

Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

Coloured covers/
Couverture de couleur

Covers damaged/
Couverture endommagée

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

Cover title missing/
Le titre de couverture manque

Coloured maps/
Cartes géographiques en couleur

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

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

Bound with other material/
Relié avec d'autres documents

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

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

Coloured pages/
Pages de couleur

Pages damaged/
Pages endommagées

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

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

Pages detached/
Pages détachées

Showthrough/
Transparence

Quality of print varies/
Qualité inégale de l'impression

Continuous pagination/
Pagination continue

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

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

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

Additional comments:/
Commentaires supplémentaires:

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

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
									J		

ROYAL OIL CO.

TORONTO
and
MONTREAL

CYLINDER
DYNAMO
ENGINE

OILS

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

... ESTABLISHED FIFTY-FIVE YEARS ...

THEO. H. EATON & SON
WINDSOR, ONT.
Importers and Manufacturers
of
Dyewoods, Dyeing Drugs
ACIDS
PURE DYEWOOD EXTRACTS
CHEMICALS, ALKALI, ETC.

Sole Agents for
THE CROWN ANILINE DYES, ALIZARINES, ETC

ANILINES **EXTRACTS**

DOMINION DYEWOOD & CHEMICAL CO.
TRADE MARK
TORONTO.
DIRECT DEEP BLACK, T.
DIRECT BLUE BLACK, B.
For Dyeing Fast Black on Cotton or Mixed Goods, one dip.
- - Manufactured only by - -
Farbenfabriken vorm F. Bayer & Co.,
ELBERFELD
Dominion Dyewood & Chemical Co.
TORONTO - Sole Agents for Canada.

HENRY PORTER
Oak Leather Tanner, and Manufacturer of
PURE OAK TANNED BELTING
Lace Leather, Goodyear Welting, Bag and Colored Shoe Leather, Carriage, Furniture and Patent Leather, Oak, Sole, and Harness Leather.
434 to 442 Visitation St.,
MONTREAL, Que.

VOL. 30.

TORONTO, MARCH 15, 1895.

No. 6.

OAK TANNED BELTING

THE J. C. McLAREN BELTING CO., TORONTO and ... MONTREAL

CHARLES F. CLARK, Edw. F. RANDOLPH,
President. Treasurer.
ESTABLISHED 1849.
THE BRADSTREET MERCANTILE AGENCY
THE BRADSTREET COMPANY PROPRIETORS.
NEW YORK.
Offices in the principal cities of the United States, Canada, the European Continent, Australia, and in London, England.

The Bradstreet Company is the oldest and financially the strongest organization of its kind working in one interest and under one management with wider ramifications, with more capital invested in the business, and it expends more money every year for the collection and dissemination of information than any similar institution in the world.

TORONTO OFFICES:
36 Front St. E., & 27 Wellington St. E.
THOS. C. IRVING, Superintendent.

INGERSOLL RUBBER CO.
MANUFACTURERS OF TORONTO LTD. CANADA
HON. WARE, OF TORONTO LTD. CANADA
PRES. & TREAS. SECTY.

BELTING TRACKING **CLOTHING MOSS**

WAREHOUSE & OFFICE 61 & 63 FRONT ST. W. TORONTO.

THE WALKERVILLE Malleable Iron Co. LIMITED.
Manufacturers of
REFINED
AIR FURNACE
MALLEABLE CASTINGS.

Walkerville, Ontario.

Ridout & Maybee
J. C. RIDOUT, (Late C. E.) J. EDW. MAYBEE,
Barrister, Solicitor, Etc. Mech. Eng.

Solicitors of and Experts in
Pamphlet on Patents Sent Free
103 Bay Street, Toronto.

PATENTS

SPECIAL
The best Electric Motor in Town
Is Manufactured By
The John Abell Engine and Machine Works Co., Ltd.,
TORONTO ONT.
The "Improved Edison" System of Electrical Machinery.

ROBT. S. FRASER,
Commission Agent & Importer
MONTREAL, QUE.

Tetlow's English Card Clothing.
Patent White Belting.

ROOT & CO...
Cane Hair, Nails & Taps
P. O. GA LKE & CO...
Worsted and Mohair Fancy Yarns

FR. JAO ANSON
Egyptian and
Peruvian Col-
ten.

IMPERIAL BANK OF CANADA

Capital Authorized - \$2,000,000
Capital Paid-up - 1,984,828
Reserve Account - 1,182,282

DIRECTORS:

H. S. HOWLAND, President
T. R. MERRITT, St. Catharines, Vice-Pres.
Wm. Ramsay, Hon. John Ferguson, Robt. Jeffrey, Hugh Ryan, T. Sutherland Stayer.
D. R. WILKIE, Cashier, B. Jennings, Asst. Cashier, E. HAY, Inspector

Head Office, - TORONTO.

BRANCHES IN ONTARIO

Bank Niagara Falls St. Thomas
Fergus Port Colborne Sault St. Marie
Galt St. Catharines Welland
Ingersoll Woodstock Rat Portage
Toronto, cor. Wellington St. and Leader Lane
cor. Yonge and Queen Streets
cor. Yonge and Bloor Streets

BRANCHES IN NORTH-WEST:

Winnipeg Brandon Portage la Prairie
Calgary Prince Albert Edmonton

Drafts on New York and Sterling Exchange bought and sold. Deposits received and interest allowed.

Prompt attention paid to collections. Municipal Bonds and Debentures bought and sold.

Agents in Canada for "Onesque Bank, Ltd."
Agents, London, Eng., "Joyce's Bank, Ltd."
73 Lombard St., E. C., with whom deposits may be made for credit with Head Office in Branches.

USE SOMETHING GOOD

PEERLESS
MACHINE
CYLINDER
ENGINE
& DYNAMO

SAMUEL ROGERS & CO.
TORONTO.

Largest Manufacturers
of STEEL and BRASS
STAMPS in Canada

**PRITCHARD
& ANDREWS**

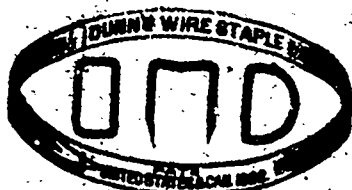
OTTAWA, ONT.

Rubber Stamps,
Stencils, Seals, Etc.

Send for Prices.

P. DUNN, Manufacturer

COTE ST. PAUL, Near Montreal.



All Kinds of Wire Staples and Suspender Rings.

**McARTHUR,
CORNEILLE & CO.**

Manufacturers and Importers

310-316 St. Paul Street

AND

147-151 Commissioners Street

MONTREAL

OFFER AT LOWEST PRICES

Pure Olive Oil, Winter Pressed
Lard Oil, Extra Fine
Spindle Oil and a
Full Assortment
of Other
Lubricating Oils,
Greases, Mill Seals, etc.
Also Chemicals, Dye Stuffs,
Dye Woods, Extracts, etc.

SOLE AGENTS IN CANADA FOR

St. Denis Dyestuff and Chemical Co.
PARIS.
A. POIRIER, - PRESIDENT.

Aniline Colors, Archil Extract, Cachou de
Laval, Etc.

BRITISH ALIZARINE CO. LONDON

Paste and Dry
Alizarine

Stamford Mfg Co., New York.
Dyewoods and
Extracts

COIGNET & CO., PARIS

Glues, Gelatines,
Etc.

Watson, Walker & Quickfall, Leeds
Indigo
Extracts

MILLERTON, TANNIN EXTRACT CO.

Hemlock
Extract

Maintains Large Stocks, fully assorted, and will
always be pleased to furnish
quotations and samples.

BROWN & CO.

MANUFACTURERS
OF

Square and Hexagon

NOTPRESSED NUTS

Paris, Ont.

WELLAND VALE MANUFACTURING CO

LOCK No. 2, ST. CATHARINES, Ont.

Manufacturers of

Axes, Soythes, Forks, Hoop,
Rakes and Edge Tools.

The Paris Electro Plating Co.

Manufacturers of

STOVE TRIMMINGS

and Novelties. Orders Solicited.

PARIS STATION - - - ONT.

F. W. HORE'S SONS

Hamilton - - - Ont.

Manufacturers of

Wheels, Wheel Materials, Shafts, &c

W. H. STOREY & SON

Montreal, Ont.

Manufacturers of Fine Gloves
and Mitts

In every variety and style. Montreal.



For Iron Fencing, Bank and Office Railings and all kinds
of Ironwork, address Toronto Fence and Ornament
Iron Works, 73 Adelaide St. West, Toronto.

THE BELL

TELEPHONE - COMPANY

OF CANADA

Manufacturers and Dealers in

Electro-Medical Apparatus,
Fire Alarm Apparatus, Elec-
trical Gas-Lighting Appara-
tus, Magnets for Mills,
Surgical Alarms, Hotel and
House Annunciators,
Electric Call Bells, etc.

FOR FURTHER PARTICULARS APPLY TO

No. 12 Hospital Street,
MONTREAL.

ROLPH, SMITH & CO.

Engravers, Lithographers,
Stationers, Die-Sinkers & Embossers

Bill Heads, Envelopes, Note Paper,
Show Cards, Calendars, Business
Cards, Cheques, Stock Certifi-
cates, Seals, Pamphlets, Circulars,
Notes, Drafts, Maps, Plans, Medal
Dies, Book Plates, Folders,
Hangers, Letter Heads, Debentures,

OFFICE SUPPLIES.
MONUMENTAL BRASS PLATES.

Bonds, Invitation Cards, Visiting
Cards, - Labels, - Posters.

49 Wellington St. West,
...TORONTO...

Send for Catalogue and Price
List to

THE JOHN MORROW MACHINE SCREW CO
INGERSOLL, ONT.

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

HACKNEY POWER HAMMERS

Are superior in many respects to most
in the market. Made by

STEVENS, HAMILTON & CO.
GALT : : ONT.

Leitch & Turnbull,

CANADA ELEVATOR WORKS,
QUEEN AND PETER STS. HAMILTON, ONT.

Patent Safety Hydraulic Hand and
POWER ELEVATORS.
Telephone connection.

ESTABLISHED 1842

**ADAM LOMAS
& SON**

Sherbrooke, Que.
Flannels Dress Goods and
Tweeds.

Agents, **JAS. A. CANTLIE & CO.**
Toronto and Montreal.

ALBERT MANUFACTURING CO.

Manufacturers of the Well Known

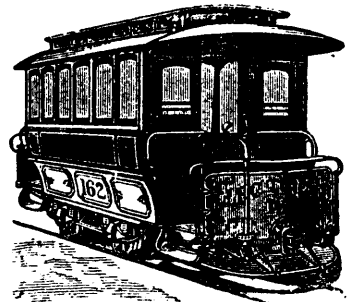
"HAMMER BRAND"

Calcined Plaster and Patent Rock Wall Plaster.

HILLSBOROUGH, N. B., CANADA.

PATTERSON & CORBIN

FINE ELECTRIC CARS



OUR SPECIALTY

St. Catharines, Ont.

MANUFACTURERS OF

Horse and Trail Cars

Every Description

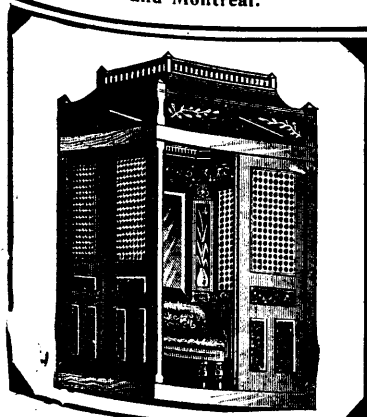
THE CANADIAN OFFICE & SCHOOL FURNITURE Co. Ltd.
PRESTON, ONT.

FINE
BANK, OFFICE,
COURT HOUSE &
DRUG STORE FITTINGS

OFFICE, SCHOOL,
CHURCH & LODGE FURNITURE

SEND FOR CATALOGUE.

J. L. JONES TORONTO



ELEVATORS

**FENSOM ELEVATOR
WORKS**
52-54-56 DUKE ST
TORONTO.

ELECTRIC HYDRAULIC
STEAM & HAND-POWER
PASSENGER & GOODS
ELEVATORS. DUMBWAITERS

The Largest Factory of the kind in the Dominion
Lion "L" Brand

BEST GOODS

HONEST GOODS



Lion "L" Brand.

Leading Dealers from Ocean to Ocean Handle These Goods.

Pure Vinegars, Mixed Pickles, Jams, Jellies and Preserves.

Michel Lefebvre & Co.
 Man'rs, MONTREAL, QUE.

Also BEET SUGAR Manufacturers at Berthierville, Que. ESTABLISHED 1840.

... 20 First Prizes, Gold, Silver and Bronze Medals.

REGISTERED

BRAND

.. Sampson ..

Portland Cement

Equal to the Best English and German Brands

MANUFACTURED BY.....

THE OWEN SOUND PORTLAND CEMENT CO., LTD
 OWEN SOUND, ONTARIO

use is authorized by the Toronto City Engineer and Engineers of other Public Works.

QUALITY GUARANTEED

.....Write for Prices, Tests and Samples.

JOHN LUCAS, 377 Spadina Avn. Representative for Toronto



ROCK

Trade
 Mark.

EMERY

MILL
 STONES

MADE TO FIT ANY MILL FRAME.

FASTEST GRINDERS KNOWN. CHEAP. DUR

NOTHING CUTS LIKE ROCK EMERY.

ROCK EMERY IS NEXT TO THE DIAMOND IN HARDNESS.

Made of **LARGE BLOCKS** of Rock Emery set in **BRONZE.**

NEVER GLAZE. Emery face requires **NO DRESSING—STAYS SHARP.**

MORE OF THESE MILLSTONES ARE NOW IN USE THAN ALL OTHER MODERN GRINDERS TOGETHER.

ROCK EMERY MILLSTONES GRIND EVERYTHING.

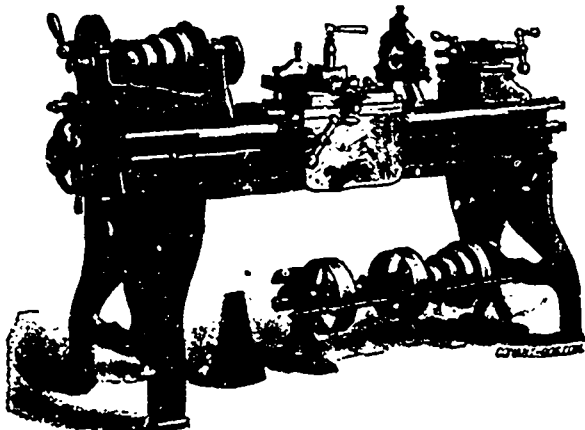
Send for Circular **B** to **STURTEVANT MILL CO., Boston, Mass.**

ESTABLISHED 1830

Robert Gardner & Son,

MANUFACTURERS OF

Fine Tools, Lathes, Planers, etc.
Shafting, Hangers & Pulleys, etc.



Nazareth, Brennan & Dalhousie Sts., **MONTREAL.**

REDDAWAY'S PATENT



BREAKING STRAIN 6IN CAMEL HAIR BELT—14,181 lbs
 6IN DOUBLE OAK LEATHER—7,522

W.A. FLEMING.

SOLE AGENT FOR CANADA.

57, ST. JAMES AVENUE (24 FRONT ST. E. VICTORIA CHAMBERS)
 MONTREAL. (TORONTO.) OTTAWA

Our Motto on EMERY WHEELS,

**"LARGE CONTRACTS, QUICK SALES
 and SMALL PROFITS"**

For an A NO. 1 Wheel

ALSO THE LARGEST and BEST LINE OF EMERY WHEEL
 MACHINERY in the U. S.

Catalogue furnished upon application.

The Springfield Emery Wheel Co., Bridgeport, Conn.

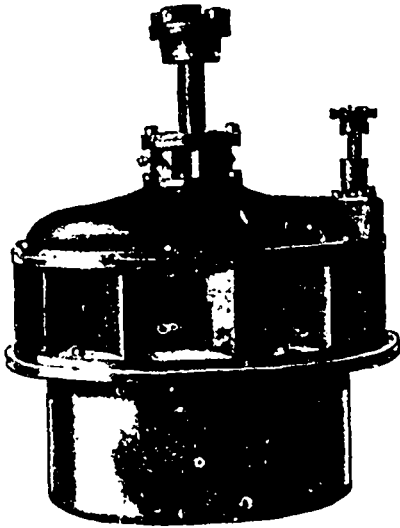
ROE & GRAHAM

Iron Founders and Machinists

WATER WHEELS, ENGINES AND MILL MACHINERY A SPECIALTY....

OTTAWA,

ONT.



The ...
**Standard
Water..
Wheel** 



Cut Showing Wheel Removed from Case 1

Made in sizes from 6 inches to 24 inches diameter. Wheel One Solid Cas.ing. 84 per cent of power guaranteed In Five Pieces. Includes whole of case, either register or cylinder gate.

Water put on full gate or shut completely off with half-turn of hand wheel, and as easily governed as any engine.

Write for Estimates, References and Catalogue of the STANDARD WATER WHEEL, also Milled and Rough Gearing of every size and description; Engines, Mill Machinery and Electric Power Plants; Latest Improved Band Saw Brazing Tables; Shears and Gummers, also Surface Grinder for Shingle Saws.

A. R. WILLIAMS,

Manufacturer of and Dealer in

Machinery and Power

Iron Working Machinery.

Wood Working Machinery

Saw Mill Machinery.

Shingle Mill Machinery.

Veneer Mill Machinery.

Mining Machinery.

Engines and Boilers, Motors and Dynamos, Fans, Blowers and Dry-Kilns.

