See Factory Locations, page 35).  
Central Ontario Power Co., Peterboro, Ont.  
Hutcheson, S. M., Paisley, Ont.  
Roland, Chas. F. St. Catharines, Ont.

## Feed Water Heaters

Babcock & Wilcox, Limited, Montreal.  
Darling Bros., Montreal.  
McDougall, John, Caledonian Iron Works Co., Montreal.

Schutte & Koerting Co., Philadelphia, Pa.

## Files

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

## Fillet (Pattern)

McLaren, J. C. Belting Co., Montreal.

## Filters (Oil)

Babcock & Wilcox, Limited, Montreal.  
Burt Mfg. Co., Akron, Ohio.  
Darling Bros., Montreal.  
McDougall, John, Caledonian Iron Works Co., Montreal.  
Perrin, William R. & Co. Limited, Toronto.

## Filters and Filtering Systems (Water)

Babcock & Wilcox, Limited, Montreal.  
McDougall, John, Caledonian Iron Works Co., Montreal.

## Financial

Bradstreet's, New York City.  
Dun, R. G. & Co., Toronto.  
Neff & Postlethwaite, Toronto.  
Petrie H. D. Hamilton Ont.

## Fire Brick and Clay

Dover Fire Brick Co., Cleveland, Ohio.  
Dunbar Fire Brick Co., Pittsburgh, Pa.  
Hamilton Facing Mill Co., Hamilton, Ont.  
Pennsylvania Fire Brick Co., Lock Haven.  
Queen's Run Fire Brick Co., Lock Haven, Pa.  
Reese-Hammond Fire Brick Co., Boliver, Pa.  
Savage Mountain Fire Brick Co., Frostburg, Md.  
Stowe-Fuller Co., Cleveland, Ohio.

## Fire Escapes

Darling Bros., Montreal.  
Meadows, Geo. B., Wire, Iron & Brass Works, Toronto.

## Flour Mill Machinery

Goddie & McCulloch Co., Galt, Ont.  
Greay, Wm. & J. G., Toronto

## Forges and Blowers

Canada Foundry Co., Toronto.  
McEachren Heating & Ventilating Co., Galt, Ont.  
Sheldon & Sheldon, Galt, Ont.  
Sturtevant, B. F. Co., Boston, Mass.

## Founders

Canada Foundry Co., Toronto.  
Cowan & Co., Galt, Ont.  
Goddie & McCulloch Co., Galt, Ont.  
Greay, Wm. & J. G., Toronto.  
Hamilton, Wm. Mfg. Co., Peterborough, Ont.  
McDougall, John, Caledonian Iron Works Co., Montreal.

## Foundry Facings and Supplies

Hamilton Facing Mill Co., Hamilton, Ont.

## Fuel Economizers

Babcock & Wilcox, Limited, Montreal  
Schutte & Koerting Co., Philadelphia, Pa.  
Sturtevant, B. F. Co., Hyde Park, Mass.

## Furniture (Lodge, Opera and School)

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

## Galvanizing

Ontario Wind Engine & Pump Co., Toronto.

## Galvanizing and Tinning Machinery and Furnaces (Wire)

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

## Gas and Gasoline Engines

Goddie & McCulloch Co., Galt, Ont.

Morrison, T. A. & Co. Montreal.

## Gauges (Recording Pressure)

Bristol Co., Waterbury, Conn.

## Gauges (Steam)

Penberthy Injector Co., Windsor, Ont.

Petrie, H. W., Toronto.

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

## Gauges (Water)

Babcock & Wilcox, Limited, Montreal.

Penberthy Injector Co., Windsor, Ont.

## Generators

Allis-Chalmers-Bullock, Limited, Montreal.  
Canadian General Electric Co., Toronto.  
Canadian Westinghouse Co., Ltd., Hamilton, Ont.  
Electrical Construction Co., London, Ont.  
Forman, John, Montreal.  
Jeffrey Mfg. Co., Columbus, Ohio.  
Jones & Moore Electric Co., Toronto.  
Phillips, Eugene F., Electrical Works, Montreal.  
Toronto & Hamilton Electric Co., Hamilton, Ont.  
Volta Electric Repair Works, Toronto.

## Gloves, Mittens and Moccasins

Storey, W. H. & Son, Acton, Ont.

## Glue Heaters

Advance Machinery Co., Toledo, Ohio.  
Greay, Wm. & J. G., Toronto.

## Glue Room Equipment

Advance Machinery Co., Toledo, Ohio.

## Government Notices

Factory Inspectors.  
Minister of Agriculture.

## Graphite

Dixon, Jos., Crucible Co., Jersey City, N.J.  
McCullough-Dalzell Crucible Co., Pittsburg, Pa.  
Pittsburg Crucible Works, Pittsburg, Pa.

## Grease Cups

Penberthy Injector Co., Windsor, Ont.

## Grinding Machinery

Canadian Corundum Wheel Co., Hamilton, Ont.  
Greay, Wm. & J. G., Toronto.

## Hardware

Butterfield & Co., Rock Island, Que.  
Gartshore, John J., Toronto.  
Globe Machine & Stamping Co., Cleveland, Ohio.  
Hopkins, F. H. & Co., Montreal.  
Morrow, John, Machine Screw Co., Ingersoll, Ont.  
Rice Lewis & Son, Toronto.

## Heating and Ventilating Apparatus

Darling Bros., Montreal.  
McEachren Heating & Ventilating Co., Galt, Ont.  
Sheldon & Sheldon, Galt, Ont.  
Sturtevant, B. F. Co., Boston, Mass.

## Holting Engines

Bertram Engine Works Co., Toronto.

