

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.
- Additional comments:
Commentaires supplémentaires:

- 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

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
									/		

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

Vol. 53. TORONTO, JULY 6, 1906. No. 1.

**B. & W.
 PATENT WATER-TUBE
 BOILERS**

Specially designed for the
RAPID, ECONOMICAL and SAFE
 Generation of Steam up to the
 highest pressures.

Over **5,000,000. H.P.** in use.

BABCOCK & WILCOX,
 LIMITED
 HEAD OFFICE FOR CANADA:
 NEW YORK LIFE BLDG., MONTREAL.
 BRANCH—114 King St. West, - TORONTO.

“REDSTONE”
 HIGH PRESSURE SHEET PACKING

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

MANUFACTURED SOLELY BY
The Gutta Percha & Rubber Mfg. Co.
 of TORONTO, LIMITED
 Head Offices—47 Yonge Street,
 TORONTO, CANADA
 BRANCHES—Montreal, Winnipeg, Vancouver.

THE
Queen's Run
Fire Brick
 CO.

HIGHEST GRADE
 SHAPES A SPECIALTY

LOCK HAVEN, PENN.

**Cranes,
 Pumps,
 Condensers.**



SEND FOR PUMP
 CATALOGUE

The SMART-TURNER MACHINE CO., Limited - HAMILTON, - CANADA

**MALLEABLE
 IRON
 CASTINGS**

CAPACITY 3,000 TONS

**McKinnon Dash &
 Metal Works Co.,**
 LIMITED
 ST. CATHARINES, - ONT.

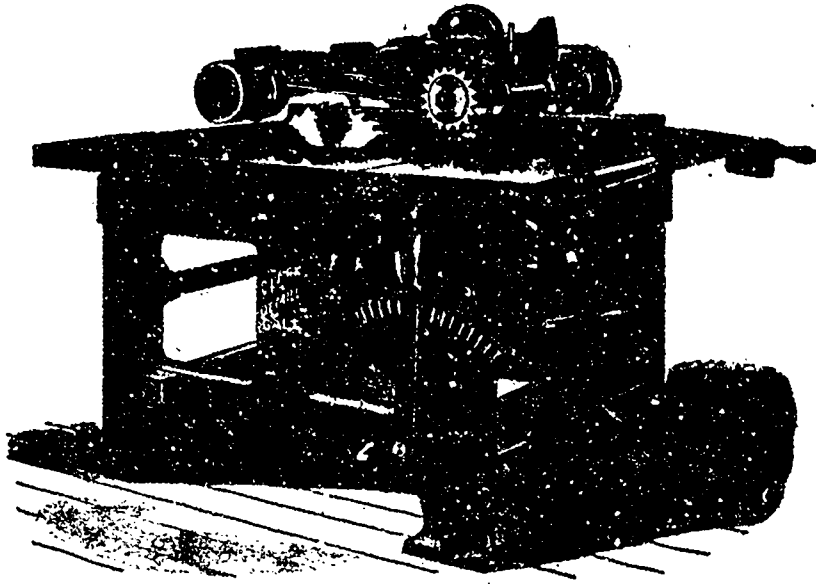
MAPLE LEAF
 STITCHED COTTON DUCK
BELTING
 DOMINION BELTING CO. LTD.
 HAMILTON CANADA

**“CARRON”
 PIG IRON**

Oldest and Best Scotch Make.
 More Popular Than Ever.

A. C. LESLIE & CO.,
 MONTREAL

High Grade Wood Working Machinery



...Our No. 24 Variable Self-feed Rip Saw. A simple, substantial saw, designed for heavy work in Planing Mills, Furniture and Sash and Door Factories.

We aim to Lead in the Manufacture of New and Improved Wood Working Machinery

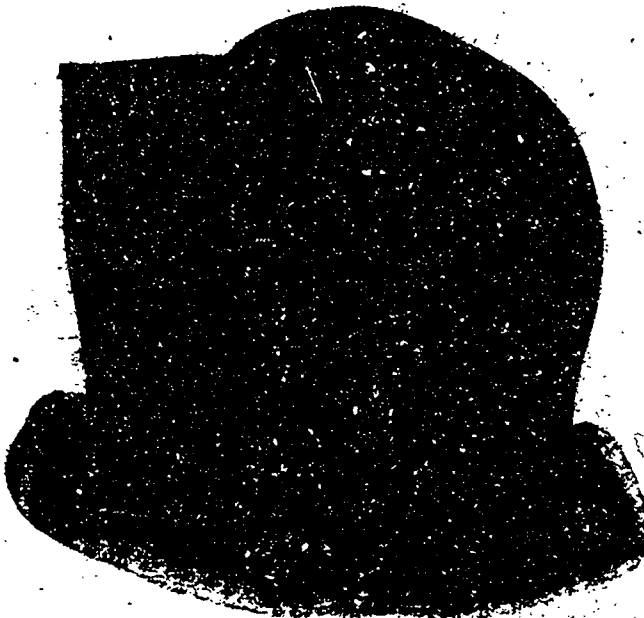
WRITE FOR CATALOGUE AND PRICES

CLARK-DEMILL CO.,
LIMITED

(Successors to Clark & Demill,) Hespeler, Ont.
Galt, Ont.

Western Representatives

The WATERLOUS ENGINE WORKS CO., LIMITED, Winnipeg, Man.
Agents for Manitoba, Saskatchewan and Alberta.



HOT BLAST HEATING

MECHANICAL DRAFT

DRYING SYSTEMS OF ALL KINDS
FOR DRYING ANY MATERIAL

SHAVINGS EXHAUST SYSTEMS
INSTALLED COMPLETE

Dry Kiln Tracks and Wheels, Lumber Dryers,
Brick Dryers, Steel Brick Cars,
Transfer Cars, Turntables, Etc.

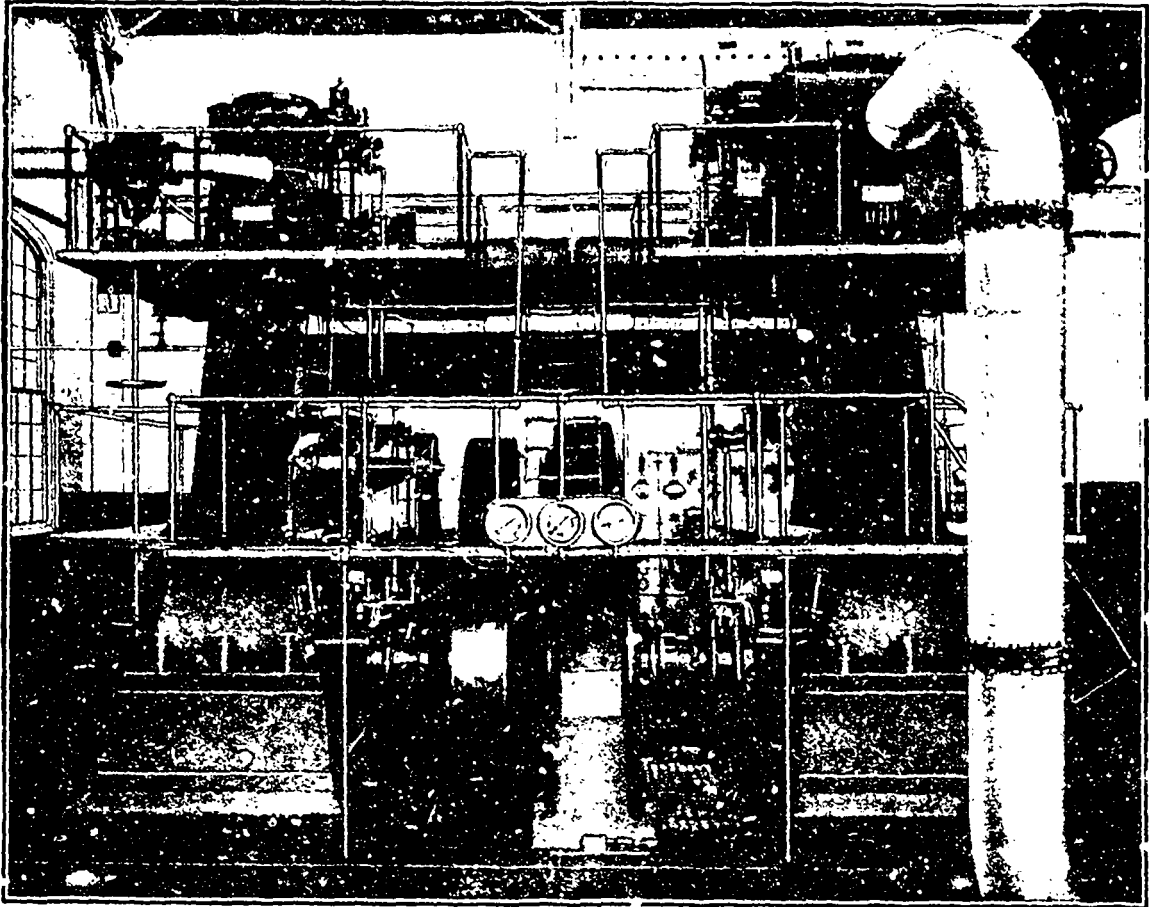
Stationary and Portable Forges, Cupola Blowers, Exhaust Fans, Planing Mill Exhaustors
Dust and Shavings Collectors, and Steam Specialties, such as Back Pressure
Valves, Oil Separators, Exhaust Heads, Etc.

VERTICAL AND HORIZONTAL STEAM ENGINES

SHELDONS, LIMITED

Engineers and Manufacturers

GALT, ONT.



Vertical Compound Goldie-Corliss Engine, 21in. and 42 in. x 30 in. speed 150 revolutions per minute, direct connected to 60 Cycle Alternator. Built for the Dominion Iron and Steel Co. by

THE GOLDIE & McCULLOCH CO., LIMITED
 GALT ———— ONTARIO ———— CANADA

On One Condition

WILL I UNTIE
 YOUR HANDS

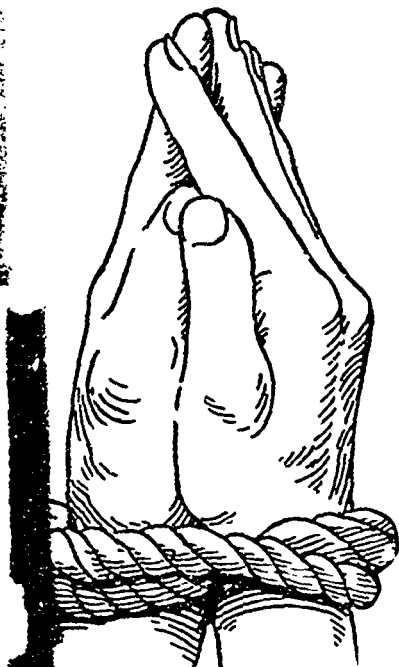
Never send your Orders
 for **BABBIT METAL**
 to any concern except the

**SYRACUSE SMELTING
 WORKS**

The Best on Earth

MONTREAL, NEW YORK
 and Branches

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER



THE ALGOMA STEEL CO., Limited

SAULT STE. MARIE, ONT.

is now booking orders for

STEEL RAILS

For delivery during the Season of 1906.

Parties intending purchasing will find it to their interests to let us have their specifications at an early date so as to ensure desired deliveries.

DRUMMOND, McCALL & CO.,

General Sales Agents.

OFFICE:

Canada Life Building, MONTREAL.

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.

BUYING TIME

The next few weeks will see a rush of contracts to the mills and furnaces for shipment the last half of the year. By placing your contract and specifications with us now, better deliveries can be had than later on after the order books are filled.

Our line includes Pig Iron, Coke, Bars, Plates, Shapes, Tool Steel, Rivets, etc.

WRITE US FOR PRICES.

THE
BOURNE-FULLER CO.

IRON, STEEL,
PIG IRON,
COKE.

Cleveland, Ohio.

Pittsburg Office,

1126 Frick Bldg.

NOVA SCOTIA STEEL and 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..

“SCOTIA” PIG IRON for Foundry Use

Works—TRENTON, N.S., and SYDNEY MINES, N.S.

Head Office—NEW GLASGOW, NOVA SCOTIA

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

July 6, 1906.

THE CANADIAN MANUFACTURER.

Folio
HD 9720.1
C35x
V.53
5

NICKEL

THE CANADIAN COPPER COMPANY.

92626J

NICKEL FOR NICKEL STEEL

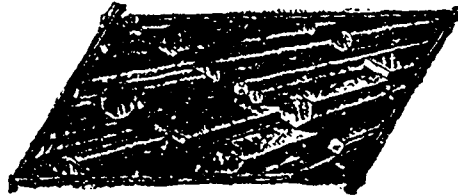
THE ORFORD COPPER COMPANY.

WRITE US FOR PARTICULARS AND PRICES.

General Offices: 43 Exchange Place, NEW YORK.

UNION DRAWN STEEL CO., LIMITED

COLD DIE-ROLLED
STEEL AND IRON



True to Size and Highly Polished.

For Shafting, Piston Rods
Screw Steel and
Roller Bearing Rods

ROUNDS, SQUARES, FLATS AND HEXAGONS.

ASK US FOR PRICES.

Office and Works: HAMILTON, CANADA.

MORISON Suspension Furnaces

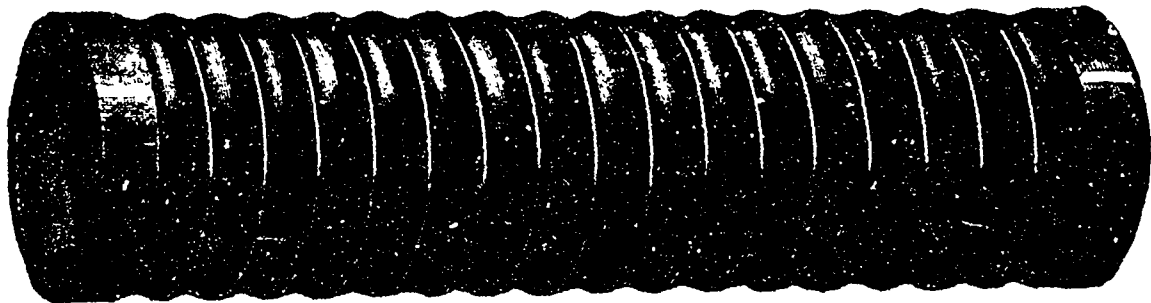


For Land and Marine Boilers

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 CALVER STS.,
BOROUGH OF BROOKLYN,
Near 10th and 23rd Street Ferries.

New York

Sole Canadian Agent—MR. GEORGE HOLLAND, M. C. Soc. C. E., P. O. Box 529, MONTREAL

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

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.

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.



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 Jenckes Machine Co., Limited

Mining Machinery; Pulp Mill Machinery;
Steam and Water Power Plants.

Catalogues and Estimates on request. Correspondence invited.

EXECUTIVE OFFICE—60 Lansdowne St., SHERBROOKE, QUE.

Sales Offices : TORONTO, ROSSLAND
HALIFAX, VANCOUVER

Plants : SHERBROOKE, Quebec
ST. CATHARINES, Ont.

The London Works of
The Canada Chemical Manufacturing Company, Limited

HAS BEEN OPERATED CONTINUOUSLY FOR OVER
F o r t y Y e a r s
 AND THE SAME HIGH STANDARD FOR QUALITY OF

Acids and Chemicals

HAS ALWAYS BEEN MAINTAINED

Chemical Works and Head Office
LONDON.

Sales Office
TORONTO.

Warehouses
TORONTO and MONTREAL

CASSELLA COLOR COMPANY

(American Branch of Leopold Cassella & Co.)

ARTIFICIAL

DYESTUFFS

New York, 182-184 Front Street.

Boston, 68 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, Thiocatechines, etc.

A Complete Assorted Stock of the above always on hand.

W. T. Benson & Co.,

Sole Agents for Canada.

164 St. James St., MONTREAL

THE **WELLINGTON MILLS**

LONDON, ENGLAND.

Genuine Emery

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

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

Manufacturers

JOHN OAKEY & SONS, Limited

Wellington Mills, Westminster Bridge Road, London, England.

Enquiries should be addressed to

JOHN FORMAN, 708 Craig St., Montreal.

THE IMPERIAL OIL COMPANY, Limited

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

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

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

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

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

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

PROFESSIONAL DIRECTORY.

Patent Attorneys, Mechanical and Electrical Engineers, Hydraulic and Constructing Engineers, Chemical and Mining Experts, Etc., Etc.

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 1482.
Res., North 2239.

T. A. MORRISON & CO.

202 St. James Street MONTREAL
Contractors' Plant, New and Second-hand.
Steel Jaw Stone Crushers, all sizes.
Sturtevant Roll Jaw and Rotary Fine Crushers.
Balanced and Centrifugal Rolls, Emory Mills,
Steam Road Rollers, Boilers and Engines,
Rock Drills, Concrete Stone,
Bridge and Building Limestone, Bricks, etc., etc.

C. J. FENSOM, B. A. Sc.

Consulting Engineer

ABERDEEN CHAMBERS, - TORONTO
Phones { Office, - - M. 1923
Residence, N. 2267

Machinery Designed, Supervised, Inspected and
Contracted for. Tests, Reports, Electric Light
Plants, Power Plants, Pumping Plants.

PATENTS PROMPTLY SECURED

We solicit the business of Manufacturers,
Engineers and others who realize the advisability
of having their Patent business transacted
by Experts. Preliminary advice free. Charges
moderate. Our Inventor's Adviser sent upon re-
quest. Marion & Marlon, Reg'd., New York Lic
No. 10, Montreal; and Washington, D.C., U.S.A.

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 speci-
fications covering Industrial Applications of Elec-
tricity—Lighting—Power Transmission—
Factory Power Distribution—Steam
Plants.

TESTS—REPORTS—VALUATIONS.

The Howe-Buller Co.
CLEVELAND, O.

FIRE BRICK SILICA FIRE CLAY
ALUMNITE
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 manu-
facture material for all heat work—second to
none.
Capacity over 200,000 Brick and Special Shapes
per day Write for catalogue.

Keystone Engineering Co.

Limited

129 Bay Street, 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.

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, Loco-
motives, Pipe, etc.; Bridges, Buildings and other
Structures. Chemical and Physical Laboratories.
Reports and estimates on properties and processes.

JOHN J. GARTSHORE

88 Front St. W., Toronto.

Rails and SUPPLIES,

Now and Secondhand,

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

NEFF & POSTLETHWAITE

CHARTERED ACCOUNTANTS

26 Wellington St. East, TORONTO
Phone Main 1830.
Audits and Investigations a Specialty.

WM. BARBER & BROS.

Georgetown, Ont.

Manufacturers of.....

Book and Fine Papers.

THE.....

Toronto Paper Manufacturing Co.,

Cornwall, Ont.

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

R. SPENCE & CO.

HAMILTON, ONT.

FILE and RASP MANUFACTURERS
AND RE-CUTTERS.

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

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.

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.
124 Yongo Street, TORONTO, ONT.



*Draughting and
Designing of
Special
Machinery
Industrial Plants*

14 Leader Lane
Phone, Main 6035
TORONTO, ONT.

H. D. PETRIE

Barrister, Solicitor, Rotary

Spectator Building,
HAMILTON, ONT.

Companies Incorporated.
Commercial Law and Collections.

S. DILLON-MILLS

MINING EXPERT

Mining Properties examined and developed,
reports furnished. Twenty years experi-
ence in Furnace and Mining Work.

688 HURON STREET. TORONTO

PATENTS

TRADE MARKS, Etc.

HANBURY A. BUDDEN

NEW YORK LIFE BUILDING,
MONTREAL.

TYPEWRITER FOR SALE

Second-Hand Remington Typewriter in good
repair. Cheaper than renting. Let us send
you samples of its work.

Canadian Manufacturer

McKINNON BLDG.

TORONTO

Sprinkler Leakage Insurance

is indemnity paid for losses sus-
tained by the accidental dis-
charge of water from installed
Sprinkler Systems.

Are you insured against
Sprinkler Leakage Damages?

The

**Canadian Casualty
and Boiler**

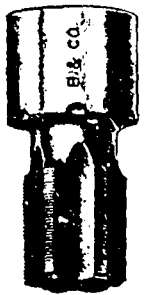
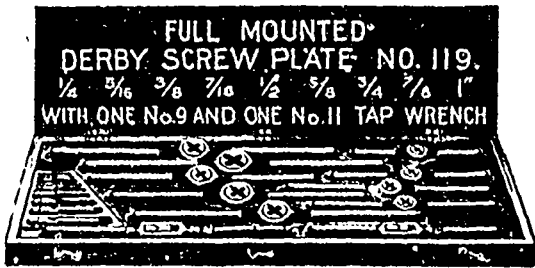
Insurance Company

TORONTO

Insures Sprinklers, Boilers, Elevators and all
Personal and Property Risks.

A. G. C. DINNICK, Managing Director.

Head Office:
22 24 ADELAIDE ST. E. and 56 VICTORIA ST.
Phone Main 4091



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

BUTTERFIELD & CO.,
 Rock Island, Que.



ELK FIRE BRICK CO.
 ST. MARY'S, PA.

Best Fire Brick for Any Purpose.

There are none "just as good."

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.

JAS. H. MILNES & CO.

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 : 79 KING STREET EAST
 Docks : Esplanade, Foot of Yonge
 TORONTO.

THE TELEPHONE

Is a Companion, Friend and Servant Combined.
 Invaluable for convenience in the household.

LONG DISTANCE TELEPHONE SERVICE

has no equal for the facility it affords in busi-
 ness life.
 Full particulars as to rates and service at the
 nearest office of the

**BELL TELEPHONE COMPANY
 OF CANADA.**

"Beech Creek" FIRE BRICK

STRICTLY HIGH GRADE
 MADE ONLY BY

PENNSYLVANIA FIRE BRICK CO.,
 BEECH CREEK, 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.

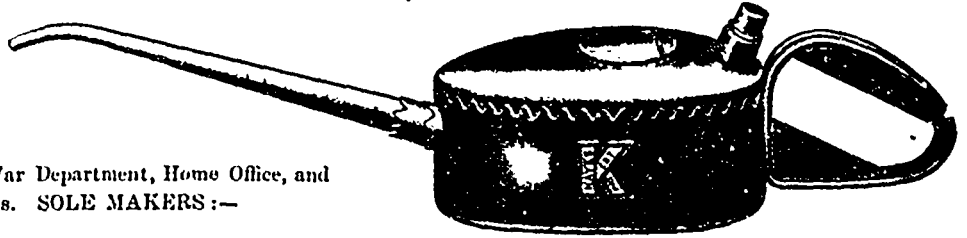
BRANDS: BEECH CREEK, BEECH CREEK ROOF, BEECH CREEK BUNG.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

KAYE'S Latest Patent Serrated Seamless Oil Can

Fitted with NEW PATENT THUMB BUTTON SEAMLESS SPOUT and SLIDE FEED HOLE

IN COPPER OR BRASS FOR ELECTRICAL PURPOSES



Contractors to H.M. Navy, War Department, Home Office, and Indian State Railways. SOLE MAKERS:—

JOSEPH KAYE & SONS, Ltd., Lock Works, LEEDS, and 93 High Holborn, LONDON, W.G., England
Agent—The N. L. PIPER RAILWAY SUPPLY CO., 314 Front St. W., TORONTO, Ont., Can.

THE PETER HAY KNIFE CO., Limited

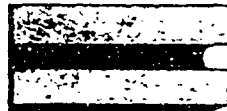


GALT, ONT.

Manufacturers of

MACHINE KNIVES

For WOOD-WORKING, PAPER CUTTING and LEATHER SPLITTING MACHINES,



SHEAR BLADES,

BARK and RAG KNIVES,

Etc., Etc., Etc.

Quality Warranted.

Send for Price List.

The Samson Turbine



Can be adapted to all water power requirements, and will give the very best results under all conditions.

It is a very strong and durable wheel, and is unequalled for ease of regulation.

Develops more power per inch of diameter than any other wheel, and costs less to install per horse power developed.

Our catalogue tells all about it—send for a copy.

THE WM. HAMILTON MFG. CO., Limited

350 Reid St.

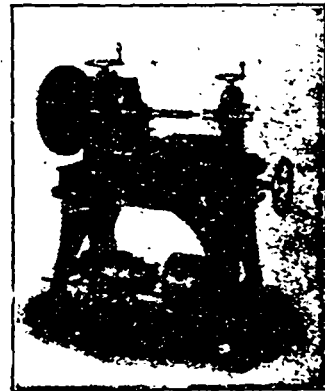
Peterborough, Ont.

STRENGTH

POWER

RIGIDITY

PRACTICAL



NEW MODEL No. 7 Plain Horizontal Mill

This machine is built to meet the increasing demand for a powerful miller for general manufacturing purposes, and embodies many improvements in power, stability and convenience. It is especially adapted to the manufacture of gun, sewing machine, typewriter and electrical work, bicycle and automobile parts. Write for catalogue. It will pay you.

BECKER-BRAINARD MILLING MACHINE CO.,

HYDE PARK, MASS., U.S.A.

Branch Office THE BOLVER,

PHILADELPHIA, PA.

A. R. WILLIAMS MACHINERY CO., - Toronto, Can.

Canadian Agents.

JEFFREY APRON CONVEYER

With Reversible Drive Connections Permits Carrier to Run in Either Direction



For Handling

Grain, Cotton Bales, Barrels and General Merchandise

OTHER ELEVATING, CONVEYING SPECIALTIES

Illustrated in Chain Catalogue No. 72A. Mailed Free.

CORRESPONDENCE SOLICITED

THE JEFFREY MFG. COMPANY

COLUMBUS, OHIO, U.S.A.

NEW YORK CHICAGO BOSTON ST. LOUIS DENVER

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

Electric Ventilating Fans



Dust - Proof Motor

Carried in Stock.

SHIPPED
READY FOR
OPERATION.

**B. F. STURTEVANT CO.,
Boston, Mass.**

General Office and Works, Hyde Park, Mass.
New York. Philadelphia. Chicago. London.
Designers and Builders of Heating, Ventilating, Drying and Mechanical Draft Apparatus; Fans, Blowers and Exhausters; Steam Engines, Electric Motors and Generating Sets; Fuel Economizers; Forges, Exhaust Heads, Steam Traps, etc. 99

THE CHEAPEST POWER KNOWN

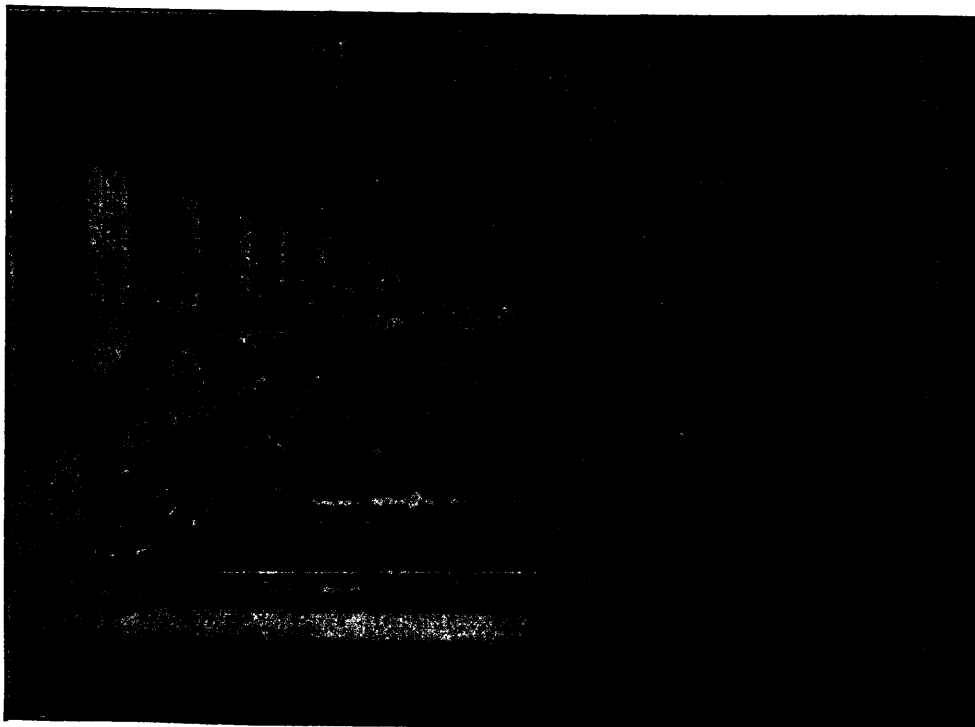
Pintsch Suction Gas Plants and National Gas Engines.