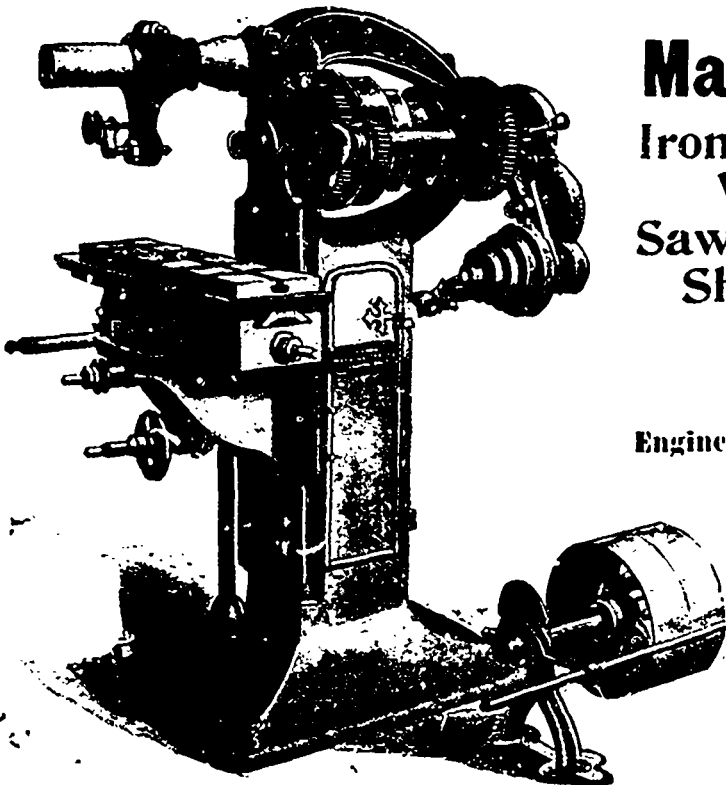
MILL SUPPLIES OF EVERY DESCRIPTION

Office and Works:

Soho Machine Works, TORONTO, Ont.

Branch Warehouse

305 St. James St., MONTREAL, Que.



EAGLE FOUNDRY † Established 1820.

...GEORGE BRUSH...
14 to 34 King and Queen Streets, - Montreal

..Maker of..
STEAM ENGINES, STEAM BOILERS,
HOISTING ENGINES, STEAM PUMPS,
Circular Saw Mills, Bark Mills, Shingle Mills, Ore Crushers, Mill
Gearing, Shafting Hangers and Pulleys.

Safety Elevators and Hoists for Warehouses, Etc.

HEINE SAFETY STEAM BOILERS...
Blake "Challenge" Stone Breaker.

**HYDRANTS, VALVES,
WATER WORKS SUPPLIES.**

ALSO IRON AND BRASS CASTINGS
OF EVERY DESCRIPTION

AT PRICES TO SUIT THE TIMES.

Law Bros. & Co.,

FOUNDERS AND MACHINISTS,
OTTAWA, ONTARIO.

E. LEONARD & SONS

LONDON - - - CANADA
MANUFACTURERS OF

ENGINES AND BOILERS
(NEW DESIGNS)

STEAM PLANTS EQUIPPED FOR ALL PURPOSES
Highest Economy, Regulation Perfect. Send for
Circular. Interviews Desired.

THOS NOPPER, - - - Sales Agent
79 YORK STREET, TORONTO, ONT.

St. Charles & Pringle
BELLEVILLE, ONT.



Manufacturers of
Electric...
Cable...
and Horse

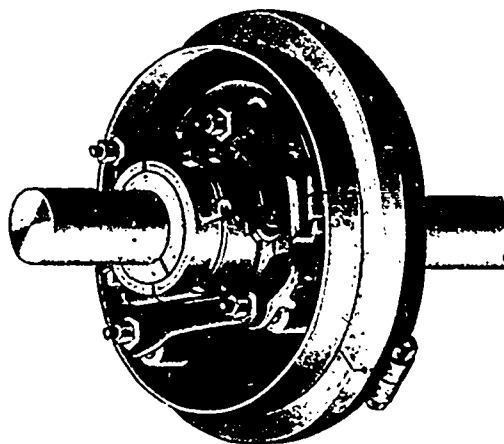
STREET CARS

Omnibuses, Horse
Wagons and Vehicles
of All Description.

**The "Dodge" Patent
Split Friction Clutch Pulley and Coupling.**

WE CLAIM POINTS OF SUPERIORITY AND MERIT AS FOLLOWS:

PERFECT BALANCE.
EASY OF ADJUSTMENT.
LIBERAL CLEARANCE.
EXCELLENT LUBRICATION.
REPAIRS MADE EASY.



SIMPLICITY.
POSITIVE FRICTION.
THE SPLIT FEATURE.
REASONABLE FIRST COST.
DETACHABLE SLEEVE.

OUR CLAIMS ARE AMPLY SUBSTANTIATED BY PRACTICE. WRITE FOR PRICE LISTS.

Dodge Wood Split Pulley Co.,

Works :-TORONTO JUNCTION.

OFFICE: 68 King St. West,
TORONTO.

FOR • • •
**Railway and
Contractors'
SUPPLIES**

SEND TO - - - -

G. & J. BROWN MFG CO. Ltd.

BELLEVILLE, ONT.

**Bridge Builders, Engineers, Boiler
Makers, Machinists and
Foundrymen,**

MANUFACTURERS OF

Frogs, Diamond Crossings, Switches, Hand Cars,
Lorries, Velocipede Cars, Jim Crows, Track
Drills, Semaphores, Rail Cars, Double and
Single Drum Hoists, Etc.

A. & E. LOIGNON,

CIVIL ENGINEERS

AND BUILDERS OF

**BRIDGES and IRON
BUILDINGS**

FOR MANUFACTURING PURPOSES.

Structural Iron Material Kept
In Stock.

DESIGNS. ESTIMATES AND SPECIFICATIONS.

7 PLACE D'ARMES, MONTREAL

NOTICE

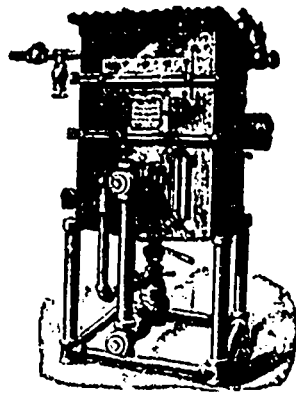
Manufacturers and Capitalists Patent Acts of 1872,
and Amendments, Section 28.

NOTICE is hereby given to all persons de-
siring of procuring the invention in the
manufacture of Aluminum and Alloys
thereof, for which certain letters patent of the
Dominion of Canada were granted on June
15th, 1882, to Chas. Martin Hall, assignor to the
Pittsburg Reduction Co., to wit: Nos. 31, 512,
31,513, 31,514, 31,515, 31,516, 31,517; and also the
invention in aluminum alloys and manufac-
ture thereof, for which certain letters patent
of the Dominion of Canada were granted on
July 28th, 1882, to John W. Langley, assignor
to the Pittsburg Reduction Company, to wit,
Nos. 31,492, that the undersigned is prepared to
grant licenses upon reasonable terms under
each and all of same letters patent, and other-
wise place the patent invention in possession
of the public in accordance with the provisions
of the above recited act.

Communications to the undersigned may be
addressed to 701 Ferguson Building, Pittsburg
Pa., U.S.A.

(Sgd) The Pittsburg Reduction Co
ASSIGNEE.

400,000 Horse Power AGGREGATE SALES 400,000 Horse Power



OUR CLAIMS FOR
THE **WEBSTER VACUUM FEED
WATER HEATER AND PURIFIER:**

It is the only Vacuum Heater made.
It is the only Heater that returns the condensed steam and drip
to boiler.
It is so constructed that it can be cleaned out in a few minutes
without having to stop the plant.
It consumes 25 Per Cent. of the Exhaust Steam from the engine,
purifies it and returns the same to the boiler.
It is guaranteed to effect a Saving in Fuel and Water of at least
10 per cent. over and above any pressure or tubular heater in the
market.
It takes up less floor space than any other heater.
It is Guaranteed and Furnished Subject to 30 Days' Trial.

WRITE US FOR NEW CATALOGUE, ETC.

DARLING BROTHERS,

SOLE MANUFACTURERS FOR CANADA,

Reliance Works, - - - - MONTREAL.

BELL & BARLEE,

Manufacturers of Fuel-Saving Oil Burners.

30 PER CENT. SAVED IN FUEL.

NO DUST, DIRT, ASHES OR SMOKE AND NO FIREMAN REQUIRED.

Our burners will perfectly atomize the oil by either steam or air process.

We are not connected with any other Oil Burner Co. Acknowledged the Best. Absolu-
tely Smokeless. It is Economical, Reliable. Requires no Expert to Manage. Cheaper
than Coal or Wood.

For Boilers, Furnaces, Forges, Ovens, Dryers Potteries, and Brick Kilns.

BELL & BARLEE, Lakefield, Ont.

THE ATTENTION of the Woolen Manufacturers is called to **THE TORRANCE PATENT
SELF-ACTING BALLING MACHINE** and positive Creel Feed for Woo
Cards. **THE LATEST AND BEST AND ONLY FEED ON THE MARKET THAT WILL MAKE YARN
POSITIVELY EVEN.**

These Machines are Built by

THE TORRANCE M'N'G. CO., Harrison, (East Newark), N. J., U. S. A., for the States, and by
THE ST. HYACINTHE M'N'G. CO., St. Hyacinthe, Que., Canada, for the Canadian market.

... WE MANUFACTURE ...

FANS FOR NOTHING

But hard work, and having had twenty years
experience we know how to get steam out of
Dye Houses and the largest
possible pro-
duct from **Dry Rooms**

OUR COMPOUND WHEEL is the most powerful in the world, and if we can't be
of actual value to you we don't want your money. **NO CUSTOMS DUTIES** on our Fans.

Send for Circular and information **Barney Ventilating Fan Co.,** 54 Oliver St., Boston, Mass., U.S.

ADVERTISE
IN THE

CANADIAN MANUFACTURER.

McLaughlin Bros.

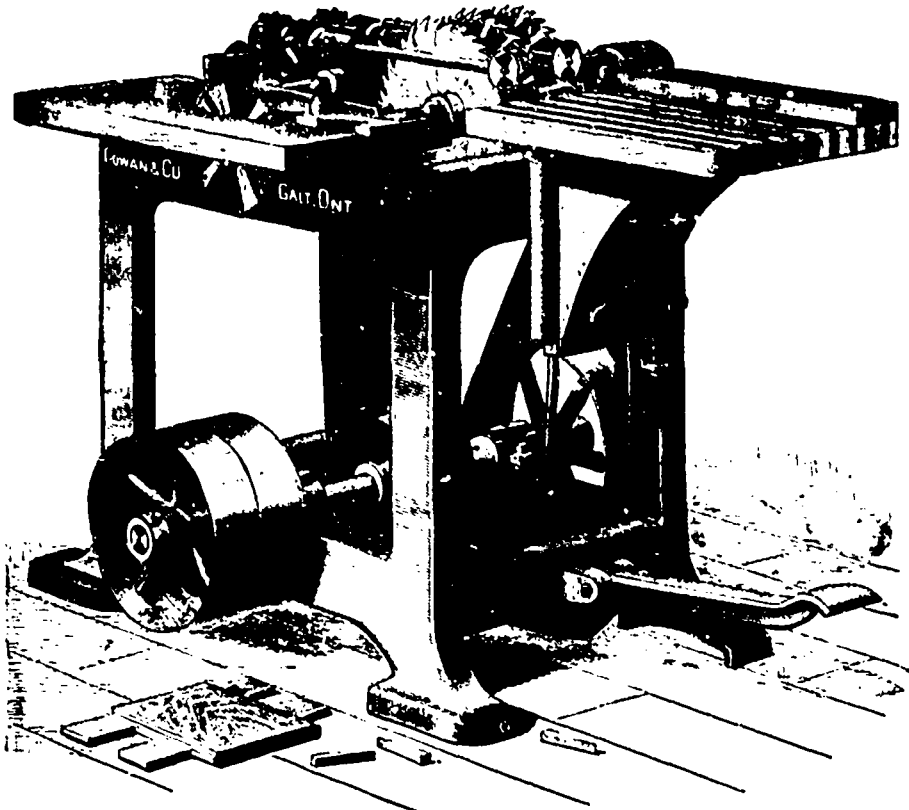
Teasels

Skaneateles Falls, N. Y.

Business Established in 1832.

Cowan & Co., Galt, Ont., Manufacturers of

Corliss and Slide Valve
Engines, = Boilers.



Moffatt's new Patent Feed Water Heaters, Lime, Mud, Magnesia, and Oil Extractor. This Heater has no equal, and steam users will find it to their advantage to investigate its merits. References and full particulars supplied on application.

Sawmill and Woodworking Machinery of every description, of the latest and most improved design.

Our new patent **Matching and Jointing Head** excels the Shimer or any other Head made.

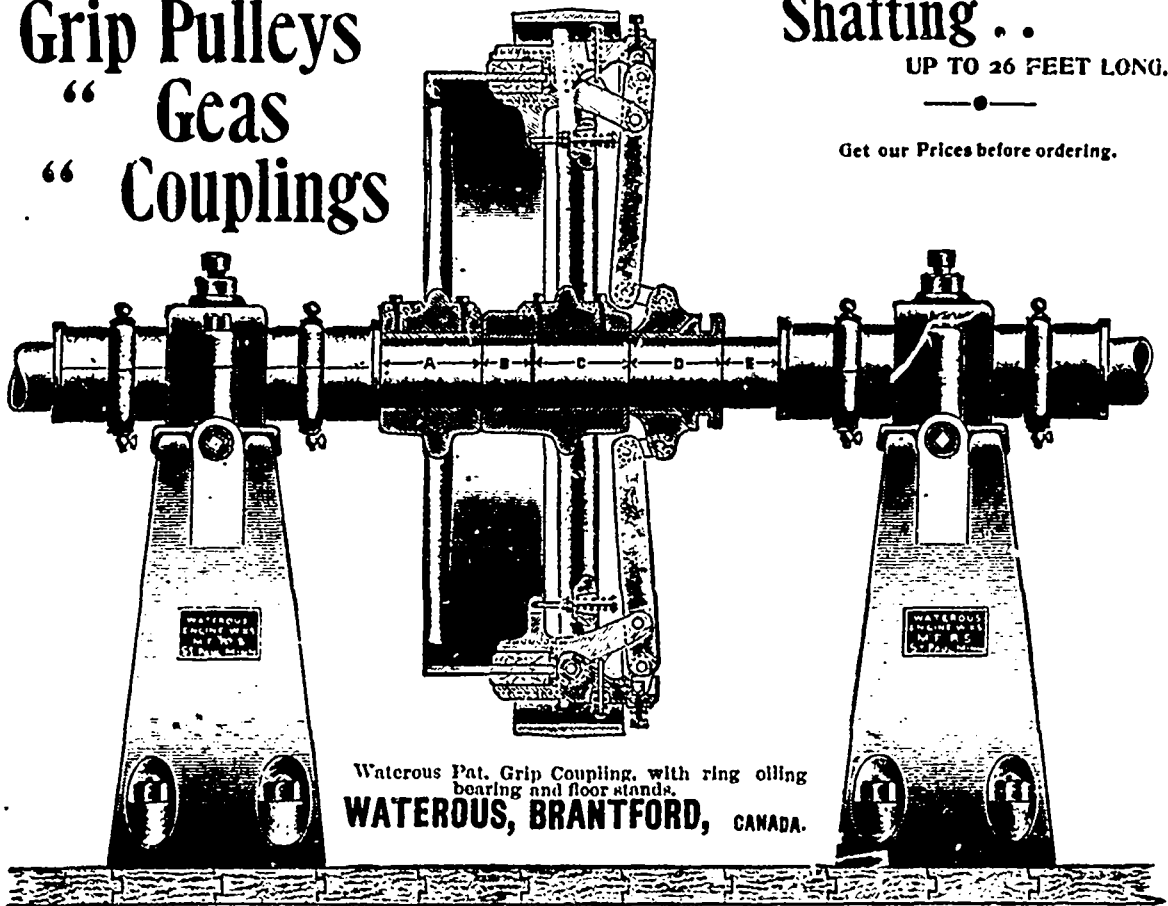
We Lead. Others Follow.
Write for prices and descriptions.

NEW IMPROVED SASH AND DOOR RELISHER.
A machine is the most simple, durable and convenient tool of its class in the market.

Grip Pulleys
" Geas
" Couplings

Shafting . .
UP TO 26 FEET LONG.

Get our Prices before ordering.



Waterous Pat. Grip Coupling, with ring oiling bearing and floor stands.
WATEROUS, BRANTFORD, CANADA.

FUEL OIL APPLIANCES

IMPROVED DUPLEX SYSTEM, for

Annealing, Forging, Enamelling, Welding, Melting, Brazing and Heating Generally

... WITH FUEL OIL ...

FURNACES DESIGNED AND BUILT FOR EVERY PURPOSE. ESTIMATES MADE, AND WORKS EQUIPPED COMPLETE.

W. S. ROCKWELL, Constructing Engineer
26 Cortlandt St., New York

THE IMPERIAL OIL COMPANY, (Limited.)

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

Lubricating, W. W. 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, etc. and solicit opportunity to compete against any Oil on the market.

Write for Prices and Samples.

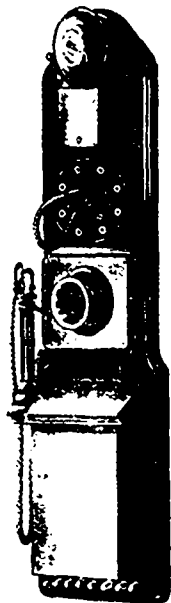
THE IMPERIAL OIL CO., Ltd.,

Head Office:—PETROLEA, CANADA.

BRANCHES

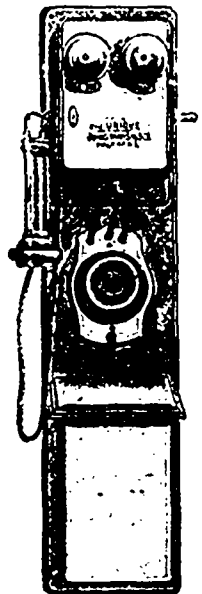
- | | | | | | | | | | | |
|-----------------|---|----------------|---|-----------------|---|----------------|---|--------------------|---|------------------|
| Halifax, N. S. | — | Hamilton, Ont. | — | Quebec, Que. | — | London, Ont. | — | Toronto, Ont. | — | Winnipeg, Man. |
| St. John, N. B. | — | Guelph, Ont. | — | Montreal, Que. | — | Chatham, Ont. | — | Peterborough, Ont. | — | Vancouver, B. C. |
| | | Moncton, N. B. | — | Stratford, Ont. | — | Kingston, Ont. | — | Windsor, Ont. | | |

Telephones



THE
"UNIQUE"
MAIN LINE AND
WAREHOUSE
TELEPHONES!