## Holts (Chain and Pneumatic)

Allis-Chalmers-Bullock, Limited, Montreal.  
Canadian Rand Drill Co., Sherbrooke, Que.  
Hopkins, F. H. & Co., Montreal.

## Hose (Fire and Pneumatic)

Gutta Percha & Rubber Mfg. Co., Toronto.  
McLaren, J. C., Belting Co., Montreal and Toronto.

## Hydrants

Kerr Engine Co., Walkerville, Ont.  
McDougall, John, Caledonian Iron Works Co., Montreal.

## Hydraulic Accumulators

McDougall, John, Caledonian Iron Works Co., Montreal.

## Hydraulic Leather

McLaren, J. C., Belting Co., Montreal.

## Hydraulic Machinery

Canada Foundry Co., Toronto.  
Darling Bros., Montreal.  
Hamilton, Wm. Mfg. Co., Peterborough, Ont.  
McDougall, John, Caledonian Iron Works Co., Montreal.

Perrin, William R. & Co., Limited, Toronto.

Petrie, H. W., Toronto.

Wilson, J. C. & Co., Glenora, Ont.

## Industrial Plants

Von der Osten, E. & Co., Toronto.

## Insulated Wires and Cables

Phillips, Eugene F., Electrical Works, Montreal.  
Wire & Cable Co., Montreal.

## Iron and Steel Specialties

Armstrong Mfg. Co., Bridgeport, Conn.  
Bourne-Fuller Co., Cleveland, Ohio.  
Canada Foundry Co., Toronto.  
Leslie, A. C. & Co., Montreal.  
London Rolling Mill Co., London, Ont.  
Lysaght, John, Limited, Bristol, England and Montreal.  
Meadows, Geo. B., Wire, Iron & Brass Works Co., Toronto.  
Nova Scotia Steel & Coal Co., New Glasgow, N.S.  
Petrie, H. W., Toronto.  
Pittsburgh Shaiting Co., Detroit, Mich.  
Rice Lewis & Son, Toronto.

## Injectors

Canada Foundry Co., Toronto.  
Hamilton Brass Mfg. Co., Hamilton, Ont.  
Penberthy Injector Co., Windsor, Ont.  
Schutte & Koerting Co., Philadelphia, Pa.  
Williams, A. R. Machinery Co., Toronto.

## Iron and Steel Inspection

Hunt, R. W. & Co., Chicago, Ill.

# Dominion Oil Cloth Co.

LIMITED

Manufacturers of **Oilcloths** of Every Description.

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

OFFICE AND WORKS:

Cor. St. Catherine and Parthenais Streets  
MONTREAL, Que.

# BANK OF HAMILTON

J. TURNBULL, General Manager.

HEAD OFFICE, - HAMILTON, ONT.

Capital.	Reserve.	Total Assets.
\$2,000,000	\$1,700,000	\$22,000,000

## BRANCHES IN

TORONTO, MONTREAL, WINNIPEG, VANCOUVER,  
and all principal towns in Canada.

Collections made in all parts of Canada.

# The Mercantile Agency

ESTABLISHED 1841.

# R. G. DUN & CO.

Offices in 169 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.

Established 1849.

# BRADSTREET'S

Capital and Surplus, \$1,500,000

Offices Throughout the Civilized World.

## EXECUTIVE OFFICES:

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

CORRESPONDENCE INVITED.

## OFFICES IN CANADA:

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

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

Advertise in the  
Canadian Manufacturer.

**WOOD ENGRAVING  
PHOTO ENGRAVING  
HALFTONES**  
OR ANY CLASS OF ENGRAVING  
FOR ADVERTISING PURPOSES.  
CATALOGUES, MAGAZINES, &c  
**J. L. JONES ENG. CO.**  
168 BAY ST.—TORONTO

**RICE LEWIS & SON  
LIMITED**

Machinist Tools, Pipe Fittings,  
Stillson and Trim  
Wrenches,

**HARDWARE and METAL**

Bar Iron, Steel, Boiler  
Plate Tubes.

COMPLETE STOCK OF STOCKS AND DIES

Pipe Vices, Steam Pipe.

CORNER KING & VICTORIA STS.  
TORONTO

**You must  
Advertise or Lose!  
Then why not  
Advertise wisely?**

The best advertisers in the country—and they are all thinkers—tell you how to advertise successfully in

**BRAINS**

FOR  
**The Retailer and Advertiser**

The very best examples of clever, money-making advertising in the world are presented weekly.

If you advertise without reading BRAINS you miss the benefit of other men's experience, men who have given years to the study of advertising.

Five dollars a year is all it costs, and its worth it. Sample copy 15 cents.

**JAMES KNAPP REEVE**  
PUBLISHER  
DEPOSIT, N. Y.

**CLASSIFIED INDEX.**

(CONTINUED).

**Lamps—Electric**

Allis-Chalmers-Bullock, Limited, Montreal.  
Canadian General Electric Co., Toronto.  
Canadian Westinghouse Co., Ltd., Hamilton, Ont.  
Forman, John, Montreal.  
Packard Electric Co., St. Catharines, Ont.  
Sunbeam Incandescent Lamp Co., Toronto and St. Catharines, Ont.

**Lashes**

Barnes, B. F. Co., Rockford, Ill.  
Canada Machinery Co., Sarnia, Ont.  
Cowdroy, C. H. Machine Works, Fitchburg, Mass.  
London Machine Tool Co., London, Ont.  
Petrie, H. W., Toronto.  
Williams, A. R. & Co., Toronto.

**Lathes (Wood-working)**

Goldie & McCulloch Co., Galt, Ont.  
Petrie, H. W., Toronto.  
Williams, A. R. Machinery Co., Toronto.