PLANTS

- No Smoke
- No Pressure
- No Danger
- No Leakage
- No Gas Holder
- No Noise
- No Boiler
- No Chimney

Engines in sizes from 2 to 800 B.H.P.

Suction Gas Plants in sizes from 10 to 1000 B.H.P. in single generators.



ENGINES

- Simplest
- Most Durable
- Perfect Regulation
- Small Gas Consumption
- Easy Starting
- No Noise
- Low Cost
- Loose Liners
- Vertical Ball Governors

Total Power already installed, over 200,000 B.H.P.

Send for Catalogue and Prices.

THE ECONOMIC POWER, LIGHT & HEAT SUPPLY CO., Limited,

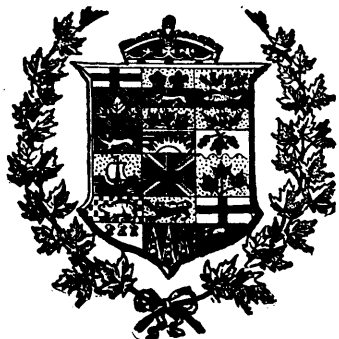
40 YORK STREET, TORONTO

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

Canadian National Exhibition

1906 of Toronto 1906

AUG. 27th
SEPT. 10th



Entries Close
August 4th

TWENTY-EIGHTH ANNUAL

THE National Show of Live Stock, Agricultural and Horticultural Products, Art and Manufactures. Processes of Manufacture are an educational Feature of the Exhibition—demonstrating the progress of Canadian Manufactures. Special inducements are offered to Exhibitors for displays in this department. Correspondence requested. **ADVANCEMENT AND IMPROVEMENT IN EVERY DEPARTMENT**

BAND OF THE 2ND LIFE GUARDS (acknowledged to be one of the finest military musical organizations in the United Kingdom) will give two concerts daily.

BRILLIANT SPECTACLE EVERY EVENING taken from Sir Walter Scott's most picturesque work, **IVANHOE**. With Tilting tournament and gorgeous pageants.

SPECIAL EXCURSIONS AND LOW RATES ON ALL LINES OF TRAVEL

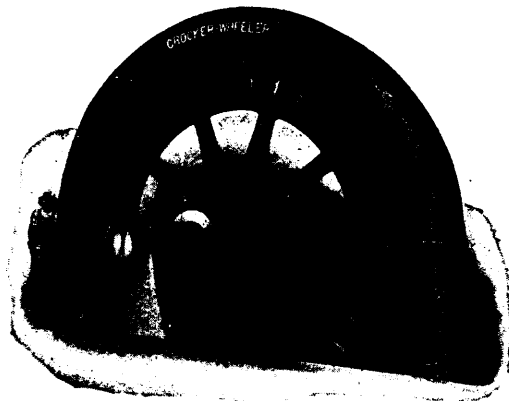
For Price Lists, Entry Blanks and all Information Address

J. A. MCGILLIVRAY, Lieut.-Col.,
President.

Office:
City Hall, Toronto.

J. O. ORR,
Manager and Secretary.

CROCKER-WHEELER COMPANY



ALTERNATING CURRENT GENERATORS.

Outputs—Belt Type, 25 K.V.A. up.

Engine Type, 75 K.V.A. up.

Canadian Representatives

THE PACKARD ELECTRIC CO., Limited

MONTREAL.

ST. CATHARINES.

WINNIPEG.



FAN MOTORS

ALL STANDARD TYPES AND SIZES, IN ANY FINISH

LARGE STOCK

QUICK DELIVERY OF ORDERS PLACED AT ONCE.

Canadian General Electric Company, Limited

Head Office, TORONTO, ONT.

DISTRICT OFFICES— Montreal.

Halifax.

Ottawa.

Winnipeg.

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 1108.

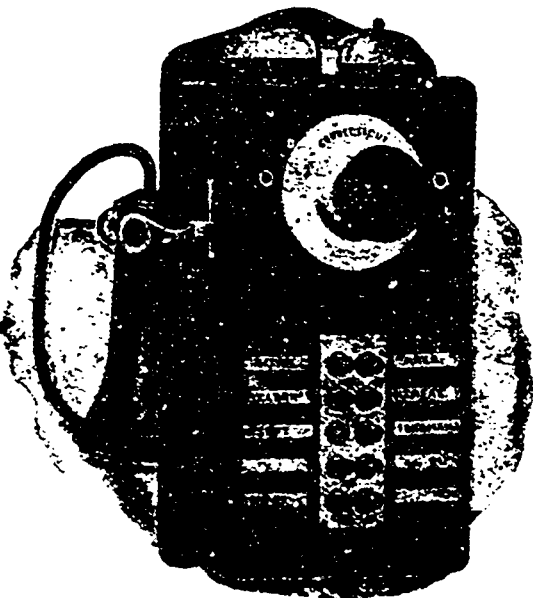
The Electrical Construction Company of London, Limited
32-40 Dundas St., London, Can.

Perfection TYPE **DYNAMOS and MOTORS**
Multipolar or Bipolar, Direct-Connected or Belted.

OVER 1500 OF OUR MACHINES IN USE | We contract for complete installations, including wiring of factories.
We repair machines of any make.
Descriptive matter and estimates furnished on application.

Branches at Vancouver, Winnipeg, Toronto, Montreal, Halifax

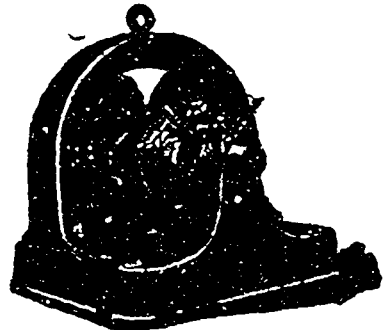
TELEPHONES OF EVERY DESCRIPTION



Telephone and Line
Supplies

JOHN FORMAN
708 and 710 CRAIG ST.
MONTREAL, QUE.

**TORONTO and HAMILTON
ELECTRIC CO.**

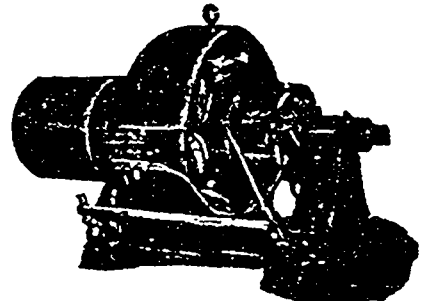


MOTORS and DYNAMOS

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.

**196 ADELAIDE WEST,
TORONTO.**

How Much of Your Power is Wasted ?

¶ During 1895-96 a series of experiments were conducted by Prof. C. H. Benjamin, of Cleveland, Ohio, to determine the ratio of the power required to drive shafting and belts, to the total power consumed, in 12 manufacturing plants on both light and heavy work. ¶ The results were as follows:

TABLES

Manufacturing Plant Number.	Total Horse-Power.	Horse-Power to drive Shafting.	Per Cent. to Drive Shafting.	Manufacturing Plant Number.	Total Horse-Power.	Horse-Power to Drive Shafting.	Per Cent. to Drive Shafting.
1.....	400	157	39.2	7.....	40.4	20.7	51.2
2.....	74	57	77	8.....	74.3	40	53.8
3.....	38.6	25.3	65.6	9.....	47.2	24.5	51.8
4.....	59.2	47.9	80.7	10.....	190	108	56.9
5.....	112	64	57	11.....	107	74.5	69.7
6.....	168	91	54.2	12.....	241	114	47.3
Average, heavy machine work,	62.3	Average, light machine work,	55.1

75 per cent. saving is what we guarantee on shaft friction.

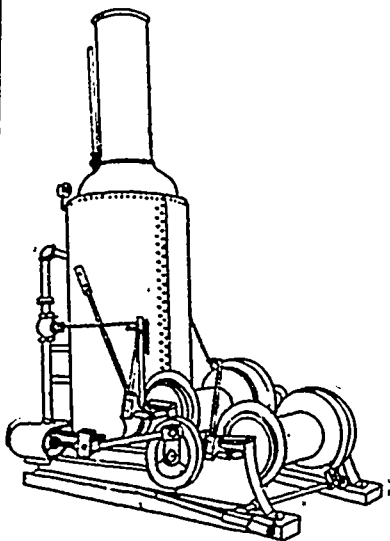
Over 200 of the leading Canadian factories are equipped with Chapman Double Ball Bearings.

Send for Catalogues and Letters from Manufacturers who have them in use.

THE CHAPMAN DOUBLE BALL BEARING CO. OF CANADA, LIMITED

Office—89 Scott St., Factory—39 Pearl St., TORONTO.

HERE'S A SNAP IN HOISTING ENGINES



Double Cylinder, Double Drum Hoisting Engine

WE are still leading in the procession and there's a good reason. ¶ We must have the best in every line for our customers. Sometimes we act as agents. Sometimes we can get better goods by manufacturing. We make our own hoisting engines—and we make them right. ¶ This one is made by one of the best engine builders in Canada—from patterns made this year, comprising the latest improvements and attachments. Every outfit tested.

Just the Hoister for Quarrying, Pile Driving, Bridge Building, Etc.

We have a few of these engines in stock for quick shipment *with or without boiler, single or double drums, with or without boom swinger.*

MACHINERY HEADQUARTERS

H. W. PETRIE Front Street West, Toronto
St. James 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 \$1.00 per year. All other Countries in Postal Union ten shillings sterling, including postage.

J. J. CASSIDEY, - - - Editor.
D. O. McKINNON, - - - Business Manager.

Classified Index Page 36
Index to Advertisers Page 45

NEW ADVERTISERS IN THIS ISSUE:

The Dominion Sewer Pipe Co., Toronto (Swansea P.O.)
W. J. McGuire & Co., Toronto.
Ridout & Maybee, Toronto.
The Roman Stone Co., Toronto.

RESPECTING STATIONARY ENGINEERS.

At the last session of the Ontario Legislature, Mr. Henry Carscallen, a member representing a Hamilton constituency, introduced a bill intended to amend an Act already in force respecting stationary engineers. The first reading of this bill occurred February 28, 1906. The second reading was on March 21, and the third reading on May 10, an interim of ten weeks elapsing between the introduction of the bill and its third and final reading, when it became law. The important features of the Act include as follows:—

A Board of Examiners for the examination of stationary engineers, which shall consist of twelve persons to be appointed by the Lieutenant-Governor-in-Council, one of whom shall be chairman of the Board;

Any five members of the Board shall form a quorum;

Members of the Board shall hold office for a period of three years at the pleasure of the Lieutenant-Governor-in-Council;

In case of a vacancy in the Board it shall be filled by the Lieutenant-Governor-in-Council;

The Board shall appoint its own Secretary;

The Board may make regulations from time to time subject to the approval of the Lieutenant-Governor-in-Council for the following purposes:—1. For the examination of candidates presenting themselves for certificate of qualification under the Act; for prescribing the subjects in which such candidates shall be examined, and the time and place for holding such examinations, and the proof to be furnished by candidates as to capacity, sobriety and good character; and the issuing by the Board of certificates of qualification under the Act. 2. For fixing the fees to be paid by such candidates upon such examination or on any certificate granted by the Board, and for fixing the annual fee payable for the renewal of any such certificate. 3. For prescribing the

causes for which any such certificate may be withdrawn. The Secretary of the Board shall keep a register in which shall be entered the name of every person to whom a certificate of qualification is granted by the Board, together with the date of the same.

No person who is not the holder of a certificate of qualification under the Act shall operate or have charge for more than thirty days at any one time of any steam plant operating an engine of fifty horse-power or over in the province of Ontario after the first day of July, 1907, nor shall any person after the said date employ any person who is not the holder of such certificate to operate or have charge of any such steam plant. Every person guilty of a violation of this section shall, upon conviction thereof before one or more Justices of the Peace, incur a penalty of not less than \$10 nor more than \$25, besides costs.

Every engineer who at the time of the passing of this Act shall hold a certificate from the Ontario Association of Stationary Engineers, or who shall be in charge of any steam plant coming under the provision of this Act, or who has had at least two years' experience in the operation of such steam plant, and who applies to the Board of Examiners for such a certificate of qualification before the first day of July, 1907, shall upon furnishing such evidence of good character as the Board may require, and upon payment of the prescribed fee, be entitled to receive a certificate of qualification from the Board.

Any person who feels himself aggrieved by the decision of the Board may appeal therefrom to the Minister of Agriculture upon giving such notice as the Minister may prescribe and the decision of the Minister shall be final.

The Act provides that the Board shall make a report in writing to the Minister of Agriculture on or before the 31st day of December in every year showing:—(a) The number of certificates granted by them during the preceding year, and the names of the persons to whom they were granted; (b) The number of applications for certificates refused and the causes for refusal; (c) the number of certificates withdrawn and the cause for the same; (d) The amount of fees received by them from candidates or holders of certificates during the preceding year; (e) The traveling and other expenses of the Board and the Secretary and the fees, salary or other remuneration received by the Board and the Secretary; (f) Upon such other matters as may be directed by the Minister of Agriculture or the Lieutenant-Governor-in-Council.

The receipts and expenses of the Board shall be audited by a chartered accountant, not a member of the Board, and the fees, salary or other remuneration paid by the Board and the Secretary shall be paid out of the fees received from candidates and others, and shall in all cases be subject to the approval of the Minister of Agriculture.

The certificate held by any person under this Act shall at all times be exposed to view in the engine or boiler room in which such person is employed, and failure to thus keep it exposed shall be prima facie evidence of the lack of qualification under the Act.

Nothing in this Act shall apply to the operation of any steam plant operating an engine of less than fifty h.p.

It will be observed that under the Act the Board of Examiners for the examination of stationary engineers shall consist of twelve persons to be appointed by the Ontario Government; to hold office for a period of three years at the pleasure of the government; that the Board may make rules and regulations subject to the approval of the government; that any person who may feel aggrieved at any decision of the Board may appeal therefrom to the government and that the Board must make regular reports of all its transactions to the government. This would seem to place the Board entirely within government control.

On the other hand the duty of the Board shall be to examine candidates for certificates of qualification, prescribing the subjects in which they shall be examined, and the proofs which they may furnish as to capacity, sobriety and good character, and the issuing of certificates of qualification.

It must not be construed that the Board of Examiners are necessarily one with the Ontario Association of Stationary Engineers. The Board is to be chosen and appointed by the Ontario Government; the Association of Stationary Engineers being a body incorporated by the government many years ago. It is the privilege of the government to select the members of the Board from the large number of good, true and competent men to be found in the community, whether they are members of the Association or not. The Association having been in existence for many years, having exhibited sagacity and wisdom in all their transactions, particularly regarding their requirements for qualifications as engineers, the government approving of the same, it was in the interest of all concerned that the Legislature should adopt the requirements of the Association and approve of and endorse its certificate of qualification as the standard by which the new Board should be governed.

The Ontario Association of Stationary Engineers was incorporated by the Ontario Government in 1891, the principal object of which as recited in its charter being to issue certificates as stationary engineers to competent men of good moral character. The steam plants of hundreds of manufacturing establishments in Ontario are under the care of engineers duly certificated by the O.A.S.E.; and as far as our information goes no charge has ever been laid against the Association as such for wrongdoing or incompetence; nor has any application ever been made to have it deprived of its charter of incorporation. The O.A.S.E. is not an unknown quantity in this province, particularly in Toronto. Its officers and most of its board of examiners reside in Toronto, others of its board residing in Brantford, Brockville, London, Hamilton, Ottawa, Bowmanville and Berlin, where they are well and favorably known, and most highly appreciated in the communities in which they reside. According to an announcement of the Association, there are about two thousand outstanding certificates issued by it of which there are three grades, the charges for which are, for first class, \$6; second class, \$4; third class, \$2, with yearly renewals of \$1, 75 cents and 50 cents respectively.

Under the new law, the fees to be charged by the Board of Examiners would probably not exceed those charged by the Association.

THE CONGRESS OF CHAMBERS OF COMMERCE OF THE EMPIRE.

The Sixth Congress of Chambers of Commerce of the Empire will assemble in London on July 10 for a session that will probably extend over four days. It will be attended by delegates from some two hundred Chambers of Commerce and commercial institutions in all parts of the British Empire. According to a preliminary announcement, more than seventy resolutions have been submitted for the consideration of the Congress, dealing with about thirty-five subjects. Commercial Relations between the Mother Country, her Colonies and dependencies will be the subject of seven resolutions. Canadian representatives will take an active part in the discussions. The Montreal Board of Trade will urge upon the governments of the United Kingdom and the different colonies "the granting of preferential treatment on a reciprocal basis." Vancouver will urge "the adoption of a commercial policy, based upon the principle of mutual benefit." The Canadian Manufacturers' Association will urge the "advisability of arranging at an early date reciprocal preferential trade measures." The South of Scotland Chamber will ask for "the establishment of a commercial preference over the whole Empire." La Chambre de Commerce du Montreal will suggest and advocate that "commercial preference between the different parts of the Empire will ensure their union and general prosperity. The Toronto Board of Trade will advance the opinion that "the bonds of the British Empire would be materially strengthened, and the union of the various parts of His Majesty's dominions greatly consolidated by the adoption of a commercial policy based upon the principle of mutual benefit, whereby each component part of the Empire would receive a substantial advantage in trade as the result of its national relationship," suggesting that the Congress appoint a representative and proportionate committee of home and colonial delegates to devise a scheme of this nature. Regarding preferential trade the Winnipeg delegates will invite the Congress to re-affirm the principle, and urge upon the governments of the Empire to treat the question "as of present practical importance, to be thoroughly inquired into with a view to such reciprocal action by way of mutual tariff concessions and otherwise as may seem expedient."

The need for the establishment of an Imperial Council and the principle that the self-governing Colonies should participate in the cost of the defence of the Empire will be affirmed. Postal questions will be dealt with in the direction of urging the granting of cheaper postage on British newspapers, and uniform parcel post charges in all parts of the Empire, and in favor of not only Imperial, but universal, penny postage. Improvement of the Consular Service, and the appointment of British commercial agents in the Colonies are to be the subject of discussion, and resolutions that will appeal to manufacturers and merchants in the old country urge the abolition

of the taxes levied in certain colonies on British commercial travellers and on trade catalogues, circulars, etc. Amongst other resolutions special mention may be made of those in favor of fast Imperial steamship services, of diverting the flow of British emigration to British colonies instead of to foreign countries, of encouraging the investment of British capital within the Empire, of the codification and assimilation of the commercial and naturalization laws of the Empire, and of the compulsory adoption of the metric system of weights, measures and currency, of the unification of the bankruptcy laws of the Dominion of Canada, and urging the adoption of a system of registration of firms. The abolition of light dues and shipping bounties and of the embargo on the importation of Canadian cattle into the United Kingdom will also be advocated.

It will be readily conceded that the programme is extensive and wide enough to give opportunity to all the delegates to indulge themselves to their hearts content in discussing many topics involving the welfare of the Empire, but no doubt many of them will find themselves choked off in their endeavours to impress their views upon the Congress. Such affairs are usually managed in that way, and many orators who hope to perpetuate their views in flowers of rectoric while statesmen stand spell-bound, will in all probability have to content themselves by asking permission of Mr. Speaker to have the speeches taken as read and have them printed in the proceedings as is done in some deliberative bodies. It is the inalienable privilege of Britishers the world over to foregather whenever they so desire, to discuss whatever topics may be uppermost in their minds, and resolute to their hearts' content, and no doubt this will be done at the London Congress. To most of the delegates the occasion will be a most delightful outing, although in Canada the disposition is to take a week or a month off in July to lounge in cool shady retreats by lake side, or ocean side, or, with reel and rod, and a plentiful supply of liquid bait, lure the finny tribe from their watery element or words to that effect.

The Chambers of Commerce of the British Empire held a four day's session in Montreal in August, 1902, and the delegates had a good time—as good a time as could possibly befall a lot of jolly good fellows. A large number of resolutions were sent in to the secretary before the meeting, the authors of all of them hoping to see them on the agenda paper so that the importance of the subjects of them might be explained. The Congress finding the surroundings pleasant and plenty of time for discussion, past a couple of dozen of resolutions, and we leave it to our readers to look backward through the intervening years and recall, if they can, all the subjects of them, and the consequent results to the Empire. Following is a synopsis of the resolutions passed at the Montreal meeting of the Congress:

1. Favoring closer trade relations between the countries of the Empire.
2. Describing the importance of the food supply to Great Britain from Colonial instead of foreign sources, particularly in time of war.

3. Supporting the idea of a continuous chain of state-owned cables and telegraphic connections to connect all British communities and possessions.

4. Urging the freer interchange on more even terms with foreign publications, of the periodicals of British countries.

5. Relating to fast steamship and mail service.

6. Suggesting legislative action throughout the Empire in the encouragement of conciliation boards in connection with labor disputes, etc.

7. Re assimilation of patent laws.

8. Protesting against restrictions on importation of Canadian cattle into Great Britain.

9. Re encouragement of commercial education.

10. Approving of colonial participation in the defense of the Empire.

11. Declaring against any future treaty-making which might hamper British countries in arranging their relations to suit themselves.

12. Objecting to France imposing additional tax on goods from British countries entered through other than ports of United Kingdom.

13. Asking the British Government to take immediate steps to obtain most favored-nation treatment for British Colonies from countries which grant that treatment to Great Britain.

14. Favoring the extension of commercial treaty rights, and the reorganization of the consular service so as to better promote Empire trade.

15. Urging the abolition of British Light Dues upon merchant shipping.

16. Favoring the compulsory adoption of the metric system within the Empire.

17. Declaring that within the British Empire there are sufficient natural resources to supply the United Kingdom with all its food.

18. Favoring a preference to British subjects in the granting of contracts for Imperial public works.

19. Re importance of incorporating Newfoundland with the Canadian Dominion.

20. Approving a unification of the naturalization laws of the Empire.

21. Favoring uniform laws for registration and protection of trade marks.

22. Approving the early enactment by the Dominion of a general bankrupt law.

23. Indorsing the British policy of opening up China to trade.

24. Re discontinuance of insertion of the London clause in bills of lading.

The pages of this journal are open to correspondence showing how many and which of the foregoing twenty-four resolutions have eventuated in the fulfilment of the matter to which they relate.

Among the propositions to be submitted to the forthcoming Congress a number of them relate to preferential trade throughout the Empire; absolute free trade within the Empire, and the protection of the Empire against the world. Any one of these subjects is big enough to engage the most earnest attention of the Congress for weeks or months; and how the business mapped out for consideration can be got through with in three or four days remains to be seen.

ABUSE IS NOT ARGUMENT.

Industrial Canada, the official publication of the Canadian Manufacturers' Association, in its June issue, pub-

lishes a criticism of an Act passed by the Ontario Legislature in May last entitled "An Act to amend the Act respecting stationary engineers," the salient points of which are contained in another column of this journal. It reminds one of the method said to prevail among some lawyers to the effect that if you have no argument to offer, abuse the other side. It first pays its compliments to Henry Carscallen, Esq., a member of the Legislature representing an important manufacturing constituency in Hamilton, who introduced the Bill. It gives Mr. Carscallen credit for the introduction of two bills; one of which was not passed, but was for the purpose of preventing, so Industrial Canada says, anyone except a lawyer from filling in a conveyancing form; and then gratuitously and without cause insults a reputable and respectable gentleman and casts a slur upon an honorable profession by saying "Mr. Carscallen, of course, is a lawyer and this bill would probably have brought a few more deeds to his office for attention." Again "The other bill standing in Mr. Carscallen's name, and which, unfortunately, the government saw fit to let pass, not for the reason that the objectionable features were not called to their attention, was an Act to amend the Act respecting stationary engineers. This Act, it says, is probably the worst example of class legislation that we have on our statute books. Of course Industrial Canada, claiming to represent the views and sentiments of a large number of respectable gentlemen constituting the C.M.A., has a legal right, we presume, to cast slurs and unworthy suggestions upon an honorable gentleman to its heart's content; but in this respect at least such sentiments are not shared in by those whom it professes to represent.

Aside from the abuse it heaps upon the legislators of the province, in its comments upon the Act in question, it makes statements that are not borne out by facts, thus insulting the common sense of its readers. Speaking of the Board of Examiners, who are to be chosen and appointed by the government it tells us that they, the Board, are so absolutely dependent on the Board of Management of the O.A.S.E., which is the controlling board of that association, that the mere fact of appointment by the government will have very little effect. The real meaning of this is that the gentlemen constituting the government of Ontario are incompetent to select a dozen good men and true to act as a Board of Examiners and therefore leave it to the managers of the O.A.S.E., a disreputable lot of interested partizans to do the job for them.

Industrial Canada says that the Act "is probably the worst example of class legislation we have on our statute books," in substantiation of which it points out that the Act provides that "no person shall operate or have charge for more than thirty days of any steam plant operating an engine of 50 h.p. or over who is not a holder of a certificate of qualification under the Act." Questions that naturally arise in this connection are: Is such an Act in the best interest of the community; and is the enforcement of it committed to the hands of honest and competent men? Industrial Canada tells us that it has

no objection to an Act which would provide for the compulsory examination of stationary engineers; and that their examination should be under the control absolutely of the government. Does Industrial Canada know the value of words? Can it properly construe well worded sentences expressed in the English language? If it can, let it read the Act. But the implication is that because the government see proper to adopt the qualifications required by the O.A.S.E., therefore it is either corrupt or do not know how to do such things. How silly. The callow youths who are grafted onto the C.M.A. and earn their salaries by writing such nonsense for the "official publication" should be spanked and made to retire.

Industrial Canada, speaking of the disposition of the fees for examination, and the annual fee to be paid by accepted engineers, says that these fees go into the hands of the Board of Management (of the O.A.S.E.) not the Board of Examiners, as created under the Act. The Act does not say any such thing. Section 24 provides that the Board of Examiners may make regulations from time to time, subject to the approval of the Lieutenant-Governor-in-Council, one of which is for fixing fees to be paid by candidates; but no where in the Act is the Board of Management mentioned; and it will be observed that all of the regulations that the Board of Examiners may make are subject to the approval of the Ontario Government. It also says that the Board of Management of the O.A.S.E. is to pay the Board of Examiners; that they have the power to pay officers of the O.A.S.E. who have nothing whatever to do with the examinations; that they have the absolute control of this money, and that if they wish to do so, to use the money to organize and to conduct a strike. These assertions are worse than foolish—they are wicked, false and intended to stir up strife and ill-feeling between employers and a class of employees whose association has, ever since its organization in 1891, never participated in a strike. Industrial Canada also says that under the Act every engineer in Ontario having charge of a boiler, some seven thousand of them, will be compelled to become a member of the Ontario Association of Stationary Engineers. Another vicious assertion. There are thousands of steam plants in Ontario whose capacity does not reach 50 h.p. and therefor the engineers having charge of them need not qualify as to competence; and it is a libel upon the government to say that under any circumstance it would countenance or allow a competent engineer to be forced into membership with the Association.