SOLD OUTRIGHT!
NO EXORBITANT
ROYALTIES!



The "UNIQUE" is the simplest and most efficient Electric Telephone made. It has no spring or screw adjustment in Transmitter to work loose.

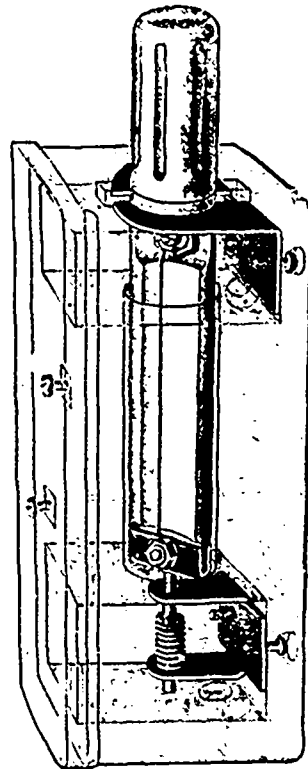
The "UNIQUE" has the only Transmitter that never gets out of adjustment, and is always the same, viz., clear and distinct.

Illustrated Telephone Price List fully describing these will be sent on application; also our Catalogue of General Electrical Supplies.

JOHN STARR, SON & CO. Ltd. Sole M'n'rs,
2, 4, 6 Duke St., Cor. Water, HALIFAX, N. S.

The Packard Transformer

The Transformer can be cut out of circuit and a burned out fuse replaced without the use of any tool whatever.



Packard Transformer Fuse Box Complete
(3 SIZE)

Packard Lamp Co., Ltd. Montreal
Makers of Packard Lamp and Transformers.

NORTHEY MFG. CO. Ltd.

TORONTO, = ONTARIO.

Steam and Power

Pumps

& HYDRAULIC MACHINERY

FOR ALL DUTIES.

VALVES and - Pipe :: Fittings

Write for Latest Prices.

RICE LEWIS AND SON

(LIMITED)

Cor. King and Victoria Sts. - TORONTO.

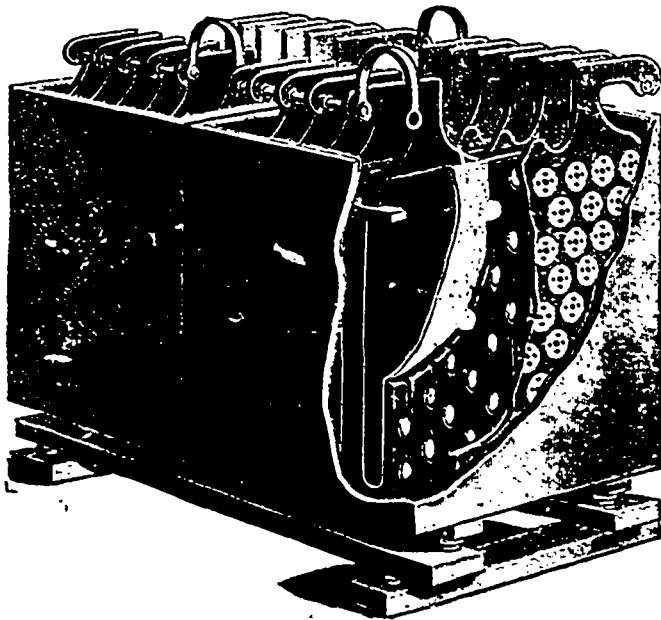
Black Sheet Iron, all sizes.
Sheet Steel, Ordinary & Dead Flat
Russia Iron, Genuine and Imitation.

M. & L. SAMUEL, BENJAMIN AND CO.

30 Front Street West, Toronto

ENGLISH HOUSE:
SAMUEL, SONS & BENJAMIN
164 FENCHURCH ST., LONDON. E.C.

SHIPPING OFFICE
1 RUMFORD PLACE, LIVERPOD



The Chloride Electrical Storage Syndicate, Ltd., Manchester, Eng. Societe Anonyme Pour Le Travail Electrique Des Metaux, Paris, France.

The only Storage Battery in use in Central Stations of American Manufacture.

THE ELECTRIC STORAGE BATTERY COMPANY.

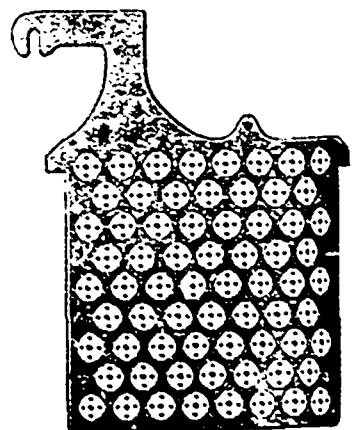
Drexel Building, Philadelphia.

Trade Mark
**CHLORIDE
ACCUMULATOR**

Registered September 11th, 1891.

Electrical Storage Cells of any Desired Capacity.

Catalogue giving capacities, dimensions, weights, prices, etc., on application



ESTIMATES GIVEN FOR...

Electric Light WIRING and... FIXTURES

Of Any Description.....

Write.....**LOWE & FARRELL,**
38 James Street South, Hamilton, Ont.

FIRSTBROOK BROS.

Mnfrs of Dovetail and Packing Boxes
Top-Pins, Side Blocks and Cross Arms. Wood Printers, Etc.
CIGAR BOXES, SHIPPING CASES.

TORONTO : : : ONT.



ESTABLISHED IN 1890.

PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

J. J. CASSIDY, - - - - - Editor.

SUBSCRIPTION - - \$1.00 per year.

ADVERTISING RATES SENT ON APPLICATION.

The Canadian Manufacturer Publishing Company, Ltd.

Room 66 Canada Life Building, King St. W., Toronto.

J. J. CASSIDY, - - President and Treasurer

J. C. GARDNER, - - Manager and Secretary.

OFFICERS OF

THE CANADIAN MANUFACTURERS' ASSOCIATION

President	- - - - -	ALBERT E. KEMP.
First Vice-President	- - - - -	JAMES P. MURRAY.
Second Vice-President	- - - - -	JAMES KENDRY.
Treasurer	- - - - -	GEORGE BOOTH.
Chairman Executive Committee	- - - - -	R. W. ELLIOT.
Chairman Tariff Committee	- - - - -	W. K. McNAUGHT.
Secretary	- - - - -	J. J. CASSIDY.

SECRETARY'S OFFICE: Canada Life Building, King St. W.

WOOLEN MANUFACTURERS' ASSOCIATION

President	- - - - -	B. ROSAMOND, M. P.
Vice-President	- - - - -	JAS. KENDRY.
Secretary	- - - - -	J. J. CASSIDY.

KNIT GOODS MANUFACTURERS' ASSOCIATION

President	- - - - -	JOHN PENMAN.
Vice-President	- - - - -	J. HEWTON.
Secretary	- - - - -	J. J. CASSIDY.

CARPET MANUFACTURERS' ASSOCIATION

President	- - - - -	JAMES P. MURRAY.
Vice-President	- - - - -	ROBERT DODDS.
Secretary	- - - - -	J. J. CASSIDY.

GLOVE MANUFACTURERS' ASSOCIATION

President	- - - - -	W. H. STOREY.
First Vice-President	- - - - -	JOHN MACLAREN.
Second Vice-President	- - - - -	A. R. CLARKE.
Secretary	- - - - -	J. J. CASSIDY.

REPRESENTATIVES TO

TORONTO INDUSTRIAL EXHIBITION ASSOCIATION

R. W. ELLIOT.	GEORGE BOOTH.
W. K. McNAUGHT.	SAMUEL MAY.
J. J. CASSIDY.	

AS TO "BRIEFS."

The Grit newspapers, and The Hamilton Spectator also, following the lead of The Toronto Globe, make a great outcry against the manufacturers because at their recent meeting the Secretary stated that the recommendations to the Government as to tariff matters had been duly presented to the Finance Minister, who, in acknowledging the receipt thereof spoke of it as a "brief." Tray, Blanche and Sweetheart, little dogs and all, bark at Mr. Foster and the manufacturers saying that the Minister in receiving the recommendations handed to him became their attorney. Of

course this is most ridiculous. Mr. Foster, representing the Government, was one of the judges whose duty it was to hear and determine upon all tariff matters that might be presented to him. As such a judge Mr. Foster had travelled all over the county hearing evidence and weighing the facts presented to him, and there was no person engaged in any industry—no one representing any interest whatever, but had full opportunity to lay their views before him, and all such views, we are assured, received full consideration at his hands. And this was just what the manufacturers did. They caused their views, to be embodied in concise form and presented to Mr. Foster; and if there was any such person as an attorney in the transaction it was the Secretary who presented the so-called "brief," and not the judge who was hearing the case.

If, however, Mr. Foster became the attorney of the manufacturers when he received their "brief," he had a good precedent for doing so. In the very report of the Secretary wherein this transaction with Mr. Foster is alluded to, mention is made of another similar transaction in which Sir Oliver Mowat, Premier of Ontario, became the attorney of the manufacturers also. Tray, Blanche and Sweetheart and all the rest of the pack of newspapers that bark so furiously at the heels of the Dominion Finance Minister because, as they say, he accepted the "brief" of manufacturers, thus becoming their attorney, make no mention of the similar transaction where the Premier of Ontario accepted a "brief" from the same source, also becoming their attorney. We call the attention of these newspapers to this neglected fact.

The Secretary of the Association in his report hereinbefore alluded to stated as follows :-

On April 10, 1893, at a special meeting of the Tariff Committee, Mr. R. W. Elliot, the chairman, explained the desirability of a delegation of members of the Association waiting upon Sir Oliver Mowat, Premier of Ontario, and request that some substantial encouragement be given by his Government towards the development of the iron industry of the Province. The suggestion met with favor, and the Secretary was instructed to see Sir Oliver and request a hearing for the proposed delegation, and also to prepare a memorial ("brief") to be presented to him. In pursuance of these instructions the Secretary arranged with Sir Oliver to receive the delegation; and on April 24, 1893, a large number of members of the Association composing the delegation waited upon Sir Oliver, presented their memorial ("brief") and explained their views in the matter. They were most kindly received by Sir Oliver and several of his Ministers; and it may be observed that since that visit a law has been placed upon the Statute books of Ontario providing for the payment of the equivalent of one dollar per ton on all pig iron made in Ontario from ores mined in the Province.

This application had reference to the encouragement of an important Canadian industry, the request being that the Government give it some substantial support; and it will be observed that it was very promptly granted. If in the record of this transaction as reported by the Secretary, the name of Sir Oliver Mowat, Premier, be read as Hon. George E. Foster, Finance Minister, and the word Dominion be substituted for the word Ontario, no difference could be perceived between the transaction and that at which the newspaper pack bark so furiously. Was it wrong for the manufacturers to ask Mr. Foster to encourage the iron industry of the country, and unobjectionable to ask Sir Oliver

to do the same thing? Was it wrong for Mr. Foster to receive a respectful request to do a certain thing, and right for Sir Oliver to not only receive a similar request but to grant it at his earliest opportunity? Was it wrong for Mr. Foster to accept a "brief" from the manufacturers and the correct thing for Sir Oliver to receive a similar brief? Or, on broader principles, is it right or is it wrong for a Minister of the Government to receive a "brief" or memorial from any citizen or body of citizens on an important public matter? Is there to be one sort of sauce for a Conservative goose and another sort for a Liberal gander? Is Mr. Foster, being a Dominion Minister of Finance, an enemy to good government when he receives a petition from a body of his constituents, and Sir Oliver Mowat, being Premier of Ontario, a friend to good government when he receives a similar petition from the same body?

And yet there are newspapers so blinded by political prejudice as not to observe that both these transactions were unobjectionable in every particular.

DISCRIMINATION IN RAILWAY FREIGHTS.

At the recent annual meeting of the Canadian Manufacturers' Association the following preamble and resolutions were passed:—

Whereas this Association recognize the fact that the prosperity and success of the manufacturing industries of Canada depend, to a great extent, upon the facilities of transportation afforded by the railroads;

And whereas, while perfectly willing to pay fair and remunerative charges for all services rendered by the railroad for transportation of freight, manufacturers are not willing to pay higher charges for short hauls than for long ones;

And whereas, on the same line of railroad higher rates are charged on some kinds of goods as compared with others, although the cost of the company of performing the service is no greater in the one case than in the other;

And whereas, in many cases lower rates are charged for goods imported or for export than for the same articles produced or for consumption in Canada;

And whereas, preferential rates are granted to one port or place as against another;

And whereas, excessive rates although perhaps not illegal prevent the development of traffic to the prejudice of the public and of the railroads themselves;

And whereas, the charges for hauling freight from points in the United States to points in Canada are frequently and generally much less than the charges for hauling similar freight between points both of which are in Canada, the distance being very much less;

And whereas, the charges for hauling freight reaching Canadian seaports from across the ocean to interior points in Canada are frequently and generally much less than the charges for hauling similar freight originating in Canada from such seaports to such interior points;

And whereas, such discrimination against Canadian manufacturers gives an undue and unjust advantage to foreign competitors;

And whereas, the difficulties in the way of obtaining redress by private individuals against railroad companies for overcharge or illegal preference are almost insuperable; therefore be it

Resolved: That this Association memorialize the Dominion Government to constitute a Court of Railway Commissioners whose duty it shall be to make rules and regulations for the government of all Canadian railways by which all such discrimination and unfairness as here alluded to shall be prevented.

Resolved: That the Secretary be instructed to transmit copies of these resolutions to the Premier of Canada; to the Minister of Railways and Canals, and to the President of the Privy Council; and also to the Boards of Trade in the principal cities and towns of Canada.

A matter that is of the greatest importance to every Canadian manufacturer is the excessive rates charged for carrying freight on Canadian railroads, and the obvious and palpably unjust discriminations shown in favor of some shippers, particularly from and to points in the United States to and from points in Canada. Under the National Policy all important manufacturing industries have multiplied to such an extent that the cost of production, because of competition, and the introduction of improved methods has been reduced until but a very narrow margin of profit remains to the manufacturer; and the distance between the points of production and consumption is a factor that, in many instances, is the measure of profit if there be profit to him in a transaction. Under such circumstances if there was no railway discrimination as to freight rates as between competing Canadian manufacturers the question would naturally resolve itself into the survival of the fittest; but when the discrimination is in favor of the foreign manufacturer and against the Canadian manufacturer, the question is as to whether the foreign or the home producer should survive. It was and is a part of the National Policy that railroads should be built in Canada wherever they might be required, and that the Government should assist in their construction, but it is most certainly in opposition to that policy that the manufacturing and all other industrial interests of Canada should be sacrificed to the end that Canadian railways may be enabled to compete with foreign railways in their export and foreign business. It is a fact that the railway freight charges on certain classes of merchandise hauled from London, Ont., to Toronto, are quite as high as the charges of similar merchandise hauled from Chicago to Toronto. How, then, is it possible for our manufacturers to successfully contend against such conditions? The home competition—that between themselves—is fierce enough, and is so keen as to place the question of profits almost at the vanishing point; but it is intolerable to them, and exceedingly unjust, that they should also be forced to lose the benefit supposed to be bestowed by a protective tariff through the action of the railroads in discriminating against them and in favor of their foreign competitors.

In this connection attention is directed to the report of Mr. Edward Gurney, chairman of the Manufacturers' Section of the Toronto Board of Trade. Mr. Gurney is an ex-president of the Canadian Manufacturers' Association, and the head of one of the largest and most important manufacturing concerns in Canada; and any utterance that he may make is entitled to great consideration. The Manufacturers' Section of the Toronto Board of Trade was organized for the special purpose of looking after the interests of the manufacturers who are members of that Board, and of manufacturers generally in Toronto and vicinity, and the matter of railway freight on manufacturers' products comes strictly within the purview of that Section. At the recent annual meeting of the Board Mr. Gurney reported as follows:—

The Manufacturers' Section has instructed me to present

for consideration the question of intercolonial communication, especially as affecting freights. The common carrier of this country, like the rest of us, has in view the interest of his shareholder, and the interests of the country at large are sometimes subordinated thereto in a degree, which, even from a business standpoint, and that the point of view of the railway, is not statesmanlike or likely to be profitable in the end. I could present to you facts covering a large range of experience which show that universally the manufacturer of Canada is at a disadvantage in our own markets. This is especially the case in relation to the trade of the more distant provinces; but it is not confined to this, or may be illustrated by the fact—which, I believe, is well sustained—that freights from Chicago to London, Ont., are as low as from Toronto to the same point. This suggests the consideration as to the charge made per mile by our own railways from the border to London, as compared with the haulage from Toronto to London, and it appears that in this case there is discrimination against Canada and the Canadian producers. In closing this brief and very unsatisfactory report of the operation of the Manufacturers' Section, I would state that there is a general concurrence amongst those who have been so far associated with the Section that co-operative action, which is afforded by this method of operation, is very desirable, and that questions of public interest are more likely to be influenced by the Board of Trade, because of the existence of the Section, than would be the case without its existence.

This outcry against railway discrimination is not confined to the manufacturers of Canada, but it goes up from all over the country and from all the industrial classes of the people; and a rapidly growing interest is being manifested regarding it. There are but few meetings of the Railway Committee of the Privy Council of the Dominion Government but applications of this nature are presented; and the question has become such a burning one that no matter what the influences of the great corporations may be with the Government, the voice of the people must and will be heard and heeded. It is claimed by some that this matter of discrimination of freight rates does not come within the bounds of the authority of the Committee; but the urgency with which the matter is being presented before it precludes the possibility of its being forever ignored, and when the inevitable happens, and the question comes up for consideration, as come it must, and that at an early day, it must be decided whether, under the Railway Act, the Committee is empowered to enquire into and to adjudicate upon the question of unjust preference and discrimination. If the Committee possess that power it must perform its palpable duty and interfere in the interest of right and justice between the manufacturers and the public at large, and the railway corporations whose only aim seems to be to earn large dividends for their shareholders. If the Committee do not possess this necessary authority, then the redress must be with the Dominion Parliament.