**Loom Reeds.**

McLaren, J. C., Belting Co., Montreal.

**Lubricators**

Penberthy Injector Co., Windsor, Ont.

**Machinists**

Bertram Engine Works Co., Toronto.  
Goldie & McCulloch Co., Galt, Ont.  
Greay, Wm. & J. G., Toronto.  
London Machine Tool Co., London, Ont.  
Worth & Martin, Toronto.

**Machinists' Supplies**

Armstrong Mfg. Co., Bridgeport, Conn.  
Butterfield & Co., Rock Island, Que.  
Canada Machinery Co., Sarnia, Ont.  
Goldie & McCulloch Co., Galt, Ont.  
Gutta Percha & Rubber Mfg. Co., Toronto.  
Hopkins, F. H. & Co., Montreal.  
Jeffrey Mfg. Co., Columbus, Ohio.  
London Machine Tool Co., London, Ont.  
Morrow, John, Machine Screw Co., Ingersoll, Ont.  
Petrie, H. W., Toronto.  
Pittsburgh Shafting Co., Detroit, Mich.  
Worth & Martin, Toronto.

**Machine Tools**

Barnes, B. F. Co., Rockford, Ill.  
Becker-Brainard Milling Machine Co., Hyde Park, Mass.  
Canada Machinery Co., Sarnia, Ont.  
Cowdroy, C. H. Machine Works, Fitchburg, Mass.  
Darling Bros., Montreal.  
London Machine Tool Co., London, Ont.  
Petrie, H. W., Toronto.

**Machinery Repairs**

Bertram Engine Works Co., Toronto  
Greay, Wm. & J. G., Toronto.

**Malleable Iron Castings**

International Harvester Co., Hamilton, Ont.  
Smith's Falls Malleable Castings Co., Smith's Falls, Ont.

**Marine and Stationary Engines and  
Boilers**

Allis-Chalmers-Bullock, Limited, Montreal.  
Bertram Engine Works Co., Toronto.

**Mechanical Draft**

Babcock & Wilcox, Limited, Montreal.  
McEschen Heating & Ventilating Co., Galt, Ont.  
Sheldon & Sheldon, Galt, Ont.  
Sturtevant, B. F. Co., Boston, Mass.

**Metal Gates**

Page Wire Fence Co., Walkerville, Ont.

**Metal Stamping**

Globe Machine & Stamping Co., Cleveland, Ohio.

**Metallurgists**

Mills, S. D., Toronto.

**Mill Machinery and Supplies**

Allis-Chalmers-Bullock, Limited, Montreal.  
Armstrong Mfg. Co., Bridgeport, Conn.  
Becker-Brainard Milling Machine Co., Hyde Park, Mass.

Darling Bros., Montreal.

Fleming, W. A. & Co., Montreal.  
Gartshore, John J., Toronto.  
Goldie & McCulloch Co., Galt, Ont.  
Greay, Wm. & J. G., Toronto.  
Gutta Percha & Rubber Mfg. Co., Toronto.  
Hamilton Brass Mfg. Co., Hamilton, Ont.  
Hamilton, Wm., Mfg. Co., Peterborough, Ont.  
Hawkeworth, Alfred, Montreal.  
Hay, Peter Knife Co., Galt, Ont.  
Hopkins, F. H. & Co., Montreal.  
Jeffrey Mfg. Co., Columbus, Ohio.  
London Machine Tool Co., London, Ont.  
Morrow, John, Machine Screw Co., Ingersoll, Ont.  
McDougall, John, Caledonian Iron Works Co., Montreal.  
McLaren, D. K., Montreal and Toronto.

Penberthy Injector Co., Windsor, Ont.  
Petrie, H. W., Toronto.  
Pittsburgh Shafting Co., Detroit, Mich.  
Reddaway, F. & Co., Manchester, England.  
Rice Lewis & Son, Toronto.  
Robb Engineering Co., Amherst, N.S.  
Spence, R. & Co., Hamilton, Ont.  
Wilson, J. C. & Co., Glenora, Ont.

**Milling Cutters and Machines**

Becker-Brainard Milling Machine Co., Hyde Park, Mass.

**Miners' Lamps**

Allis-Chalmers-Bullock, Limited, Montreal.  
Anton, John & Son, Monongahela, Pa.

**Mining Machinery**

Allis-Chalmers-Bullock, Limited, Montreal.  
Canadian Rand Drill Co., Sherbrooke, Que.  
Corbett, R. B., Brooklyn, N.Y.  
Gartshore, John J., Toronto.  
Hamilton, Wm. Mfg. Co., Peterborough, Ont.  
Hopkins, F. H. & Co., Montreal.  
Jeffrey Mfg. Co., Columbus, Ohio.  
Jencks Machine Co., Sherbrooke, Que.  
Link-Belt Engineering Co., Philadelphia, Pa.  
McDougall, John, Caledonian Iron Works Co., Montreal.

Perrin, William R. & Co., Limited, Toronto.

Petrie, H. W., Toronto.  
Schutte & Koerting Co., Philadelphia, Pa.  
Williams, A. R. Machinery Co., Toronto.

**Motors and Dynamoes**

Allis-Chalmers-Bullock, Limited, Montreal.  
Canadian General Electric Co., Toronto.  
Canadian Westinghouse Co., Ltd., Hamilton, Ont.  
Corbett, R. B., Brooklyn, N.Y.  
Electrical Construction Co., London, Ont.  
Forman, John, Montreal.  
Jeffrey Mfg. Co., Columbus, Ohio.  
Jones & Moore Electric Co., Toronto.  
Petrie, H. W., Toronto.  
Toronto & Hamilton Electric Co., Hamilton, Ont.  
United Electric Co., Toronto.  
Volta Electric Repair Works, Toronto.