The animus of Industrial Canada arises from the failure of the efforts made by the C.M.A. to prevent the passage of the Act.

FACTIONAL ELEMENTS.

When the bill to amend the Act respecting Stationary Engineers was before the Ontario Legislature in April last a committee was appointed to hear whatever any interested parties might have to say concerning it. Friends advocated it because, under it, engineers would be required to have a practical knowledge of their business before being allowed to assume charge of a steam

plant of 50 h.p. or more, a certificate to be evidence that a holder should have had two years or more experience in the management or care of steam boilers and boiler feeding devices; that he understands the management of heating apparatus and the principles of combustion; a knowledge of the application of steam, the use of the steam engine indicator, the construction of steam boiler and of condensing and non-condensing engines, strength of materials, the care of dynamos, etc. Those who opposed the passage of the Act offered no such reasons. The organized opponents who appeared before the Committee were the Canadian Manufacturers' Association and the Employer's Association. This latter body, representing the employing interests of Toronto and vicinity, in a protest made to the committee, stated that in their opinion there had not been any special incident calling for any change in the then existing law, and while they agreed that the care of life and property was of the first importance, still the supervision of the means of safeguarding the public interests should be solely under government control "instead of under any influence from trade unions, the Ontario Association of Stationary Engineers or any other factional element." The protest of the Association suggested that if the bill was to be pushed to a vote in the legislature, several amendments should be made to it, all of which but one were accepted by the promoters and were finally included in the Act. The objectionable proposition was to the effect that any certificate of qualification granted to an engineer should be "permanent except for cause," meaning that no annual or renewal fee would ever be required. This, of course, was intended that as the Board of Examiners appointed by the government were to be remunerated for their services from the fees paid by the applicants, it would soon die of inanition, a thing desired by the Employers' Association.

Perhaps the most remarkable and far-reaching proposition requested by the Association to be included in the Act was as follows:—

(a) No stationary engineer licensed under this Act shall leave his employment without the consent of his employer unless he shall have previously given two full weeks' notice in writing to his employer or employers.

(b) Every person guilty of a violation of the preceding section shall, upon summary conviction thereof, incur a penalty of not less than \$20, and not more than \$50, besides costs, and shall have his certificate cancelled, and another certificate shall not be issued to such person by the Board for a period of at least six months from the date of cancellation for the first offence, nor for a period of two years from date of cancellation for the second offence.

The war of the rebellion of 1860-64 in the United States was fought to abolish negro slavery—but the Employers' Association of Toronto wanted the legislature of Ontario to establish a worse form of slavery. If a free Canadian, being an engineer fully and legally qualified to act as such, and in charge of a steam plant belonging to a member of the Employers' Association, or any one else, should desire to better his condition by quitting that employ, and it should not please his employer to have

him do so, no matter what the emergency might be, unless he had given two full weeks' notice in writing of his desire, should he thus quit, he must be considered guilty of a violation of the law, be liable to a fine of \$50 and costs, and be deprived of his certificate of qualification for at least six months; and should he ever do the like again it would be impossible for him to obtain a renewal of his certificate for a period of two years. There would be no necessity of preferring a charge against the engineer of incompetence, lack of qualification or efficiency, or intemperance or any other disqualifying act but if he should quit his work without the two full weeks' notice, he is to be punished severely, and for a second offence be deprived of the opportunity for two years of earning his living by his profession in which he may have passed long years of his life and of providing food, raiment and shelter for wife and babes.

Talk about "factional elements" indeed. Who, in this matter, are the stirrers-up of strife, discord, hatred and bad blood?

YANKEE GOODS IN CANADA.

It is difficult for Englishmen to understand why, notwithstanding tariff preferences, political ties, sentiments of patriotism and loyalty, and perhaps other considerations, Canada still insists upon buying so many things from the United States and so few from Great Britain, says the New York Commercial. Many explanations have been offered and it might be said that it is not the Englishmen alone who have been surprised at Canada's fondness for Yankee goods.

Much is doubtless due to the geographical relationship of the two countries and to the similarity in tastes and habits which naturally results. Such things are much stronger than tariff bars, but the extent to which Canadian purchases in the United States continue without apparent regard for the always paramount question of cost is certainly something of an enigma.

Not one of the English journalists, trade emissaries and statisticians who have studied the problem have come so close to a satisfactory conclusion as W. D. Scott, superintendent of immigration at Ottawa. In a recent paper on Canadian progress in population, Mr. Scott, after admitting that Canada likes and looks for American immigrants, made the significant statement that the American immigrants into Canada make excellent settlers, owing to the fact that the majority of them are adepts at prairie farming, also that they bring in much capital and improved machinery for farming purposes.

Thus it is that American goods are constantly finding their way into Canada as the personal property of immigrants and they are there advertising themselves, convincing the Canadians of their merits and irresistibly creating a further demand. The essence of the whole subject is that American goods more naturally find their way into Canada than any others and, making themselves appreciated, give a good reputation to everything that the United States make and compel a demand that the Canadian importers are forced to recognize.

EDITORIAL NOTES.

It is interesting to know that a cargo of about 5,500 tons of iron ore was recently shipped from Bilbas, Spain, to Philadelphia to be used in a Pennsylvania steel mill. The value of this ore was about \$3.50 per ton at point of shipment. And yet there are those in Canada who object to the government paying the usual full bounty on steel made in Canada in the manufacture of which foreign ore is used.

The Provincial Secretary's Department has received from the Governor-General a letter enclosing a copy of the communication from the Commercial Department of the British Board of Trade, which says that the Department has decided to send a commercial mission to Canada with objects similar to that of the mission despatched to Australia and New Zealand. These, in brief, are to ascertain by direct enquiry the extent and degree of the effectiveness of foreign competition with British trade in Canada, the best means of successfully combating the same, and the opportunities which may exist for the further development of United Kingdom trade. In addition suitable persons will be selected, after consultation with the Canadian Government, to act as commercial correspondents of the British Board of Trade in the more important trade centres of Canada. The board will appreciate any assistance that can be given to the mission by the Canadian or Provincial Governments. Mr. Richard Griggs of Middlesborough will be the chief member of the mission.

According to a dispatch from Rome the Postal Union Congress, which practically ended May 22, cheapened the postage on heavy letters. Not only has the unit of weight been raised from 15 to 20 grams, but the postage was reduced from 25 centimes to 15 for 20 grams after June 1st. These changes will be even more favorable to Anglo-Saxon non-metric countries than those using the decimal system, the British delegates having secured the adoption of one ounce. Unfortunately the congress could not be induced to lower the initial rate of letter postage. The British and Japanese proposals for a reduction to 20 centimes both failed. New Zealand's advocacy of universal penny postage was rather a demonstration than a business proposal. A little success was scored by picture postcards in internationalization. Permission was granted hitherto by only a few countries to write on the left-hand half of the address side. Still a more welcome boon to the public is the new reply coupon, which takes the form of a postal order to the bearer exchangeable in any country for a postage stamp of the value of 25 centimes.

The Manchester Chamber of Commerce, like some other representative English bodies, has unanimously adopted a resolution with regard to the compulsory use of the metric system of weights and measures, which is intended to embody their policy henceforth with regard to this proposed legislation. The resolution is to the following effect:—"That, while continuing to support the enforced

adoption of the metric system of weights and measures for general purposes in this country, the chamber shall always maintain, in any future action taken in support of legislation to bring this about, that the cotton-yarn trade and the engineering trades ought to be expressly exempt from such legislation." The chamber declared that any legislation which failed to recognize the exceptions desired should be met by strenuous opposition from the great industries concerned.

A new stamp has been issued by the post-office department, to be used in connection with letters not fully prepaid. The stamp will be for the use of post-masters only. In the past it has been the custom to mark letters not fully prepaid with a figure, specifying how much the receiver would have to pay. The stamp will now be used instead. The new stamp is bluish in color, and is in several denominations.

The government statement of the transactions of life insurance companies doing business in Canada shows that the new business done in 1905 exceeded by \$7,410,234 in amount of policies the amount written in the previous year. The respective figures were \$105,716,336 last year, and \$98,306,102 in 1904. It is remarkable that the increase was confined to the Canadian and British companies, for the United States companies doing business in this country showed a decrease. Last year they did new business to the extent of \$34,486,215, where in 1904 they reached an aggregate of \$36,145,211, Canadian companies exhibit an increase of 3.17 per cent., British companies increased .91 per cent., while United States companies decreased 4.08 per cent. The total amount of policies in force at the close of 1905 was \$630,334,240, on which the premiums for the year were \$22,080,717. At the end of 1904 policies in force totalled \$587,880,790, with premiums of \$19,969,324. The number of policies which became claims during the year was 8,870, representing \$9,033,000, as compared with 8,537 policies for \$8,832,000 in 1904.—Bradstreet's.

A decision of much importance to certain manufacturers was made by Judge Clute, in a Toronto Court a few days ago. Wampole & Co., manufacturers of patent medicines, had sued the F. E. Karn Co., retail druggists. It was an action for damages for breach of trade contracts and for an injunction restraining defendants from further breaches. Plaintiffs are manufacturing chemists and owners of certain proprietary medicines and preparations. The agreements were made upon the sale of certain of plaintiffs' preparations to defendants, the defendants covenanting not to resell at prices below those mentioned in the agreements. Defendants pleaded that the agreements were void as being in restraint of trade. Held, upon the evidence that the agreements in question were procured by an unlawful conspiracy between plaintiffs, defendants, and other manufacturing chemists, and the Association of Wholesale and Retail Druggists, and that the conspiracy was entered into for the purpose of unduly preventing or lessening competition in the purchase, barter and sale of the articles in question, being articles of trade and commerce, and for the purpose of unreasonably enhancing the price of the commodities, and are contrary to the provisions of the Criminal Code, and null and void. Action dismissed with costs to Wampole & Co.

The Industrial Canada Labor Bulletin is being published in London, England.

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.

Application has been made for the incorporation of the Ambursen Hydraulic Construction Co., of Canada, Limited, to carry on the Canadian business of the Ambursen Hydraulic Construction Co., of Boston, Mass., builders of Ambursen concrete steel dams. The capital of the Canadian company will be \$100,000; the provisional directors are Chas. H. Eglee, and W. H. Aureh, Boston, Mass., David S. Walker, R. S. Lea and Earnshaw Bradley, of Montreal. Mr. Bradley, who has been the energetic representative of the American company, will be secretary-treasurer of the Canadian company.

The Hamilton Stamp & Stencil Works, and the Hamilton Tool & Optical Co., Hamilton, Ont., are now associated companies. H. Barnard is president of the two companies. Of the Stamp & Stencil Works B. Broughton is vice-president and G. Goummer, secretary-treasurer. Of the Tool & Optical Co. A. Hutton is vice-president and B. Broughton, secretary-treasurer.

The Ostler File Co., Hamilton, Ont., have been compelled to enlarge their works. They are building new premises on the corner of Bay and Strachan Streets. These will be ready for occupation about September 1.

The Temiskaming & Northern Ontario Railroad Co. have decided to award their contract for 85,000 tons of 80-pound steel rails to the Dominion Iron & Steel Co. and the Algoma Iron & Steel Co., both Canadian corporations, and, although the final details have not yet been arranged, it is understood that the tonnage will be allotted equally between these two big concerns, so that it is no longer possible for the United States Steel Corporation or any of the other big mills in the United States to secure any part of the contract for the 1907 rail requirements of this road. It is believed, however, that the Steel Corporation, the Pennsylvania Steel Co. or the Lackawanna Steel Co. will obtain the contracts for the necessary fastenings and the 1,545,000 ties needed by the Temiskaming road in the laying of their new track. Several electric traction lines, lumber and mining companies, frog, crossing and switch manufacturers have taken an additional lot of standard steel rails, aggregating 12,000 tons, for delivery before the end of the current year, and further contracts for fully 50,000 tons of rails for 1907 delivery will be placed to-day or to-morrow with the leading mills by big steam roads, which have not yet covered all their requirements for next year.

The new steel steamer Ungava, for the Montreal Transportation Co., for lake and river navigation, was launched at Collingwood, Ont., last week. She is 206 feet over all by 41 feet beam, by 19 feet deep, and will carry 85,000 bushels of wheat. The vessel was built by the Collingwood Shipbuilding Co. She has a double bottom, and is fitted with up-to-date appliances for the trade she will engage in.

The ratepayers of Ingersoll, Ont., voted favorably on a by-law to grant T. Water-

house & Co. a loan of \$20,000 to establish a knitting factory there.

The cheese box factory of Messrs. Jones, Jackson & Mason, Eldorado, Ont., was damaged June 25 by the explosion of a boiler.

The department of Public Works, Ottawa, invite tenders up to July 9, for the construction of a public building at North Bay, Ont.

The congregation of the Bathurst Street Methodist Church, Toronto, will erect a Sunday School building at a cost of about \$20,000.

The premises of the Warren Bituminous Paving Co., Toronto, were damaged by fire June 17. Loss about \$3,500.

The Jones Co., Toronto, manufacturers of office fittings will establish a branch factory at Winnipeg, Man.

The Laurentide Mica Co., Ottawa, have purchased a 30 h.p. boiler of the locomotive type from the Jenckes Machine Co., Sherbrooke, Que.

The Middlesex County Council will build a new bridge at Sylvan, Ont., at a cost of about \$10,000.

Chas. Mills, Hamilton, Ont., will erect a new Gospel Tabernacle, at a cost of about \$30,000.

The Ontario Public Works Department, Toronto, invite tenders for additions to the chemical building and greenhouses at the Guelph Agricultural College, Guelph, Ont.

The Central Presbyterian Church, Hamilton, Ont., was destroyed by fire June 20. Loss about \$50,000.

The Trans-Niagara Bridge Co., Toronto, have been organized with a capital of \$1,000,000 to construct a new bridge across the Niagara River for railway and general traffic purposes. The directors include Frederic Nicholls, H. G. Nicholls and Sir Henry M. Pellatt, Toronto.

The Great Lakes Portland Cement Co., Port Colborne, Ont., have been incorporated with a capital of \$1,000,000, to manufacture cement, etc.

The Farrar Transportation Co., Collingwood, Ont., will build a new steamer having a capacity of 8,000 tons.

The ratepayers of Toronto will vote on a by-law to expend \$200,000 on straightening the River Don and other improvements.

The Canadian Transit Co., Toronto, have been incorporated with a capital of \$50,000, to manufacture gas, petroleum, etc. The provisional directors include J. F. Holliss, J. Watt, and T. H. Wilson, Toronto.

The Chesterfield Lumber Co., Richard's Landing, Ont., have been incorporated with a capital of \$100,000, to manufacture lumber, timber, etc. The provisional directors include P. Chesterfield, J. Gibbs and A. Littleton, Richard's Landing, Ont.

The Canadian Wood Products, Toronto, have been incorporated with a capital of \$40,000, to manufacture lumber, timber, etc. The provisional directors include R. M.

Bertram, M. Bertram and A. W. Holmstead, Toronto.

The Central Ontario Granite & Marble Co., Trenton, Ont., have been incorporated with a capital of \$300,000, to manufacture granite, marble, etc. The provisional directors include C. E. Ritchie, Akron, Ohio, H. J. Wright and W. Gilchrist, Toronto.

The Portland Cast Stone Co., Guelph, Ont., have been incorporated with a capital of \$40,000, to manufacture cement, lime, plaster, etc. The provisional directors include W. F. Colwill, T. J. Colwill and W. W. P. Colwill, Guelph, Ont.

The Gallagher Iron Mining Co., Sault Ste. Marie, Ont., have been incorporated with a capital of \$500,000, to carry on a mining, milling and reduction business. The provisional directors include F. H. Hughes, R. J. Gibson, Sault Ste. Marie, Ont., and J. J. Gallagher, Sault Ste. Marie, Mich.

The Peterborough & Chemong Auto-Car Co., Peterborough, Ont., have been incorporated with a capital of \$5,000, to manufacture auto cars, etc. The provisional directors include T. J. Parker, A. Elliott and B. Lee, Peterborough, Ont.

The Weir Wardrobe Co., Mount Forest, Ont., have been incorporated with a capital of \$100,000, to manufacture furniture, store fittings, etc. The provisional directors include R. Harmer, J. R. Shaw and A. Hutchinson, Toronto.

The North Ontario Reduction & Refining Co., Toronto, have been incorporated with a capital of \$500,000, to carry on a mining, milling and reduction business. The provisional directors include J. A. Young, H. B. Ritchey and J. J. Wright, Toronto.

The Bianchi Zooscope & Zoograph Co., Toronto, have been incorporated with a capital of \$25,000, to manufacture cameras, photograph supplies, etc. The provisional directors include J. Bianchi, J. H. Whitehead and S. C. Wood, Toronto.

The Dominion District Steam Heating Co., Toronto, have been incorporated with a capital of \$100,000, to manufacture gas, electricity, etc. The provisional directors include W. Seccombe, G. E. Bradshaw and H. L. Dunn, Toronto.

The Canadian Wire Screen Mfg. Co., Toronto, have been incorporated with a capital of \$250,000, to manufacture wire, brass goods, wire screen, etc. The provisional directors include G. B. Meadows, F. A. Mansell and A. T. Blackwell, Toronto.

The Canada Spool & Bobbin Co., Walkerton, Ont., have been incorporated with a capital of \$30,000, to manufacture spools, bobbins, novelties in wood, etc. The provisional directors include W. M. Shaw, J. W. Harcourt and J. H. Scott, Walkerton, Ont.

The Rainy River Navigation Co., Kenora, Ont., have been incorporated with a capital of \$40,000, to manufacture vessels, steamships, etc. The provisional directors include G. A. Graham, J. T. Horne, Fort William, Ont., and W. Ross, Kenora, Ont.

The Sasagenaga Mining Co., Cobalt, Ont., have been incorporated with a capital of \$250,000, to carry on a mining, milling and reduction business. The provisional directors include F. P. Gavin, Windsor, Ont., H. H. Lang, Ottawa, and A. J. Young, North Bay, Ont.

The Blanchite Process Paint Co., Toronto, have been incorporated with a capital of \$250,000, to manufacture paints, oils, varnishes, etc. The provisional directors include B. M. Armstrong, J. E. Askwith and A. Haydon, Ottawa.

The Miller Mfg. Co., Toronto, have been incorporated with a capital of \$40,000, to manufacture wearing apparel, etc. The provisional directors include H. Miller, C. A. Graham, and A. C. Jeffries, Toronto.

The Erie Cobalt Silver Mining Co., Toronto, have been incorporated with a capital of \$1,000,000, to carry on a mining, milling and reduction business. The provisional directors include J. H. Jewell, S. A. Singlehurst and H. W. Maw, Toronto.

The Trethewey Silver-Cobalt Mine, Toronto, have been incorporated with a capital of \$1,000,000, to carry on a mining, milling and reduction business. The provisional directors include W. G. Trethewey, W. E. H. Carter and F. W. Strathy, Toronto.

The M. Erb Co., Berlin, Ont., have been incorporated with a capital of \$150,000, to manufacture furniture, mattresses, etc. The provisional directors include M. Erb, A. Erb and E. B. Erb, Berlin, Ont.

The Amalgamated Oil Co., London, Ont., have been incorporated with a capital of \$1,000,000, to carry on a mining, milling and reduction business. The provisional directors include C. B. Keenleyside, B. V. Hole and W. D. Edy, London, Ont.

The trustees of the General Hospital, Toronto, will erect a new hospital at a cost of about \$1,000,000.

Messrs. White, Sons & Co., London, Ont., intend establishing threshing machine works at Fort William, Ont.

The Crandall Cutlery Co., Bradford, Pa., are seeking a location in Western Ontario for the establishment of a branch factory.

The Cosgrave Brewing Co., Toronto, will erect a four-story hotel at a cost of about \$23,000.

The Department of Public Works, Ottawa, invite tenders up to July 10 for the construction of a pier at Cape Cove, Que.

The ratepayers of Hamilton, Ont., will vote on a by-law to grant \$100,000 for a fire station and for equipments for the central stations.

The General Distillery Co., Toronto, will erect a storehouse at a cost of about \$11,000.

A. W. Draper, Toronto, will erect an apartment house at a cost of about \$30,000.

The Robb Engineering Co., Amherst, N.S., are building for the Hamilton Iron & Steel Co., Hamilton, Ont., a 250 h.p. engine for direct connection to Westinghouse generator.

An isolation hospital will be erected at Peterborough, Ont., at a cost of about \$10,000.

An addition will be erected to Huron Street school, Brantford, Ont., at a cost of about \$15,000.

The congregation of Barton Street Methodist church, Hamilton, Ont., will erect a Sunday school building at a cost of about \$12,000.

The Bell Telephone Co., Toronto, will erect a new building at a cost of about \$40,000.

The Para Construction Co., Toronto, have been incorporated with a capital of \$2,000,000,

to construct docks, piers, canals, reservoirs, etc. The provisional directors include J. S. Lovell, W. Bain and E. W. McNeill, Toronto.

Messrs. S. H. and W. H. Edwards, Colborne, Ont., will erect an opera house there.

The Ottawa Electric Co., and the Ottawa Gas Co., Ottawa, have been consolidated.

The Riverdale Club, Toronto, will erect a club house at a cost of about \$8,000.

The premises of the Munro-McIntosh Carriage Co., Alexandria, Ont., were destroyed by fire June 26. Loss about \$40,000.

The transformer station and car barns of the Hamilton, Grimsby & Beamsville Electric Railway Co., Grimsby, Ont., were destroyed by lightning, June 29. Loss about \$20,000.

The Standard Bank of Canada are establishing a branch in Lindsay, Ont.

The Superior Cement Co., Orangeville, Ont., have ordered a 200 h.p. Robb-Armstrong engine from the Robb Engineering Co., Amherst, N.S.

The Harriston Furniture Mfg. Co., Harriston, Ont., have been incorporated with a capital of \$25,000, to manufacture furniture, carpet, machinery, etc. The provisional directors include G. Leighton, J. M. McKay, and W. C. Chambers, Harriston, Ont.

The Blakeney Woolen Co., Blakeney, Ont., have been incorporated with a capital of \$40,000, to manufacture woolen goods, etc. The provisional directors include J. Coxford, J. G. Forgie, Pembroke, Ont., and J. E. H. Barnet, Renfrew, Ont.

The Renfrew Brick & Tile Mfg. Co., Renfrew, Ont., have been incorporated with a capital of \$20,000, to manufacture brick, tile, etc. The provisional directors include T. Henderson, J. E. H. Barnet, and A. Francis, Renfrew, Ont.

The Seaforth Woolen Mills, Seaforth, Ont., have been incorporated with a capital of \$50,000, to manufacture yarns, cloth, etc. The provisional directors include J. Greig, D. M. Mitchell and G. W. Close, Seaforth, Ont.

The Interocean Mfg. Co., Toronto, have been incorporated with a capital of \$40,000, to manufacture leather, boots, shoes, etc. The provisional directors include J. R. L. Starr, T. E. Wilson and A. A. Rogers, Toronto.

Railway Supplies, Limited, Toronto, have been incorporated with a capital of \$250,000, to manufacture rails, rail joints, angle bars, etc. The provisional directors include W. Bain, R. Gowans and E. W. McNeill, Toronto.

The Oil Well Supply Co., Petrolea, Ont., have been incorporated with a capital of \$100,000, to manufacture drilling tools, oil, gas, etc. The provisional directors include J. Joyce, J. A. MacKenzie and T. V. Joyce, Petrolea, Ont.

The Canadian McVicker Engine Co., Galt, Ont., have been incorporated with a capital of \$100,000, to manufacture gas and gasoline engines, etc. The provisional directors include J. R. Golden, Galt, Ont., C. L. Weisner, Toronto, and T. J. Lannen, Buffalo, N.Y.

The Superior Oil Co., Sault Ste. Marie, Ont., have been incorporated with a capital of \$500,000, to manufacture oil, soap, etc. The provisional directors include E. L. Stewart, H. C. Hamilton, and A. Elliott, Sault Ste. Marie, Ont.

The A. R. Williams Machinery Co., Toronto, purpose establishing a branch warehouse at Vancouver, B.C.

The Turrett Crown, Limited, Toronto, have been incorporated with a capital of \$125,000, to build vessels, steamers, etc. The provisional directors include A. W. MacKenzie, D. B. Hanna and L. W. Mitchell, Toronto.

The Schofield-Holden Machine Co., Toronto, have been incorporated with a capital of \$40,000, to manufacture machinery, vessels, steamships, etc. The provisional directors include R. Schofield, A. P. Holden and M. H. Anderson, Toronto.

The Manufacturers Natural Gas Co., Hamilton Ont., have been incorporated with a capital of \$200,000, to manufacture gas, etc. The provisional directors include J. Milne, W. Southam, and W. G. Walton, Hamilton, Ont.

The Benson Johnston Co., Stratford, Ont., have been incorporated with a capital of \$40,000, to manufacture furniture, picture frames, stationery, etc. The provisional directors include B. E. Johnston, H. B. Andrews and F. Johnston, Stratford, Ont.

Messrs. Geo. H. Lees & Co., Hamilton, Ont., have been incorporated with a capital of \$100,000, to manufacture watches, jewelry, etc. The provisional directors include W. Lees, G. H. Lees and S. H. Lees, Hamilton, Ont.

The West Ontario Oil Co., Petrolea, Ont., have been incorporated with a capital of \$100,000, to manufacture petroleum, oil, etc. The provisional directors include J. W. Craise, A. McIntyre and J. M. Garrison, Petrolea, Ont.

The Giant Silver Nugget Mines, Haileybury, Ont., have been incorporated with a capital of \$1,000,000, to carry on mining, milling and reduction business. The provisional directors include J. D. Spence, J. C. MacMurchy and G. A. Walker, Toronto.

The Composite Brick Co., Parry Sound, Ont., have been incorporated with a capital of \$20,000, to manufacture brick, tiles, sewer pipes, etc. The provisional directors include C. A. Phillip, J. Calder and G. G. Gladman, Parry Sound, Ont.

The Welland Concrete Co., Welland, Ont., have been incorporated with a capital of \$20,000, to manufacture brick, cement, etc. The provisional directors include B. J. McCormick, S. P. Townsend, and N. W. Porter, Welland, Ont.

A chapel will be erected in Cote des Neiges cemetery, Montreal, at a cost of about \$12,000.

A waterworks system will be installed at Mont Joli, Que., by the Mont Joli Water Co., at a cost of about \$50,000.

Messrs. Munderloh & Co., Montreal, will erect a four story building at a cost of about \$20,000.

Messrs. Ames-Holden, Limited, Montreal, have been incorporated with a capital of \$1,500,000, to manufacture leather, rubber, boots, shoes, etc. The charter members include J. Redmond, H. B. Ames and A. R. Holden, Montreal.

The Leach Piano Co., Montreal, have been incorporated with a capital of \$145,000, to manufacture pianos, organs, gramophones, etc. The charter members include W. H.

Leach, A. L. Dupont and E. F. Kerr, Montreal.

The Canadian Newcomb Motor Co., Montreal, have been incorporated with a capital of \$600,000 to manufacture automobiles, boats, machinery, etc. The charter members include W. F. Borland, Westmount, Que., D. McDonald and W. J. White, Montreal.

The American Tobacco Co., Montreal, have placed an order with the Robb Engineering Co., Amherst, N.S., for a 125 h.p. Corliss engine for their new factory there.