This matter may be further emphasized by reference to a report made to the Patrons of Industry of the Municipality of Russell, Manitoba, by a committee appointed by them to prepare a statement to be laid before the Commission appointed to take evidence in the matter of railway freight rates in Manitoba and the North West Territories. The report is compiled from the most recent sworn public returns furnished by the different railway companies to the Minister of Railways and Canals, and has reference to the

freight rates upon some staple articles transported to and from the municipality of Russell. For the purposes of comparison the Canadian Pacific Railway is divided at Callender Station, otherwise known as North Bay Junction, where a connection is formed by that road with the Grand Trunk Railway, west of which there is no competition, while eastwardly there is competition between the two roads. According to these reports the net earnings per mile of the Canadian Pacific road, in its entirety, averaged \$3,500 per mile, the earnings per train mile being \$1.50 and the cost per train mile run, 91 cents. The net earnings of the Grand Trunk Railway were \$5,450 per mile of railway, the earnings per train mile \$1.03, and the cost per train mile, 74 cents. The net earnings of the Intercolonial Railway were \$2,666 per mile of railway; earnings per train mile run, 69 cents, and cost per train mile substantially the same—69 cents. The average net earnings per mile of all Canadian railways was \$3,346, and the earnings per train mile run, \$1.13.

According to the returns the net earnings of the Grand Trunk Railway are \$5,078,606, or 3 per cent. on the capital of the company, estimated at a cost of \$53,000 per mile, or \$168,000,000. The net earnings of the Intercolonial on a total cost of \$54,000,000, including all the annual deficits, or \$48,000 per mile, are \$20,000, or less than 1-20 per cent. The net earnings of the C. P. R. are \$8,129,000, or 3 per cent. on an estimated cost of \$47,000 per mile on 5,784 miles, or \$271,000,000. Inasmuch as 1,688 miles of the C.P.R. is prairie construction, and the most expensive sections of the railway, namely 200 miles in the Rocky Mountains and 428 miles between Port Arthur and Winnipeg were built by the Government for \$45,000 a mile, at a time when labor, material and inaccessibility all enhanced the cost of construction; and as no right of way had to be paid for over the largest portion of their line, \$47,000 is a large estimate for the cost of construction over their whole railway. When, however, the above estimate of capital of \$271,000,000 is reduced by the gift of \$100,000,000, made up as follows: \$25,000,000 in money to main line; \$30,000,000 for 700 miles of railway built; \$10,000,000 for re-purchase of 6,333 acres of land; land granted to main line and branches exceeding 20,000,000 acres.

After deducting the re-purchased land and other sources of public aid to the branches included in the Canadian Pacific road mileage, amounting to five or six million dollars, the dividend of 3 per cent. on \$271,000,000 is excessive, as compared with the 3 per cent. on the estimated cost of the Grand Trunk, and the earnings of the people of the Province of Manitoba and the North-west Territories. As against the \$1.03 east of Callendar station, it is evident the excessive profits are taken by discrimination in rates from the earnings of the people in consequence of the absence of any competition.

It may be urged that the discrimination made by the Canadian Pacific road west of North Bay is exceptional, and occasioned by causes beyond the control of the company and that such a condition does not prevail in the more thickly settled parts of Ontario, Quebec and the Maritime Provinces; in answer to which attention is directed to Mr. Gurney's report to the Toronto Board of

Trade, and also to the constant complaints that are made to the Railway Committee of the Privy Council. The report of the Committee of the Patrons of Industry at Russell covers the ground more completely than any thing that has been given to the public in this section of country, and therefore we may be permitted to still further exemplify the situation by some additional reference to facts as shown in that report. The freight rates on a few of the articles received at and shipped from Russell are calculated on a basis of train mileage earnings with 40,000 pounds of merchandise to the car, and fifteen cars to the train. Thus car loads of shingles hauled from Vancouver to Russell, 1,595 miles at a rate of 62½ cents per 100 pounds, cost per train mile of fifteen cars, \$2.40. Car loads of shingles from Vancouver to Niagara river and other points in Ontario via North Bay and Suspension Bridge, 2,985 miles at a rate of 75 cents per 100 miles, cost per train mile of fifteen cars only \$1.50.

Car loads of oats from Chicago to New York City by Chicago, Grand Trunk and Grand Trunk Railway via Suspension Bridge about 1,000 miles, cost per train mile \$1.08. Car loads of oats from Russell to Fort William, 654 miles, cost per train mile \$2.10. Car loads of lumber, Keewatin to Russell at 23 cents per 100 pounds cost per train mile \$2.10.

Car load Vancouver to Russell, lumber and shingles, at 62½ cents per 100 pounds, cost per train mile \$2.40, and doors on same car at \$2.28 per 100 pounds cost per train mile \$10.50. Cars of furniture, Ontario to Russell, 1,600 miles, cost per train mile, \$5.60. Car of cattle, Russell to Winnipeg, 23 cents per 100 pounds, 226 miles cost per train mile \$6. Car of cattle, Russell to Montreal, 71 cents per 100 pounds, cost per train mile \$2.55. Car of butter, Russell to Vancouver, \$2.86 per 100 pounds cost per train mile \$10.65. Car of shingles, Vancouver to Brandon, 1,349 miles, 50 cents per 100 pounds, cost for transportation \$2.25 per thousand shingles. Car of hogs, Russell to Winnipeg, 226 miles, cost per train mile, \$5.25.

By this it will be seen that the railroads practise unjust and onerous discrimination upon all classes of the public and all the various industries. The situation is one that demands prompt relief.

THE SONG OF THE SIREN.

Men of business know that before 1878 we had industries lusty, thriving and developing in a more rapid ratio than any we have to-day. They know that a reformed tariff which will emancipate the great natural industries will give new life to the country, and therefore, new prosperity to the towns and cities, and new vitality to every commercial and manufacturing interest. *Toronto Globe.*

Men of business know that before 1878 the manufacturing industries of Canada were in such a deplorable condition that the manufacturers could see no light ahead of them and that they must inevitably go to the wall unless the fiscal policy that then existed should be abandoned, and one more in accord with the necessity of the occasion and the spirit of the times substituted. For many years previous to 1878 Canada gave good trial to a low tariff system, in the vain hope that by it the financial exigencies of the country would be fully met, and that prosperity would prevail. Instead of such happy results depression

overspread the land, and financial deficits had to be met by additions to the public debt. The exports of the products of our "natural industries," as *The Globe* calls them, decreased constantly, and the want of life in the country was as painfully felt as was the lack of prosperity in the towns and cities, and the absence of vitality in commercial and manufacturing interests. At that time there was no National Policy party in Canada, and there was a painful lack of that national feeling that sprung up and so rapidly gained headway when the National Policy was proclaimed. At that time the manufacturers were looking anxiously for a Moses to lead them out of the bondage of a tariff for revenue only policy into the better and fairer land where Canadian capital and Canadian workmen would be of more importance in the eyes of the Government than the capital and workmen of other countries. If *The Globe's* political friends had been quick to comprehend the situation they would have extended a helping hand to the manufacturers, and thereby have secured their continuance in its party, for it must be stated that a very considerable portion of them were thus affiliated. But the Bourbons of the party — they who never learn — unable to discern the impending change, left the manufacturers to shift for themselves, and then it was — now twenty years ago — that a strong body of representatives assembled unto themselves and formed what is now the Canadian Manufacturers' Association. Those of them who had previously been adherents to the Liberal party continued their allegiance to it in all local and provincial issues, but separated from it on all Dominion issues where the policy of protection was at stake. They considered that the Mowat Government, as far as provincial politics was concerned, was quite as good and acceptable as anything that might have been hoped for if the Opposition should attain to power; and that is the sentiment entertained by many of the members of the Association at this time. Since the birth of the Association many manufacturers have become connected with it who never were in affiliation with the Liberal party and perhaps never will be; but this diversity of sentiment, in other than tariff issues, has never led to any unpleasantness or misunderstanding or disagreement among the members of the Association simply because no political question other than the National Policy is ever discussed by the Association.

It is not likely therefore that any blandishments of *The Globe* telling the manufacturers that if the Liberal party should accede to power it would not lay the hand of animity upon any industry in the land, and that Liberals are not a party of commercial assassins, will avail. Neither is it likely that the manufacturers have forgotten the causes that led up to the formation of the Association. *The Globe* to the contrary notwithstanding, they know that before 1878 the manufacturing industries of the county were anything but lusty and thriving. They remember that the tariff that then prevailed, which was just such a tariff as *The Globe* and its party wish to again thrust upon the country, will enslave all its industries, and bring about just such a deplorable condition as now prevails in the United States. A burned child dreads the fire, and manufacturers with the experience of before 1878 before them are not disposed to listen to the songs of the siren of free trade.

FREE TRADERS AND THEIR METHODS.

At the recent meeting of the Canadian Manufacturers Association, Mr. W. H. Law, the retiring president, in his address alluding to the various methods of the opponents of protection to destroy it, said:—

It is interesting to observe the methods by which the free traders seek to discredit Canadian manufacturers. At one time they are taunted with being unable to hold their own, in their own country, against foreign competition. At another time they are denounced as thieves and robbers. At another time they are consigned to the custody of the Evil One. Then cajolery is used, and they are told that under a change of policy no injury would be done or attempted to any manufacturing industry. It may be that our present system is not perfect—perfection is not attained in this life—but we do not usually call in quacks as medical advisers when we are ill, neither do we consult with our enemies on important business matters—and it would not be wise to ask the enemies of protection to correct any incongruities there may exist in the tariff.

Unlike the persistent and perhaps consistent Cobdenites of Great Britain who advocate free trade under any and all circumstances, the enemies of protection in Canada have no settled and persistent policy in their fight against it, their sole aim and desire being rather to displace the present government and the administrators of it, that they themselves may attain to power. When Richard Cour de Lion—he of the lion heart, as he has denominated himself, other Sir Cartwright, was Finance Minister, his dislike of the manufacturers who approached him with suggestions as to necessary changes in the tariff impelled him with his characteristic urbanity to consign them all to a hotter climate than ever prevails in this country; and as the gentleman has never shown any greater consideration for the manufacturers than on that occasion, and as he proposes to again become Finance Minister by the grace of Mr. Laurier if their party should accede to power in the next election, it is certain that the manufacturers could expect no different reception from him than previously. But a few days ago he denounced the manufacturers as packs of wolves, and if he thus considers them, certainly they could hope for no justice or consideration whatever from him.

So too as to Mr. Laurier, who, on a recent occasion in Montreal, drew a very distinct line between the policies of the two political parties of the country. He announced most emphatically that as the policy of the present dominant party is that of tariff protection to our manufacturing industries, so was the policy of his party that of free trade as they have it in Britain. The line is plainly drawn and there can be no ambiguity found in his words. As between the two policies, with him and his party it is war to the knife and the knife to the hilt.

In the presence of this plain and unmistakable position of these two leaders of the free trade party The Toronto Globe has become apprehensive that the effect has been to create an alarm throughout the country that bodes no good to the success of its party. It recognizes the fact that "free trade as they have it in Britain" advocated by Mr. Laurier, and the "go to the devil" sentiments entertained by Richard of the Lion Heart towards the manu-

facturers, if carried to their full, and intended conclusions, and embodied in the policy of the government, should these leaders accede to power, would so unsettle business as to create a panic quite as disastrous in its effects as that which followed a similar cause in the United States, and from which that country is yet suffering. The Globe fears that the sound judgment that at three general elections has saved Canada from such a fate, will again exert itself, and continue the marplots in the cold shades of opposition. It knows that the manufacturers are not the only friends of the National Policy. It knows that the financial institutions of the country and the mercantile community and the agricultural interests are all vitally interested in preventing a revolution that would be disastrous in the extreme. And so it proclaims, as it does in a recent editorial, that "A Liberal Government would not lay the hand of enmity upon any industry in the land." It tells us that the business men of the country "know just what there is in the story of prosperity told from the Conservative platform; just what are the fruits of the system of protection; and they will readily concede that men thus sensitive to the welfare of the commercial interests are not revolutionists, theoretical madmen who seek power only to exult in the ruin of industries." It tells us, too, that "Liberals are not a party of commercial assassins. They do not propose to legislate for the United States, nor even for Great Britain, but for Canada, for Canadian interests, for the Canadian people."

These be queer declarations for The Globe to make in the light of the "free trade as it is in Britain" torch held aloft by Mr. Laurier, the would-be Premier, and the "manufacturers may go to the devil" sentiments of Sir Richard Cartwright, the would-be Minister of Finance, of a Liberal Dominion Government. The Globe does not explain how a Liberal Government could possibly refrain from laying the hand of enmity upon Canadian manufacturing industries, and how it would strive to save rather than to destroy, when the would-be Premier of such a Government has declared his policy to be "free trade as it is in Britain," and the would-be Finance Minister denounces the manufacturers to be wolves, and consigns them to the custody of the devil. Of course The Globe knows, as it says the business men of Canada know, that the story of the prosperity of the country, brought about by the operation of the National Policy, is true; and it knows also, as the business men of Canada know, that those who seek to destroy that policy are revolutionists and theoretical madmen who seek power only to exult in the ruin of our manufacturing industries. It knows that the enemies of protection are commercial assassins who would certainly not, if in power, legislate in the interest of any Canadian manufacturing industry.

The "free trade as they have it in Britain" policy of Mr. Laurier will not answer in Canada. The abuse of the manufacturers by Sir Richard is not to the taste of the business men of Canada. The cajolery of The Globe, and its assertion that its party, if in power, would not legislate against the interests of the manufacturers, is estimated at its true value. We want no panic in Canada such as has so recently prevailed in the United States, and from which that country is yet suffering.

COMMERCIAL ASSASSINS.

The Toronto Globe attempts to cajole the manufacturers by telling them that Mr. Laurier and his party are not such a bad lot of fellows after all, and that if they attain to power they will not slaughter the manufacturing interests of the country as some National Policy advocates assert. In a recent editorial it has these soothing words to say:—

A Liberal Government would not lay the hand of enmity upon any industry in the land. They would strive to save rather than to destroy. And in the vast majority of cases a sane and prudent, but yet effective, re-arrangement of the tariff would help rather than hinder the industries of the country. * * * Liberals are not a party of commercial assassins.

It also tells us, in the same editorial, that the Liberals do not intend that a Liberal Government shall be a silent partner of the "plundering combines," and that these tax-eating concerns must be forced to earn their living like the rest of us—that the insolence of these masters must be rebuked, and that "the overthrow of the great taxing combine at Ottawa is the first and all-important step towards a commercial regeneration in Canada."

The Globe does not indicate which of the manufacturing industries a Liberal Government would not lay the hand of enmity upon, or which of them it would strive to save rather than destroy. To The Globe and to the Liberal leaders all manufacturers who ask tariff protection for their industries are combinesters, and it also tells us that if in power the Liberals would incontinently squelch the insolent manufacturers, and that their overthrow is the first and all-important step to be taken by the Liberal party. In one paragraph, cajolery—in another threats of vengeance and destruction. In one breath manufacturers are talked to as though they were a lot of children to whom soft promises are made but never intended to be kept—in another breath they are denounced as plundering combinesters, insolent tax-eaters and thieves who keep their hands in the public pocket. If the manufacturers are such as The Globe pictures them, and if their industries are to be overthrown as soon as the Liberal party attain to power, why does The Globe flatter and cajole them by saying that its party is not a party of commercial assassins, and that a Liberal Government would not lay the hand of enmity upon any industry in the land? In which promise is it mendacious? Its party could not keep faith in both promises. It cannot kill and keep alive at the same time. It cannot keep the hand of enmity off of industries—it cannot strive to save them, and at the same time destroy. The Globe's promises are irreconcilably inconsistent. Neither the manufacturers nor the business men of Canada are to be taken in by such mendacity.

BOILER EXPLOSIONS.

At about 6:30 o'clock on the evening of February 25 that portion of Toronto in the vicinity of Queen and Sherbourne streets was badly shaken up by the concussion occasioned by the explosion of a steam boiler in the soda water factory of J. J. McLaughlin at 153-155 Sherbourne street. Those who witnessed the event were astonished to see the front of the building, a substantial brick and stone struc-

ture two stories high, fall outward, the roof and a portion of the walls being scattered in an indescribable wreck across the entire street. The explosion occurred at an hour when the streets were crowded with persons returning home after the business of the day, the wonder being that none of them were killed or seriously injured. A street car heavily loaded with passengers had just passed, and was still not fifty feet clear of the line of devastation, while another car, similarly loaded, had not quite reached the danger point. The destruction of property was not confined to the demolished factory, every neighboring building suffering more or less from the concussion in the loss of window glass, plastering, etc. The aggregate loss was about \$12,000.

The event has opened the eyes of many to the enormous and wonderful power of steam and water when confined in such boilers. The one which exploded was of the vertical type, about 3 feet in diameter and 7 feet high, made of a not very superior quality of iron $\frac{1}{4}$ of an inch thick. Assuming that the iron possessed a tensile strength of 40,000 pounds, there must have been a pressure of from 350 to 400 pounds per square inch to have caused the disruption. The fact that the building was completely wrecked is evidence that there was plenty of water in the boiler; and the fact that the boiler itself was literally blow to pieces proves that it was of uniform strength throughout. There being no important structural weakness in any part of the boiler, the steam pressure must have reached a point where the whole structure had to give way; the sudden release and violent expansions of the heat contained in the water and steam in the boiler causing the instantaneous collapse of the building and the resulting destruction of other property.

It is stated that before leaving the factory the fireman in charge of the boiler had banked his fire, at which time the steam gauge indicated a pressure of 50 pounds. If this is true it is possible that the safety valve had become stuck, and that the fireman had neglected to close the damper after banking the fire—that the fire brightened up, and the engine not being in operation, and there being no outlet or escape for the accumulating steam, the pressure of it increased until the explosion occurred.

This explosion—it cannot be called an accident—is evidence that a law is very much needed to make it compulsory for all steam boilers and their fittings to be frequently inspected by competent men, and that engineers in charge of them should be fully qualified for their positions.

There are hundreds of establishments in Toronto the motive power of which is steam obtained from just such inefficient boilers in the care of just such inefficient men as those here alluded to; and in the business sections the sidewalks over which thousands of persons are constantly passing, are actually honeycombed with spaces occupied by boilers that are liable to explode at any time under conditions similar to those that caused so much destruction on Sherbourne street. Many of these sidewalk boilers are so placed as to be difficult of access for frequent examination, and it is not probable that any law will be made, or if made enforced, for the inspection of boilers until some mis-called accident has destroyed many valuable lives.