**Moulding Sand**

Hamilton Facing Mills Co., Hamilton, Ont.

**Nickel.**

Canadian Copper Co., New York, N. Y.  
Orford Copper Co., New York, N. Y.

**Novelty Manufacturers**

Worth & Martin, Toronto.

**Nozzles**

McCullough-Dalsell Crucible Co., Pittsburg, Pa.  
Pittsburg Crucible Works, Pittsburg, Pa.

**Office and Bank Fittings**

Canadian Office & School Furniture Co., Preston, Ont.  
Meadows, Geo. B., Wire, Iron & Brass Works 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 Cloth**

Dominion Oil Cloth Co., Montreal.

**Oil Cups**

Penberthy Injector Co., Windsor, Ont.

**Paints and Colors**

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

**Paper Manufacturers**

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

**Patents**

Budden, Hanbury, A., Montreal.  
Fetherstonhaugh & Co., Toronto.  
Marion & Marion, Montreal.

**Perforated Metals**

Globe Machine & Stamping Co., Cleveland, Ohio.  
Greening, B. Wire Co., Hamilton, Ont.

**Personal Accident**

Canadian Casualty & Boiler Insurance Co., Toronto

**Phosphorizers**

McCullough-Dalsell Crucible Co., Pittsburg, Pa.  
Pittsburg Crucible Works, Pittsburg, Pa.

**Pig Iron**

Bourne-Fuller Co., Cleveland, Ohio.  
Canada Iron Furnace Co., Montreal.  
Nova Scotia Steel & Coal Co., New Glasgow, N.S.  
Shepard, Charles G., Buffalo, N.Y.  
Syracuse Smelting Works, Montreal.

**Pipe (Riveted, Iron and Steel)**

Babcock & Wilcox, Limited, Montreal.  
McDougall, John, Caledonian Iron Works Co., Montreal.

# CLASSIFIED INDEX.

(CONTINUED).

## Pipe Threading Machines

Armstrong Mfg. Co., Bridgeport, Conn.  
 Butterfield & Co., Rock Island, Que.  
 Petrie, H. W., Toronto.  
 Rice Lewis & Son, Toronto.

## Pipes and Tubes

Bourne-Fuller Co., Cleveland, Ohio.  
 Canada Foundry Co., Toronto.  
 Corbett, R. B., Brooklyn, N.Y.  
 Montreal Pipe Foundry Co., Montreal.  
 Rice Lewis & Son, Toronto.

## Plaster

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

## Plates

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

## Plumbago

Hamilton Facing Mills Co., Hamilton, Ont.  
 McCullough-Dalsell Crucible Co., Pittsburg, Pa.  
 Pittsburg Crucible Works, Pittsburg, Pa.

## Pneumatic Tools

Allis-Chalmers-Bullock, Limited, Montreal.  
 Canadian Rand Drill Co., Sherbrooke, Que.

## Pointer Rolls (For Rods and Wire)

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

## Portland Cement

Osea Sound Portland Cement Co., Owen Sound, Ont.

## Power Plants—Equipments

Allis-Chalmers-Bullock, Limited, Montreal.  
 Babcock & Wilcox, Limited, Montreal.  
 Canadian General Electric Co., Toronto.  
 Canadian Westinghouse Co., Ltd., Hamilton, Ont.  
 Corbett, R. B., Brooklyn, N.Y.  
 Darling Bros., Montreal.  
 Delano-Osborn Engineering Co., Toronto.  
 Electrical Construction Co., London, Ont.  
 Goldie & McCulloch, Galt, Ont.  
 Gutta Percha & Rubber Mfg. Co., Toronto.  
 Hamilton, Wm. Mfg. Co., Peterborough, Ont.  
 Jeffrey Mfg. Co., Columbus, Ohio.  
 Jones & Moore Electric Co., Toronto.  
 Keystone Engineering Co., Toronto, Ont.  
 McDougall, John, Caledonian Iron Works Co., Montreal.

Packard Electric Co., St. Catharines, Ont.  
 Perin, William R. & Co., Limited, Toronto.  
 Petrie, H. W., Toronto.  
 Phillips, Eugene F., Electrical Works, Montreal.  
 Pittsburgh Shafting Co., Detroit, Mich.  
 Robb Engineering Co., Amherst, N.S.  
 Sartevant, B. F. Co., Boston, Mass.  
 Toronto & Hamilton Electric Co., Hamilton, Ont.  
 United Electric Co., Toronto.  
 Wilson, J. C. & Co., Glenora, Ont.

## Presses (Tile, Sewer Pipe, Nozzles and Sleeves)

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

## Pulleys

Darling Bros., Montreal.  
 Goldie & McCulloch Co., Galt, Ont.  
 Greay, Wm. & J. G., Toronto.  
 Hamilton, Wm. Mfg. Co., Peterborough, Ont.  
 Jeffrey Mfg. Co., Columbus, Ohio.  
 McDougall, John, Caledonian Iron Works Co., Montreal.  
 McLaren, J. C., Belting Co., Montreal and Toronto.  
 Petrie, H. W., Toronto.  
 Pittsburgh Shafting Co., Detroit, Mich.  
 Wilson, J. C. & Co., Glenora, Ont.