The Fairbanks Morse Co., Chicago, Ill., recently placed an order with the Jencks Machine Co., Sherbrooke, Que., for a 115 h.p. vertical tubular boiler 60 inches diameter by 14 feet high. The boiler was shipped to Sault Ste. Marie.

The grist mill of Eugene Brouillette, Rochelle, Que., was destroyed by fire June 15.

W. Bentham, Montreal, will erect an apartment house 145x120 feet, at a cost of about \$80,000.

The Northern Electric Co., Montreal, will erect a building at a cost of about \$13,000.

The Montreal Street Railway Co., Montreal, will erect a power house at a cost of about \$95,000. They also intend erecting two other power houses.

The premises of the Nicolet Cathedral and the Convent of the Sisters of Assumption, Nicolet, Que., were destroyed by fire June 21. Loss about \$400,000.

The congregation of the Emmanuel Congregational Church, Montreal, will erect a church building at a cost of about \$77,000.

The Robb Engineering Co., Amherst, N.S., have received an order from Professor Jas. Robertson for six 150 h.p. boilers for the Macdonald College at St. Anne de Bellevue, Que.

Ecole Polytechnique, Montreal, will erect an addition to his premises 96x96 feet, at a cost of about \$33,000.

The Dominion Textile Co., Montreal, will erect a seven story factory at a cost of about \$50,000.

The Smart Bag Co., Montreal, will erect a factory 125x75 feet, at a cost of about \$50,000.

S. Page, Granby, Que., will erect an hotel at a cost of about \$35,000.

The Canadian Pacific Railway Co., Montreal, will erect a station at Port Arthur, Ont.

The Grand Trunk Railway Co., Montreal, will erect a ten story building there at a cost of about \$250,000.

The Grand Trunk Pacific Terminal Elevator Co., Montreal, have been incorporated with a capital of \$5,000,000, to carry on a warehousing and milling business. The charter members include C. M. Hays, W. Wainwright and A. P. Stuart, Montreal.

Messrs. Evans Bros., Montreal, have been incorporated with a capital of \$50,000, to manufacture coal, wood, etc. The charter members include W. H. Evans, J. H. Cayford and J. E. Cribb, Montreal.

The Script Weight Recorder Mfg. Co., Joliette, Que., have been incorporated with a capital of \$49,000, to manufacture scales, recording apparatuses, etc. The charter

members include S. P. Champoux, J. M. Tellier and L. V. Labelle, Joliette, Que.

Messrs. Herron-Leblanc, Montreal, have been incorporated with a capital of \$90,000 to manufacture drugs, spices, etc. The charter members include J. Le Blanc, R. S. Herron, W. H. Johnson, Montreal.

La Compagnie Chimique Kinot, Montreal, have been incorporated with a capital of \$20,000, to manufacture chemicals, drugs, etc. The charter members include A. Chevalier, L. J. Berard and V. Morin, Montreal.

The Magdalen Islands Development Co., Montreal, have been incorporated with a capital of \$2,000,000, to manufacture gas, electricity, etc. The charter members include C. E. Archibald, J. N. Pyke and S. A. Finley, Montreal.

The Improved Shuttle Co., Montreal, have been incorporated with a capital of \$30,000, to manufacture shuttles, looms, etc. The provisional directors include H. D. Metcalfe, C. N. Blakely and F. C. Saunders, Montreal.

Narcisse Lord, St. Johns, Que., will erect a large three story building 92x40 feet at that place.

The wood working factory of J. H. Hooman, Upper Musquodoboit, N.S., was destroyed by fire June 16. It will be rebuilt.

An addition will be erected to the Union Bank of Halifax building, Halifax, N.S.

The Dominion Iron & Steel Co., Sydney, N.S., have secured the contract for 50,000 tons of 80 pound rails from Messrs. Mackenzie & Mann, for their railway system east and west. They have also received an order from the Grand Trunk Pacific Railway Co., Montreal, for 150,000 tons of steel rails.

The city council, Halifax, N.S., voted a bonus of \$10,000 a year to the Brandram-Henderson Co., and exemption from local tax for ten years, and agree not to levy taxation for a second term of ten years in excess of \$1,500 per annum, and to supply water to the company at the minimum rate of 7½ cents per 1,000 gallons, provided the company will establish lead reduction works in Nova Scotia.

The Halifax School Board, Halifax, N.S., will erect a new high school at a cost of about \$35,000.

F. G. Zwicker, Halifax, N.S., will erect a new building at a cost of about \$7,000.

The Eudist Fathers, Halifax, N.S., will erect a chapel and annex at a cost of about \$40,000.

C. H. Labillois, Fredericton, N.B., will erect a steel bridge across the St. John River at Hawksbaw, N.B., at a cost of about \$75,000.

The Council, Fredericton, N.B., will purchase a boiler from the Robb Engineering Co., Amherst, N.S., and a 100 h.p. engine from Goldie & McCulloch, Galt, Ont.

G. Green, Carleton, N.B., will erect a saw-mill at that place.

The New Brunswick Telephone Co., Fredericton, N.B., will improve and extend their plant at a cost of about \$100,000.

A school building will be erected at Sussex, N.B., at a cost of about \$20,000.

The Fredericton Board of Education will erect a school building at Belleisle Creek, N.B. at a cost of about \$5,000.

Messrs. Osler, Hammond & Nanton, Winnipeg, Man., will erect an office building there at a cost of about \$200,000.

J. Burrige, Winnipeg, Man., will erect an apartment house at a cost of about \$26,000.

The Modern Laundry Co., Winnipeg, Man., will erect an addition to their building at a cost of about \$25,000.

The Brandon, Saskatchewan & Hudson Bay Railway Co., Brandon, Man., will erect a new station to cost about \$30,000, at that place.

The congregation of St. Giles' Presbyterian Church, Winnipeg, Man., will erect a new edifice at a cost of about \$30,000.

The J. D. McArthur Co., Winnipeg, Man., have been incorporated with a capital of \$1,000,000, to carry on a constructing and contracting business, and to manufacture lumber, timber, metals, etc. The provisional directors include J. D. McArthur, D. F. McArthur, and B. J. McLeod, Winnipeg.

Messrs. Eakins & Griffin, Shoal Lake, Man., have been incorporated with a capital of \$60,000, to manufacture furniture, boots, shoes, etc. The provisional directors include J. T. Haig, Winnipeg, Man., W. J. Eakins and W. J. Griffin, Shoal Lake, Man.

The Meisel Mfg. Co., Winnipeg, Man., have been incorporated with a capital of \$250,000, to manufacture machinery, etc. The provisional directors include R. P. Roblin, R. McKenzie, Winnipeg, and R. M. Meisel, Port Huron, Mich.

The Hebrew Echo Publishing & Printing Co., Winnipeg, Man., have been incorporated with a capital of \$2,000, to carry on a publishing and printing business. The provisional directors include M. Haid, L. Goodman and M. Wadlinger, Winnipeg.

Northern Constructions, Limited, Winnipeg, Man., have been incorporated with a capital of \$150,000 to carry on a contracting and constructing business. The provisional directors include E. S. Estlin, G. W. Jones and J. J. Borebank, Winnipeg, Man.

Messrs. Turner, Curran & Co., Winnipeg, Man., have been incorporated with a capital of \$40,000, to manufacture sewing machines, musical instruments, etc. The provisional directors include P. B. C. Turner, W. T. Curran and J. H. Leech, Winnipeg, Man.

Messrs. Brown & Rutherford, Winnipeg, Man., will erect an addition, 102x20 feet, to their factory at that place.

J. E. Pepper, Swan Lake, Man., will erect a large addition to his hotel there.

Winnipeg, Man., is to have a new V.M.C.A. building at a cost of about \$60,000.

The ratepayers of Winnipeg, Man., voted favorably on a by-law to establish an electrical power plant at a cost of about \$3,500,000, and to expend \$200,000 for school extension.

The Western Systems Co., Winnipeg, Man., will establish a large plant for the manufacture of loose-leaf ledgers, etc. J. Mackenzie and J. E. Roberts, Winnipeg, are interested.

The Canadian Investor Co., Winnipeg, Man., have been incorporated with a capital of \$20,000 to carry on a printing and publishing business. The provisional directors include H. S. Pringle, J. O. Dunford and D. E. MacLean, Winnipeg, Man.

The Souris Construction Co., Souris, Man., have been incorporated with a capital of

\$10,000, to carry on a contracting and constructing business. The provisional directors include F. W. Downs, T. L. Arnett and J. H. Arnett, Souris, Man.

The Canadian Star Publishing Co., Winnipeg, Man., have been incorporated with a capital of \$10,000, to carry on a printing and publishing business. The provisional directors include W. Lisowey, W. Rutko and M. Sloboda, Winnipeg, Man.

The Manitoba Scotsman Co., Winnipeg, Man., have been incorporated with a capital of \$25,000, to manufacture paper, stamps, stencils, etc. The provisional directors include J. P. Robertson, H. Sandison and H. S. Paterson, Winnipeg.

The Kelly Hardware Co., Winnipeg, Man., have been incorporated with a capital of \$15,000, to manufacture hardware, machinery, etc. The provisional directors include H. E. Kelly, G. F. Williamson, Brandon, Man., W. L. Garland, Winnipeg, Man.

Messrs. McLean & Grisdale, Winnipeg, Man., have been incorporated with a capital of \$20,000, to manufacture lime, brick, cement, etc. The provisional directors include D. McLean, R. C. Grisdale and R. A. C. Manning, Winnipeg, Man.

The Western General Electric Co., Red Deer, Alta., are enlarging their electric lighting plant and have placed an order with the Robb Engineering Co., Amherst, N.S., for a 250 h.p. compound Corliss engine and Robb-Mumford boiler.

The congregation of St. Paul's Presbyterian Church, Prince Albert, Man., will erect a church building at a cost of about \$25,000.

The congregation of Holy Trinity church, Strathcona, Alta., will erect a church building at a cost of about \$8,000.

An electric light system will be installed at Cardston, Alta., at a cost of about \$15,000.

The Jenckes Machine Co., Sherbrooke, Que., have recently shipped to the Alberta Portland Cement Co., Calgary, Alta., a complete hoisting plant consisting of 40 h.p. locomotive boiler and 10x7 hoisting engine, together with hoisting rope, steam piping, etc. The order was placed with the company's office at Rossland, B.C.

The Calgary Milling Co., Calgary, Alta., will erect a mill and elevator at New Westminster, B.C.

The Canadian Pacific Railway Co. will build a steel bridge at Lethbridge, Alta., at a cost of about \$1,000,000.

Regina, Sask., is to have a new Masonic hall at a cost of about \$50,000.

The Hudson Bay Co., Lethbridge, Alta., will erect a new building at that place.

The Builders' Supply & Construction Co., Calgary, Alta., have purchased a plant in Didsbury, Alta., and will manufacture cement blocks, brick, tile, etc.

The Moose Jaw Machine Works, Moose Jaw, Sask., have been established with a capital of \$50,000. They will erect an addition to their plant at that place.

The Canadian Pacific Railway Co., Montreal, will erect a roundhouse and repair shops at Arcola, Sask.

The Consolidated Mining & Smelting Co. of Canada have ordered from the Jenckes Machine Co., Sherbrooke, Que., for use at the Centre Star Mine, Rossland, B.C., a 36 inch by 24 inch Farrel bacon ore crusher, of

which the capacity is 1,000 tons of six inches cube every ten hours. The shipping weight is 60,000 pounds.

The Brackman-Ker Milling Co., Victoria, B.C., will erect grain elevators at Bittern Lake, Lamont and St. Albert, Alta.

Messrs. W. P. Tierney & Co., Nelson, B.C., have been awarded the contract for construction of 50 miles of railway from Grand Forks to Franklin City and the McKinley Mine, B.C.

The Brown Alaska Mining Co., Vancouver, B.C., have just received from the Jenckes Machine Co., Sherbrooke, Que., a 100 h.p. tubular boiler, the order for same having been placed with the Vancouver, B.C., office of the company.

The Trail electric light plant, Rossland, B.C., was destroyed by fire June 12. Loss about \$18,000.

The ratepayers of Kamloops, B.C., will vote on a by-law to raise \$15,000 to erect a new public school.

The Rossland, B.C., office of the Jenckes Machine Co., Sherbrooke, Que., have closed a contract with the Dominion Copper Co., Boundary Falls, B.C., for one of their 42x30 Farrel-Bacon ore crushers also for a 16 inch by 10 inch crusher of the same pattern. The capacity of the larger machine is 1,500 ton of six inches cube in a day of ten hours, and the shipping weight is 125,000 pounds. It is the largest pattern jaw crusher so far built anywhere. Several of these crushers have been put in use by the Granby Smelter of Phoenix, B.C., within the past three years.

The premises of the Yale Columbia Lumber Co., Nakusp, B.C., were destroyed by fire June 14. Loss about \$25,000.

Messrs. Pither & Leiser, Victoria, B.C., will erect a four story business block at a cost of about \$50,000.

A library building will be erected at Cranbrook B.C., at a cost of about \$15,000.

HAVE NOW BRANCH IN CANADA.

The Weber Steel Concrete Chimney Co., Chicago, Ill., have established a Canadian branch in Toronto. This company had done some business in Canada and had been so impressed with the prospects for them here that C. P. Woodworth, who has represented them for several years was appointed Canadian sales manager with offices at 116 Home Life Building, Toronto. Several orders have already been secured by Mr. Weber, the largest being for a chimney in Montreal for the American Tobacco Co., the order coming through the general contractors, the Dominion Engineering & Construction Co., Montreal.

PATENT FIRMS AMALGAMATE.

At the first of the month a new firm, Fetherstonhaugh, Denison & Blackmore, was formed through the amalgamation of Fetherstonhaugh & Denison, Toronto, and Fetherstonhaugh & Blackmore, Toronto. The Toronto office of the company is now in the Star Building, 18-20 King Street West, while the Montreal branch will continue in the Liverpool, London & Globe Bldg. The firm have also opened an office at 193 Sparks Street, under the management of Mr. J. Forward. The branch will facilitate the handling of the firms' clients' business.

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 Last West.—A 48-page, superbly illustrated, booklet dealing with the agricultural, industrial and commercial opportunities of Edmonton. The book is designed to be of greatest service to anyone desiring authoritative information regarding this wonderful centre of what is aptly termed "The Last West," on account of it being the last country to be opened up for settlement in the great westward march of civilization. For copy write to secretary Board of Trade, Edmonton, Alta.

The report of the Department of Colonization of Mines and Fisheries of the Province of Quebec, for the year 1905, has been issued. Mr. J. Obalski, Superintendent of Mines, states that the production exceeded that of 1904 by about one million dollars. The discoveries at Chibogamoo and Cobalt have greatly encouraged prospectors, and numerous applications for prospecting licenses in the northern districts of the province between Lake Temiskaming and Lake Mistassini are being received. Mr. Obalski spent some time at the Liege Exhibition as commissioner for the Dominion Government, and was active in making Canada's mineral wealth known in Europe.

A Guide to Minerals and Rocks by Prof. W. G. Miller, Provincial Geologist of Ontario. It is a new book on the study of minerals. This little work comes out at a very opportune moment, having been written for the instruction of those who have but a rudimentary knowledge of rocks, minerals and geological phenomena. Professor Miller occupied the chair of geology in the School of Mining at Queen's and having had a long experience in teaching, is enabled to handle the somewhat difficult subject he has chosen, in a lucid manner.

For the fifth year Mr. J. Castell Hopkins has issued the "Canadian Annual Review of Public Affairs." The volume deals interestingly and comprehensively with the leading events of the year in Canada and the British Empire. Dominion political affairs, the general elections in Ontario, the provincial elections in Alberta and Saskatchewan, Dominion and Provincial finances, our relations with the Empire and with the United States, the transportation interests of Canada, Canadian educational interests, literature, journalism, finance, insurance, and industrial conditions are among the subjects treated in the volume.

The Joseph Dixon Crucible Co., Jersey City, N.J., have sent us a little pamphlet entitled "Unions for Steam Pipes," being an illustrated description of the several varieties of unions with valuable suggestions concerning same by the well-known writer on such matters, Mr. W. H. Wakeman, an expert steam engineer and author of well known books on steam engineering. This pamphlet is a reprint from Dixon's house organ Graphite, and they would be glad to send a copy free of charge to any engineer or steam fitter, or any one interested in steam

pipes, by addressing the Joseph Dixon Crucible Co. as above.

The Methodist Magazine and Review for July begins its sixty-fourth volume with one of the best numbers yet issued. Its illuminated cover shows an Indian, in a red Hudson's Bay blanket, watching the invasion of the railway, "the white man's trail." It contains five articles describing Canada, its resources and its outlook, from Sable Island to far Vancouver, illustrated with 68 engravings. "The Switzerland of Canada," "The New West," "Early Days of Canada," and stirring Canadian poems give a thoroughly patriotic character. Current topics are illustrated with a number of vigorous cartoons. Toronto: William Briggs, \$2.00 a year.

Steam Turbines and Generators.—Bulletin 1504, a thirty-two page illustrated description of Allis-Chalmers steam turbines and generators.—By Allis-Chalmers-Bullock, Limited, Montreal.

Sockets and Receptacles.—Section 6 of the C. G. E. Supply Catalogue, containing 32 pages devoted to descriptions of sockets, receptacles, etc.—By the Canadian General Electric Co., Toronto.

Roman Stone.—A 32 page booklet (vest pocket size) devoted to descriptions, illustrations and Roman stone and its use in bank buildings, warehouse, factory offices, houses, etc.—The Roman Stone Co., Toronto.

The Illuminating Engineering.—The first number of a new paper devoted exclusively to lighting in all its phases. This paper should find a wide field among lighting companies, engineers and users.—By the Illuminating Engineering Pub. Co., 25 Broad Street, New York.

Asbestos Products.—A 72-page catalogue full of illustrations, descriptions, price tables, etc., of asbestos products of all descriptions.—The Canadian Asbestos Co., Montreal.

McLachlan Gas & Gasoline Engines.—A 24-page catalogue devoted to the traction, stationary, portable and marine gas and gasoline engines.—By the McLachlan Gasoline Engine Co., Limited, Toronto.

The Murphy Automatic Smokeless Furnace.—A 32-page catalogue on calendered paper showing the Murphy furnaces, their parts in detail and several typical installations.—The Murphy Iron Works, Detroit, Mich.

Fireproof Construction.—A 32-page booklet on calendered paper devoted to fireproof construction and the Kahn trussed bar, based upon practical tests as set forth in various official reports, including comments on the San Francisco disaster.—The Trussed Concrete Steel Co., Detroit and Toronto.

Reinforced Concrete.—A 32-page booklet comprising advance sheets of a work on reinforced concrete, this part being devoted to practical calculation and application of reinforced concrete.—The Trussed Concrete Steel Co., Detroit and Toronto.

Hot Blast Heating Apparatus.—A 20-page booklet giving a brief description of the apparatus and system used in hot blast heating, including argument showing advantages of this system.—Sheldons, Limited, Galt, Ont.

Iron and Steel Works Equipment.—A 16-page booklet devoted to open-hearth and reheating furnaces, giving illustrated descriptions of various important installations.

Some of these views are 9x6 inches, giving much detail.—The Wellman-Seaver-Morgan Co., Cleveland Ohio.

Jeffrey Wire Rope Conveyors for Pulp Mills.—A four page illustrated pamphlet giving splendid views of pulp mill conveyors.—The Jeffrey Mfg. Co., Columbus, Ohio.

PERSONALS.

The firm of Wayland, Williams & Dadson, 321 St. James Street, agents for the Campbell Suction Gas Plants, Montreal, have dissolved, Mr. Williams retiring. The business will be carried on under the present style by Mr. A. T. Dadson.

Mr. F. A. Paulin, late Chicago manager for the India Rubber Co., New Brunswick, N.J., is now in charge of the tire department of the Canadian Rubber Co. of Montreal. Mr. Paulin is a Canadian by birth, having spent his early years in the carriage trade in Ontario. He has had extended experience during the past 12 years throughout the larger cities in the United States.

T. J. Best, for many years connected with Warden King & Son, Montreal, has secured a half interest in the National Tool & Axe Works, Three Rivers, Que.

CANADIAN ELECTRICAL ASSOCIATION CONVENTION.

SOME IMPRESSIONS—NOT A REPORT.

On June 19, 20 and 21, the Canadian Electrical Association held its sixteenth convention at Niagara Falls, N.Y. The attendance was hardly as large as usual. While the usual attention was given to the reading and discussion of papers on technical subjects the central feature of the convention was the visit of the delegates to the works of the electrical companies at the Falls.

While the electricians could appreciate, as the ordinary visitor could not, the mechanical perfection of the equipment of these plants, the outstanding impression on the minds of most of these experts was the same as that given the laymen—a realization of what this development means to industry in the Niagara peninsula of Canada. The view was freely expressed that in a very short time Western Ontario would be cob-webbed with electric railways while the number of manufacturers in such towns as Niagara, Welland and St. Catharines would be doubled in a very short time.

A visit to Niagara Falls, Ont., by several delegates drew out the fact that that city is getting a 24-hour service from the Ontario Power Co., at \$10 per h.p. This gives the city an exceptional inducement to hold out to manufacturers.

The election of officers was, next to the cake-walk, the liveliest incident of the convention. R. G. Black, of the Toronto Electric Light Co., was elected president; R. S. Kelsch, the Montreal consulting expert, first vice-president and W. R. Ryerson, of Niagara Falls, second vice-president. Then, when the election of a secretary was due the interest might also be described as "high tension." C. H. Mortimer, of the Electrical News, who filled the position acceptably for many years, had announced his decision to retire and suggested as his successor, T. S. Young, who had been doing the work for some months. A strong canvass was made, however, for Arch. W. Smith, and the outcome was looked

for eagerly by all interested. The counting of the ballots showed Mr. Young the winner.

There was a good attendance of supply men present, the following companies being represented:

Allis-Chalmers-Bullock, Limited, Montreal.
The Canadian Westinghouse Co., Hamilton.
The Canadian General Electric Co., Toronto.

The Robb Engineering Co., Montreal.
Berlin Electrical Mfg. Co., Berlin, Ont.
New York Insulated Wire Co., New York.
National Electric Lamp Co., Cleveland Ohio.

Packard Electric Co., St. Catharines.
Sunbeam Incandescent Lamp Co., St. Catharines.

Mechanics' Supply Co., Quebec.
R. E. T. Pringle, Montreal.
Oneida Community, Limited, Niagara Falls, Ont.

Murphy Iron Works, Toronto.
Conduits, Limited, Toronto.
J. A. Dawson & Co., Montreal.
The Wire & Cable Co., Montreal.
The Hamilton Anchor Co., Hamilton.
Duncan Electric Mfg. Co., Montreal.
Philadelphia Electrical & Mfg. Co., Philadelphia, Pa.

A feature of the convention was "The Register," a twice-a-day publication gotten out by Allis-Chalmers-Bullock, Limited, Montreal, containing a list of the delegates, their business and their number, making identification easy. This firm also had a suite of rooms in the hotel building in which they exhibited a number of beautiful framed bromide enlargements of some of the machinery which they have already built and installed during their short career. The most noticeable was the powerhouse of the Northern Aluminum Co., Limited, at Shawinigan Falls, Que., containing the largest inter-polar generators ever built.

The Pittsburg Transformer Co., Pittsburgh, Pa., was represented by H. G. Steele and had in the convention hotel a fine display of their transformers.

The Canadian Westinghouse Co., Hamilton, Ont., made the feature of their display the Nernst lamp. The details of this lamp were examined carefully by the delegates and it is safe to say a good impetus toward popularity was given the lamp.

The souvenir man was E. Irving, of the Sunbeam Incandescent Lamp Co., whose handsome leather pocket books were at a premium. Mr. Irving, associated with Alister MacLean, of the Robb Engineering Co., and H. P. Kimball, of New York, were the judges of the cake-walk, which passed off in lively fashion.

R. B. Hamilton, of the Packard Electric Co., was chairman of the local entertainment committee—so it need not be mentioned that there was "somethin' doin'" all the time.

MAKING GRAPHITE IN CANADA.

The International Acheson Graphite Co., who established works at Niagara Falls, N.Y., five years or so ago, and who started a Canadian branch at Niagara Falls, Ont., in March this year, are already finding a good market here. This firm manufacture their own graphite from anthracite coal and as it is guaranteed 93 per cent. pure carbon, it is popular for various purposes, particularly for the manufacture of high class paints.

MACHINERY AND ENGINEERING.

A Review of New Machinery, Power Appliances and Factory Equipment of all Kinds.

A GOLDIE & McCULLOCH INSTALLATION.

Canada has no reason to be ashamed of the progress made by her manufacturers of power equipment. Such firms as the Goldie & McCulloch Co., Limited, Galt, Ont., by keeping in close touch with engineering progress the world over, are giving Canadians power users the benefits of the best ideas from all sources.

One of the recent installations by this company in the powerhouse of the Dominion Iron & Steel Co., Sydney, N.S., demonstrates the truth of this. The accompanying illustration shows one of the two vertical engines included in this installation.

The valve motion of these engines is of the Corliss type, similar in construction to the standard for horizontal engines made by this company, with steam actuated dash pots. This style of dash pot enables the engines to be run at a higher rate of speed than is usual with this type of engine. Both high and low pressure cylinders are fitted with separate eccentrics for actuating the steam and exhaust valves, and the cut-off of both cylinders is under the control of the governor. This latter feature is essential to the proper regulation and economy of engines operating on a greatly varying load and is especially desirable in a case where direct driven alternating current generators are to be run in

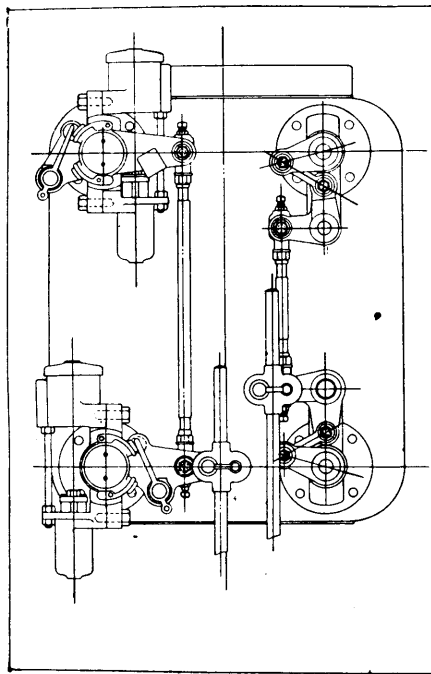


FIG. 2—VALVE GEAR—H.P. CYLINDER.

parallel. If the low pressure cylinder is not so controlled but has a fixed cut-off, the

division of load between the two cylinders will vary with every change of load; the high pressure cylinder carrying the greater proportion of the total at light loads, and vice versa. As above stated, the closing of the admission valves is accomplished by steam pressure. When the valve is opened an extension of the dash pot spindle is pushed into a small steam cylinder against pressure and when released the valve is closed rapidly, giving a sharp cut off. The necessary cushion is effected by an air cylinder placed at the opposite end of the dash pot spindle. The top of this air cylinder is adjustable so that the latch plate arm on the valve spindle can be made to come to rest at its proper place. The steam and exhaust valves are double ported. The valve seats are lapped out and the valves ground to gauge. The edges of the cylinder ports are planed in a special planer. The oiling is effected from a central reservoir with pipes leading to the various places to be oiled.