But such a law should be enacted without delay.

THE GOVERNMENT AS DEALERS IN CEMENT.

In the Mail and Empire of February 19, under the heading "From the Capital" we find an item stating that the plans for Section One of the Trent Valley Canal are now complete, that all the cement to be used in the work will be supplied by the Government, and that this plan has been found to work admirably on the Soulanges Canal contracts.

We hope this does not mean the use of more Belgian cement to the exclusion of our Canadian cements, yet we must say it looks very much like it. We have heretofore referred to this cement question, showing the positive injury that was being done to our manufacturers of cement in their being ignored by the powers that be at Ottawa.

While it does seem to us somewhat strange to see the Dominion Government in the position of a dealer in cement yet we could pass this by, if they would deal in Canadian cement. If our Canadian Portland cement makers are unable to supply the cement required, what is to prevent the use of Thorold cement? We know for a fact it was used in the building of the new Welland Canal, a work that cost \$15,000,000 and which includes some of the finest masonry in the world; and most assuredly a cement good enough to be used in such a work, is good enough for the Trent Valley Canal or any other canal. Where are Sir Chas. H. Tupper and Dr. Montague, and the other Ministerial speakers, who so strongly proclaim themselves in favor of the encouragement of Canadian industries?

ADVERTISING FAKES.

The Canadian Press Association is a great and benevolent institution. Aside from looking after the legitimate objects for which it was brought into being, it has now undertaken to rescue broken down journalistic enterprises, and place them upon a sound financial base. At least it has undertaken to do that kind act for one such journal. We are certified of this by a circular recently sent out to the Canadian press, over the name of the President of the Association, in which it is stated that at the annual meeting of the Association held in Toronto in February a resolution was passed directing the executive to bring before the press the merits of a certain sickly little trade journal published in Toronto in the alleged interest of the fraternity, and to urge the necessity of giving it a cordial and substantial support. The circular informs us that before the establishment of the poor little publication in question its need was felt; and now it has begun its precarious existence it has effected some good by exposing advertising fakes and rotten methods among the supply houses. We are also told that the puny little thing has been conducted at a loss, and that it can only be maintained by the hearty co-operation of the Canadian press, to whom a most touching appeal is made for financial support.

This sort of whining and begging is a disgrace to Canadian journalism; and it is no credit to the Press Association to lend itself to any such business. Why, pray, should Canadian journals be taxed to support a would-be competitor for which the admission is made that it is unable to support itself? If we mistake not the poor little thing was put afloat by a concern that professes to be financially well established, and that publishes several

other trade journals. If the poor little thing is so puny—if it is likely to die of inanition—why not let it die?

The claim that this little mendicant has accomplished some good in exposing advertising fakes and rotten methods in certain supply houses, is rather fishy. It reminds us of what occurred a couple of years ago when a so-called trade journal endeavored to boom its business by inserting advertisements without authority, and when those whose business had been thus mentioned declined to be bled for the ads., there was great indignation. And now we hear talk of good being done by exposing fakes!

EDITORIAL NOTES.

In a recent issue of this journal we alluded to the destruction by fire of the Globe building in this city and the character of the testimony taken before the coroner's jury held to ascertain the cause of the death of a fireman who was killed on that occasion. We showed that Mr. Stone, of the Toronto Lithographing Company, who occupied a portion of the building, had testified that Mr. Knox, the architect who planned the reconstructing of the building, had said that all the machinery in Toronto could be put on the third flat with perfect safety; that Mr. Burke, the architect, had said that the building was perfectly safe; that in the opinion of Mr. Siddall, the architect, the building was perfectly safe for the purpose for which it was used, and that within twenty minutes after the first alarm was given the entire structure was a total wreck. Our criticism was that these architects had considered the building perfectly safe before its destruction, and that they considered themselves competent to formulate a new fire by-law which they wanted the City Council to adopt, while from the facts alluded to regarding the stability of the building, it was questionable whether they were really experts in their trade. Mr. Siddall, however, one of the architects alluded to, takes exception to what we said, and we cheerfully give him an opportunity to criticise our criticism. His communication appears in another page. He tells us that the building which had been pronounced of such excellent stability by both himself and his brother architects, before it was so quickly destroyed by fire, "was on a patchwork at best," but that it was safe for the purposes for which it was used, and, in case of fire, as safe as most buildings of its class in the city. Mr. Siddall, the architect, also tells us that neither Mr. Burke or himself if asked if the building was safe in case of fire would certainly not have said yes—that they would have declared that it was stable only for the purposes for which it was used. Mr. Siddall seems to quibble. A hundred or more persons were usually employed in that building, and if the fire had occurred on any other day than Sunday, no doubt a great loss of life would have resulted. The means of passage from floor to floor throughout the building may have been arranged upon correct architectural principles, but some simple common people question it; and they also fail to appreciate the frankness of architects in declaring that the third flat of the building was capable of carrying a load equal to all the machinery in Toronto, and that it was as safe as most buildings of its class, thus quieting any apprehensions that the scores of human beings constantly employed in it might have entertained, while after the

entire destruction of the building in twenty minutes after the alarm was given, they tell us frankly that if asked if the building was safe in case of fire they would certainly not have said yes; and that it was only a patchwork at best. It may be professional for architects to keep mum as to the possible danger to human life in buildings for which they furnish plans, but unprofessional common people entertain the idea that in the cause of humanity architects should protest against the construction of such death traps. In view of the facts we again enquire, Who are properly qualified to undertake the duties of an architect?

A large buying movement in Bessemer pig iron has taken place at Pittsburgh and in the Shenango and Mahoning valleys during the last ten days of February. Fully 100,000 tons have been sold, principally for forward delivery, the price ranging at about \$10 at Pittsburgh. These transactions are generally interpreted as indicating that bottom prices for pig iron have at last been reached, and that a substantial advance may now be looked for.—The Bulletin.

The Dominion Ministers will have a busy week addressing the electors of Ontario. Although it has not been officially announced, it is understood they will speak from the old brief prepared by a committee of the Manufacturers' Association.—Toronto Globe.

It is quite certain that the Minister will not speak from any brief prepared by The Globe.

A large number of the leading lumber millowners of British Columbia held a meeting in the City of Victoria, that province, a few days ago to discuss the advisability of subsidizing the shipbuilding industry. It was suggested that the Government by so doing would stimulate the lumbering industry as well as place it on such a basis as would enable it to compete advantageously with the Puget Sound trade. The Vancouver Board of Trade afterwards passed the following resolution on the same subject: "That in the opinion of this Board the memorial of the millowners and loggers seeking for a subsidy of \$5 to \$7.50 per ton on all vessels built in this Province merits the serious attention of the Provincial Government, as it would be the means of fostering an important industry and creating employment for a large number of people, besides materially aiding or stimulating the general business of the Province; and this Board would further urge that action be taken to this end during the present session of Parliament." A copy of this resolution was sent to the Premier. The proposal has also been heartily endorsed by the Victoria and New Westminster Boards of Trade, and is being supported also by a numerous and influentially signed petition from other cities. One main point made on behalf of the suggested policy, is the need of home built wooden vessels of moderate size for use in the lumber trade. These can, it seems, profitably carry larger loads in proportion to their bulk than iron ships, and do this at lower freight rates. Hence vessels of this class, mainly built in the United States, are now doing a large part of the carriage of British Columbia lumber. Those who favor the suggested bonus consequently urge the gradual replacement of these foreign bottoms by home built wooden vessels, and urge that a bonus is necessary to give the proposed

industry the necessary impetus. They also quote the case of Nova Scotia's wooden shipbuilding as an instance in point in favor of the proposal.

Sheffield at one time supplied saws for practically the whole world. Many years ago, largely owing to the repressive and burdensome regulations of the Saw Grinders Trade Union, the business began to shrink. It took ready root in the United States. A certain American manufacturer built up a huge business, supplying not only America and foreign markets, but several of our colonies, and even competing with English manufacturers at their own doors. By careful and steady cultivation of the requirements of distant customers a good deal of the trade was brought back to Sheffield, although several of our manufacturers, finding the fight against Trade Unionism hopeless, relinquished it altogether and went into other crafts. In making inquiries of late years in different saw establishments, the principals have told us that they were doing a good business. That, we believe, is quite true. But we were a little surprised, in talking with one of our principal wood merchants the other day, to find that he has to get his band-saws, for cutting timber, from the United States. He would greatly prefer to use English saws, but after exhaustive trials he was obliged to give them up. He found the French saw very much superior to the Sheffield make for his purposes. He eventually bought his steel from Jessop's firm, and made the saws on his own premises. The French saws cost him from 7l. to 8l. and his own make were not much cheaper. But within the last year he was induced to try an American-made band-saw, which he found so effective in his work that he has used no other since. He gets the steel from Jessop, forwards it to the United States, has the saw made there and actually sent back to Sheffield to be used within three miles of where the steel originally came from! He tells us that the teeth are so set that he gets twice as much work out of the American saw as he did out of the English make. And the Americans, in their wonderful adaptation of means to an end, have perfected a machine for sharpening these band-saws, which does the work of hours in a fourth of the time previously occupied.—British Trade Journal.

Messrs. Michel Lefebvre & Co., Montreal, have favored us with a copy of a pamphlet on the beet sugar industry and its adaptability to Canada, written by Mr. R. H. Lawder. Nearly the whole of the settled portion of Canada lies within what is known as the sugar beet belt. In the years 1889, 1890 and 1891, a series of numerous experiments was made in the cultivation of this crop, in different sections of the Province of Ontario, and the general results, both as to yield per acre and saccharine quality of the roots, were so favorable as to indicate, beyond doubt, that the soil and climate are admirably adapted to the production of good sugar beets. From these experiments, and from the information gathered in connection with them, all the conditions as to yield, quality, and cost of production compare very favorably with those found in any of the sugar beet producing countries in Europe, and afford satisfactory assurance that the establishment of the beet sugar industry in Canada will result in the same wonderful success which has been accomplished there.

This industry is, in a special degree, a farmer's industry, because fully 60 per cent. of the cost of the raw sugar manufactured from beets consists of the money paid to farmers for the roots. With careful and intelligent cultivation they will obtain for the crop of one acre of beets three or four times as much money as they can realize from an acre of any kind of grain. The cost of cultivation is somewhat higher, but this is fully compensated by the improvement of the land through which the yield and quality of future crops are largely benefited. The pulp remaining, after the sugar has been extracted from the beets, is a valuable fodder for dairy and cattle fattening purposes. The introduction and expansion of this crop in all of the countries in Europe where beet production flourishes, have universally been found to increase rather than to reduce the outturn of other crops, and the number of cattle kept. So long as the policy of admitting foreign sugar into Canada, free of duty, is maintained, and in the absence of any encouragement by way of bonus or otherwise to the beet sugar industry, it cannot be expected that capital will be invested in an enterprise which is subject to many risks and difficulties during the first few years of its operation. With liberal but reasonable encouragement and assistance from the Dominion and Provincial Governments guaranteed for a few seasons, there is a fair assurance that the necessary capital will be found for erecting immediately two or three large, well equipped factories in suitable localities.

It is a dirty bird that befouls its own nest. The Hamilton Spectator that poses as a friend of the manufacturers,

denounces the Manufacturers' Association because it does not contribute to the campaign fund of the Conservative party in Ontario elections.

The Hamilton Spectator follows the lead of the Toronto Globe in supposing that a "brief" is held by the judge who is to hear a case, and not by the attorney who represents the petitioner. Such ignorance is inexcusable. An attorney prepares the brief and the judge considers it.

The Toronto Globe endeavors to make political capital out of the fact that because the Manufacturers' Association caused to be prepared a statement of their views regarding the tariff, and presented it to the Finance Minister in the form of a brief, that the Minister in receiving the brief became the attorney of the Association. It ignores the fact that the Minister was acting as a judge, and that the attorney of the Association was the secretary who presented the brief. The Hamilton Spectator takes the same view, but for the more dishonest object of getting even with the Association because it declines to take active part in local politics.

The Hamilton Spectator says that the Secretary of the Canadian Manufacturers' Association, during the last Ontario election campaign, announced oracularly that the Conservatives of Ontario could not expect help from the manufacturers. Oracularly or otherwise, the Secretary informs The Spectator that he said no such thing. The manufacturers are free men and are at liberty to do as they

ROBIN, SADLER & HAWORTH,

Manufacturers of

OAK TANNED LEATHER BELTING,
MONTREAL AND TORONTO.

Orders addressed either to our Toronto or Montreal office will have prompt care.
Goods will be forwarded same day as order is received.

please in the matter of contributions to political campaign funds. There are many manufacturers in Ontario who, if they contributed to campaign funds would not place their contributions in the hands of the Conservative purse holders if the money was to be used in local politics; and there are many others who would do just that thing, but in Dominion politics they would all exert themselves for the success of the National Policy. See the point?

The Supreme Court of the United States in an opinion read by Justice Harlan, has decided that the date of issue, and not the date of application for an American patent, determines whether or not it expires coincidentally with a foreign patent granted for the same invention. The decision affects adversely many patents, notably in connection with the use of the telephone, the electric light and many other valuable inventions, all told, it is estimated, representing six hundred millions of capital, which are by the decision held to have expired.

Has the National Policy made you rich? Toronto Globe.

Will free trade make you rich? They have free trade in Great Britain, but the laboring classes there do not seem to be becoming very wealthy, if we may judge from the Parliamentary Report of the London Times, which says:—

In the House of Commons the Chancellor of the Exchequer, in reply to Mr. Dalziel, said the Government had carefully considered the question of the unemployed in

London and throughout the country, and also the various schemes proposed for dealing with the distress. The Government, he announced, intended to propose immediately the appointment of a select committee of this House to consider the following points, viz.:—The extent to which distress arising from want of employment prevailed; the power at present possessed by local authorities for dealing with such cases; and the steps which ought to be taken, whether by change in legislation or administration, to prevent or mitigate the evils arising therefrom. The right hon. gentleman informed Mr. Chamberlain and Mr. Weir that the scope of the enquiry would extend to distress in the provinces and in Scotland.

For an un mutilated copy of the CANADIAN MANUFACTURER of the following dates ten cents each will be paid at this office:—January 19, 1894; February 2 and 16, 1894; October 5, 1894.

The Toronto Globe has been so rash as to remark that the depression which has prostrated the United States has fallen with diminished force on Canada. The Gazette says that this diminution in force was due to the protective tariff in Canada. The Gazette still declines to tell us how it is that protection could have done so much for Canada and done nothing at all for the United States.—Montreal Herald.

Protection has done much for the United States the same as it has done much for Canada, and the depression that prostrated the former country was not caused by protection but by the removal of it, or the threat of removal. That country was in a high condition of prosperity when just such pessimists as the Montreal Herald and Toronto Globe

ELECTRICAL SUPPLIES - - -

Do not fail to write for Prices and Quotations on all kinds of Electrical Supplies.

We carry the largest stock of high-class fittings for Electrical Work in Canada.

FANCY PORCELAIN CUT-OUTS, ROSETTES, WALL PLUGS, SWITCHES, BRACKETS, ETC.

Have you tried the I. R. G. P. Wire? We guarantee our wire to have a higher insulation resistance than any wire in Canada.

WRITE FOR PRICES ON ALL SUPPLIES REQUIRED. - - - SEND US THAT RUSH ORDER.

JOHN FORMAN, = = 650 Craig Street, Montreal.

AGENT for Crompton Howell Battery Co., Ediswan United Electric Co. and the India Rubber, Gutta Percha and Telegraph Works Co.

LAMPS

DO YOU EVER USE INCANDESCENT LAMPS?

IF so, do you know what a good Lamp is? We can give you Lamps at all prices, and have the best Lamp made in the world; namely: the genuine "EDISWAN," in any candle power, from one to two thousand; to fit any base. Don't buy lamps until you get our quotations.

Frosted Lamps - Colored Lamps - Mogul Lamps

SEND US THAT RUSH ORDER.

JOHN FORMAN, 650 Craig Street, Montreal.

AGENTS:—Edison & Swan United Electric Co., and Hungarian Incandescent Lamp Co.

and Mr. Laurier and Sir Richard Cartwright persuaded the people to go in for so-called tariff reform with the result that business of all sorts was prostrated and the worst panic that ever afflicted the people came upon them. It took the people but a short while to discover the fearful blunder they had committed, and at their next opportunity at the poles they again abandoned the free trade Democratic party and restored the protective Republican party to power.

Forcing up prices by restraints on trade enables manufacturers to cut down the wages of their employees. It lessens the consumption of goods, and, consequently, the demand for labor. At the same time it lessens the purchasing power of wages. This process has been called "burning the workingman's candle at both ends." It is to be hoped the waste will at least give him more light on the subject.—Toronto Globe.