## Pumps and Pumping Machinery

Allis-Chalmers-Bullock, Limited, Montreal.  
 American Steam Pump Co., Battle Creek, Mich.  
 Canada Foundry Co., Toronto.  
 Corbett, R. B., Brooklyn, N.Y.  
 Darling Bros., Montreal.  
 Downie Pump Co., Downieville, Pa.  
 Goldie & McCulloch Co., Galt, Ont.  
 Peckes Machine Co., Sherbrooke, Que.  
 Ler Engine Co., Walkerville, Ont.  
 Torus Machine Works, Baldwinville, N.Y.  
 McDougall, John, Caledonian Iron Works Co., Montreal.  
 Ontario Wind Engine & Pump Co., Toronto.  
 Petrie, H. W., Toronto.  
 Schutte & Koerting Co., Philadelphia, Pa.

## Punches and Shears

Canada Machinery Co., Sarnia, Ont.  
 Canada Machine & Stamping Co., Cleveland, Ohio.  
 Petrie, H. W., Toronto.

## Purifiers

Babcock & Wilcox, Limited, Montreal.  
 Goldie & McCulloch Co., Galt, Ont.  
 McDougall, John, Caledonian Iron Works Co., Montreal.

## Purifying and Softening Systems (Water)

Babcock & Wilcox, Limited, Montreal.  
 Darling Bros., Montreal.  
 McDougall, John, Caledonian Iron Works Co., Montreal.

## Railroads

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

## Railway Supplies

Algoma Steel Co., Sault Ste. Marie, Ont.  
 Allis-Chalmers-Bullock, Limited, Montreal.  
 Gartsshore, John J., Toronto.  
 Greening, B. Wire Co., Hamilton, Ont.  
 Gutta Percha & Rubber Mfg. Co., Toronto.  
 Hopkins, F. H. & Co., Montreal.  
 Nova Scotia Steel & Coal Co., New Glasgow, N.S.  
 Phillips, Eugene F., Electrical Works, Montreal.

## Roamers

Butterfield & Co., Rock Island, Que.

## Rivets

Bourne-Fuller Co., Cleveland, Ohio.

## Rock and Ore Crushers

Allis-Chalmers-Bullock, Limited, Montreal.  
 Bradley Pulverizer Co., Boston, Mass.

## Roller Bearings

Pittsburg Shafting Co., Detroit, Mich.

## Rolling Mill Engineers

Bourne-Fuller Co., Cleveland, Ohio.

## Roofing

Bourne-Fuller Co., Cleveland, Ohio.  
 Metallic Roofing Co., Toronto.  
 Pedlar People, Oshawa, Ont.

## Rubber Goods

Gutta Percha & Rubber Mfg. Co., Toronto.  
 Pittsburgh Shafting Co., Detroit, Mich.

## Rubber Packing

Gutta Percha & Rubber Mfg. Co., Toronto.

## Rubber Washing Tubs

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

## Rural Mail Boxes

Globe Machine & Stamping Co., Cleveland, Ohio.

## Safes and Vaults

Goldie & McCulloch Co., Galt, Ont.

## Screws

Morrow John, Machine Screw Co., Ingersoll, Ont.

## Screw Plates

Armstrong Mfg. Co., Bridgeport, Conn.  
 Butterfield & Co., Rock Island, Que.

## Shafting

Allis-Chalmers-Bullock, Limited, Montreal.  
 Bourne-Fuller Co., Cleveland, Ohio.  
 Goldie & McCulloch Co., Galt, Ont.  
 Greay, Wm. & J. G., Toronto.  
 Jeffrey Mfg. Co., Columbus, Ohio.  
 McDougall, John, Caledonian Iron Works Co., Montreal.  
 Nova Scotia Steel & Coal Co., New Glasgow, N.S.  
 Petrie, H. W., Toronto.  
 Pittsburgh Shafting Co., Detroit, Mich.

## Shapers and Carvers

Advance Machinery Co., Toledo, Ohio.

## Shear Knives

Hay, Peter Knife Co., Galt, Ont.

## Sheets (Iron and Steel)

Bourne-Fuller Co., Cleveland, Ohio.  
 Leslie, A. C. & Co., Montreal.  
 Lyssaght, John, Limited, Bristol, England and Montreal.

## Sheet Metal Goods

Globe Machine & Stamping Co., Cleveland, Ohio.  
 Metallic Roofing Co., Toronto.  
 Pedlar People, Oshawa, Ont.

## Sheet Metal Stamping

Globe Machine & Stamping Co., Cleveland, Ohio.  
 Metallic Roofing Co., Toronto.

## Ship Builders

Bertram Engine Works Co., Toronto.

## Smoke Stacks

Hamilton, Wm. Mfg. Co., Peterborough, Ont.  
 McDougall, John, Caledonian Iron Works Co., Montreal.

## Solder

Globe Machine & Stamping Co., Cleveland, Ohio.  
 Syracuse Smelting Co., Montreal.

# THE CANADIAN MANUFACTURER

J. J. CASSIDY, Manager.

PUBLISHED TWICE A MONTH.

Devoted to the Industrial Interests of Canada.

\$1.50 a Year. Sample Copies Free.

Advertising Rates on application.

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

## Keep Posted on Coal

You will save money by reading THE RETAIL COALMAN. We guarantee the largest paid circulation of any coal trade paper. That's the best proof of its practical worth and genuine merit.

## A Whole Year for only \$1

Sample Copy free for the asking.

Special attention given Canadian news.

## THE RETAIL COALMAN,

1536 Monadnock Building,  
 CHICAGO, ILL.

# THE AMERICAN

## Carpet and Upholstery Journal

The leading magazine devoted to these trades, published in Philadelphia, the center of carpet and upholstery manufacture in the United States.

Subscription, - \$2.00 per annum.

A copy of the "American Buyer's Directory" of the wholesale trade, free with subscription.