The diameter of the high pressure cylinder is 21 inches; the low pressure cylinder 42 inches and the stroke 30 inches. The speed is 150 revolutions per minute. The main bearings, which are fitted with removable shells, are 14 inches diameter and 28 inches long. The crank pins are $6\frac{1}{2}$ inches diameter by $8\frac{1}{2}$ inches long. The fly wheel is 12 feet

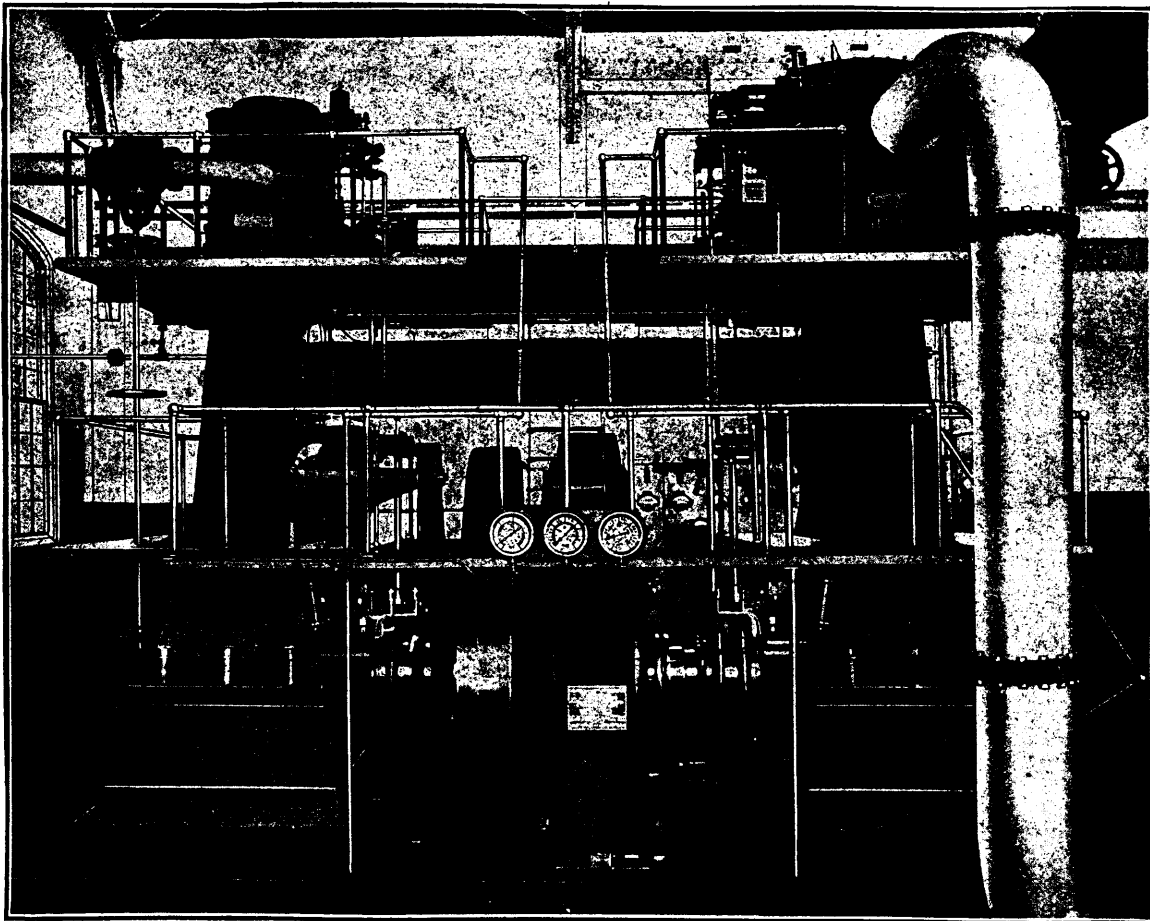


FIG. 1.—PAIR OF VERTICAL ENGINES BUILT BY THE GOLDIE & McCULLOCH COMPANY.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER

diameter and weighs 32,000 pounds. The total height of this engine above the floor line is 19 feet. The governor is of the "Rites" inertia type and is especially adapted for the parallel running of alternators and for other places where extremely close regulation and quick action are necessary.

The engines are direct connected to 60-cycle alternating current generators of 600 k.w. capacity.

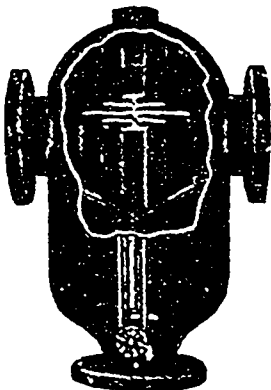
BIG ORDERS FOR MACHINERY.

Since the extension of his display facilities and the inauguration of his present vigorous selling methods, H. W. Petrie, Toronto and Montreal, has built up a steadily-expanding business. Not only is the increase shown in the number of orders received, but many orders now being received are of great magnitude. One order received by Mr. Petrie, from the Canada Foundry Co. totals practically \$50,000, while several other orders almost as valuable have been booked.

STEAM AND OIL SEPARATORS.

The Smart-Turner Machine Co., Limited, Hamilton, Ont., have recently got out a new steam and oil separator for use in connection with the automatic feed pumps and receivers, or steam plants.

It is well known that wet steam is a source of waste. The hot water carried into the pipes with the steam together with the condensation which occurs in the pipes themselves, is thrown away if allowed to pass into the engines, and furthermore, its presence in the cylinder tends to increase the initial condensation, and therefore the steam consumption. It will therefore save fuel to separate this hot water from the steam, and return it to the boiler, or should the boiler foam, the separator keeps the water out of the engine, all of which is caught in the separator. When exhaust steam is used for heating systems when the condensation is returned to the boiler, the separator is an absolute necessity to extract the oil, as it is well known what trouble it will cause if allowed to enter the boiler.

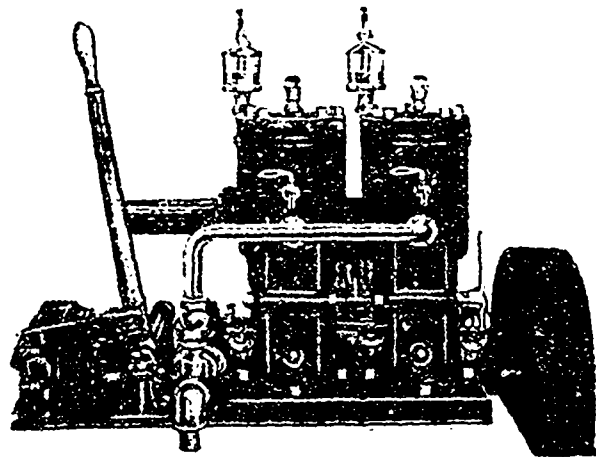


The illustration shows the interior of the separator in which a diaphragm or bridge, partially divides the inner space into an upper and lower chamber. A vertical wall of the same width reaches from the diaphragm to the top of the upper chamber. From the two sides of this wall baffle plates extend towards the inlet and outlet, forming deep pockets, such, that particles of water or oil are deposited where they cannot be again picked up by the steam and carried along, as

is liable with the ordinary separator. The sides of the separator is provided with vertical ribs which extract the last traces of oil or moisture. There are also side openings between the upper and the lower chambers which will take care of any sudden rush of water. The passages are sufficiently large to go away with any back pressure. Any further particulars will be furnished by the manufacturers of the separator.

THE McLACHLAN MARINE ENGINE.

During the last year the McLachlan Gasoline Engine Co., Swansea, Ont., have devoted much attention to improvements to their marine engines. They have now developed one that is likely to receive wide popularity. It is 2 cycle, 3 port; has no valves, no leaks, piston rings, no firing in the crank case, occupies very small space. It can be run at



TWO CYLINDER McLACHLAN MARINE ENGINE.

very slow speed when required and is built to run in units of one or more cylinders, from 3 1/2 h.p. up. The accompanying illustration shows one of the two cylinder engines of this type. Full details of the engine of any power will be sent on request.

AGENCY FOR TANGYE GAS ENGINES.

W. Gillespie, 98 East Front St., Toronto, who for six years was Ontario manager for S. Vessot & Co., has secured the agency for the "Tangye" gas engines and the "Dominion" gas producer plants. Mr. Gillespie is making a strong bid for business in this line and as the sentiment in favor of this class of power is increasing it is to be expected he will find a steady growing demand for his plants.

A director of the Dominion Iron & Steel Co., Sydney, N.S., stated this week that the company have just closed a good contract for steel rails with the Montreal Street Railway at \$33.50, and it is just this kind of business that resulted in the company refusing to accede to the request made by Mr. F. W. Morse, that it should sell rails to the Grand Trunk Pacific at \$29 a ton. The Dominion Iron & Steel Co. have more orders than they can fill at their different plants, and that is the main reason why they are not anxious to close orders at low prices.

WATER SUPPLY FOR ONTARIO TOWNS.

An indication of the prosperity of Ontario is the decision of many municipalities to possess modern water and sewerage systems. A number of plans for both classes of work have recently been forwarded to the office of Dr. C. A. Hodgetts, Secretary of the Provincial Board of Health, who will prepare reports in relation to them after visiting the various municipalities and becoming personally acquainted with the situation. His reports will probably be acted upon by the board at its meeting in July. Under the medical health act all such proposed works or the alteration of existing water or sewerage systems must receive the approval of the board.

Among the plans to be reported upon are those for a water supply system for Chesley, Bruce County, the source of supply of which

will be an artesian well; water supply for Bradford, York County, also from wells, the estimated cost of this system being \$28,000, and water supply and sewerage systems for Picton, Prince Edward County.

New Liskeard is also to have a fine water supply system and an up-to-date sewage disposal scheme. On the Legislative excursion last week Dr. Hodgetts looked into both schemes. He visited Watson's Falls, on the south branch of the Wabis River, four miles from New Liskeard, whence it was first proposed to obtain the town's water supply, but decided that the water there was not good enough for the purpose. It is now proposed to obtain the water from springs at a point in the township of Harris, less than two miles away from the town. These would give about 1,500,000 gallons of water a day. An analysis of the water is now being made, with a view to deciding as to its suitability. In regard to sewerage plans, the town is divided by the Wabis River, and consequently will have to be sewered on both sides.

Haileybury, New Liskeard's rival, is also to have a modern water supply system, either from Lake Temiskaming or from springs.

At the industries commission recently held at Vryheid, Natal, it was stated that thousands of millions of tons of coal equal in quality to any yet mined in Africa existed within a radius of 30 miles of the town.

BUILDING AND CONSTRUCTION.

FIRE RESISTING QUALITIES OF REINFORCED CONCRETE.

By Capt. John Stephen Sewell.

The following extracts give the most excellent conception of the requirements of fire-proof construction and the adaptability of reinforced concrete.

A satisfactory fire-resisting building should be one well adapted to its intended occupancy, in which the first cost, plus the capitalized cost of insurance, maintenance, repairs, and depreciation, shall be a minimum. Under the head of insurance should be included not only the premiums actually paid for insurance, but also an allowance for interruption to business as the result of a fire. If the insurance rates are worked out on a thoroughly scientific basis, they will take account, not only of the probability of a fire, but of the probable cost of adequate repairs in case of fire, or, as the underwriters would probably express it, of the salvage in the structure itself, apart from its contents. It is this latter item, together with its related one, of interruption to business, that seems to have been overlooked in the development of most of the so-called fire-proof types of the present day.

While the various methods of protecting the iron or steel structure were in process of development, the art of reinforcing concrete against tensile stresses by light metal members imbedded at the proper points, was also developing. By this means, the compressive strength of the concrete is used for structural purposes, steel being used only to resist the tension. This results in a considerable saving of steel.

This new composite material is now widely used for fire-resisting buildings. Since even heavy beams, girders, and columns of iron or steel were found to soften and fail under very moderate temperatures in a fire, the light steel members in reinforced concrete are evidently not the primary source of its fire resisting qualities. This quality is primarily derived, therefore, from the concrete, but it is influenced also by the method of reinforcement, as will be shown.

FIRE RESISTIVE BUILDING MATERIAL.

A fire-resisting material, to be ideal for building purposes, should fulfil the following requirements:

1. It should be incombustible.
2. It should undergo no molecular change in a fire that will impair its strength or change its form.
3. It should be possessed of considerable strength, and should be so applied that the expansion and contraction stresses, due to a rapid heating and sudden cooling, will not destroy it or impair its usefulness.
4. It should be a poor conductor of heat. Concrete, made of Portland cement and other suitable materials, may be the best thing to use in many cases. It has given a good account of itself in numerous fires, conflagrations and tests, not only as a covering for steel structure, but, in connection with reinforcing bars, as a vital part of the structure itself.

Portland cement, in setting, takes up a considerable percentage of water, in process of crystallization, to which it owes its great strength. Mixed with sand, broken stone,

broken bricks, clinkers (cinders), or crushed slag and water, and allowed to set, it forms the artificial stone called concrete, which has great crushing strength, and considerable strength against tension or shearing; but irregularities in composition and mixing, stresses due to expansion or shrinkage in setting, etc., make it entirely unreliable under tension and shearing. Its crushing strength is its most reliable and valuable physical quality as a material in itself; it has other valuable characteristics, however, which are quite essential to its successful use as reinforced concrete; it protects imbedded steel from corrosion; it has about the same coefficient of expansion and contraction as steel, under changing temperatures; it holds on to

known that temperatures as high as 1,500° Fahr. are quite common, and there is reason to believe that, in many fires, local foci of heat have existed in which the temperature was considerably higher than 2,000° Fahr. But the process of dehydration proceeds slowly, and consumes a good deal of heat; the concrete both before and after dehydration, is a poor conductor of heat, so that considerable time is required to raise the temperature to the point where dehydration will begin, except on the very surface. Ordinarily, before a reinforced concrete structure as a whole can be seriously involved in the dehydrating process, the fire will have been brought under control, or will have exhausted itself.



View of room below Reinforced Concrete floor in the Commercial and Tanners National Bank, after Baltimore fire. This indicates the remarkable resistance offered by Reinforced Concrete against fire. The upper portion of the building was completely destroyed, the walls and debris falling on this floor.

imbedded steel bars with an astonishing tenacity, so that even smooth round bars imbedded to a very moderate depth in a mass of concrete that has set, will break before pulling out. All of the above qualities, including the compressive strength, are of great importance in reinforced constructions.

It has been pretty well settled that under temperatures of from 800° to 1,000° Fahr., possibly under temperatures as low as 600° Fahr., Portland cement which has set begins to lose its water of crystallization. As long as the necessary temperature is maintained, the loss progresses, until finally all or most of the water will be driven off, and the cement or concrete will have lost most of its strength, in fact, will be ruined.

CONCRETE AND HIGH TEMPERATURES.

While concrete is a very good non-conductor, the above facts might seem to disqualify it for resisting fires, since it is well

Where the heat has been intense, the damage to the concrete will be proportionately great; but the most intense heat almost never prevails except in relatively small spots, so it is quite possible to have a severe fire without serious structural damage in a reinforced concrete building, notwithstanding the low temperature at which dehydration begins. The same, or a similar, line of reasoning will show that limestone does not possess necessarily fatal weakness as an aggregate for fire-resisting concrete in all cases. It also follows from the above reasoning, that, other things being equal, concrete for fire-resisting purposes should be as rich in cement as possible, since this will increase the amount of water of crystallization and consequently the amount of heat consumed in driving it off.

In reinforced concrete, the prevailing practice, until very recently, at any rate, has been to use simple longitudinal bars, either plain

rounds or squares, or some type of deformed bar, placed near the lower side of beam, slabs, etc., and around the periphery of columns, just inside of the outer surfaces. It has been usual, in columns, to bind the longitudinal bars together at intervals, and in the case of girders and beams, and even of floor slabs, so-called stirrups have sometimes been used; these consist of small steel members, either vertical or inclined, traversing the beam from top to bottom; sometimes the stirrups are passed around the longitudinal bars and sometimes they are entirely free. More recently, the stirrups have been developed into well defined web members, rigidly fastened to the longitudinal bars so as to be independent of the concrete for the transmission of stress, and so arranged as to take up the tensile stresses that always exist in the web of any beam or truss along lines which make an angle with the direction of the flange or chord stresses; the latter, in reinforced concrete, are resisted, in the lower part, at least, by the longitudinal bars. In all types some of the longitudinal bars are sometimes bent upwards as they approach the abutments thus assisting in resisting the web stresses, which increase in intensity as the flange stresses decrease.

REPAIRING DAMAGED CONCRETE.

Where simple bars without stirrups or web members are used the structural integrity depends absolutely upon the bond between the bars and the surrounding concrete and upon the unbroken continuity of the concrete itself. If such beams or slabs are exposed to a fire and the concrete is damaged so as to expose the bar or so as to leave a very small thickness of undamaged concrete below it, the only way to make adequate repairs is to tear out and rebuild the damaged beams and slabs, as a whole. In other words, the loss is total, in fact, greater than the original cost, even if collapse does not occur as a result of the fire. Even if the structural integrity is not impaired—and this means a much greater thickness of concrete below the bars than is ever seen in commercial work—the fire-resisting qualities are impaired and in the case of slabs, at any rate, an economical method of fully restoring it is not known—to the writer at least.

An adequate bond between old and new concrete is not attainable. Simply plastering the missing material on to the under side of the slab is but a partial remedy, for the next fire will speedily strip it off. Spreading metal lath under the damaged slab, securing it by numerous expansion bolts and stiffening it properly, then embedding it in cement plaster, would be practically a complete remedy, but it would be expensive and laborious. Wrapping a damaged beam or girder with expanded metal, well secured, and covering it with cement plaster, is relatively less expensive and would be an adequate restoration. Even where expanded metal is used, however, if the bars have been exposed, or nearly exposed, the power to transmit full stress into the concrete above is irrevocably lost, and the expanded metal and cement can not restore the structural integrity; they will, at the utmost, only restore the fire-resisting qualities.

VALUE OF RIGIDLY ATTACHED DIAGONALS.

Where stirrups are used, the case is not quite so desperate, but even in this case, the transmission of stress between stirrups

and bars is absolutely dependent upon the integrity of the concrete which binds them together. Other things being equal, the introduction of stirrups not attached with rigid metallic fastenings to the main bars will not greatly increase the fire resisting qualities of the structure, though they will undoubtedly improve its structural qualities, in the first instance, if they are properly designed and spaced.

If rigidly attached web members are used, however, the case is quite different. They should be fastened to the main bars with rigid metallic fastenings, without the possibility of lost motion, and so securely that the web member will part before the fastening

and hollow tile separators has recently received a great development, as a substitute for floor slabs of reinforced concrete alone. A drawing of such a floor, as designed for the War College, using the Kahn Trussed Bar, and a very heavy tile, is shown herewith.

This floor is 50 per cent. deeper than a reinforced slab would have been. The diagonals are rigidly attached, however, and the bar gives results much better than any attainable before its introduction. This floor was made with a view to resisting fire without other damage than the loss of ordinary plaster from the ceiling; therein it differs materially from commercial standards. But the type can be made as light as the



ALLAN WAREHOUSE, TORONTO, ONTARIO. GORDON & HELLIWELL, ARCHITECTS.
The entire construction of this building is of Kahn Reinforced Concrete, including footings, columns, girders and floors.

will fail or slip. The web members should preferably be inclined at an angle of 45° away from the centre of the span, in both directions, as this is practically the direction of the web stresses; their aggregate cross section should increase from the center to the ends, so as to be always proportional to the total web stresses.

CONCRETE AND HOLLOW TILE COMBINED.

The application of a complete system of web members to thin floor slabs, however, is not so convenient as it is to deeper beams and girders. But, as a rule, a floor slab of minimum thickness is not absolutely essential. A combination of reinforced concrete joists

and hollow tile arches. For a given degree of structural strength and fire-resisting qualities, the writer believes it to be the cheapest floor available at the present time. Incidentally, it promises to reconcile the terra cotta and the reinforced concrete interests, and to stop the campaign of mutual recrimination that has been waged so bitterly between them. Whether this will be to the advantage of the owner remains to be seen.

The tiles in this type of floor are set loose upon the centering before the concrete is placed; the joints are imperfectly filled, which is an advantage, since the tiles have no structural duty to perform, and are freer to expand when heated, so they are not so likely

to lose their exposed webs, as when they are built into flat arches.

ECONOMY OF THE COMBINATION.

The great economy of this type of floor lies in its increased depth, and the greater lever arm of the steel. Where ordinary reinforced concrete girders and slabs are used, if the steel can be obtained without paying excessive royalties, and if the work is done by the general contractor, or by local parties, so that it is not handicapped by large costs for moving plant and men, advertising, administering from a distant central office, etc., there should be an economy, as compared with a fireproofed steel structure of the same efficiency, equal at least to 30 per cent. of the cost of the naked steel structure. If the reinforced concrete be given some advantage in depth—as is often possible—the economy may be as great as 50 or 60 per cent. of the steel in the steel structure.

The above discussion of fire-resisting qualities applies mainly to beams, girders and slabs. The writer thinks the proper line of development for columns is the "hooped column" of M. Considere, with enough concrete outside of the steel to protect it from fire—not less than two inches in any case. Damaged material can be replaced with metal lath and cement plaster with satisfactory results, both as to efficiency and cost; or, the

column can be covered with tile, which ought to be porous, solid, and at least two inches thick.

A word as to the probable future of reinforced concrete may not be out of place. It is thought that for factories, warehouses, and all important buildings of moderate height, it will surely drive out both the steel structure and the combustible building; where heights are great and rapid erection is vital, the steel structure will hold its own for some time, possibly always; but it is not by any means sure that reinforced concrete may not yet be master of the entire field. But, in any case, the real struggle is between structural steel and reinforced concrete. Terra cotta is as good a partner for reinforced concrete as it is for steel.

LOW SUMMER TOURIST RATES WEST.

During the entire summer the Chicago & North-Western Railway will have in effect very low round trip tourist rates to Colorado, Utah, California, Oregon, Washington and British Columbia points. Choice of routes going and returning with favorable stopovers and time limits. Very low excursion rates to the Pacific Coast from June 25th to July 7th. For further particulars, illustrated folders, etc., write or call on B. H. Bennett, General Agent, 2 East King St., Toronto, Ont.

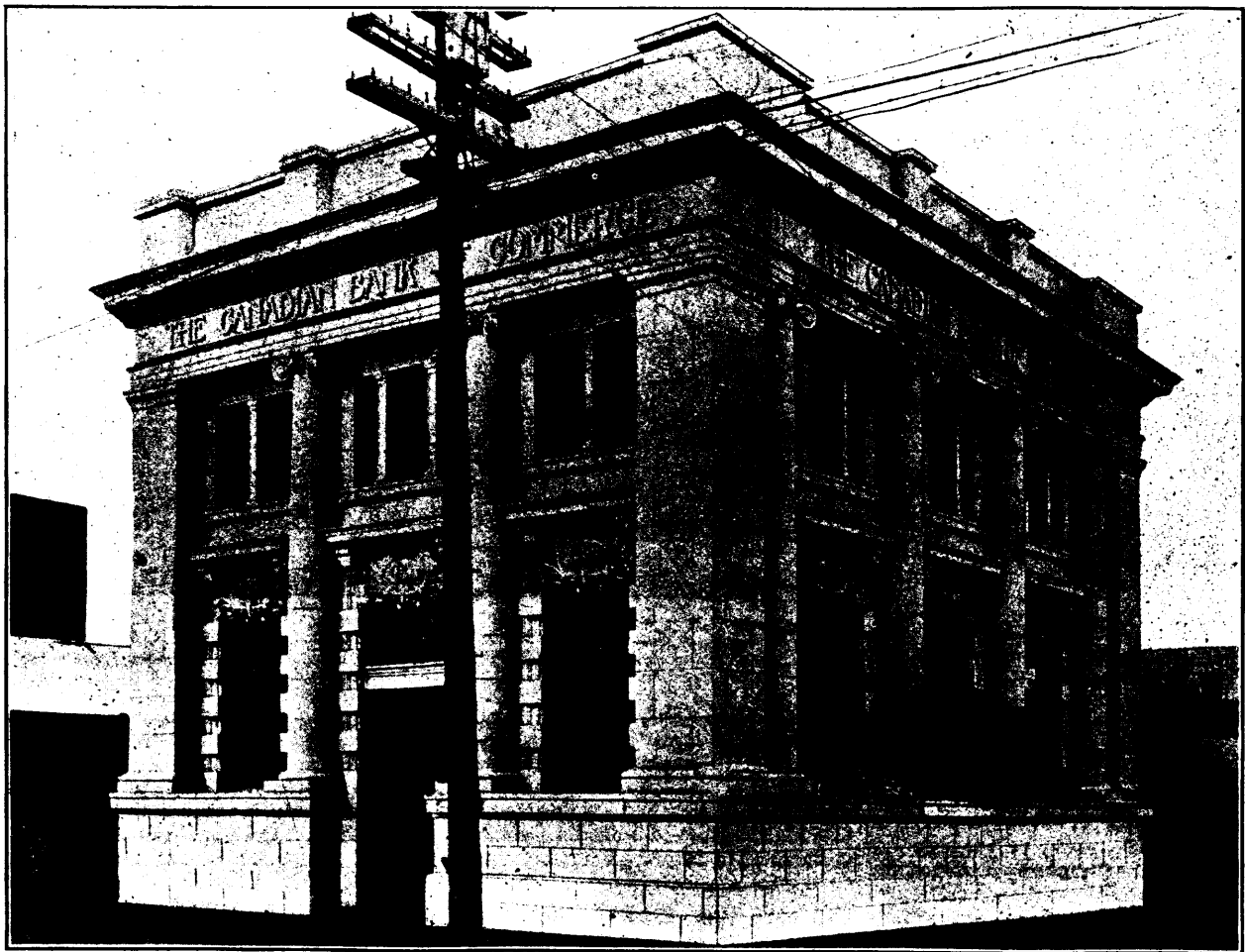
ARMSTRONG BROS. MFG. CO. IN CHICAGO.

The extension of their business in the Great West has been so great that the Armstrong Mfg. Co., Bridgeport, Conn., have opened a branch office and warehouse at 23 South Canal St., Chicago, Ill., under the charge of Hugh S. Laing, formerly assistant-manager of their New York branch.

In addition to a complete line of the Armstrong stocks and dies, there will be carried, a full stock of Armstrong's pipe cutters, pipe vises, Bard adjustable bushings, ratchet attachments for die stocks and pipe wrenches. In the salesroom a full line of pipe cutting and threading machines taking up to 6-inch pipe are on exhibition. In the wareroom a full stock will be maintained to enable customers in the district to receive their orders promptly.

Canadian buyers of these lines should find the Chicago office of this company a great convenience.

Mr. J. C. Royce, S.B., consulting engineer, sails for England on July 7. Mr. Royce will investigate the recent development of the gas engine and producer plants in Europe and also the independent motor driven railway ear now in use on English railways.



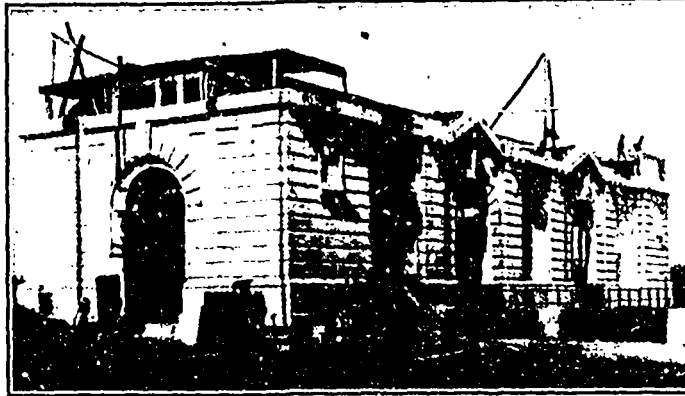
THE CANADIAN BANK OF COMMERCE, BRANDON, MANITOBA.—DARLING & PEARSON, ARCHITECTS.