By which The Globe intimates that low prices are an un-mixed blessing. But are they? The people of the United States are having this question forced on their attention and are solving it for themselves. Hear what the Bulletin of the American Iron and Steel Association says:—

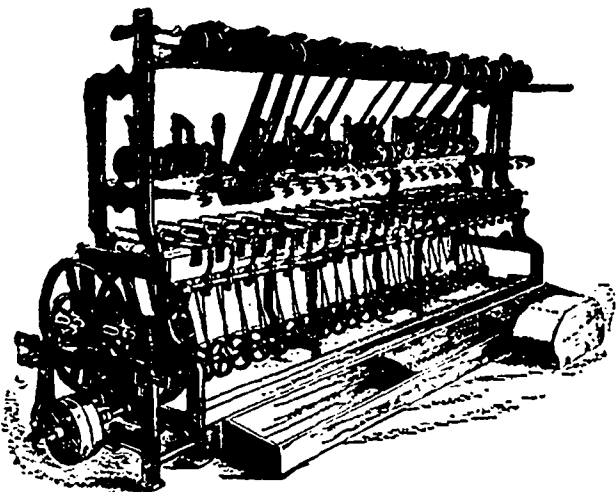
One of the greatest clothing manufacturing firms in the world has its headquarters in New York City, with an allied firm in Chicago. Each firm does an immense business. The two firms have retail departments in Chicago, St. Louis, Milwaukee, Cincinnati, Philadelphia, Kansas City, St. Paul, Omaha, Brooklyn, Boston, Minneapolis, Harlem, and Lincoln. This indicates the enormous extent of the business of these manufacturing clothiers. These two allied firms have sent out a large number of circulars to all parts of the country soliciting trade, and saying that

the removal of the duty on wool by the Democratic party enabled them to sell their goods at lower prices than in former years. These firms have received answers to many of their circulars, and in a large number of cases the answers express the strongest dissatisfaction with the results of the changes in the tariff made by the Democratic party. C.S. Broadbent, of De Rio, Texas, sends a letter which is sharp and stinging in its description of the results of Democratic policy. Mr. Broadbent writes as follows:

"Yes, your circular letter is true. Prices do show the effects of the changes in the tariff. But this is a stock country, and, with wool selling at 7 cents a pound and hides selling at prices that do not make it worth while to ship them, if the free trade statesmen will tell us where we are to get \$2 to buy a boy's suit that we formerly paid \$6 for, they will do us a favor and solve a knotty problem. Our people can hardly get enough to eat, and have to wear clothing carried over from the days of 18-cent wool. In the days of 18-cent wool they lived and dressed well and had a good annual surplus. We do not sell one-half the goods we used to sell, and those we do sell are at less than one-half the former profit, and where there is such vast underconsumption the markets are bound to be glutted."

Sir Mackenzie Bowell, Premier of Canada, has written a letter, which has been published, in which he deals with a letter published in the Peterboro' Review by a political opponent, in which he contradicts the absurd falsehoods and preposterous statements therein made. It is said that a lie will travel seven leagues while truth is pulling on his boots to follow and contradict it; and the promulgator of a falsehood may always congratulate himself that the injury he set out to inflict will rankle and smart even after

MEDAL AWARDED AT WORLD'S FAIR



Patent Bobbin Winding Machine, for Worsted or Cotton Yarns

Pat. Nov. 2nd, 1887. With variable motion. Pat. Aug. 5th, 1883.

The Only Successful Skein Winder

Variable Motion, patented Aug. 16th, 1891, and Sept. 5th, 1893.

W. W. ALTEMUS & SON

... Textile Machinery ...

2816 North 4th Street : : : Philadelphia, Pa.

... Builders of ...

Cop and Bobbin Winders

Chenille Cutters

Spoolers, Warp Mills

Beaming, Carpet Rolling

Machines, Reels, Etc.

ESTABLISHED 20 YEARS

A. KLIPSTIEN & CO.

122 PEARL ST., NEW YORK

Anilines, Dyestuffs . . .

. . . and Chemicals

of every variety, of the best quality and at the lowest prices. Delivery made at New York, Montreal or Hamilton.

WRIGHT & DALLYN

AGENTS

HAMILTON, ONT.

NEW YORK AND BOSTON

DYEWOOD COMPANY

..... MANUFACTURERS OF

Dyewood • Extracts

... Selling Agents for the United States and Canada for the ...

ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION

Berlin, Germany.

METHYLENE BLUES, ERIKA, OONGO BROWNS, ETC.

NEW YORK, 55 Beekman St. BOSTON, 115 and 117 Milk St.
PHILADELPHIA, 122 and 124 Arch St.

A.W. LEITCH, 16 Hughson St. South, HAMILTON, ONT.

the venomous character of it is known. It was in this spirit that The Toronto Globe, Hamilton Spectator, Montreal Herald and other mendacious sheets gave currency to the idea that the Minister of Finance had accepted a "brief" from the manufacturers. In making the suggestion they well knew they were propagating an absurd falsehood, but it answered their purpose.

In denial of a statement made by Senator Lodge of the United States, in a recent article in the Forum, the Ottawa Citizen intimates that, in practice, the Canadian tariff discriminates against Great Britain. "It is not true," it says, "that Canada discriminates against the United States. On the contrary, we imported from that country last year goods to the value of \$58,221,976, of which \$29,659,926 were admitted free of duty. From England we imported goods to the value of \$45,925,422, of which only \$13,226,000 worth were admitted free of duty." Regarding which The Hamilton Times enquires why there should not be a change in the tariff in which there is discrimination against the Mother Country as shown by the fact that we collect nine and a half million dollars in duty on forty-three millions' worth of British goods, and only seven and a half millions in duty on fifty-eight and a quarter million dollars' worth of imports from the United States. The cases are not at all parallel. The duty upon any article coming into Canada from either Great Britain or the United States is identically the same—no more, no less. We import more raw materials upon which there is but light duty, if any duty, from the United States than from Britain, while

from Britain our imports are generally of very valuable finished products, such as are not produced in the United States.

The Globe speaking of the Liberal party and their plan of campaign says:—

They know just what there is in the story of prosperity told from the Conservative platform, just what are the fruits of the system of protection in Canada, and they will readily concede that men thus sensitive to the welfare of the commercial interests are not revolutionists, theoretical madmen who seek power only to exult in the ruin of industries.

It is kind of The Globe to inform the public that its free trade party are not revolutionists and madmen, and that they do not seek power only to exult in the ruin of Canadian industries. But that is just about the kind of persons The Globe's political friends are. Public opinion being adverse to The Globe's disclaimer, the mind of the public will continue to think that what The Globe says about its political friends is not true.

We regret to have to allude to the fact that The Hamilton Spectator does not possess the ability to comprehend that the Canadian Manufacturers' Association is not the tail of any party kite.

It is a mistake for any person or any newspaper to suppose that the Canadian Manufacturers' Association can be induced to turn the grindstone for the sharpening of local political axes. Carry the news to The Hamilton Spectator.

CANADA TOOL WORKS, **Dundas, JOHN BERTRAM & SONS, Ontario.**



Manufacturers of

**MACHINE TOOLS AND
SPECIAL MACHINERY.**



Equipments for Bicycle Factories,

Boiler Shops, Ship Yards, Steam

Forges, Repair Shops, &c.



Gear and Rack Cutting to
Order.



Correspondence solicited.

There is a valuable lesson in the attempts of the people of the United States to rid themselves of the burden of protection. The obvious lesson is, never adopt protection. We did not learn it in time, so we can only profit by the next available opportunity and get rid of it before the beneficiaries develop any greater powers of resistance.—Toronto Globe.

Quite wrong, dear Globe, as usual. The people of the United States are not attempting to get rid of protection, but to restore it to something like what it was before Mr. Cleveland and his free trade democratic party knocked the life out of the McKinley tariff. Attempting to rid themselves of protection indeed, when even the Solid South returns protection Republicans to Congress.

The only political question in which the Canadian Manufacturers' Association as such can possibly take part is that of the Dominion policy of tariff protection to our manufacturing industries. By that sign they hope to conquer.

The Globe very graciously informs the manufacturers that "a Liberal Government would not lay the hand of enmity upon any industry in the land." Perhaps not; but who would be willing to give it an opportunity to do so?

Dear Globe: Commercial assassins is a suitable epithet to apply to your party. "We thank thee, Jew, for teaching us that word."

Messrs. Spon & Chamberlain, 12 Cortlandt St., New York, have sent us a very handsomely bound copy of their theoretical and practical Ammonia Refrigeration, a work of reference for engineers and others employed in the management of ice and refrigeration machines.

This is a practical handbook for those interested in refrigeration, the information seemingly covering the whole ground. The book contains 146 pages, of which 25 contain tables essential to the subject. The publisher's price is \$1.00.

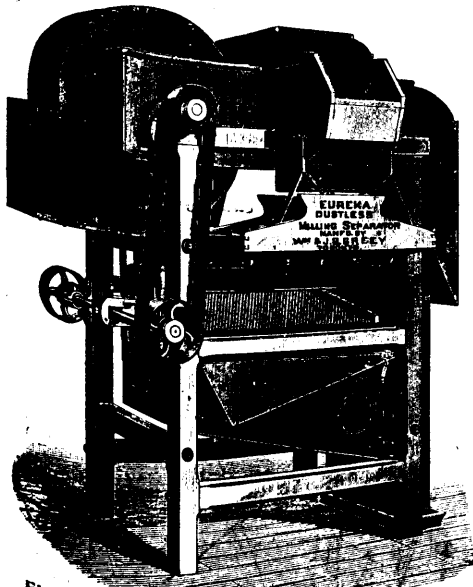
One of the most important projects ever undertaken by Scribner's Magazine begins in the March number with the first instalment of President E. Benjamin Andrews's dramatic narrative, A History of the Last Quarter-Century in the United States. That this will be always interesting is proved by the statement of the author's plan to his readers in the introductory paragraph, in which he tells them that they are "going upon a rapid excursion, through vast tracts, with frequent use of the camera, and not upon a topographical survey." The first instalment deals with the United States at the close of Reconstruction, and among the incidents described are the Chicago Fire, the Tweed Ring, the Rise of the Liberal Party, the Ku-Klux Klan, Black Friday and the Treaty of Washington. Each incident is accompanied with a unique series of illustrations, drawn from the best sources and supplemented with the accounts of eye-witnesses, so that the story of the quarter-century will be told pictorially from month to month.

Mrs. Shakespeare sounds a bit odd to our ears, and that is why thousands of people will read with curiosity the article under that title in the March Ladies' Home Journal. It is by Dr. W. J. Rolfe, the Shakespearean authority, who gathers together everything that is known about Shakespeare's wife, her courtship, her married life and her children, and presents his material in a fascinatingly-interesting article. Mrs. Jeanette H. Walworth tells a good Southern love story under the title, The Three Miss Merritts. An excellent glimpse is afforded of the family and home life of Bill Nye, by Augusta Prescott. Whether women should be allowed into men's clubs is treated humorously by John Kendrick Bangs. The music and words of a very good devotional song are also given. And there is much more in this issue of the Journal. Published by The Curtis Publishing Company, of Philadelphia.

The two chief characteristics of science—the thoroughgoing quality of its research and the wonderful progress that it gives to the arts—are both prominent in The Popular Science Monthly for March. The opening article is a vivid illustrated description of The Birth of a Sicilian Volcano, by Prof. A. S. Packard. In a fully illustrated article on Copper, Steel, and Bank-note Engraving, the various divisions of the engraver's art, and some of the measures taken to prevent counterfeiting of bank bills, are clearly explained by C. W. Dickinson, Jr. Mr. Bela Hubbard undertakes to point out The Lesson of the Forest Fires, a terrible feature of which in 1894 was the loss of

WRITE TO

WM. & J. G. GREY, 2 Church St., TORONTO, ONT.



EUREKA DUSTLESS MILLING SEPARATOR.

For the

Latest and

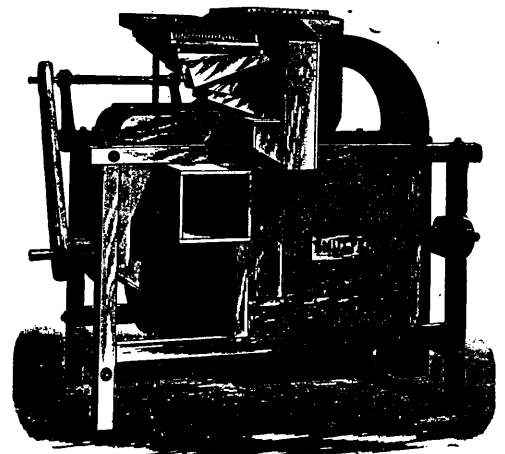
Best . . .

Wheat Cleaners

Up to Date

and

Guaranteed.



EUREKA HORIZONTAL CLOSE SCOURING SMUTTE

Also Sole Manufacturers in Canada of the

. . . . CELEBRATED PRINZ

INDENTED STEEL CYLINDER COCKLE MACHINES.

life involved. The Mother as a Power for Woman's Advancement is a wholesome and feeling view of the woman question, by Mrs. Burton Smith, an earnest Southern woman. Wellner's Sail-wheel Flying Machine, which embodies a novel mode of employing aeroplanes, is described by Miss Helene Bonfort, with illustrations. In The "Mutual Aid Society" of the Senses, remarkable instances in which the loss of sight or hearing has been largely made good by increased delicacy of another sense are given by Dr. S. M. Miller. Lord Rayleigh of the Royal Institution of Great Britain, presents an outline of The Scientific Work of Tyndall, which attests the far-reaching value of the great scientist's labors. There is a biographical Sketch, with Portrait, of the eccentric naturalist Thomas Nuttall, who cut private doors and scuttles in the house at the Harvard Botanic Garden to avoid meeting people. In the Editor's Table the teaching of sociology in the universities is discussed, and some additional facts about diphtheria antitoxine are given. New York: D. Appleton & Company. Fifty cents a number, \$5 a year.

Outing for March abounds in excellent fiction, seasonable sport and a diversity of travel and adventure. The contents are as follows: A Study in Love, by Louise D. Mitchell; Fish Shooting in the West Indies, by Henry Wydam Lanier; A reminiscence of Texas Shooting in Japan, by Kinza Hirai; The Manx Mystery, by T. D. Dickson; Lenz's World Tour Awheel; The Fallen City of Theebaw, by Edwin Asa Dix; A Jamestown Romance, by Sara Beaumont Kennedy; Curling in the Northwest, by H. J. Woodside; Miniature Yacht Modeling, by Frank'a Bassford; A Yaqui Boar Hunt, by Forrest Crissey; The Eden of the Gulf, by Annetta Josefa Halliday-Antona; The National Guard of New York State in Active Service in Brooklyn, by D. S. Mercein, and the usual editorials, poems and records.

Architects and Architecture.

Editor THE CANADIAN MANUFACTURER :

DEAR SIR,—Your article on "Architects and Architecture" in the issue of the 1st Feb. is unfair and indiscriminate and your deductions are unsound.

The Globe Building was the result of re-modelling an old building involving the retaining of as much of the old as possible and strengthening in the manner most feasible; it was only a patchwork at best, but was carried out in an intelligent manner by the architects, Knox & Elliot. I have no interest in defending their work, being in no way responsible for it; I happened to have the drawings only through acquiring their business long after The Globe was completed.

What I stated at the inquest is perfectly true. The building was safe for the purposes for which it was used and in case of fire as safe as most buildings of its class in the city—you omit this qualification though it was given in evidence.

All your criticism hinges on the word "safe;" yet if you are competent to criticise you must know that the only buildings that are safe in case of fire are the perfectly fireproof buildings.

Had Mr. Burke or myself been asked if the building was safe in case of fire we certainly could not have said yes. We only declared that it was stable for the purposes for which it was used. You are unfair, therefore, in stating that these gentlemen considered a building perfectly safe that tumbled into the street in twenty minutes after the appearance of fire within its walls.

You are indiscriminate in that you judge from this exceptional circumstance the ability of the architects in the city to erect safe buildings. Unfortunately it is not the inability of architects to design them, but the scarcity of clients' capital to pay for them, which has prevented more fireproof buildings from being erected in Toronto.

FOUNDRY FACINGS

Ceylon Plumbago Foundry
Supplies, Fire Brick, Fire
Clay and Moulding Sand.

Canadian Agents for

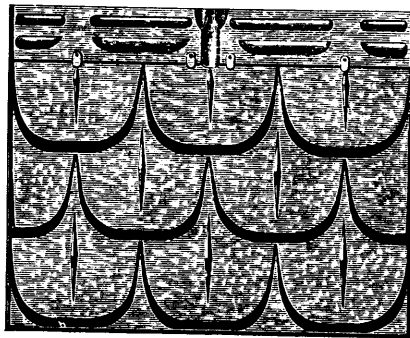
COLLIAU CUPOLA FURNACE.

HAMILTON FACING MILL COMPANY,

Hamilton, Ontario.

METAL ROOFING.

Those contemplating building the coming season would do well to send for our catalogue. Cheap as a wooden shingle. Will last a life time.



Guaranteed to be Water, Wind, Storm, Fire, and Lightning Proof.

THE PEDLAR METAL ROOFING CO.

Office and Works, OSHAWA, ONTARIO.
In answering please mention this paper.

THE PETERBOROUGH

CARBON AND PORCELAIN CO.,

LIMITED

MANUFACTURERS OF

Carbon Points for All Systems of Arc Lights

BATTERY PLATES, CARBON BRUSHES, and
all kinds of PORCELAIN for Electrical
and Hardware Lines.

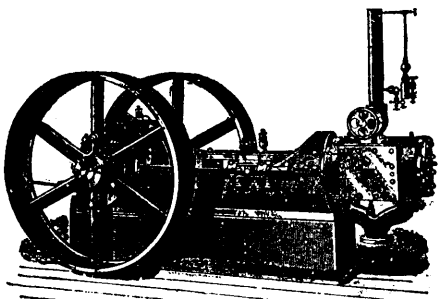
All goods guaranteed equal in quality to the
best manufacturers in the world.

PETERBOROUGH,
ONTARIO.

ADVERTISE IN
THE CANADIAN MANUFACTURER.

Armington & Sims

AUTOMATIC HIGH SPEED ENGINES



—FOR—
ELECTRIC LIGHTING

—AND—

GENERAL FACTORY
PURPOSES

Perfect Regulation and
Highest Economy.

Steam Pumps
SHAFTING, PULLEYS

—AND—

General Machinery

Nie & Whitfield - HAMILTON, ONT.

Kay Electric Co'y

MANUFACTURERS OF

DYNAMOS

FOR

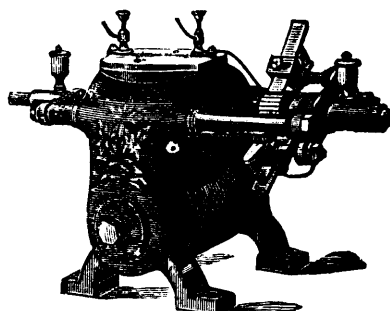
ARC AND INCANDESCENT
LIGHTING,

Plating Machines,

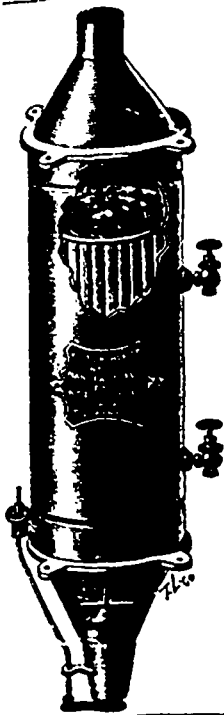
Medical Batteries

AND ALL KINDS OF

ELECTRIC APPLIANCES



HAMILTON, ONTARIO



**WM. & J. G.
GREEY,**

**TORONTO,
ONTARIO.**

Manufacture
**THE VICTOR
WHEAT
HEATER,**

The benefits
secured are

**WHITER
FLOUR,**

**UNIFORM
GRADES,**

**CLEANER
OFFALS,**

**BROADER
BRAN.**

**.. IMPORTANT ..
TO LIGHTING STATIONS.**

OUR NEW
ALTERNATING CURRENT INDICATORS

Are now ready. Before purchasing elsewhere send for our New Catalogue, which contains the prices and description of the above instruments, and also a list and prices of other new instruments of our manufacture.