## THE TRADES PUBLISHING COMPANY

102 South 12th Street,  
 PHILADELPHIA  
 New York Office:  
 Hartford Building.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

# CLASSIFIED INDEX.

(CONTINUED).

## Special Machinery

Allis-Chalmers-Bullock, Limited, Montreal.  
Globe Machine & Stamping Co., Cleveland, Ohio.

## Speed Recorders

Bristol Co., Waterbury, Conn.

## Sprinkler Insurance

Canadian Casualty & Boiler Insurance Co., Toronto.

## Stamps and Stencils

Globe Machine & Stamping Co., Cleveland, Ohio.

## Steam Pumps

Allis-Chalmers-Bullock, Limited, Montreal.  
American Steam Pump Co., Battle Creek, Mich.  
Canada Foundry Co., Toronto.  
Darling Bros., Montreal.  
Goldie & McCulloch Co., Galt, Ont.  
McDougall, John, Caledonian Iron Works Co., Montreal.  
Petrie, H. W., Toronto.  
Pittsburgh Shafting Co., Detroit, Mich.  
Williams, A. R. Machinery Co., Toronto.

## Steam Separators

Babcock & Wilcox, Limited, Montreal.  
Darling Bros., Montreal.  
MoEchran Heating & Ventilating Co., Galt, Ont.  
Sheldon & Sheldon, Galt, Ont.

## Steam Specialties

Darling Bros., Montreal.  
MoEchran Heating & Ventilating Co., Galt, Ont.  
Penberthy Injector Co., Windsor, Ont.  
Schutte & Koerting Co., Philadelphia, Pa.  
Sheldon & Sheldon, Galt, Ont.

## Steam Valves

American Steam Pump Co., Battle Creek, Mich.  
Babcock & Wilcox, Limited, Montreal.  
Darling Bros., Montreal.  
Kerr Engine Co., Walkerville, Ont.  
Petrie, H. W., Toronto.  
Williams, A. R. Machinery Co., Toronto.

## Steel and Composite Ships

Bertram Engine Works Co., Toronto.

## Steel Balls

Algoma Steel Co., Sault Ste. Marie, Ont.  
Drummond, McCall & Co., Montreal and Toronto.  
Gartshore, John J., Toronto.  
Hopkins, F. H. & Co., Montreal.

## Steel Shafting

Darling Bros., Montreal.  
Goldie & McCulloch Co., Galt, Ont.  
Greay, Wm. & J. G., Toronto.  
Hamilton, Wm. Mfg. Co., Peterborough, Ont.  
Leslie, A. C. & Co., Montreal.  
McDougall, John, Caledonian Iron Works Co., Montreal.  
Nova Scotia Steel & Coal Co., New Glasgow, N.S.  
Pittsburg Shafting Co., Detroit, Mich.  
Wilson, J. C. & Co., Glenora, Ont.

## Stocks and Dies

Armstrong Mfg. Co., Bridgeport, Conn.  
Butterfield & Co., Rock Island, Que.  
Petrie, H. W., Toronto.  
Rice Lewis & Son, Toronto.  
Worth & Martin, Toronto.

## Stoppers

McCullough-Dalsell Crucible Co., Pittsburg, Pa.  
Pittsburg Crucible Works, Pittsburg, Pa.

## Structural Steel

Bourne-Fuller Co., Cleveland, Ohio.  
Canada Foundry Co., Toronto.  
Hopkins, F. H. & Co., Montreal.

## Sulphur Furnace

Schutte & Koerting Co., Philadelphia, Pa.

## Suspension Furnaces

Continental Iron Works Co., New York City.

## Tanks (Oil and Water)

Canada Foundry Co., Toronto.  
Corbett, R. B., Brooklyn, N.Y.  
Goldie & McCulloch Co., Galt, Ont.  
Hamilton, Wm. Mfg. Co., Peterborough, Ont.  
McDougall, John, Caledonian Iron Works Co., Montreal.  
Ontario Wind Engine & Pump Co., Toronto.

## Taps and Dies

Butterfield & Co., Rock Island, Que.  
Globe Machine & Stamping Co., Cleveland, Ohio.

## Tees

Bourne-Fuller Co., Cleveland, Ohio.  
Canada Foundry Co., Toronto.

## Textile Manufacturers

Dominion Oil Cloth Co., Montreal.  
Smith Mfg. Co., Toronto.  
Storey, W. H. & Sons, Aston, Ont.

## Textile Supplies

Greay, Wm. & J. G., Toronto.  
McLaren, J. C. Belting Co., Montreal and Toronto.

## Thermometers (Recording)

Bristol Co., Waterbury, Conn.

## Tin

Leslie, A. C. & Co., Montreal.  
Syracuse Smelting Works, Montreal.

## Tool Grinders

Barnes, B. F. Co., Rockford, Ill.

## Tool Steel

Bourne-Fuller Co., Cleveland, Ohio.  
Hopkins, F. H. & Co., Montreal.  
Leslie, A. C. & Co., Montreal.

## Transfer Ornaments

Meyeroord Co., Chicago, Ill.

## Trucks

Corbett, R. B., Brooklyn, N.Y.  
Greay, Wm. & J. G., Toronto.  
Hopkins, F. H. & Co., Montreal.  
McDougall, John, Caledonian Iron Works Co., Montreal.  
Sheldon & Sheldon, Galt, Ont.

## Trucks (Railway)

Canada Foundry Co., Toronto.

## Trucks (Wire Mill Supplies)

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

## Tubs (Cleaning and Coating Wire)

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

## Tugs

Bertram Engine Works Co., Toronto.