This building which is one of the finest Bank structures in Manitoba has just been completed and occupied by the Canadian Bank of Commerce.

It is built of Roman Stone and was erected complete by the Roman Stone Company, Limited, of Toronto, Ontario.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER

ALL THE MERITS OF
NATURAL STONE
WITH ESPECIAL ADVAN-
TAGES OF ITS OWN



HOMOGENOUS
THROUGHOUT
H A S T H E
NATURAL COLOR
OF STONE WITHOUT
FACING OR PRINTING

GATE HOUSE, ONTARIO POWER CO., NIAGARA FALLS.
Green & Wicks, Architects.
Built entirely of reinforced Concrete and Roman Stone.

BUILD WITH
Roman Stone
(Trade Mark Registered)

An Imperishable Material

Made from pure white marble and the best European cement, and hand-finished throughout.
It cannot be distinguished from cut stone.

THE BEST AT A
REASONABLE
PRICE



ENDORSED BY
LEADING
ARCHITECTS

RESIDENCE OF ERI WHALEY, Esq., TORONTO.
Sprout & Rolph, Architects. Trimmed with Roman Stone.

The ROMANSTONE CO.

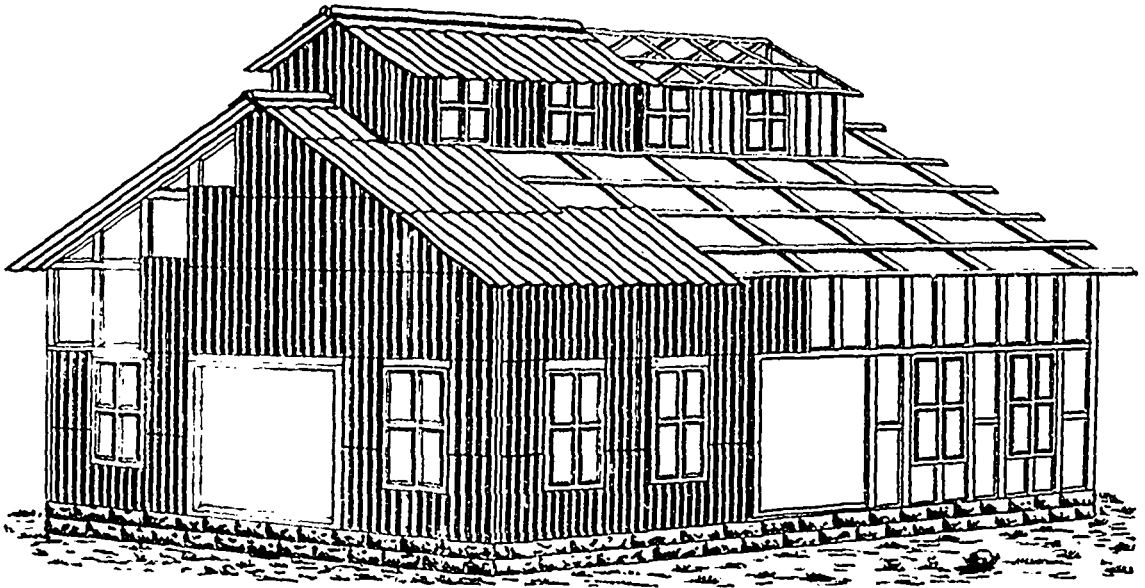
Limited

50-100 Marlborough Ave., Toronto

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

CORRUGATED IRON

“Keeping Everlastingly at it Brings Success.”



PEDLAR'S CORRUGATED IRON is made on a 38,000 lb. Press (the only one in Canada) one corrugation at a time, and is guaranteed true and straight to size.

We carry a 600 ton stock in Oshawa, Montréal, Ottawa, Toronto and London and can ship ordinary requirements the same day order is received.

Made in 1", 2", or 2½" corrugations in sheets any length up to 10 feet in 28, 26, 24, 22, 20, 18 gauge, both painted and galvanized.

This class of material is most suitable for fireproofing, Factory, Mill, Barns and Warehouse Buildings and is water and wind proof.

Corrugated Ridges, Lead Washers and Galvanized Nails carried in stock.

Send specifications to your nearest office for catalogues and prices.

The PEDLAR PEOPLE

Montreal, Que. 767-769 Craig St.	Ottawa, Ontario 423 Sussex Street	Toronto, Ontario 11 Colborne Street	London, Ontario 69 Dundas Street	Winnipeg, Man. 76 Lombard Street	Vancouver, B.C. 615 Pender Street
-------------------------------------	--------------------------------------	--	-------------------------------------	-------------------------------------	--------------------------------------

WRITE YOUR NEAREST OFFICE. HEAD OFFICE AND WORKS. OSHAWA, ONT.
LARGEST MAKERS OF SHEET METAL BUILDING MATERIALS UNDER THE BRITISH FLAG

HARBISON-WALKER REFRACTORIES Co.

PITTSBURG, PA.

**Manufacturers
of
Highest Grade
Refractory
Materials**
**7,000 Regular
Customers**

Write for Booklet K

Fire Clay : Silica : Magnesia : Chrome

BRICK

**Sole Agents For
Carl Spaeter
Magnesite**

**Importers of
Chrome Ore**

**1,100,000
Daily Capacity**



YOUR "Stock Account" will show a larger "credit," if you use McCullough-Dalzell Crucibles. They turn out more stock, in proportion to cost, than other makes. Write for prices.
McCULLOUGH-DALZELL CRUCIBLE COMPANY, - - PITTSBURG, PA.



Below are given the ingredients of iron and stone cements which have had extensive use and found to be the best formulas for such articles:—Stone cement: zinc of magnesium oxide, 2 parts; zinc or magnesium chloride, 1 part; powdered stone as diluent; water to make paste. Iron cement: iron filings, 40 parts; manganese dioxide, 10 parts; sal ammoniac, 1 part; Portland cement, 20 to 40 parts; water to form a paste.

F. G. Morley, secretary of the Toronto Board of Trade, received a letter yesterday from Masataki Togo, of Tokio, Japan, stating that in commemoration of the late war with Russia they are preparing for the establishment of a great semi-international exhibition to be held in Tokio from September 1 to November 31, of this year. The exhibition is under the auspices of the government, in co-operation with prominent business men

and statesmen in Japan. They ask the Toronto Board of Trade to encourage manufacturers in Canada to exhibit any kind of articles and say it would be a good advertisement for them as since the war, the demand for foreign manufactured goods is rapidly increasing. The intention is to keep the establishment permanent after the close of three months' exhibition, as an industrial commercial museum.

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.

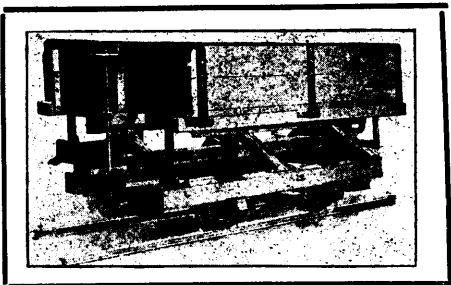
Our Varnishes are the safest goods to handle and the surest and most reliable goods to use.

BERRY BROTHERS, Limited

VARNISH MANUFACTURERS

WALKERVILLE, ONT.

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



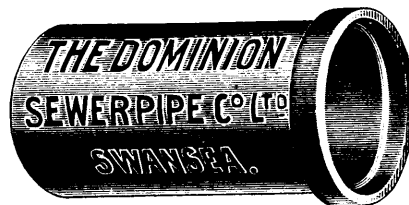
Cars! Cars! Cars!

of all descriptions for
**ORE, BRICK, COAL, TRAM, MINE, COKE, FOUNDRY, RAILWAY
 PUSH AND HAND CARS**

**SPECIAL CARS CONSTRUCTED UPON RECEIPT OF SPECIFICATION
 LIGHT RAILS AND SWITCHES**

F. H. HOPKINS & CO., MONTREAL

Phone
PARKDALE 1809



Post Office and
 Telegraph Address:
SWANSEA, - ONT.

Manufacturers of

Vitrified
 Salt-Glazed

SEWER PIPES

In Sizes from
 4 in. to 24 in.

PRICE LIST AND DISCOUNTS ON APPLICATION.

THE DOMINION SEWER PIPE CO., Limited - Works and Office, **SWANSEA**
 (near Toronto)

Canadian White Company, Limited

SOVEREIGN BANK BUILDING, - MONTREAL, CANADA

ENGINEERS and CONTRACTORS

- FOR -

Steam and Electric Railroads; Electric Light and Power Plants; Building Construction;
 Water and Gas Works; Docks, Harbor Works, etc., etc.

WINNIPEG OFFICE: Bank of British North America Building

CORRESPONDENTS

J. G. WHITE & COMPANY, INC.,
 New York City.

J. G. WHITE & COMPANY, LIMITED
 London, England.

WARING-WHITE BUILDING CO.,
 London, England.

WIPING RAGS ARE BETTER THAN WASTE!

Did you know that the right kind of wiping rags will do your wiping work better and are cheaper than waste?

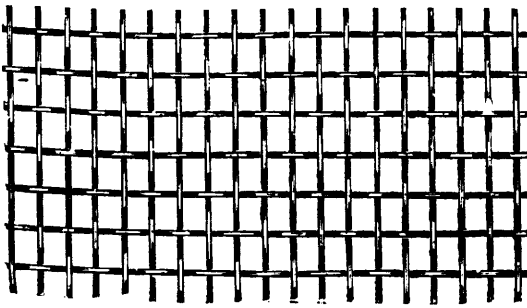
Our Washed and Fumigated Wipers will. They are sanitary and free from buttons, hooks and starchy parts.

THESE GOODS ARE DUTY FREE.

WE PAY THE FREIGHT.

• Write for samples and prices.

I. L. SCHEINMAN & CO., - Detroit, Mich.



WIRE COTTON and WOOL DRYING FLOORS

Special Oblong and Square Meshes for
Cotton and Wool Drying Floors
Wire Guards for Mill Windows
Perforated Metals for Dye Vats
Wire Rope for All Purposes

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

MONTREAL PIPE FOUNDRY CO., LIMITED

SUCCESSORS TO

DRUMMOND-McCALL PIPE FOUNDRY CO.
 (Limited)

Manufacturers of



"Specials," Hydrants, Valves, Etc.

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

James Thomson, Pres. and Man. Dir. **J. G. Allan,** Vice-Pres. **James A. Thomson,** Secretary. **Alex. L. Gartshore,** Treasurer.

The GARTSHORE-THOMSON PIPE & FOUNDRY CO.

(LIMITED)

CAST IRON PIPE

3 in. to 60 in. diameter.

For Water, Gas, Culverts and Sewers Special Castings and all kinds of **Flexible and Flange Pipe**
WATER WORKS SUPPLIES HAMILTON, ONT.

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

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

BANK OF HAMILTON

J. TURNBULL, General Manager

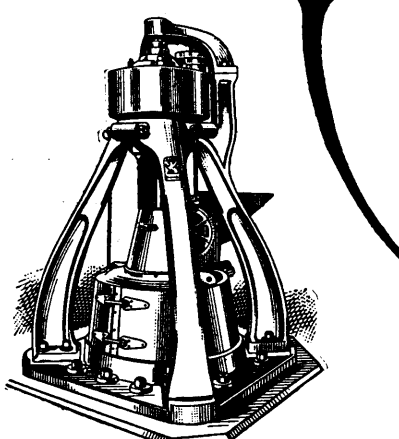
HEAD OFFICE, - HAMILTON, ONT.

Capital.	Reserve.	Total Assets.
\$2,500,000	\$2,500,000	\$29,000,000

90 Branches Throughout the Dominion of Canada.

Collections made in all parts of Canada on most favorable terms.

The GRIFFIN Mill



The Greatest Pulverizing Machine in the World

Used Wherever Portland Cement is Made

OVER 50 PER CENT. OF THE PORTLAND CEMENT MANUFACTURED IN THE UNITED STATES TO-DAY IS GROUND IN THE GRIFFIN MILL.

The Griffin Mill pulverizes more cement than the combined output of all other machines used for this purpose.

Thoroughly tested by continually successful and constantly increasing use during the past sixteen years.

Portland Cement Clinker reduced from 1/2 inch to required fineness in one operation, with no auxiliary apparatus. No other machine made will do this.

Buy the GRIFFIN MILL and get the BEST. It holds the world record from every standpoint.

Send for Catalogue and full information.

Bradley Pulverizer Company, 92 State St., Boston



When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER

THESE SHORT "ADS" SHOULD HAVE YOUR ATTENTION TO-DAY.

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:

- Barrie, Ont.
- Brantford, Ont.
- Hamilton, Ont.
- Peterborough, Ont.
- Regina, N.W.T.
- Sherbrooke, Que.
- Toronto, Ont.

FOR SALE, CHEAP!

Fine 3-story brick factory building, besides other storage buildings. If you are contemplating starting a branch in Canada this is a grand opportunity. Cheap electric power and natural gas. For further particulars apply to

WM. CHAPLIN,
St. Catharines, Ont., Canada.

FACTORY PREMISES FOR SALE

Brick Factory in Stouffville near Toronto, 3 story Stone and Concrete Basement. Boiler and Engine, over 4 acres land, Railway siding and every convenience for any manufacturing concern, only \$10,000. Full particulars on application to J. J. McKenney, 43 Victoria Street, Toronto.

First-class mills use

LOWELL CRAYONS

WHY? THEY ARE WORTH THEIR COST.

Will you try our Samples?

LOWELL CRAYON CO., - Lowell, Mass.
Original Manufacturers.

**LARGE WAREHOUSE
ALSO
WAREHOUSE SITE
TORONTO**

CENTRAL LOCATION A BARGAIN

Houses for sale in all parts of city.

S. T. SUTTON & CO.,
Real Estate

Phone Main 6633 15 King West

FOR SALE OR TO RENT

New Binder Twine Factory; buildings solid concrete, fire-proof; capacity 3 ton, or 60 spindles; room for increasing capacity if desired; Hoover and Gamble machinery throughout; cheap labor; also good water power site; rock banks and bottom, which, if developed, will, besides running factory, bring in good revenue. Apply

The AYTON CORDAGE & POWER CO.,
Limited,
Ayton, Ont.

Cheap Power for Sale

Twenty h.p. for forty cents a day; thirty h.p. for sixty cents a day; fifty h.p. for a dollar a day; same proportion for larger or smaller powers. This is not Niagara electric power, but it is cheaper, better, and, above all, safer; information free for the asking. W. Gillespie, 98 East Front Street, Toronto.

THE BEST GASOLINE ENGINE

On the continent for all purposes is the Sylvester. Parties wanting cheap power will consult their own interest in purchasing a Sylvester, built in sizes 1½ to 32 horse power; portable, stationary and marine; best and cheapest power available; if you want an easy starting, simple and reliable engine that will give full rated power in coldest weather, buy the Sylvester; works as easy in January as July on gasoline, coal oil or distillates; write for catalogue. **The Sylvester Mfg. Co. Limited, Lindsay, Ont.**

GASOLINE ENGINES

FOR LAUNCHES AND CANOES.

2-H.P. ENGINE COMPLETE FOR \$65.

M. O. CROSS ENGINE CO.
DETROIT.

**A Perfect
SMOKE CONSUMER
For Sale**

J. T. ELLIS' Improved Patent Device adapted for Stationary Locomotive and Marine Boilers. Consumes all the smoke and saves fuel. Can be seen working on steamer John Hanlan. Apply

Ridout & Maybee Patent Office
103 Bay St., Toronto



**ARMSTRONG'S
RATCHET
ATTACHMENT
FOR
ARMSTRONG
DIE STOCKS**

For threading pipe in position close to walls or ceilings, in corners or wherever there is limited space.

Write for Catalogue and Prices.

THE ARMSTRONG MFG. CO.,
281 KNOWLTON ST.,
BRIDGEPORT, CONN., U.S.A.

Advertise in the
Canadian Manufacturer.

A Salesman for You.

You can add a valuable salesman to your staff at a cost of from 10c. to \$1.00 a week by inserting a condensed "ad." on this page. It will sell goods for you.

THE CANADIAN MANUFACTURER
McKINNON BLDG. TORONTO



Send for Catalogue and Price List to

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

I. C. FELL & CO.

STAMP MANUFACTURERS

DIE SINKERS

Write us.

ENGRAVERS

84 Adelaide West

TORONTO



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

CASTINGS GREY IRON
IN ROUGH OR MACHINED.
PATTERNS WOOD OR IRON.
ESTIMATES FURNISHED.
DAVID MAXWELL & SONS
ST. MARYS, ONT.

**WOOD ENGRAVING
PHOTO ENGRAVING
HALF TONES**

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

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

CLASSIFIED INDEX.

Abrasives

Williams, A. R. Machinery Co. Toronto

Acids

Canada Chemical Co., London, Ont.
Canada Process Co., Toronto.
Nichols Chemical Co. of Canada, Montreal.

Air Compressors

Allis-Chalmers-Bullock, Limited, Montreal.
American Steam Pump Co., Battle Creek, Mich.
Canada Foundry Co., Toronto.
Canadian Hand Drill Co., Sherbrooke, Que.
Darling Bros., Montreal.
Smart-Turner Machine Co., Hamilton, Ont

Alum

Nichols Chemical Co. of Canada, Montreal.

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

Benson, W. T. & Co., Montreal.
Brunner, Mond & Co., Norwich, England.
Canada Chemical Mfg. Co., London, Ont.
Canada Process Co., Toronto.
Casella Color Co., New York City.
McArthur, Cornille & Co., Montreal.
Nichols Chemical Co. of Canada, 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.

Architects

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

Automatic Gear Cutting Machines

Becker-Brainard Milling Machine Co. Hyde Park, Mass.

Axles

Hopkins, F. H. & Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.

Babbitt Metal

Petrie, H. W., Toronto.
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.
London Rolling Mills, London, Ont.
Union Drawn Steel Co., Hamilton Ont.

Belt Dressing

McLaren, J. C. Belting Co., Montreal and Toronto.
Petrie, H. W., Toronto.
Sadler & Haworth, Montreal and 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.
Sadler & Haworth, Montreal and Toronto.
Williams, A. R. Machinery Co., Toronto.

Belting (Cotton)

Dominion Belting Co., Hamilton, Ont.
McLaren, D. K., Montreal and Toronto.
McLaren, J. C. Belting Co., Montreal and Toronto
Petrie, H. W., Toronto.
Sadler & Haworth, Montreal and Toronto.

Belting (Leather)

Montreal Belting Co., Montreal.
McLaren, D. K., Montreal and Toronto.
McLaren, J. C. Belting Co., Montreal and Toronto.
Petrie, H. W., Toronto.
Sadler & Haworth, Montreal and Toronto
Williams, A. R. Machinery Co., Toronto.

"IMPERIAL" PNEUMATIC TOOLS



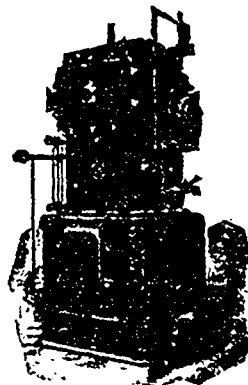
ECONOMY IN BELT PRESERVATION

Belt economy does not end with the purchasing. The belt is worth its cost price only so long as its original condition which fixes the price is maintained.

Shop conditions always affect the elasticity and "life" of the belt. Dixon's Solid Belt Dressing counteracts these evil effects, preserves efficiency, and keeps the belt at "par value." Get sample 33-O.

Joseph Dixon Crucible Co., Jersey City, N.J.

DO YOU WASTE WHAT OTHERS ARE SAVING OR SAVE WHAT OTHERS ARE WASTING ?



THIS is the day of by-products. In many important lines of business the profit now lies in what used to be thrown away.

In your line there are two classes—those who save the "by-products" and those who waste them.

The wasters cannot successfully compete with the savers.

WEBSTER FEED WATER HEATERS and HEATING APPLIANCES have made economy a fine art. In many businesses their saving has swung the balance over from the "Loss" side to the "Profit" side.

Webster Steam Appliances now hold undisputed the highest place in steam engineering economy.

MANUFACTURED BY

DARLING BROTHERS, Limited
TORONTO — MONTREAL — WINNIPEG

INTERNATIONAL

FIRE

INSURANCE
RATES

Reduced 40 to
70 per cent. by
equipping your
buildings with

INTERNATIONAL
AUTOMATIC
SPRINKLERS

+++

Our systems com-
mended by all insur-
ance bodies.



"Full Size"

W. J. McGUIRE & CO.

TORONTO AND MONTREAL.

EXPANDED

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

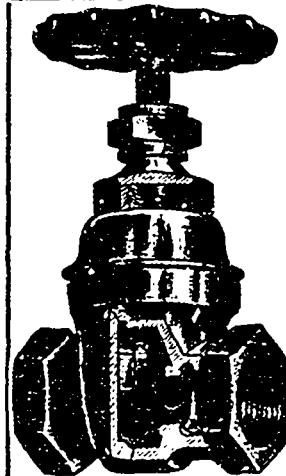
FLOORS -- ROOFS -- WALLS

Write for Catalogue and Prices.

EXPANDED METAL AND
FIREPROOFING CO., LIMITED

100 King Street West, TORONTO.

METAL



IF YOU WOULD SAVE
MONEY

Pay a few cents more for a good
Valve, and save Dollars in Steam-
Fitter's bills.

Buy "KERR" Valves

and you will find a big saving
during the year.

QUALITY COUNTS

THE KERR ENGINE CO., LIMITED

Manufacturers

WALKERVILLE, - ONT.

To Reach Canadian Manufacturers.

If you want to sell machinery, power appurtenances, factory
equipment, office specialties—anything the manufacturer uses—
you should make your wants known.

HERE IS THE MEDIUM—THE OLDEST, THE MOST INFLU-
ENTIAL PAPER GOING TO CANADIAN MANUFACTURERS

Would you like this space for a year at less than \$10 (Ten
Dollars) an issue?

We are ready to answer all questions about the Paper.

The Canadian Manufacturer

McKinnon Building,

- -

TORONTO

CLASSIFIED INDEX.

(CONTINUED).

Belting (Rubber)
 McLaren, D. K., Montreal and Toronto.
 McLaren, J. C., Belting Co., Montreal.
 Petrie, H. W., Toronto.

Belting and Supplies
 Bristol Co., Waterbury, Conn.
 Dominion Belting Co., Hamilton, Ont.
 Jutta Percha & Rubber Mfg. Co., Toronto.
 Jeffrey Mfg. Co., Columbus, Ohio.
 Montreal Belting Co., Montreal.
 McLaren, D. K., Montreal and Toronto.
 McLaren, J. C., Belting Co., Montreal and Toronto.
 Petrie, H. W., Toronto.
 Williams, A. R. Machinery Co., Toronto.

Blast Furnace Brick
 Dunbar Fire Brick Co., Pittsburgh, Pa.
 Elk Fire Brick Co., St. Mary's, Pa.
 Hamilton Facing Mill Co., Hamilton, Ont.
 Harrison-Walker Refractories Co., Pittsburg, Pa.
 Pennsylvania Fire Brick Co., Beech Creek, Pa.
 Jones's Run Fire Brick Co., Lock Haven, Pa.
 Stowe-Fuller Co., Cleveland, Ohio.

Blowers
 Hamilton Facing Mill Co., Hamilton, Ont.
 Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Boston, Mass.

Boiler Compounds
 Canada Chemical Mfg. Co., London, Ont.
 Canada Process Co., Toronto.
 Hamilton Facing Mill Co., Hamilton, Ont.

Boiler Inspection
 Boiler Inspection & Insurance Co., Toronto.
 Canadian Casualty & Boiler Insurance Co., Toronto.

BOILERS (See Engines and Boilers)

Bolts and Nuts
 London Rolling Mills, London, Ont.
 Morrow John Machine Screw Co., Ingersoll, Ont.

Brass Founders
 Hamilton Brass Mfg. Co., Hamilton, Ont.

Building and Paving Brick
 Dunbar Fire Brick Co., Pittsburgh, Pa.
 Hamilton Facing Mill Co., Hamilton, Ont.
 Harrison-Walker Refractories Co., Pittsburg, Pa.
 Pennsylvania Fire Brick Co., Beech Creek, Pa.
 Jones's Run Fire Brick Co., Lock Haven, Pa.
 Stowe-Fuller Co., Cleveland, Ohio.

Building Iron and Steel
 Bourne-Fuller Co., Cleveland, Ohio.
 Canada Foundry Co., Toronto.
 Expanded Metal & Fireproofing Co., Toronto.
 Metallic Roofing Co., Toronto.
 Pedlar People, Oshawa, Ont.

Builders' Materials
 Albert Mfg. Co., Hillsboro, Ont.
 Canada Foundry Co., Toronto.
 Conduits Company, Limited, Toronto.
 Expanded Metal & Fireproofing Co., Toronto.
 Gartschore, John J., Toronto.
 Hopkins, F. H. & Co., Montreal.
 Metallic Roofing Co., Toronto.
 Pedlar People, Oshawa, Ont.
 Sheldon & Sheldon, Galt, Ont.

Cables
 Dominion Wire Rope Co., Montreal.
 Greening, B. Wire Co., Hamilton, Ont.
 Phillips, Eugene F. Electrical Works, Montreal.

Canada Plates
 Leslie, A. C. & Co., Montreal.
 Nova Scotia Steel & Coal Co., New Glasgow, N.S.

Canoes
 Waterborough 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.
 Montreal Pipe Foundry Co., Montreal.
 McDougall, John, Caledonian Iron Works Co., Montreal.

Castings (Grey Iron, Malleable Iron and Brass)
 International Harvester Co., Hamilton, Ont.
 Jencks Machine Co., Sherbrooke, Que.
 Kerr Engine Co., Walkerville, Ont.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 McKinnon Dash & Metal Works Co., St. Catharines, Ont.
 Maxwell, David & Sons, St. Mary's, Ont.
 Smart-Turner Machine Co., Hamilton, Ont.

Cement Machinery
 Allis-Chalmers-Bullock, Limited, Montreal.
 Bradley Pulverizer Co., Boston, Mass.
 McDougall, John, Caledonian Iron Works Co., Montreal.

Centrifugal Pumping Machinery
 Morris Machine Works, Baldwinville, N.Y.
 Smart-Turner Machine Co., Hamilton, Ont.

Chain Making Machinery (Welded Coil Chain)
 Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Channels
 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.

Chemicals
 Canada Chemical Co., London, Ont.
 Canada Process Co., Toronto.
 Nichols Chemical Co. of Canada, Montreal.

Chemists
 Hays, Thomas & Son, Toronto.

Clay Working Machinery
 Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Coal, Coke and Charcoal
 Bourne-Fuller Co., Cleveland, Ohio.
 Hamilton Facing Mill Co., Hamilton, Ont.
 Milnes, James H. & Co., Toronto.
 Wilson, H. T. Coal Co., Detroit, Mich.

Coal Cutting Machines
 Allis-Chalmers-Bullock, Limited, Montreal.
 Canadian Hand Drill Co., Sherbrooke, Que.
 Jeffrey Mfg. Co., Columbus, Ohio.

Coal Tipples
 Jeffrey Mfg. Co., Columbus, Ohio.
 Jencks Machine Co., Sherbrooke, Que.

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

Coke Oven Brick
 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.