**WHITNEY
ELECTRICAL INSTRUMENT CO.**

Sherbrooke, P.Q., Canada.

Penacook, N.H., U. S.

.. AGENTS ..

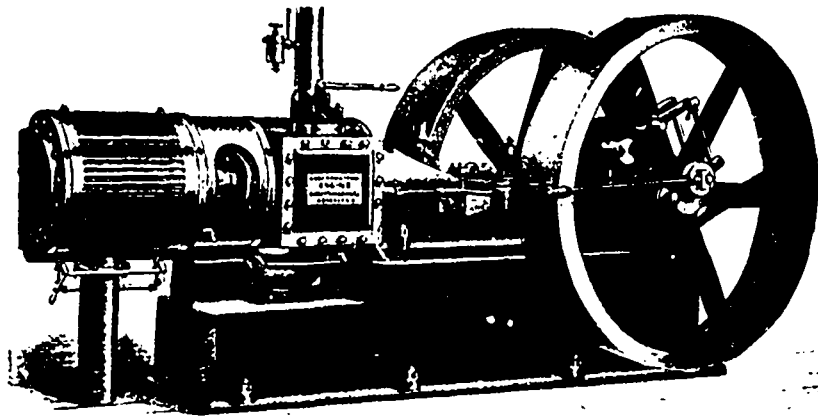
Henry F. Kellogg, General Selling Agent.

- BOSTON, MASS., W. S. Hill.
- BALTIMORE, M.D., The Pools Electric Co.
- CHICAGO, ILL., Electric Appliance Co.
- CINCINNATI, O., Nowotny Electric Co.
- HALIFAX, N.S., John Starr, Son & Co. Ltd.
- NEW YORK CITY, Geo. L. Colgate, 136 Liberty Street.
- SAN FRANCISCO, CAL., California Electrical Works.
- TORONTO, ONT., Toronto Electrical Works.

L. A. W.

W. B. BENTLEY & CO.,

BARRISTERS, SOLICITORS, ETC. Spec-
ially in - COMMERCIAL LAW. Toronto,
Canada. Cable address, "Bentley," Toronto.
Patents procured in Canada and Foreign
Countries.



In the Robb-Armstrong Tandem Compound Engine the high pressure cylinder is placed next the frame and both pistons and cylinder heads may be withdrawn through the low pressure cylinder without disturbing it. Both valves are controlled by the governor, arranged so as to give equal work to each cylinder.

Robb Engineering Co., Ltd., Amherst, N. S.

AGENTS:

The Canada Machinery Agency, 345 St. James Street, Montreal.
Wm. McKay, Seaforth, Ont., Travelling.

TAKE A NOTE OF IT. Tel. 1040.

I've moved my office to

CANADA LIFE BUILDING.

A. G. NEFF Chartered Accountant,
Auditor, Assignee, etc.

Emery

Emery Wheels, Grinding Machines, Grinders' Supplies ...
Quick process and large stock.

WHEN IN A HURRY
ORDER OF

The Tanite Co.,

New York, 161 Washington Street. Pa. U. S. A.
Cincinnati, 1 West Pearl Street.
London, Eng., 1108 Hamilton, 90 Cannon St., E. C.

ON HAND

1 16x42 Reynolds' Corliss Engine

FOR SALE VERY LOW.

I. Matheson & Co., Engineers,

NEW GLASGOW, NOVA SCOTIA.

The Canadian Canoe Co., Ltd.

BOX 107, : PETERBORO, ONT.



We build Canoes of **CEDAR, BUTTERNUT, BASSWOOD** and other woods, for Paddling, Sailing, Racing, Fishing, Etc. Skiffs of all sizes.

STEAM LAUNCHES to carry six persons, from \$175 up.

... WRITE FOR CATALOGUE ...

Your deductions are unsound when you question the competency of architects to formulate a new fire by-law from your distortion of their evidence in this inquest. The question you ask in closing your article is an easy one. Only those are qualified to undertake the duties of an architect who have been properly educated and trained.

Yours truly,

J. W. SIDDALL.

Dominion Coal Co.

Those people, and they were not a few, who ventured to predict that the American Syndicate had only bought up the Cape Breton mines for the purpose of closing them in the interests of American collieries, must by this time be convinced that their conclusions were, to say the least of it, premature, and they would do well in the future to act upon Mark Twain's advice: "Never prophesy unless you know." There were a few superficial observers who considered that the first year's operations of the company lent colour to such a supposition, and not a few ran about exclaiming, "There, we told you so, the Emery & Gardner mines are already closed, and others are sure to follow;" but what the critics failed to see, is, at the end of the second year, perfectly obvious to the most casual observer, i.e., that the company were pursuing a wise and carefully considered policy in lopping off the unprofitable branches of their concern and consolidating the whole upon a firm and reliable basis. The record of the present year shows the first fruits of this sagacious policy in a development of the best mines, a largely increased output from the whole, and a provision of the most modern and approved appliances for transporting, handling and shipping the coal. In view of the result already achieved it is a tolerably safe prediction that, in a few years, this company will so have developed its most profitable mines, and, so thoroughly established its markets, as to have rendered itself tolerably independent of all competition, and one of the strongest and best paying concerns on this side of the Atlantic. This opinion is based upon a thorough knowledge of the enormous mineral resources of the company, and their advantageous position for economical working; together with an appreciation of the vigorous and intelligent manner in which the whole business of the concern is being established. And although it is no doubt a disappointment to find a 40% tariff against them upon coal exported to the United States, we venture to think that in view of the foregoing considerations even this will not prove an insuperable barrier to a large business with the New England States; and if in addition it should be found practicable to open up a trade with the West Indies and South America, there would be sufficient scope for a still greater development than

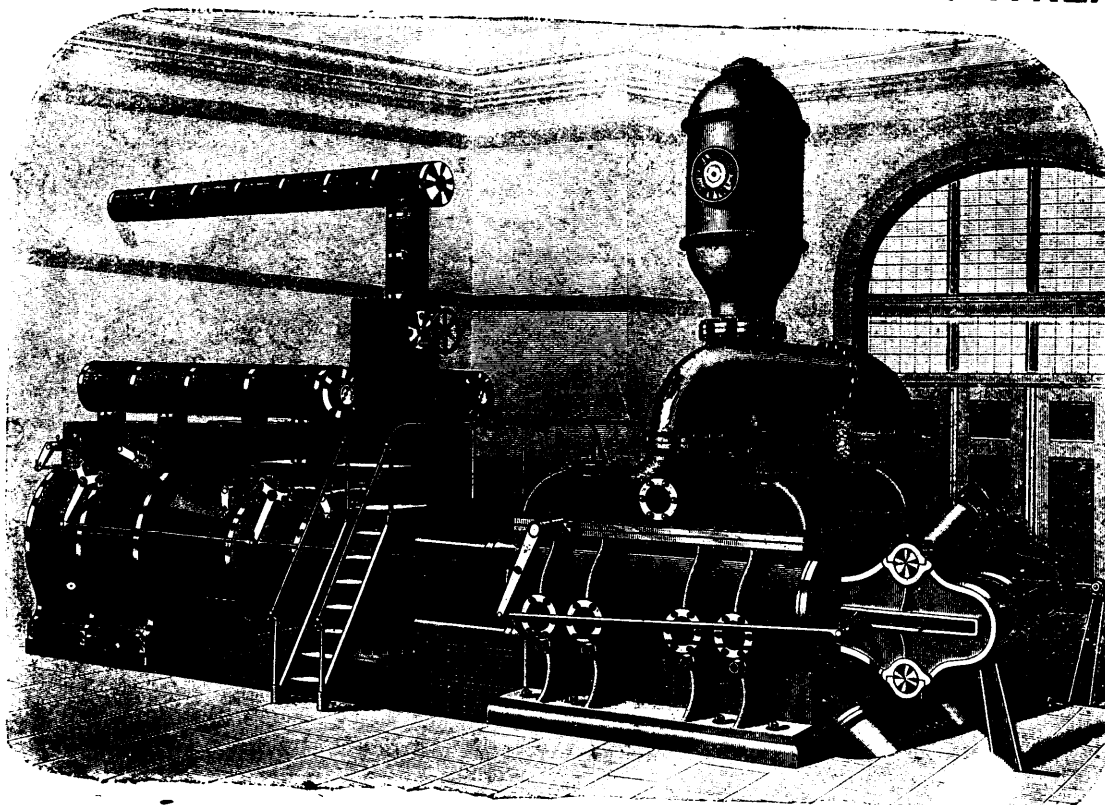
has yet been contemplated. In this connection we are pleased to note that the company has recognized that, in the probable absence of any considerable quantity of back freight, the only hope for this class of trade lies in cheap transport, and they have contracted for several large vessels of the "turret" type, carrying 4,000 to 5,000 tons each, which should enable them to carry coal to the River Platte at about \$2 a ton. Their enterprise in this respect and in the opening up of a winter port at Louisburg, of which more anon, are worthy of the highest commendation, and deserve the success which they seek. These general observations are forced from us by noting the details of the year's work, which we are able to give below. We may say just as we are going to press, the information reaches us that the total amount of coal hoisted for the year exceeds 1,000,000 tons, and the quantity shipped is about 930,000 representing an increase on the year of 200,000 tons, or 27%.

Caledonia Colliery.—The largest outlay has been at the important Caledonia mine, which has been almost revolutionized, and is now the best equipped mine which the Company possesses. The following are the additions this year:—Chimney stack erected 125 ft. high, with 6 ft. flue; three Babcock & Wilcox boilers of 200 h. p. each; one Rand compressor, capable of driving 50 coal cutting machines, working at 80 lbs. pressure; one pair of hoisting engines, 20 in. double cylinder, 3 ft. 6 in. stroke, 5 ft. drum, to replace a smaller pair; one iron bank-head and pit frame, covered in with corrugated iron sheets, two self-dumping cages; new screening apparatus; 3,000 ft. of additional railway sidings on surface; additional shaft for raising and lowering workmen 11x8 ft.; endless haulage for operating the west level; capable of hauling 1,000 tons per day if required. This re-opens an old district which has been standing for some years, and which is expected to yield a large output of coal next season; the west levels have been driven in by Stanley headers, about 900 ft. each up to date. The east deep has been carried down about 600 ft., and levels driven to the south 700 ft. and to the north 1,000 ft.—the latter connecting with the south level from the west deep. This has opened up two new districts equal to about 50 rooms. It is in these districts that the Ingersoll coal cutters are working. A pipe line has been constructed from the compressor on the surface to the bottom of the east deep, and into these two latter levels, supplying the coal cutters with air. A pipe line has also been laid to the back of the west levels a distance of nearly 3,000 ft. to drive the Stanleys. This will subsequently be used for coal cutting. A large steam pump has been put in at the bottom of the shaft to raise the water to the surface, in lieu of the old lifts. The two bank heads from east and west deeps, and the approach to the shaft are being regraded and enlarged.

Note.—The output from Caledonia mine was restricted to very

JOHN M^cDOUGALL,

CALEDONIAN IRON WORKS MONTREAL, QUEBEC.



General Agents

in Canada for

THE FAMOUS

Worthington

Pumps

Hydraulic

Machinery

Condensers and

Water Works

Supplies.

WORTHINGTON PUMPS ARE UNEQUALLED FOR EFFICIENCY AND ECONOMY.

little for the first few months of the season owing to the new machinery not having been completed. Since then, however, a larger tonnage has been raised than in previous years. A concrete compressor house has also been erected.

Little Glace Bay Colliery.—Two multitubular boilers have been set up on the Jeffrey system to supply steam for driving air machinery. One Rand air compressor has been erected which is working 12 coal cutters. A pipe line has been laid from this compressor down the deep and into the north and south levels. A new pump has been fixed at the bottom of the deep, which is raising the water to the pumping shaft. This supersedes the old system of hauling it with tanks. A hauling engine 18" x 36" has been erected on the surface for the purpose of working endless haulage below ground. And this system has been laid along the shaft level to the north, a distance of 3,000 ft. This level has been widened and a double road constructed the whole distance. A concrete engine and compressor house has been commenced.

International Colliery.—New engine and boiler house has been erected; a chimney stack 100 ft. high with 6 ft. flue has been erected; Two Lancashire boilers 30 ft. x 7 ft. are ordered for erection at this mine; also one hauling engine 18" x 36" to drive endless haulage, which it is intended to introduce here during the coming season.

Old Bridgeport Colliery.—One additional Ingersoll air compressor has been laid down, and pipe line constructed along the shaft level into the Reserve mine, from which air is taken to drive Ingersoll air cutting coal machines in Old Bridgeport mine and two Stanley headers in the new deeps. New bank head and pit frame have been erected, and new screening machinery put in operation; self dumping cages have been introduced; a new pair of hoisting engines 14½" double cylinders have been erected; two additional multitubular boilers; reservoir constructed and pipe line laid to supply water for steam purposes; hauling engine placed in the mine, and tail rope haulage laid down from the shaft to the extremity of the main level towards Reserve mine; two new deeps have been driven down by the Stanley headers, a distance of about 700 ft. This will open up a new district. A connection has been made with the Reserve mine, which is now drained through the Old Bridgeport sea level.

Reserve Colliery.—The French slope has been widened and a double track laid from surface to face, a distance of 4,000 ft. Endless haulage has been put in, the motive power being supplied by the hoisting engine previously used. A new district has been opened up on the main slope, yielding a greatly increased tonnage. By this means the total output of the mine has reached about 1,300 tons per day during the shipping season.

Gowrie Colliery.—One additional air compressor has been erected

and a pipe line laid down the deep and along the north level, to supply air for coal cutting machinery; also for pumping and hauling. One tail rope hauling engine has been fixed in the south level, and is hauling the whole of the coal from this district. A Mitchell long-wall undercutter has been placed in the north level, and is cutting nearly 1,000 tons of coal per week. This north district is a new one, and has been opened entirely this year. The levels have been driven about 1,000 ft. from the deep, and the whole of this district is being worked on the long-wall system. All the coal is extracted and the roads are protected by substantial cogging, which is constructed from the fallen roof. A new pound room has been driven at the foot of slope; also a new water way from the same in a direct line to the pumping shaft. A range of pipe has been laid from the pump through this new road and the old road abandoned. A new pipe-way has been constructed on the surface from Sand lake to Gowrie mine, which will yield a permanent supply of water for steam purposes; distance about 3,500 ft.

Victoria Colliery.—Two new cylinders have been put in, 26 in. diam., in lieu of 24 in. previously used. The centre slope has been enlarged and driven down about 300 ft. and a double track laid throughout. This has been connected by new levels with the west deep. The latter has been abandoned and the whole of the coal west of the centre slope is now hauled from the latter point. The water has been pumped out of the district which was flooded three years ago, and the output raised to 700 tons per day. A bore-hole 8 inches in diameter is being put down from the surface to the pump room for the purpose of pumping water vertically. Two new multitubular boilers have been erected on the surface, and the bank-head has been regraded and improved.

Dominion No. 1 Colliery.—The whole of the work here, except a small portion of the sinking, has been done this year. A shaft 24 ft. x 10 ft. 6 in. has been sunk through the Phalen seam, a depth of about 150 ft. Large and expensive plant is being erected, consisting of two Ingersoll air compressors. A pair of 20" x 54" hoisting engines; a pair of 18" x 36" hauling engines for endless haulage; three Babcock boilers 200 h.p. each; one 12-ft. diam. Murphy fan, driven with 6-ft. flue has been completed; all the permanent erections are of brick; railway sidings have been constructed; an air shaft 10 ft. in diameter has been sunk; and below ground over 5,000 ft. of deep and level work have been driven; steam pump has been placed below, which is raising water to the surface; a pipe line has been constructed from Old Bridgeport mine to supply water; upwards of 70 miner's houses and a large boarding house have been built adjacent to this mine.

At Caledonia, Glace Bay and International Mines.—Fifty to sixty

.....THE.....

Goldie & McCulloch Co.,

Limited,

Galt, Ontario,

MANUFACTURERS OF

STEAM ENGINES,
BOILERS,
WATER WHEELS,

Steam Engines, Boilers.
Water Wheels, Flouring and Saw Mill
Machinery, Wood Working Machinery,
Wool Machinery.

Fire and Burglar-Proof Safes, Vault
Doors.

Wood Rim Split Pulleys, Friction Pulleys,
Friction Clutch, Couplings., etc.

“Dumfries - Foundry,”

Galt, Ontario, Canada.

WM. & J. G. GREY, TORONTO,

MANU'FRS OF

SUPERIOR CHILLED ROLLS.

Perfect Surface, Deep Chill, Hard,
Tough, Durable, Guaranteed
Free From Flaw.

—FOR—

Iron Rolling Mills,
Rubber Works,
Paper Mills,
Flour Mills, Etc.



For Rolling
Iron, Steel, Gold,
Silver, Brass, Copper
Wire, Lead, Paper, Etc.

Have the Largest and Most Complete
Plant of Grinding and Corrugating Machin-
ery in Canada.

other miners' houses have been erected, also new offices, machine and engine shops, roundhouse, warehouse and other buildings, have been erected at Glace Bay.

Caledonia postscript:—A new long-wall undercutter has recently been started, which has given very satisfactory results, having undercut 500 lineal ft. of coal 3 ft. under, in one working day.

Shipments.—We append herewith the total shipments (approximate) of coal for the year and are able to state that, if trade admits of it, the output for the next season will be considerably in excess of that for 1894; and during the winter every preparation will be made to this end.