## Tumbling Barrels

Globe Machine & Stamping Co., Cleveland, Ohio.

## Turbines

Canada Foundry Co., Toronto.  
Greay, Wm. & J. G., Toronto.  
Hamilton, Wm. Mfg. Co., Peterborough, Ont.  
Wilson, J. C. & Co., Glenora, Ont.

## Typewriters and Supplies

United Typewriter Co., Toronto.

## Valves

American Steam Pump Co., Battle Creek, Mich.  
Babcock & Wilcox, Limited, Montreal.  
Canada Foundry Co., Toronto.  
Hamilton Brass Mfg. Co., Hamilton, Ont.  
Kerr Engine Co., Walkerville, Ont.  
Petrie, H. W., Toronto.  
Schutte & Koerting Co., Philadelphia, Pa.  
Williams, A. R. Machinery Co., Toronto.

## Valves (Rubber)

Gutta Percha & Rubber Mfg. Co. Toronto.

## Varnishes

Berry Bros., Walkerville, Ont.

## Ventilators

Darling Bros., Montreal.  
Sheldon & Sheldon, Galt, Ont.  
Sturtevant, B. F. Co., Boston, Mass.

## Wagon and Carriage Wood Work

Hore, F. W. & Son, Hamilton, Ont.

## Washers or Hollinders (Cleaning Rubber)

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

## Water Power Development

Vogel, C. H., Ottawa.

## Water Purifying Chemicals

Canada Chemical Mfg. Co., London, Ont.

## Windmills

Ontario Wind Engine & Pump Co., Toronto.

## Wire Mill Supplies

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

## Wire and Wire Rope

Dominion Wire Rope Co., Montreal.  
Greening, B. Wire Co., Hamilton, Ont.  
Leslie, A. C. & Co., Montreal.  
Phillips, Eugene F. Electrical Works, Montreal.  
Pittsburg Shafting Co., Detroit, Mich.  
Wire & Cable Co., Montreal.

## Wire Rope Fittings

Dominion Wire Rope Co., Montreal.

## Wire Cloth

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

## Wire Drawing Machinery

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

## Wire Fencing and Netting

Page Wire Fence Co., Walkerville, Ont.

## Wire Specialties

Meadows, Geo. B. Wire, Iron & Brass Works Co. Toronto.  
Page Wire Fence Co., Walkerville, Ont.

## Wood-Working Machinery

Advance Machinery Co., Toledo, Ohio.  
Canada Machinery Co., Sarnia, Ont.  
Cowdrey, C. H., Machine Works, Fitchburg, Mass.  
Goldie & McCulloch Co., Galt, Ont.  
London Machine Tool Co., London, Ont.  
Petrie, H. W., Toronto.  
Sheldon & Sheldon, Galt, Ont.  
Williams, A. R. Machinery Co., Toronto.

## Yachts

Bertram Engine Works Co., Toronto.

## Zinc

Leslie, A. C. & Co., Montreal.  
Syracuse Smelting Works, Montreal.

# The Engineering Review

A High-Class Illustrated Monthly Technical Record.

The largest sale circulation throughout the Empire.

SUBSCRIPTION RATE:  
12/6 per annum (post free).

For Advertising Rates apply to  
General Manager.

104 High Holborn, - LONDON W.C.,  
ENGLAND.

- or -

THE INTERNATIONAL NEWS CO., Limited  
TORONTO and MONTREAL.

## ATTENTION!

Do you desire to keep posted on the industrial affairs of Alabama, and more especially the Great Birmingham District? If so, subscribe for

The Dixie Manufacturer  
BIRMINGHAM, ALA

It is the only industrial paper published in Alabama. It is old and established. Published semi-monthly. Subscription price, \$2 per year. If you want to sell machinery, hardware, electrical and building supplies you cannot find a better medium. Send for copy and advertising rates.

ROUNTREE PUBLISHING CO.,  
BIRMINGHAM, ALABAMA.

# INDEX TO ADVERTISEMENTS.

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

See Classified Index Beginning on Page 46

of ..... outside front cover.

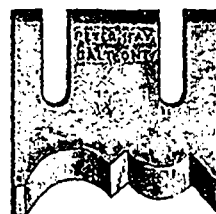
obo.....outside back cover.