Condensers
 Smart-Turner Machine Co., Hamilton, Ont.

Conduits (Interior)
 Conduits Company, Limited, Toronto.

Contractors' Machinery
 Allis-Chalmers-Bullock, Limited, Montreal.
 Gartschore, John J., Toronto.
 Hopkins, F. H. & Co., Montreal.
 Jencks Machine Co., Sherbrooke, Que.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 Smart-Turner Machine Co., Hamilton, Ont.

Contractors' Plants
 Allis-Chalmers-Bullock, Limited, Montreal.
 Hopkins, F. H. & Co., Montreal.
 Jencks Machine Co., Sherbrooke, Que.
 Petrie, H. W., Toronto.
 Smart-Turner Machine Co., Hamilton, Ont.
 Williams, A. R. Machinery Co., Toronto.

Conveying Machinery
 Allis-Chalmers-Bullock, Limited, Montreal.
 Babcock & Wilcox, Limited, Montreal.
 Canada Foundry Co., Toronto.
 Jeffrey Mfg. Co., Columbus, Ohio.
 Link-Belt Engineering Co., Philadelphia, Pa.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 Perin, William R. & Co., Limited, Toronto.
 Smart-Turner Machine Co., Hamilton, Ont.

Copper Materials
 Greening, B. Wire Co., Hamilton, Ont.
 Phillips, Eugene F. Electrical Works, Montreal.
 Syracuse Smelting Works, Montreal.

Corrugated Iron
 Metallic Roofing Co., Toronto.
 Pedlar People, Oshawa, Ont.

Cotton Banding and Rope
 McLaren, J. C. Belting Co., Montreal.

Covers
 McCullough-Dalzell Crucible Co., Pittsburg, Pa.
 Pittsburg Crucible Works, Pittsburg, Pa.

Cranes (Electric and Hand Power)
 Smart-Turner Machine Co., Hamilton, Ont.

Crayons
 Lowell Crayon Co., Lowell, Mass.
 McLaren, J. C. Belting Co., Montreal.

Crucibles
 Dixon, Joseph, Crucible Co., Jersey City, N.J.
 Hamilton Facing Mill Co., Hamilton, Ont.
 McCullough-Dalzell Crucible Co., Pittsburg, Pa.
 Syracuse Smelting Works, Montreal.

Crucible Caps
 Hamilton Facing Mill Co., Hamilton, Ont.
 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-Braunard Milling Machine Co., Hyde Park, Mass.

Dashes
 McKinnon Dash & Metal Works Co., St. Catharines, Ont.

Deep Well Engines
 American Steam Pump Co., Battle Creek, Mich.

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.

Dredges
 Allis-Chalmers-Bullock, Limited, Montreal.

Drills
 Allis-Chalmers-Bullock, Limited, Montreal.
 Canadian Westinghouse Co., Ltd., Hamilton, Ont.
 Petrie, H. W., Toronto.

Drills (Pneumatic and Rock)
 Allis-Chalmers-Bullock, Limited, Montreal.
 Canadian Hand Drill Co., Sherbrooke, Que.
 Jeffrey Mfg. Co., Columbus, Ohio.

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
 Benson, W. T. & Co., Montreal.
 Brunner, Mond & Co., Northwich, England.
 Canada Chemical Mfg. Co., London, Ont.
 Canada Process Co., Toronto.
 Cassella Color Co., New York City.
 McArthur, Corneille & Co., Montreal.
 Nichols Chemical Co. of Canada, 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
 Keystone Engineering Co., Toronto.

Electrical Supplies
 Allis-Chalmers-Bullock, Limited, Montreal.
 Bristol Co., Waterbury, Conn.
 Canadian General Electric Co., Toronto.

CLASSIFIED INDEX.

(CONTINUED).

Canadian Westinghouse Co., Ltd., Hamilton, Ont.
 Electrical Construction Co., London, Ont.
 Forman, John, Montreal.
 Jones & Moore Electric Co., Toronto.
 Keystone Engineering Co., Toronto.
 Packard Electric Co., St. Catharines, Ont.
 Toronto & Hamilton Electric Co., Hamilton, Ont.

Elevators and Conveyors
 Allis-Chalmers-Bullock, Limited, Montreal.
 Darling Bros., Montreal.
 Jeffrey Mfg. Co., Columbus, Ohio.
 Jenckes Machine Co., Sherbrooke, Que.

Elevator Insurance
 Canadian Casualty & Boiler Insurance Co., Toronto.

Emery and Emery Wheels
 Forman, John, Montreal.
 Hamilton Facing Mill Co., Hamilton, Ont.
 Petrie, H. W., Toronto.

Engineers (Chemical)
 Heys, Thomas & Son, Toronto.
 Hunt, Robert W. & Co., Chicago, Ill.

Engineers (Civil)
 Parke, R. J., Toronto.
 Vogel, C. H., Ottawa.

Engineers (Consulting)
 Aitken, K. L., Toronto.
 Canadian White Co., Montreal.
 Electrical Construction Co., London Ont.
 Fensom, C. J., Toronto.
 Gearing, H., Toronto.
 Hunt, Robert W. & Co., Chicago, Ill.
 Keystone Engineering Co., Toronto, Ont.
 Marion & Marion, Montreal.
 Parke, R. J., Toronto.
 Perrin, William R. & Co., Limited, Toronto
 Vogel C. H., Ottawa.

Engineers (Contracting)
 Babcock & Wilcox, Limited, Montreal.
 Canada Foundry Co., Toronto.
 Canadian White Co., Montreal.
 Darling Bros., Montreal.
 Electrical Construction Co., London Ont.
 Fensom, C. J., Toronto.
 Keystone Engineering Co., Toronto.
 McDougall, John, Caledonian Iron Works Co., Mont-
 real.
 Robb Engineering Co., Amherst, N.S.

Engineers (Electrical)
 Aitken, K. L., Toronto.
 Allis-Chalmers-Bullock, Limited, Montreal.
 Canadian General Electric Co., Ltd., Toronto.
 Canadian Westinghouse Co., Ltd., Hamilton, Ont.
 Canadian White Co., Montreal.
 Crocker-Wheeler Co., St. Catharines, Ont.
 Electrical Construction Co., London, Ont.
 Fensom, C. J., Toronto.
 Jones & Moore Electric Co., Toronto.
 Keystone Engineering Co., Toronto.
 Marion & Marion, Montreal.
 Toronto & Hamilton Electric Co., Hamilton Ont.

Engineers (Mechanical)
 Allis-Chalmers-Bullock, Limited, Montreal.
 Babcock & Wilcox, Limited, Montreal.
 Darling Bros., Montreal.
 Electrical Construction Co., London, Ont.
 Fensom, C. J., Toronto.
 Gearing, H., Toronto.
 McDougall, John, Caledonian Iron Works Co., Mont-
 real.
 Hunt, Robert W. & Co., Chicago, Ill.
 Kerr Engine Co., Walkerville, Ont.
 Marion & Marion, Montreal.
 Robb Engineering Co., Amherst, N.S.
 Sheldon & Sheldon, Galt, Ont.
 Smart-Turner Machine Co., Hamilton, Ont.

Engineers (Mill and Hydraulic)
 Fensom, C. J., Toronto.
 Smart-Turner Machine Co., Hamilton, Ont.
 Vogel, C. H., Ottawa.

Engineers (Mining)
 Heys Thomas & Son, Toronto.
 Mills, S. D., Toronto.

Engineers and Contractors
 Canadian White Co., Montreal.
 Jeffrey Mfg. Co., Columbus, Ohio.
 Jenckes Machine Co., Sherbrooke, Que.
 Smart-Turner Machine Co., Hamilton, Ont.

Engines and Boilers
 Allis-Chalmers-Bullock, Limited, Montreal.
 Babcock & Wilcox, Limited, Montreal.
 Canada Foundry Co., Toronto.
 Goldie & McCulloch Co., Galt, Ont.

Hamilton, Wm. Mfg. Co., Peterborough, Ont.
 Hopkins, F. H. & Co., Montreal.
 Jenckes Machine Co., Sherbrooke, Que.
 Morris Machine Works, Baldwinsville, N.Y.
 McDougall, John, Caledonian Iron Works Co., Mont-
 real.
 Petrie, H. W., Toronto.
 Robb Engineering Co., Amherst, N.S.
 Sheldon & Sheldon, Galt, Ont.
 Smart-Turner Machine Co., Hamilton, 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
 Hamilton Facing Mill Co., Hamilton, Ont.
 Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Boston, Mass.

Exhaust Heads
 Darling Bros., Montreal.
 Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Hyde Park Mass.

Exhausters
 Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Hyde Park, Mass.

Factory Sites
 (See Factory Locations, page 31.)
 Central Ontario Power Co., Peterboro Ont.
 Hutcheson, S. M., Paisley, Ont.

Feed Water Heaters
 Babcock & Wilcox, Limited, Montreal.
 Darling Bros., Montreal.
 McDougall, John, Caledonian Iron Works Co., Mont-
 real.
 Pittsburg Filter Mfg. Co., Pittsburg, Pa.
 Robb Engineering Co., Amherst, N.S.
 Smart-Turner Machine Co., Hamilton, Ont.

Feed Water Purifiers
 Pittsburg Filter Mfg. Co., Pittsburg, Pa.

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

Fillet (Pattern)
 Hamilton Facing Mill Co., Hamilton, Ont.
 McLaren, J. C. Belting Co., Montreal.
 Sadler & Haworth, Montreal and Toronto.

Filters (Oil)
 Babcock & Wilcox, Limited, Montreal.
 Darling Bros., Montreal.
 McDougall, John, Caledonian Iron Works Co., Mont-
 real.
 Perrin, William R. & Co., Limited, Toronto.

Filters and Filtering Systems (Water)
 Babcock & Wilcox, Limited, Montreal.
 Jenckes Machine Co., Sherbrooke, Que.
 McDougall, John, Caledonian Iron Works Co., Mont-
 real.
 Pittsburg Filter Mfg. Co., Pittsburg, Pa.

Financial
 Bradstreet's, New York City.
 Dun, R. G. & Co., Toronto.
 Neff & Postlethwaite, Toronto.
 Petrie H. D. Hamilton, Ont.

Finials
 Metallic Roofing Co., Toronto.
 Pedlar People, Oshawa, Ont.

Fire Brick and Clay
 Dunbar Fire Brick Co., Pittsburgh, Pa.
 Elk Fire Brick Co., St. Mary's, Pa.
 Hamilton Facing Mill Co., Hamilton, Ont.
 Harbison-Walker Refractories Co., Pittsburg, Pa.
 Pennsylvania Fire Brick Co., Beech Creek, Pa.
 Queen's Run Fire Brick Co., Lock Haven, Pa.
 Stowe-Fuller Co., Cleveland, Ohio.

Fire Escapes
 Darling Bros., Montreal.

Fireproof Partitions
 Metallic Roofing Co., Toronto.
 Pedlar People, Oshawa, Ont.

Flour Mill Machinery
 Allis-Chalmers-Bullock, Limited, Montreal.
 Goldie & McCulloch Co., Galt, Ont.

Forges and Blowers
 Canada Foundry Co., Toronto.
 Hamilton Facing Mill Co., Hamilton, Ont.
 Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Boston, Mass.

Founders
 Canada Foundry Co., Toronto.
 Goldie & McCulloch Co., Galt, Ont.
 Hamilton, Wm. Mfg. Co., Peterborough, Ont.
 Jenckes Machine Co., Sherbrooke, Que.
 McDougall, John, Caledonian Iron Works Co., Mont-
 real.
 Robb Engineering Co., Amherst, N.S.
 Smart-Turner Machine Co., Hamilton, Ont.

Foundry Facings and Supplies
 Hamilton Facing Mill Co., Hamilton, Ont.

Fuel Economizers
 Babcock & Wilcox, Limited, Montreal.
 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
 Economic Power, Light & Heat Supply Co., Toronto.
 Morrison, T. A. & Co., Montreal.
 Smart-Turner Machine Co., Hamilton, Ont.

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.

Generating Sets
 Sturtevant, B. F. Co., Hyde Park, Mass

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.

Gloves, Mittens and Moccasins
 Storey, W. H. & Son, Acton, Ont.

Government Notices
 Factory Inspectors.
 Minister of Agriculture.

Graphite
 Dixon, Jos. Crucible Co., Jersey City, N.J.
 Hamilton Facing Mill Co., Hamilton, Ont.
 McCullough-Dazell Crucible Co., Pittsburg, Pa.
 Pittsburg Crucible Works, Pittsburg, Pa.

Hames
 McKinnon Dash & Metal Works Co., St. Catharines.

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.

Heating and Ventilating Apparatus
 Darling Bros., Montreal.
 Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Boston, Mass.

Hoisting Engines
 Allis-Chalmers-Bullock, Limited, Montreal.
 Jenckes Machine Co., Sherbrooke, Que.

Holsts (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.
 Sadler & Haworth, Montreal and Toronto.

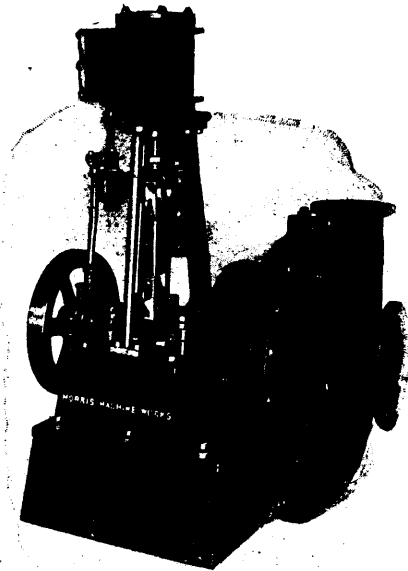
Hotel
 Gallatin Hotel, New York City.

Hydrants
 Kerr Engine Co., Walkerville, Ont.
 Jenckes Machine Co., Sherbrooke, Que.
 McDougall, John, Caledonian Iron Works Co., Mont-
 real.

Hydraulic Accumulators
 Jenckes Machine Co., Sherbrooke, Que.
 McDougall, John, Caledonian Iron Works Co., Mont-
 real.
 Smart-Turner Machine Co., Hamilton, Ont.

Hydraulic Leather
 McLaren, J. C., Belting Co., Montreal.
 Sadler & Haworth, Montreal and Toronto.

Hydraulic Machinery
 Canada Foundry Co., Toronto.
 Darling Bros., Montreal.
 Hamilton, Wm. Mfg. Co., Peterborough, Ont.
 Jenckes Machine Co., Sherbrooke, Que.
 McDougall, John, Caledonian Iron Works Co., Mont-
 real.
 Perrin, William R. & Co., Limited, Toronto.
 Petrie, H. W., Toronto.
 Smart-Turner Machine Co., Hamilton, Ont.
 Wilson, J. C. & Co., Glenora, Ont.



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 & HUBBELL, Agents
F. 61-69 North Jefferson St., CHICAGO, ILL.




Corrugated Iron

*For Sidings, Roofings,
Ceilings, Etc.*

Absolutely free from defects—made from very finest sheets.
Each sheet is accurately squared, and the corrugations pressed one at a time—not rolled—giving an exact fit without waste.
Any desired size or gauge—galvanized or painted—straight or curved. Send us your specifications.


The Metallic Roofing Co.
WHOLESALE MANFRS. LIMITED
TORONTO, CANADA.

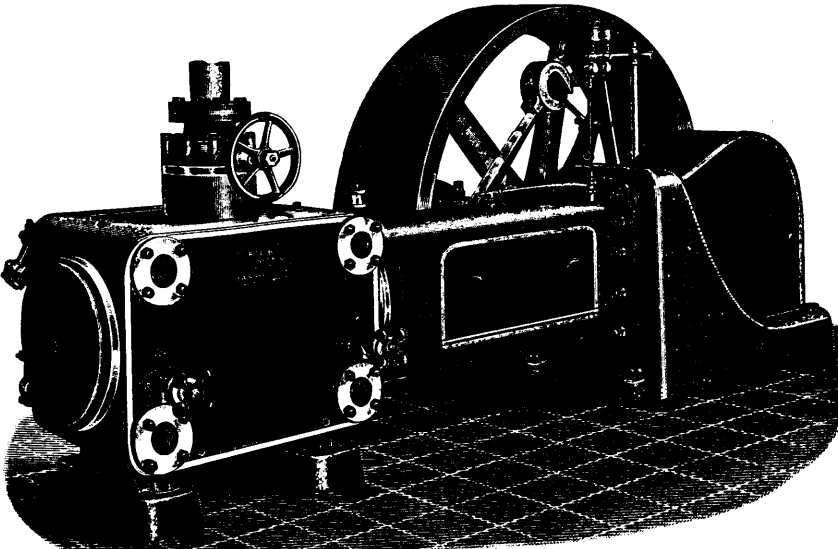


DEEP WELL PUMPS

Steam Geared or Electrically Driven.

Deep Well Pumping Systems for Cities, Railroad, Mines, Factories, etc.

DOWNIE PUMP CO., Downieville, Pa., U.S.A. 



Our Corliss engines are fitted with Robb-Armstrong Corliss valve gear, which has the following good points.

Positively Driven
Encased in Oil

Runs Noiselessly
Minimum Friction

Minimum Wear

Robb Engineering Co., Limited
AMHERST, N.S.

District Offices { 320 Ossington Ave., Toronto, WILLIAM McKAY, Manager.
Bell Telephone Bldg., Montreal, WATSON JACK, Manager.
355 Carlton Street, Winnipeg, J. F. PORTER, Manager.

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.

CLASSIFIED INDEX.

(CONTINUED).

Insulated Wires and Cables

Phillips, Eugene F., Electrical Works, 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.
 Metallic Roofing Co., Toronto.
 Nova Scotia Steel & Coal Co., New Glasgow, N.S.
 Pedlar People, Oshawa, Ont.
 Petrie, H. W., Toronto.
 Union Drawn Steel Co., Hamilton, Ont.

Injectors

Canada Foundry Co., Toronto.
 Hamilton Brass Mfg. Co., Hamilton, Ont.
 Williams, A. R. Machinery Co., Toronto.

Iron and Steel Inspection

Hunt, R. W. & Co., Chicago, Ill.

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.

Lathes

Petrie, H. W., Toronto.
 Williams, A. R. Machinery 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

Hamilton Facing Mill Co., Hamilton, Ont.

Machinists,*

Goldie & McCulloch Co., Galt, Ont.
 Robb Engineering Co., Amherst, N.S.
 Smart-Turner Machine Co., Hamilton, Ont.

Machinists' Supplies

Armstrong Mfg. Co., Bridgeport, Conn.
 Butterfield & Co., Rook Island, Que.
 Goldie & McCulloch Co., Galt, Ont.
 Gutta Percha & Rubber Mfg. Co., Toronto.
 Hopkins, F. H. & Co., Montreal.
 Jeffrey Mfg. Co., Columbus, Ohio.
 Morrow, John, Machine Screw Co., Ingersoll, Ont.
 Petrie, H. W., Toronto.

Machine Tools

Becker-Brainard Milling Machine Co., Hyde Park, Mass.
 Darling Bros., Montreal.
 Petrie, H. W., Toronto.

Malleable Castings

International Harvester Co., Hamilton, Ont.
 McKinnon Dash & Metal Works Co., St. Catharines, Ont.
 Smith's Falls Malleable Castings Co., Smith's Falls, Ont.

Marine and Stationary Engines and Boilers

Allis-Chalmers-Bullock, Limited, Montreal.
 Jenokes Machine Co., Sherbrooke, Que.
 Smart-Turner Machine Co., Hamilton, Ont.

Mechanical Draft

Babcock & Wilcox, Limited, Montreal.
 Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Boston, Mass.

Metal Doors

Metallic Roofing Co., Toronto.
 Pedlar People, Oshawa, Ont.

Metal Stamping

Globe Machine & Stamping Co., Cleveland, Ohio.
 Metallic Roofing Co., Toronto.
 Pedlar People, Oshawa, Ont.]

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.
 Gartshore, John J., Toronto.
 Goldie & McCulloch Co., Galt, Ont.
 Gutta Percha & Rubber Mfg. Co., Toronto.
 Hamilton Brass Mfg. Co., Hamilton, Ont.
 Hamilton, Wm., Mfg. Co., Peterborough, Ont.
 Hay, Peter Knife Co., Galt, Ont.
 Hopkins, F. H. & Co., Montreal.
 Jeffrey Mfg. Co., Columbus, Ohio.
 Jenokes Machine Co., Sherbrooke, Que.
 Morrow, John, Machine Screw Co., Ingersoll, Ont.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 McLaren, D. K., Montreal and Toronto.
 McLaren, J. C. Belting Co., Montreal.
 Petrie, H. W., Toronto.
 Robb Engineering Co., Amherst, N.S.
 Smart-Turner Machine Co., Hamilton, Ont.
 Spence, R. & Co., Hamilton, Ont.

Milling Cutters and Machines

Becker-Brainard Milling Machine Co., Hyde Park, Mass.

Miners' Lamps

Allis-Chalmers-Bullock, Limited, Montreal.

Mining Machinery

Allis-Chalmers-Bullock, Limited, Montreal.
 Canadian Rand Drill Co., Sherbrooke, Que.
 Gartshore, John J., Toronto.
 Hamilton, Wm. Mfg. Co., Peterborough, Ont.
 Hopkins, F. H. & Co., Montreal.
 Jeffrey Mfg. Co., Columbus, Ohio.
 Jenokes 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.
 Williams, A. R. Machinery Co., Toronto.

Motors and Dynamos

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.
 Keystone Engineering Co., Toronto.
 Petrie, H. W., Toronto.
 Sturtevant, B. F. Co., Hyde Park, Mass.
 Toronto & Hamilton Electric Co., Hamilton, Ont.

Moulding Sand

Hamilton Facing Mills Co., Hamilton, Ont.

Moulders Supplies.

Hamilton Facing Mill Co., Hamilton, Ont.

Municipal Filtration Plants (Water)

Pittsburg Filter Mfg. Co., Pittsburg, Pa.

Nickel

Canadian Copper Co., New York, N.Y.
 Orford Copper Co., New York, N.Y.

Nozzles

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

Office and Bank Fittings

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

Oils and Lubricants

Dixon, Jos. Crucible Co., Jersey City, N.J.
 Hamilton Facing Mill Co., Hamilton, Ont.
 Imperial Oil Co., Petrolia, Ont.
 Queen City Oil Co., Toronto.

Oil Cloth

Dominion Oil Cloth Co., Montreal.

Paints and Colors

Berry Bros., Walkerville, Ont.
 McArthur, Corneille & Co., Montreal.

Paper Manufacturers

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

Patents

Budden, Hanbury A., Montreal.
 Fetherstonhaugh & Co., Hamilton, Toronto.
 Marion & Marion, Montreal.

Patterns (Wood and Iron)

Maxwell, David & Sons, St. Mary's, Ont.

Perforated Metals

Globe Machine & Stamping Co., Cleveland, Ohio.
 Greening, B. Wire Co., Hamilton, Ont.
 Metallic Roofing Co., Toronto.
 Pedlar People, Oshawa, Ont.

Personal Accident

Canadian Casualty & Boiler Insurance Co., Toronto.

Phosphorizers

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Piano Action and Key Machinery

H. Gearing, Toronto.

Pig Iron

Bourne-Fuller Co., Cleveland, Ohio.
 Canada Iron Furnace Co., Montreal.
 Nova Scotia Steel & Coal Co., New Glasgow, N.S.
 Syracuse Smelting Works, Montreal.

Pipe (Riveted, Iron and Steel)

Babcock & Wilcox, Limited, Montreal.
 McDougall, John, Caledonian Iron Works Co., Montreal.

Pipe Threading Machines

Armstrong Mfg. Co., Bridgeport, Conn.
 Butterfield & Co., Rook Island, Que.
 Petrie, H. W., Toronto.

Pipes and Tubes

Bourne-Fuller Co., Cleveland, Ohio.
 Canada Foundry Co., Toronto.
 Montreal Pipe Foundry Co., Montreal.

Plaster

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

Plates

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

Plumbago

Hamilton Facing Mills Co., Hamilton, Ont.
 McCullough-Dalzell Crucible Co., Pittsburg, Pa.
 Pittsburg Crucible Works, Pittsburg, Pa.

Pneumatic Tools

Allis-Chalmers-Bullock, Limited, Montreal.
 Canadian Rand Drill Co., Sherbrooke, Que.
 Hamilton Facing Mill Co., Hamilton, Ont.

Pointer Rolls (For Rods and Wire)

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

Power Plants—Equipments

Allis-Chalmers-Bullock, Limited, Montreal.
 Babcock & Wilcox, Limited, Montreal.
 Canadian General Electric Co., Toronto.
 Canadian Westinghouse Co., Ltd., Hamilton, Ont.
 Darling Bros., Montreal.
 Economic Power, Light & Heat Supply 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.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 Packard Electric Co., St. Catharines, Ont.
 Perrin, Wm. R. & Co., Limited, Toronto.
 Petrie, H. W., Toronto.
 Phillips, Eugene F., Electrical Works, Montreal.
 Robb Engineering Co., Amherst, N.S.
 Smart-Turner Machine Co., Hamilton, Ont.
 Sturtevant, B. F. Co., Boston, Mass.
 Toronto & Hamilton Electric Co., Hamilton, Ont.

Presses (Tile, Sewer Pipe, Nozzles and Sleeves)

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

Pulleys

Darling Bros., Montreal.
 Goldie & McCulloch Co., Galt, Ont.
 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
 Smart-Turner Machine Co., Hamilton, Ont.

Producer Gas Plants

Economic Power, Light & Heat Supply Co., Toronto

Pumps and Pumping Machinery

Allis-Chalmers-Bullock, Limited, Montreal.
 American Steam Pump Co., Battle Creek, Mich.
 Canada Foundry Co., Toronto.

CLASSIFIED INDEX.

(CONTINUED).

Darling Bros., Montreal.
 Downie Pump Co., Downieville, Pa.
 Goldie & McCulloch Co., Galt, Ont.
 Jenckes Machine Co., Sherbrooke, Que.
 Kerr Engine Co., Walkerville, Ont.
 Morris Machine Works, Baldwinsville, N.Y.
 McDougall, John, Caledonian Iron Works Co. Montreal.
 Ontario Wind Engine & Pump Co., Toronto.
 Petrie, H. W., Toronto.
 Smart-Turner Machine Co. Hamilton, Ont.

Punches and Shears
 Globe 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 and St. Paul, Minn.

Railway Supplies
 Algoma Steel Co., Sault Ste. Marie, Ont.
 Allis-Chalmers-Bullock, Limited, Montreal.
 Gartshore, 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.

Reamers
 Butterfield & Co., Rock Island, Que.

Rivets
 Bourne-Fuller Co., Cleveland, Ohio.
 London Rolling Mills, London, Ont.

Rock and Ore Crushers
 Allis-Chalmers-Bullock, Limited, Montreal.
 Bradley Pulverizer Co., Boston, Mass.

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.

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.

Saddlery Hardware
 McKinnon Dash & Metal Works Co., St. Catharines, Ont.

Safes and Vaults
 Goldie & McCulloch Co., Galt, Ont.

Saw Mill Machinery
 Allis-Chalmers-Bullock, Limited, Montreal.

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.
 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.
 Smart-Turner Machine Co., Hamilton, Ont.

Shear Knives
 Hay, Peter Knife Co., Galt, Ont.

Sheets (Iron and Steel)
 Bourne-Fuller Co., Cleveland, Ohio.
 Leslie, A. C. & Co., Montreal.
 Lysaght, John, Limited, Bristol, England, and Montreal.
 Metallic Roofing Co., Toronto.
 Pedlar People, Oshawa, Ont.