A		PAGE		PAGE		PAGE	
Advance Machinery Co., Toledo, Ohio .....	14	Canada Machinery Co., Sarnia, Ont.....	8	Electric Engineering & Supply Co., St. Hilaire Station, Que.....	10		
Agriculture, Ontario Minister of, Toronto .....	42	Canadian Casualty & Boiler Insurance Co., Toronto .....	5	Electrical Publishing Co., London, W. C., England.....			
Aitken, K. L., Toronto .....	20	Canadian Copper Co., New York, N. Y.....	5	Engineering Review, London, England.....	52		
Albert Mfg. Co., Hillsborough, N.B. ....	9	Canadian Corundum Wheel Co., Hamilton, Ont.....	34	Evans, Horace F., Ashcroft, B.C.....	10		
Algoma Steer. Co., Sault Ste. Marie, Ont. ....	4	Canadian General Electric Co., Toronto.....		Expanded Metal & Fireproofing Co., Toronto...	14		
Allis-Chalmers-Bullock, Ltd., Montreal .....	55	Canadian Heine Safety Boiler Co., Toronto .....					
American Carpet & Upholstery Journal, Philadelphia, Pa.....	51	Canadian Legal Pub. Co., Toronto.....	42				
American Steam Pump Co., Battle Creek, Mich.		Canadian Manufacturer Pub. Co., Toronto....	51-54				
Anton, John & Son, Monongahela, Pa.....	10	Canadian Office & School Furniture Co., Preston, Ont .....	45				
Archbold, Dr. Geo., Presscott, Ont.....	10	Canadian Otis Elevator Co., Hamilton, Ont.....	ofc	<b>F</b>			
Armstrong Mfg. Co., Bridgeport, Conn. ....	43	Canadian Rand Drill Co., Sherbrooke, Que .....	44	Factory Inspectors, Ontario .....	42		
		Canadian Westinghouse Co., Ltd., Hamilton, Ont .....	55	Factory Locations .....	36-44		
		Cassella Color Co., New York and Montreal ..	40	Ferguson, J. D., Hamilton, Ont.....	6		
		Central Ontario Power Co., Peterboro, Ont..	38-39	Fatherstonhaugh & Co., Toronto .....	ofc		
<b>B</b>		Chapman Double Ball Bearing Co., Toronto..	16	Firstbrook Box Co., Toronto.....	45		
Babcock & Wilcox, Limited, Montreal .....	ofc	Chicago & North-Western Railway, B. H. Bennett, General Agent, Toronto.....	30	Fleming, W. A. & Co., Montreal.....			
Bank of Hamilton, Hamilton, Ont.....	49	Continental Iron Works, New York, N.Y.....	3	Ford Motor Co. of Canada, Walkerville, Ont....	2		
Barber, Wm. & Bro., Georgetown, Ont.....	47	Corbett, R. B., Brooklyn, N.Y.....	44	Forman, John, Montreal.....	14-16		
Barnes, B. F. Co., Rockford, Ill.....	34	Cowdroy, C. H., Machine Works, Fitchburg, Mass .....	11				
Becker-Brainard Milling Machine Co., Hyde Park, Mass.....	15	Crocker-Wheeler Co., St. Catharines, Ont.....	12	<b>G</b>			
Bellhouse, Dillon & Co., Montreal .....	40			Gartshore, John J., Toronto .....	10		
Bell Telephone Co.....				Geigy Aniline & Extract Co., New York, N.Y.,	40		
Benson, W. T. & Co., Montreal .....	40	<b>D</b>		Globe Machine & Stamping Co., Cleveland, Ohio	42		
Berry Bros., Walkerville, Ont .....	36	Darling Bros., Montreal .....		Goldie & McCulloch Co., Galt, Ont.....	3		
Bertram Engine Works Co., Toronto.....	14	Dean & Son, London, E.C., England .....		Greening, B. Wire Co., Hamilton, Ont .....	5		
Blagden, Vaugh & Co., London, E.C., England	40	Delano-Osborn Engineering Co., Toronto .....	10	Greay, Wm. & J. G., Toronto .....	obo		
Boiler Inspection & Insurance Co., Toronto...	obo	Department Public Works, Ottawa.....		Gutta Percha & Rubber Mfg. Co., Toronto .....	ofc		
Borden & Selleck Co., Chicago, Ill.....	45	Dewar Detective Agency, St. Louis, Mo.....	45				
Bourne-Fuller Co., Cleveland, Ohio.....	4	Dixon, Jos., Crucible Co., Jersey City, N.J .....	45	<b>H</b>			
Boynton, F. M., Inc., Buffalo, N.Y.....	7	Dominion Belting Co., Hamilton, Ont.....	42	Hamilton Brass Mfg. Co., Hamilton, Ont .....			
Bradley Pulverizer Co., Boston, Mass .....	43	Dominion Oil Cloth Co., Montreal.....	49	Hamilton Facing Mills Co., Hamilton, Ont .....	obo		
Bradstreets, Toronto and New York .....	49	Dominion Wire Rope Co., Montreal.....	8	Hamilton, Wm. Mfg. Co., Peterborough, Ont ..	15		
Bristol Co., Waterbury, Conn .....	obo	Dover Fire Brick Co., Cleveland, Ohio.....	9	Hawksworth, Alfred, Montreal.....	14		
Brownlee, J., Galt, Ont .....	7	Downie Pump Co., Downieville, Pa.....	45	Hay, Peter Knife Co., Galt, Ont .....	53		
Brunner, Mond & Co., Northwich, England ..	41	Drummond, McCall & Co., Montreal, Que .....	40	Heys, Thomas & Son, Toronto .....	10		
Budden, Hanbury A., Montreal.....	10	Dun, R. G. & Co., Toronto.....	40	Hoffman, Jules G., Detroit, Mich .....	6		
Burt Mfg. Co., Akron, Ohio.....	35	Dunbar Fire Brick Co., Pittsburg, Pa .....	9	Hopkins, F. H. & Co., Montreal.....			
Butterfield & Co., Rock Island, Que.....	36			Hors, F. W. & Son, Hamilton, Ont .....	45		
		<b>E</b>		Hunt, Robert W. & Co., Chicago, Ill.....	10		
		Edwards, R. J., Toronto .....	42	Hutcheson, S. M., Paisley, Ont .....	44		
		Electrical Construction Co., London, Ont.....	13				
		Electrical Supervision Society, Toronto.....	10				
<b>C</b>							
Canada Chemical Mfg. Co., London, Ont.....	40						
Canada Foundry Co., Toronto.....	13						
Canada Iron Furnace Co., Montreal.....	4						

## THE PETER HAY KNIFE CO., Limited



GALT, ONT.



Manufacturers of

# MACHINE KNIVES

For WOOD-WORKING,  
PAPER CUTTING and LEATHER SPLITTING  
MACHINES,



Quality Warranted.  
Send for Price List.

SHEAR BLADES, BARK and RAG KNIVES, Etc., Etc., Etc.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



PAGE

MISSING