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.
 Pedlar People, Oshawa, Ont.

Shovels.
 Hamilton Facing Mill Co., Hamilton, Ont.

Smoke Stacks
 Gearing, H., Toronto.
 Hamilton, Wm. Mfg. Co., Peterborough, Ont.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 Robb Engineering Co., Amherst, N.S.
 Smart-Turner Machine Co., Hamilton, Ont.

Solder
 Globe Machine & Stamping Co., Cleveland, Ohio.
 Syracuse Smelting Co., Montreal.

Special Machinery
 Allis-Chalmers-Bullock, Limited, Montreal.
 Globe Machine & Stamping Co., Cleveland, Ohio.
 Smart-Turner Machine Co., Hamilton, Ont.

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.
 Smart-Turner Machine Co., Hamilton, Ont.
 Williams, A. R. Machinery Co., Toronto.

Steam Separators
 Babcock & Wilcox, Limited, Montreal.
 Darling Bros., Montreal.
 Robb Engineering Co., Amherst, N.S.
 Sheldon & Sheldon, Galt, Ont.
 Smart-Turner Machine Co., Hamilton, Ont.

Steam Shovels
 Allis-Chalmers-Bullock, Limited, Montreal.

Steam Specialties
 Darling Bros., Montreal.
 Penberthy Injector Co., Windsor, Ont.
 Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Hyde Park, Mass.

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 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.
 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.

Stocks and Dies
 Armstrong Mfg. Co., Bridgeport, Conn.
 Butterfield & Co., Rock Island, Que.
 Petrie, H. W., 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.

Sulphate of Alumina
 Nichols Chemical Co. of Canada, Montreal.

Suspension Furnaces
 Continental Iron Works Co., New York City.

Tanks (Oil and Water)
 Canada Foundry Co., Toronto.
 Goldie & McCulloch Co., Galt, Ont.
 Hamilton, Wm. Mfg. Co., Peterborough, Ont.
 Jenckes Machine Co., Sherbrooke, Que.
 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.
 Storey, W. H. & Sons, Acton, Ont.

Textile Supplies
 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 Steel
 Bourne-Fuller Co., Cleveland, Ohio.
 Hopkins, F. H. & Co., Montreal.
 Leslie, A. C. & Co., Montreal.

Trucks
 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.

Tumbling Barrels
 Globe Machine & Stamping Co., Cleveland, Ohio.
 Petrie, H. W., Toronto.
 Smart-Turner Machine Co., Hamilton, Ont.

Turbines
 Canada Foundry Co., Toronto.
 Hamilton, Wm. Mfg. Co., Peterborough, Ont.
 Jenckes Machine Co., Sherbrooke, Que.

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.
 Smart-Turner Machine Co., Hamilton, Ont.
 Williams, A. R. Machinery Co., Toronto.

Valves (Rubber)
 Gutta Percha & Rubber Mfg. Co., Toronto.

Varnishes
 Berry Bros., Walkerville, Ont.

Ventilators
 Darling Bros., Montreal.
 Metallic Roofing Co., Toronto.
 Pedlar People, Oshawa, Ont.
 Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Boston, Mass.

Wagon and Carriage Wood Work
 Hors, 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.
 Canada Process Co., Toronto.

Water Softening Plants
 Pittsburg Filter Mfg. Co., Pittsburg, Pa.

Wheelbarrows.
 Hamilton Facing Mill Co., Hamilton, Ont.

Windmills
 Ontario Wind Engine & Pump Co., Toronto.

Wiping Rags for Waste
 Schienman, I. L. & Co., Detroit, Mich.

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.

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.

Wood-Working Machinery
 Advance Machinery Co., Toledo, Ohio.
 Goldie & McCulloch Co., Galt, Ont.
 Petrie, H. W., Toronto.
 Sheldon & Sheldon, Galt, Ont.
 Williams, A. R. Machinery Co., Toronto.

Zinc
 Leslie, A. C. & Co., Montreal.
 Syracuse Smelting Works, Montreal.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER

English Card Clothing

FULL STOCK ON HAND

"GENUINE OAK"
Leather Belting

OUR PRICES ARE LOW

Rubber Belting

D. K. McLAREN

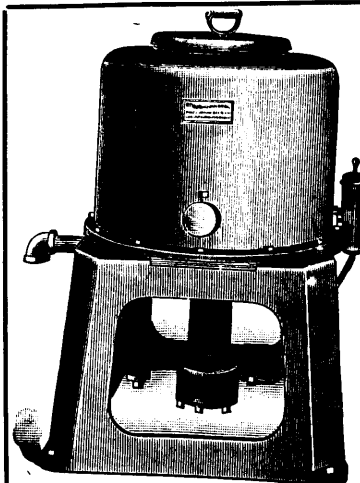
751 Craig Street, MONTREAL
196 King Street West, TORONTO
21 St. Peter Street, QUEBEC
169 Prince William St., ST. JOHN, N.B.



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

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

Persons having business with any of the Inspectors will find them at the above address. HON. NELSON MONTEITH, Minister of Agriculture



Save the Oil

From Chips, Screws, Nuts, Bolts, or any other small parts which are finished in oil, and

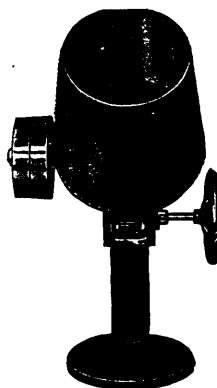
Save the Waste

Get 90% of the oil returned and have waste perfectly clean for use again.

Ask for the Catalogue

THE CANADIAN OIL AND WASTE SAVING MACHINE COMPANY

BROCKVILLE, ONT.



IMPROVED

TUMBLING BARRELS

The Globe Tilting Tumblers being CHEAPEST to operate are the CHEAPEST TO BUY.

SEND FOR CIRCULAR. WRITE FOR AGENCIES. MANUFACTURED BY

THE GLOBE MACHINE & STAMPING CO.

977 Hamilton St., CLEVELAND, OHIO.

H. W. PETRIE, Canadian Agent,

131-145 Front Street West, TORONTO, ONT.

Albert Manufacturing Co.

MANUFACTURERS OF THE WELL-KNOWN

"Hammer Brand" Calcined Plaster

AND

PATENT ROCK WALL PLASTER.

HILLSBOROUGH, N.B., CANADA.

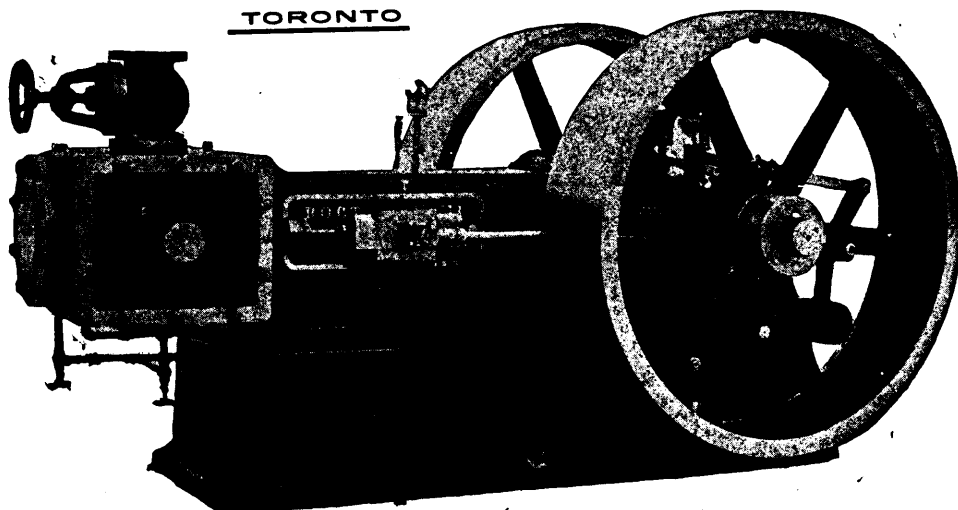
The A. R. Williams Machinery Co.,

LIMITED

MANUFACTURERS IMPORTERS AND DEALERS

TORONTO

—IN—



Engines, Boilers
Iron Machinery
Tools
Wood-Working Machinery

—AND—

GENERAL MILL MACHINERY and SUPPLIES

Write for.....

CATALOGUE and QUOTATIONS

OUR NEW BELL PATENT HIGH SPEED AUTOMATIC ENGINE

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

INDEX TO ADVERTISEMENTS.

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

See Classified Index Beginning on Page 37

ofc outside front cover.		obc.....outside back cover.	
A	PAGE		PAGE
Agriculture, Ontario Minister of, Toronto.....	44	Canada Process Co., Toronto.....	obc
Aitken, K. L., Toronto.....	8	Canadian Casualty & Boiler Insurance Co. Toronto.....	8
Albert Mfg. Co., Hillsborough, N.B.....	44	Canadian Copper Co., New York, N.Y.....	5
Algoma Steel Co., Sault Ste. Marie, Ont.....	4	Canadian General Electric Co., Toronto.....	13
Allis-Chalmers-Bullock, Ltd., Montreal.....	47	Canadian Manufacturer Pub. Co., Toronto.....	11
American Carpet & Upholstery Journal, Philadelphia, Pa.....		Canadian National Exhibition, Toronto.....	12
Armstrong Mfg. Co., Bridgeport, Conn.....	36	Canadian Office & School Furniture Co., Preston, Ont.....	36
Ayton Cordage & Power Co., Ayton, Ont.....	36	Canadian Oil & Waste Saving Machine Co., Brookville, Ont.....	44
		Canadian Rand Drill Co., Sherbrooke, Que.....	37
B		Canadian Westinghouse Co., Ltd., Hamilton, Ont.....	47
Babcock & Wilcox, Limited, Montreal.....	ofc	Canadian White Co., Montreal.....	34
Bank of Hamilton, Hamilton, Ont.....	35	Carter Publishing Co., London, Eng.....	7
Barber, Wm. & Bro., Georgetown, Ont.....	8	Cassella Color Co., New York and Montreal.....	7
Becker-Brainard Milling Machine Co., Hyde Park, Mass.....	10	Central Ontario Power Co., Peterboro, Ont.....	33
Bell Telephone Co.....	9	Chaplin, Wm., St. Catharines, Ont.....	36
Benson, W. T. & Co., Montreal.....	7	Chapman Double Ball Bearing Co., Toronto.....	14
Berry Bros., Walkerville, Ont.....	3	Chicago & North-Western Railway, B. H. Bennett, General Agent, Toronto.....	30
Boiler Inspection & Insurance Co., Toronto.....	obc	Clark-DEMILL Co., Hespeler, Ont.....	obc
Bourne-Fuller Co., Cleveland, Ohio.....	4	Conduits Co., Limited, Toronto.....	obc
Bradley Pulverizer Co., Boston, Mass.....	35	Continental Iron Works, New York, N.Y.....	5
Bradstreets, Toronto and New York.....	41	Copeland-Chatterton Co., Toronto.....	12
Bristol Co., Waterbury, Conn.....	obc	Crocker-Wheeler Co., St. Catharines, Ont.....	12
Brunner, Mond & Co., Northwich, England.....	6	Cross, M. O., Engine Co., Detroit, Mich.....	36
Budden, Hanbury A., Montreal.....	8		
Butterfield & Co., Rock Island, Que.....	9	D	
		Darling Bros., Montreal.....	37
C		Department Public Works, Ottawa.....	
Canada Chemical Mfg. Co., London, Ont.....	7	Dixon, Jos., Crucible Co., Jersey City, N.J.....	37
Canada Foundry Co., Toronto.....			
Canada Iron Furnace Co., Montreal.....	4		
		Dominion Belting Co., Hamilton, Ont.....	ofc
		Dominion Oil Cloth Co., Montreal.....	8
		Dominion Sewer Pipe Co., Swansea, Ont.....	34
		Dominion Wire Rope Co., Montreal.....	
		Downie Pump Co., Downieville, Pa.....	41
		Drummond, McCall & Co., Montreal.....	4
		Dun, R. G. & Co., Toronto.....	41
		Dunbar Fire Brick Co., Pittsburg, Pa.....	9
		E	
		Economic Power, Light & Heat Co., Toronto..	11
		Electrical Construction Co., London, Ont.....	13
		Elk Fire Brick Co., St. Mary's, Pa.....	9
		Engineering Review, London, England.....	
		Expanded Metal & Fireproofing Co., Toronto...	38
		F	
		Factory Inspectors, Ontario.....	39
		Factory Locations.....	36
		Fell, I. C. & Co., Toronto.....	37
		Fensom, C. J., Toronto.....	8
		Fetherstonhaugh & Co., Toronto.....	obc
		Forman, John, Montreal.....	7-13
		G	
		Gartshore, John J., Toronto.....	8
		Gartshore - Thomson Pipe & Foundry Co., Hamilton, Ont.....	42
		Gearing, H., Toronto.....	8
		Gillespie, W., Toronto.....	36

Sorting the Scrap

Not all scrap makes good bar iron—it must be carefully selected to give satisfactory results.

London Bar Iron is made only from the choicest scrap, selected by experts. Consumers are unanimous that it has the quality.

Orders promptly filled.

London Rolling Mills London, Canada.

PERRIN'S

HYDRAULIC AND
POWER SCREW

PRESSES

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

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

INDEX TO ADVERTISEMENTS (Continued).

	PAGE		PAGE		PAGE
Globe Machine & Stamping Co., Cleveland, Ohio	44	Metallic Roofing Co., Toronto	41	Piper, N. L. Railway Supply Co., Toronto	41
Goldie & McCulloch Co., Galt, Ont.	3	Mills, S. D., Toronto	8	Pittsburg Filter Co., Pittsburg, Pa.	46
Grand & Toy, Toronto		Mfines, J. H. & Co., Toronto	9	Q	
Greening, B. Wire Co., Hamilton, Ont.	35	Montreal Belting Co., Montreal	8	Queen City Oil Co., Toronto	ofc
Gutta Percha & Rubber Mfg. Co., Toronto	ofc	Montreal Pipe Foundry Co., Montreal	35	Queen's Run Fire Brick Co., Lock Haven, Pa.	ofc
H					
Hamilton Brass Mfg. Co., Hamilton, Ont.		Morris Machine Works, Baldwinsville, N.Y.	41	R	
Hamilton Facing Mills Co., Hamilton, Ont.	ofc	Morrison, T. A. & Co., Montreal	8	Retail Coalman, Chicago, Ill.	
Hamilton, Wm. Mfg. Co., Peterborough, Ont.	10	Morrow, John, Machine Screw Co., Ingersoll, Ont.	36	Robb Engineering Co., Amherst, N.S.	41
Harbison-Walker Refractories Co., Pittsburg, Pa.	33	Mc			
Hay, Peter Knife Co., Galt, Ont.	10	McArthur, Corneille & Co., Montreal	ofc	Roman Stone Co., Toronto	31
Heys, Thomas & Son, Toronto	8	McCullough-Dalzell Crucible Co., Pittsburg, Pa.	33	S	
Hopkins, F. H. & Co., Montreal	34	McDougall, John, Caledonian Iron Works Co., Montreal	46	Schienman, I. L. Co., Detroit, Mich.	34
Hore, F. W. & Son, Hamilton, Ont.	35	McGuire, W. J. & Co., Toronto and Montreal	38	Sheldon & Sheldon, Galt, Ont.	2
Hunt, Robert W. & Co., Chicago, Ill.	8	McKenney, J. J., Toronto	36	Smart-Turner Machine Co., Hamilton, Ont.	ofc
I					
Imperial Oil Co., Petrolia, Ont.	7	McKinnon Dash & Metal Works Co., St. Catharines, Ont.	ofc	Smith's Falls Malleable Castings Co., Smith's Falls, Ont.	ofc
International Harvester Co., Hamilton, Ont.		McLaren, D. K., Montreal and Toronto	44	Spence, R. & Co., Hamilton, Ont.	8
J					
Jeffrey Mfg. Co., Columbus, Ohio	11	N			
Jenokes Machine Co., Sherbrooke, Que.	6	Neff & Postlethwaite, Toronto		Storey, W. H. & Son, Acton, Ont.	35
Jones & Moore Electric Co., Toronto	13	Nichols Chemical Co. of Canada, Montreal	6	Stowe-Fuller Co., Cleveland, Ohio	8
Jones, J. L., Engraving Co., Toronto	36	Northern Aluminum Co., Shawinigan Falls, Que. and Pittsburg, Pa.		Sturtevant, B. F. Co., Boston, Mass.	11
K					
Kaye, Joseph & Sons, Limited, London, Eng.	10	Nova Scotia Steel & Coal Co., New Glasgow, N.S.		Sutton, S. T. & Co., Toronto	36
Kelly's Directories, Toronto and London, England	46	O			
Kerr Engine Co., Walkerville, Ont.	38	Oakey, John & Sons, London, England	7	Sylvester Mfg. Co., Lindsay, Ont.	36
Keystone Engineering Co. Toronto	8	Ontario Wind Engine & Pump Co., Toronto	36	Syracuse Smelting Co., Montreal and New York	3
L					
Leslie, A. C. & Co., Montreal		Orford Copper Co., New York, N.Y.	5	T	
London Rolling Mill Co., London, Ont.	45	P			
Lowell Crayon Co., Lowell, Mass.	36	Packard Electric Co., St. Catharines, Ont.	12	Toronto & Hamilton Electric Co., Hamilton, Ont.	13
Lysaght, John, Limited, Bristol, England and Montreal	ofc	Parke, Roderick J., Toronto	8	Toronto Paper Mfg. Co., Cornwall, Ont.	8
M					
Marion & Marion, Montreal	8	Pedlar People, Oshawa, Ont.	32	Turner, Vaughn & Taylor Cuyahoga Falls, Ohio	ofc
Maxwell, David, & Sons, St. Mary's, Ont.	36	Penman & Sprang, Windsor, Ont.		U	
		Pennsylvania Fire Brick Co., Beech Creek, Pa.	9	Union Drawn Steel Co., Hamilton, Ont.	5
		Perrin, William R. & Co., Limited, Toronto and Chicago, Ill.	45	V	
		Petrie, H. W., Toronto	14	Vogel, C. H., Ottawa	8
		Petrie, H. D., Hamilton, Ont.	8	W	
		Phillips, Eugene F., Electrical Works, Montreal	13	Wardlaw, T. D., Toronto	
				Westinghouse Electric & Mfg. Co., Pittsburg, Pa.	47
				Williams, A. R. Machinery Co., Toronto	44
				Winn & Holland, Montreal	6

WORTHINGTON TURBINE PUMPS

... HAVE ...

No Guards. No Springs.
No Valves. No Reciprocating Parts.

FOR ALL HEADS,
ALL SERVICES, AND
ALL PRIME MOVERS

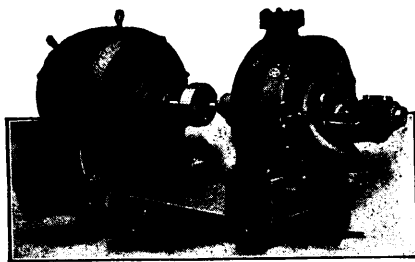
If you have any difficult pumping problem for solution, write us
Our experience is at your disposal.

The JOHN McDOUGALL CALEDONIAN IRON WORKS CO., Limited

BUILDERS FOR CANADA

MONTREAL

Send for Catalogue B. 8.



EXPORTERS

desiring full and up-to-date lists of buyers in Great Britain and Foreign Countries should consult Kelly's Directory of the Merchants, Manufacturers and Shippers of the World, (endorsed by the British Government) containing

LISTS OF

MANUFACTURERS OF THE WORLD,
EXPORTERS AND IMPORTERS,
BANKS, CHAMBERS OF COMMERCE,
CONSULS AND SHIPPING AND FORWARDING AGENTS.

All classified and arranged by countries. The Directory is easy of reference, is indexed to articles as well as to countries and towns, and contains nearly 4,000 pages and over a million names.

KELLY PUBLISHING CO.,

Head Office: LONDON, W.C., ENGLAND, and at New York, Paris, Hamburg, Melbourne, Sydney, Dunedin, Cape Town, Bombay, Buenos Ayres, etc., etc.

Dominion Branch—70 Dunn Ave., TORONTO

Pittsburgh Filter Mfg. Co.

PITTSBURGH,
PA.

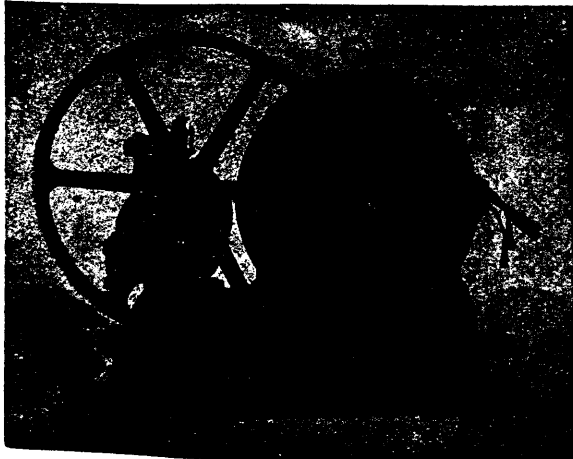


FILTERS
Softeners

City or
Industrial

WESTINGHOUSE MOTOR QUALITY

soon makes a showing in the driving of every kind of apparatus; machine tools, pumps, hoists, compressors, blowers, etc., etc.



Westinghouse Type S. Motor Driving Taber Pump

Quality Shows

in the absence of repair bills.

Quality Shows

in long continuous service.

Quality Shows

in efficient and economical operation.

Canadian Westinghouse Co., Limited

General Office and Works, HAMILTON, ONTARIO.

Lawlor Bldg., King and Yonge Sts.,
TORONTO.

152 Hasting Street,
VANCOUVER.

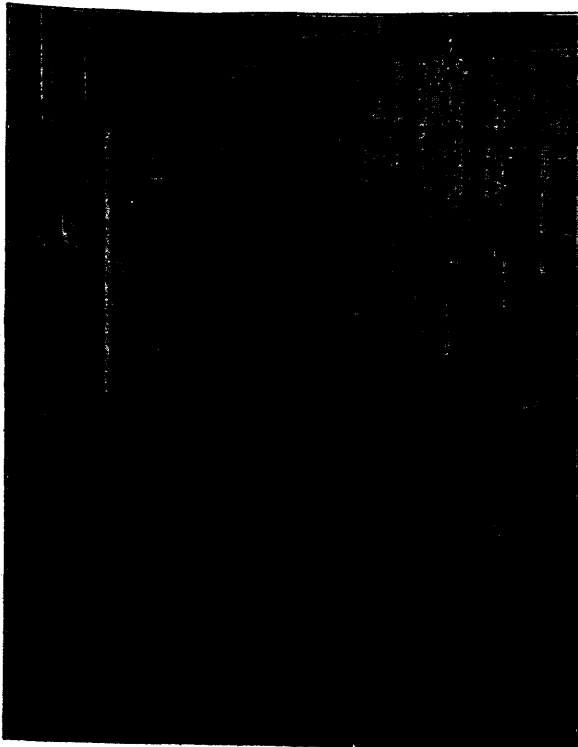
For particulars address nearest office:
HAMILTON.

922-928 Union Bank Bldg.,
WINNIPEG.

Sovereign Bank of Canada Bldg.,
MONTREAL.

184 Granville Street,
HALIFAX.

ALLIS - CHALMERS - BULLOCK LIMITED



IDEAL SMALL LIGHTING PLANT

TWO OF OUR 12 K.W. GENERATORS
AND AUXILIARY APPARATUS FORMING
THE LIGHTING PLANT AT WM.
DOW & CO.'S BREWERY, MONTREAL.

Head Office and Works
MONTREAL

District Offices

- | | | |
|--------------|---|--------------------------|
| TORONTO | - | MCKINNON BUILDING. |
| WINNIPEG | - | CANADA LIFE BUILDING. |
| NELSON | - | JOSEPHINE St. |
| MONTREAL | - | SOVEREIGN BANK BUILDING. |
| VANCOUVER, | - | 416 SEYMOUR St. |
| NEW GLASGOW, | - | N.S. TELEPHONE BUILDING. |

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

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

**OILS, CHEMICALS, DYESTUFFS
AND
TANNING EXTRACTS**

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

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

**THE BOILER INSPECTION
and INSURANCE CO. of CANADA**
CANADA LIFE BUILDING
TORONTO

Thirty Years' Experience as Consulting Engineers

Thorold, Ont., October 24th, 1904.
**THE BOILER INSPECTION & INSURANCE CO.
OF CANADA,**

Consulting Engineers,
Toronto, Ont.

Dear Sirs:—
In justice to your Boiler and Insurance Company would say that we cheerfully acknowledge that we are well satisfied to continue placing the risk with you on our nine Saw Mill Boilers at Little Current, on the same terms as during the past three years.

You cheerfully give us your valued opinion and advice on all matters affecting the Boilers and Engines in our Mill and knowing your ability, from long experience in such matters we have no hesitation in advising others to insure their boilers with you.

Yours truly,
J. & T. CONLON.

**CONDUITS COMPANY
LIMITED**

SUCCESSORS TO

The Richmond Conduit and Mfg. Co.
Limited

Sole Manufacturers

Under U.S. and Canadian Patents

GALVADUCT

AND

LORICATED

CONDUITS

For Interior Construction

TORONTO, CANADA

MANUFACTURING CHEMISTS

THE CANADA PROCESS COMPANY, LIMITED

Office and Works, Queen's Wharf, BATHURST STREET, TORONTO

Manufacturers and Importers of High Grade Chemicals

Glauber Salts, Hypo-Sulphite of Soda, Nitrate of Iron,
Sulphuric Acid, Nitric Acid, Muriatic Acid,
Pure Liquid Carbonic Acid Gas "Zenith Brand."

Also Sulphite of Lime, Bi-Sulphite of Lime, Sulphite of Soda, Bi-Sulphite of Soda, Hydrofluoric Acid, Liquid Sulphur Dioxide and Specialties for Dyeing, Tanning and Manufacturing Industries.

MACHINERY

FOR

Wire Drawing.
Chain Making.

Core Machines for general foundry practice.

Vitrified Sewer Pipe.

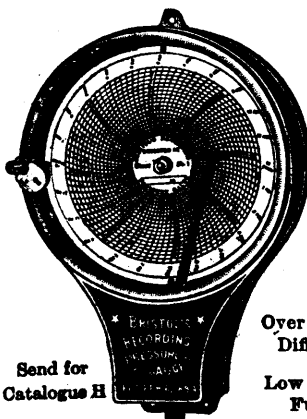
Rubber Washing.

Reclaimed Rubber Water Separators.

Write us—

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

**BRISTOL'S
Recording Instruments**



Send for
Catalogue H

For.....

Pressure,

Tempera-

ture and

Electricity.

Over One Hundred
Different Varieties.

Low Prices and
Fully Guaranteed

Gold Medal, St. Louis Exposition.

THE BRISTOL CO.

WATERBURY, CONN., U.S.A.

NEW YORK—114 Liberty St.

LONDON—23 College Hill.

**Smith's Falls Malleable
Castings Company, Limited**

CAPACITY 4,000 TONS

MANUFACTURERS
OF

**MALLEABLE
IRON
CASTINGS**

Smith's Falls, Ont., Can.

PATENTS Fetherstonhaugh & Co.
Head Office—TORONTO Branch Offices / Montreal, Ottawa, Winnipeg

HAMILTON, ONT.

Manufacturers of

Ceylon Pumbago Supplies

5

also Extra Fine Quality

MOLDING SAND

WRITE FOR PRICES