Caledonia	Mine	119,195	tons
Glace Bay	"	138,417	"
Gowrie	"	127,782	"
Dominion No. 1	"	32,840	"
International	"	129,324	"
Old Bridgeport	"	54,185	"
Reserve	"	208,071	"
Victoria	"	118,429	"

928,243 tons

In addition to extensive outlays on mechanical appliances at nearly all the collieries now being operated, the company has commenced to re-open the celebrated Hub seam of coal, which is one of the finest in their property, and was formerly owned by the Little Glace Bay Mining Co. Operations are being carried on day and night, and it is hoped that this mine will be ready to ship coal by the opening of navigation next spring. By that time also, the new Dominion No. 1 mine will be ready to deliver something like 1,000 tons of coal per day. And the company's arrangements for transporting coal to Louisburg as well as their new pier at the latter place, and their crane and bucket arrangements at the International Pier will be completed. We have only to say at the close of this article that, a company which has developed the mineral resources of Cape Breton in the short period of two years, to an almost unprecedented extent, and which has expended on the spot upwards of \$1,000,000 in that time, has more than justified its existence as a bona fide commercial undertaking, and has given hostages for the due fulfilment and its many obligations, which should be satisfactory to the most exacting critic.—Canadian Mining Review.

Wondrous Future of Electrical Science.

The astounding discoveries of the young Servian genius, Nikola Tesla, are so novel and so extraordinary that the most imaginative

of inventors are unable to foresee what form their development will take. Mr. Tesla shows us the electric fluid under conditions in which it differs from ordinary electricity as much as light differs from heat. A current of 2,000 volts will kill a man in the twinkling of an eye, but Tesla lets currents pour through his hands with a potential of 200,000 volts vibrating a million times a second, and showering from him in dazzling streams of light. Mr. Tesla says that he will soon be able to wrap himself in a complete sheet of electric fire that will keep a man warm at the North Pole without harming. Equally astounding, and with more visible usefulness, is Mr. Tesla's discovery that currents of such enormous potential and frequency can be transmitted without the use of wires. A room can be filled with electricity from copper plates in ceiling and floor, so that electric lamps will burn without any connecting wire as soon as they are brought in. In the same way intelligence and power may be transmitted without a wire circuit, doing away with the necessity for trolleys, storage batteries and subways. No one can read the account of The Researches and Writings of Nikola Tesla, by Thomas Commerford Martin, just published by The Electrical Engineer, of New York, without feeling that a new era is dawning in electrical science. This sudden enlargement of the idea of scientific men, in regard to the nature and the possibilities of electricity, has led the New York Mail and Express to bring together in a symposium the opinions of well-known electricians as to the future development of electrical science. Mr. Edison thinks we shall yet be able to get electricity direct from coal, a discovery compared with which the philosopher's stone is a mere bauble. Then our steamships will need only "a snug little bin for 250 tons of coal, instead of one for 2,800 tons." Successful aerial flight, electrical cookery, a transatlantic telephone, a real telescope with which one can see around the world by the medium of a wire, the formation of wholesome food products under the potency of electrical affinities—these are some of the things which imaginative inventors foresee. Most startling of all, though it was suggested nearly ten years ago by an undergraduate in a western college, is Mr. Edison's idea that unspoken thought may be recorded by electrical apparatus applied to the cranium, and either reproduced at pleasure or transmitted to another person.

New Dye Bath.

At a late meeting of the Society of Chemical Industry in Manchester, England, William Marshall of the Rochdale Technical School describes a new dye-bath arrangement which he had devised for experimental dye trials and comparative dye tests. He had in view the attainment of a more uniform temperature than is to be got

HAMILTON COTTON CO.

Hamilton, Ontario

DYERS, BLEACHERS

AND MANUFACTURERS OF

Warp Yarn, in Beam, Chain or Skein, White or Colored.
Single and Double Yarns, Cop Yarn, Single and Double Hosiery Yarn in all Colors, including genuine "Fast Black."

PAUL FRIND & CO., - TORONTO

Selling Agents for Beam Warps

S. LENNARD & SONS

DUNDAS, ONTARIO

Patentee of "ELYSIAN" SEAMLESS HOSE and LADIES' NURSING VESTS

MANUFACTURERS OF

Plain and Fancy Hosiery

Caps, Toques, Sashes

AND LADIES' NATURAL WOOL AND SUMMER UNDERWEAR

Represented in Eastern Ontario, Quebec, Nova Scotia, and New Brunswick by

ANDREW BEILL, Montreal

Penman Manufacturing Co., Ltd.

.... PARIS, ONT.

Manufacturers of...

Hosiery, Shirts, Drawers Glove Linings and Yarns

Selling Agents: D. MORRICE, SONS & CO., Montreal and Toronto.

ROSAMOND WOOLEN CO.

... ALMONTE, ONT. ...

Fine Tweeds, Cassimeres and Fancy Worsted Suitings
and Trouserings.

Guelph Woolen Mill Co., Ltd.

GUELPH - - - ONTARIO

Manufacturers of

UNDERWEAR, HOSE, WHEELING, FINGERING and WORSTED YARNS
EIDERDOWN FLANNEL, Etc.

Selling Agents: DONALD FRASER, MONTREAL: E. H. WALSH & Co., TORONTO

T. A. MORRISON & CO. 118 St. Peter Street ...MONTREAL.

Building Materials!

Red and Buff Pressed Bricks, and Ornamental Terra Cotta—Building and Sewer Bricks—Porous Terra Cotta Fireproofing, Building Stones, Metal Lath, Etc.

AUBURN WOOLEN CO.

PETERBOROUGH, ONT.

MANUFACTURERS OF

FANCY TWEEDS, ETC.

Selling Agents, D. MORRICE, SONS & CO., Montreal and Toronto

by means of the apparatus formerly in use. His bath takes a circular form, and consists of several parts, an outer casing provided with holes which acts as a support for the dye bath and screens the Bunsen burners from draughts.

The heating arrangement consists of six burners, one for each pot, fitted on a circular ring. The dye bath differs from all other forms in being hemispherical in form, with a cone rising from the centre. This latter feature presents several advantages: In the first place, it lessens the quantity of fluid required by the dye bath; secondly, it promotes the circulation of the hot fluid, and so tends to bring about greater uniformity of temperature, and, thirdly, it acts as a flue to the products of combustion of the gas burners.

The dye bath containing six holes for the dye pots round its periphery, one in the centre for the cone and another for a thermometer, together with two handles, by means of which the top and its contents can be revolved, which is a distinct novelty in the construction of dyeing apparatus, and one which will tend to promote the main end in view, uniformity of temperature. As a heating fluid the inventor prefers calcium chloride, which gives very satisfactory results, is cheaper than glycerine, and much superior to oil. This new apparatus seems to be a decided improvement on all forms hitherto in use. The dye pots are of the usual form, and have to be obtained from Germany.

Fighting Parallel Roads.

The ability of electric railroads with cars running at frequent intervals to compete successfully with parallel steam roads is now a fact so well established as to require no further demonstration. Some steam roads have recognized this already, and as a result we have chronicled several instances in which local trains have been wisely abandoned as unprofitable. It seems, however, that the parallel electric railway is not to enjoy its newly acquired popularity undisturbed. Indeed, indications are already manifesting themselves that the steam roads will make a fight to maintain their traffic. This fact is showing itself in various ways. Thus we notice that the Cumberland Valley R. R. between Harrisburg and Mechanicsburg, Pa., where preparations are being made to build an electric line, has put on additional trains and is now running ten each way daily. It is also rumored that the fares will be reduced if necessary to retain the business. We cannot but admire the grit of the railroad managers in attempting to maintain their grasp on the business acquired and long held, but we confess our inability to see how they can long maintain such a warfare, which must in the end result disastrously to them. The moment they stop their unprofitable work, the trolley will step in. From whichever side we view the situation the electric road has

the advantage. It can certainly run more cars at more frequent intervals than the steam road can with economy; while on the other hand the more trains the steam road runs, the less probably will be the economy of operation for that particular section, with a traffic such as is to be expected on that stretch of road and many others similarly situated. The reduction in fares proposed is sure to stimulate traffic, but there is a limit to this, as more than one rate-cutting road has found to its sorrow long ago. That steam railroad managers, who watch the course of events and know how to draw conclusions from them, are convinced of the futility of competing with parallel electric roads for local traffic, is indeed shown in the recent action of the Pennsylvania R. R. Company, who have brought suit at Lancaster, Pa., against the Lancaster & Litz Electric Railway Company and the Lancaster Construction Company. The steam road avers that the electric road is seeking to run across a farm owned by the plaintiffs without their consent and without giving proper compensation for the right of way. This is obviously a subterfuge as the bill of complaint further claims that the Act of May 14, 1889, does not authorize the construction of railroads other than such as are necessary to "provide a cheap and convenient road for the carriage of passengers in the centres of population and business." The complaint requests the Court to restrain the issuing of certificates for the capital stock or bonds, and from crossing the plaintiff's property, and that all securities already issued by the electric railway company be declared null and void and cancelled. We cannot believe that the officers of the Pennsylvania R. R. Company really expect to gain their point so far as the total extinction of the proposed electric railway is concerned, and the suit has been brought more with the view to delaying and embarrassing the work of rivals, a method of warfare in which steam roads are past masters. As we have had occasion to say in a recent discussion of this subject, the most satisfactory way to provide for the inevitable coming of the trolley for local traffic is for steam roads to build their own trolley lines, or re-equip existing tracks electrically, and the sooner they do so the better they will be off. We already note a growing tendency of state railroad commissioners to protect steam roads, among the more recent actions being the refusal of the railroad commissioners of both Connecticut and New York states to permit trolley crossings of steam railroads at grade. This cannot fail to give the steam roads equipped with the trolley an advantage, which will make competition from parallel roads more difficult; but unless they equip with electricity even this obstacle put in the way of competing trolley lines will avail nothing.

The situation is an interesting one in many respects and the close of the episode will be watched with keen interest.—Electrical Engineer.

Wm. J. Matheson & Co. Limited

423-425 ST. PAUL ST., MONTREAL

ALSO AT

NEW YORK, BOSTON, PHILADELPHIA, AND PROVIDENCE, U.S.A.

IMPORTERS AND MANUFACTURERS OF

DYE STUFFS NATURAL AND ARTIFICIAL

Works: Long Island City, Port of New York
Main Office: 178 Front Street, New York

OUR

Diamine Colors..

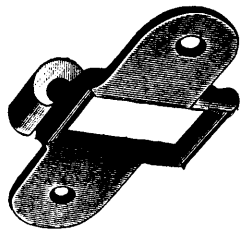


- Have the Singular Merit of Dyeing Cotton, Wool and Silk in an Alkaline Bath, in one operation, without a mordant, hence their great importance for Mixed Fabrics. Some of the shades produced are faster than Alizarine.

WM. & J. G. GREY,

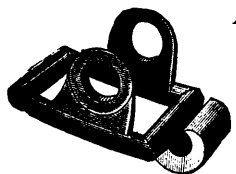


TORO TO,
Carry full line
of the

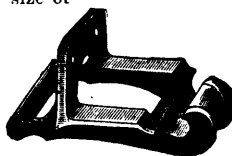


LINK CHAIN BELTING AND ATTACHMENTS,

Also Manufacture any size of



Sprockets
For
Any Chain.



Jas. A. Cantlie & Co.

GENERAL MERCHANTS AND
MANUFACTURERS' AGENTS

ESTABLISHED 22 YEARS

- COTTONS**—Grey Sheetings, Checked Shirtings, Denhams, Cottonades, Tickings, Bags, Yarn, Twine, etc.
- TWEEDS**—Fine, Medium and Low Priced Tweeds, Serges, Cassimeres, Doeskins, Etottes, Kerseys, etc.
- FLANNELS**—Plain and Fancy Flannels, Overcoat Linings, Plain and Fancy Dress Goods, etc.
- KNITTED GOODS**—Shirts, Drawers, Hosiery, etc.
- BLANKETS**—White, Grey and Colored Blankets.

WHOLESALE TRADE ONLY SUPPLIED

ALBERT BUILDING, 290 ST. JAMES STREET, - - MONTREAL
20 WELLINGTON STREET WEST, - - - - TORONTO

Advances made on Consignments. Correspondence Solicited.

CAPTAINS OF INDUSTRY.

This department of the Canadian Manufacturer is considered of special value to our readers because of the information contained therein. With a view to sustaining its interesting features, friends are invited to contribute any items of information coming to their knowledge regarding any Canadian manufacturing enterprises. Be concise and explicit. State facts clearly, giving correct name and address of person or firm alluded to, and nature of business.

Mr. Hamilton is about putting up a saw mill at Sand Point, Ont.

The Nelson Saw Mill Co., Nelson, B. C., will shortly put in a mill at Rossland.

Ramage Bros. have installed an electric light plant in their flour mill at Chesley, Ont.

Brush & McLean have purchased property at Colchester South, Ont., and will erect a saw mill.

Silas Brush and Eli McLean will build a new 60-barrel flour mill at Harrow, Ont., at a cost of \$6,000.

Messrs. Kalte & Poole, Berlin, have secured the Port Elgin foundry and will commence operations at once.

The Toronto Mineral Wool Mfg. Co. are applying for incorporation with a capital stock of \$25,000 to manufacture mineral wool.

New machinery has been put in the Stanfield knitting mill, Truro, N. S., and the firm will now manufacture finished hose and merino-wool men's underwear.

The Victoria Electric Light Co.'s works, Victoria, B. C., were seriously damaged by fire on Tuesday, February 26th. The loss is estimated at \$15,000 to \$20,000.

The new flour mill of S. J. Cherry at Preston, Ont., will be constructed of brick, 40x60 feet, and five stories in height. A large storehouse, 36x40 feet, will be built in connection with the mill.

The new grain elevator at Prescott, Ontario, which is to have a capacity of 500,000 bushels, will, it is expected, be ready for receiving grain by the first of June. One of the advantages likely to accrue from the erection of this elevator is a rapid discharge on arrival of vessel, as it will have two marine legs capable of lifting 20,000 bushels per hour.

Messrs. Hiram Walker & Sons, Windsor, Ont., are contemplating the erection of an immense tobacco factory at Walkerville, Ont.

The Ontario Paving Brick Co., Toronto, Ont., are applying for incorporation with a capital stock of \$50,000 to manufacture paving materials, etc.

Statistics of the Canadian pig iron industry show that during 1894 the production was 53,014 tons. Of this 40,000 tons were produced in Nova Scotia.

The Ontario Veneer Co., of Toronto, Ont., are applying for incorporation with a capital stock of \$20,000 to manufacture veneers, and veneered goods, etc.

The Canadian Cotton Mill Co. is putting into the St. Croix mill fifty new looms from the Crompton Loom Works of Worcester, Mass., intended for high class work.

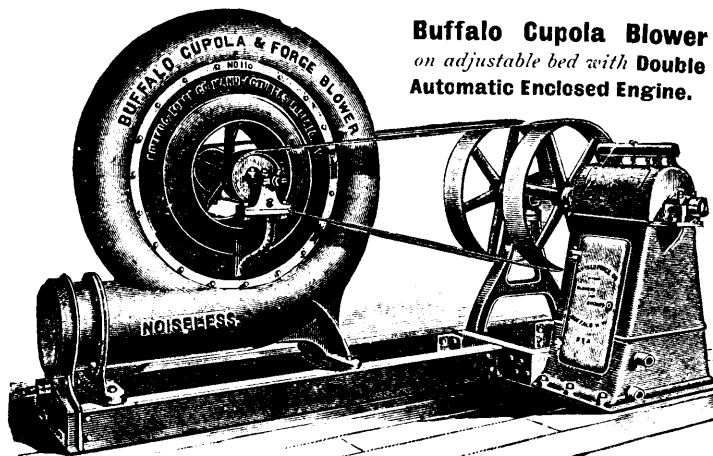
The Guelph Paving Co., Guelph, Ont., are applying for incorporation with a capital stock of \$25,000 to make and lay asphalt, cement and other similar sidewalks, etc.

The Ottawa Porcelain & Carbon Co. has been incorporated with a capital stock of \$100,000 to manufacture all articles in connection with electric light and electric power apparatus and in particular the manufacturing of porcelains, carbons, etc.

The Niagara Falls Electric Street Railway Co. are applying for incorporation with a capital stock of \$250,000 to construct a street railway and to supply electricity for the purposes of light, heat and power in the municipalities of the town of Niagara, the Village of Niagara and Town of Stamford, Ont., etc. The chief place of business will be at the Town of Niagara Falls.

The British Columbia Paper Manufacturing Co. will be wound up and a new company organized to take over the mills at Alberni, which, it is expected, will be again in operation in six weeks under the management of Mr. Dunbar. The plant will be improved by the addition of new machinery.—Victoria, B.C., Commercial Journal.

C. Beck, of Penetanguishene, Ont., has made arrangements with the Waterous Co., of Brantford, for supplying of a complete band saw mill, to be erected near Savanne, on the C. P. R., where he, in connection with the Hogan Bros., Wyeveal, and Dr. Spohn, under the name of the Savanne Lumber Co., contemplates extensive lumbering operations. He has also purchased an additional band mill for the new Keene mill and also intends putting a new gang in the Penetang mill.



Buffalo Cupola Blower
on adjustable bed with **Double Automatic Enclosed Engine.**

**Buffalo Dry-Kilns, Shaving Fans, Forges,
Blowers, Exhausters, Blacksmith Drills, Etc.**

Are described in Sectional Catalogues FREE on application.

**Their Efficiency, Smooth Running, and
Durability are Unsurpassed**

BUFFALO FORCE CO., Buffalo, N.Y., U.S.A.

SOLD IN

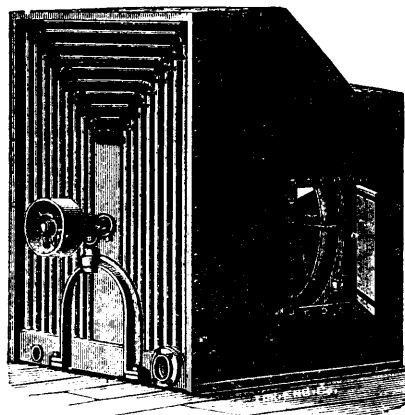
TORONTO, ONT., BY H. W. PETRIE.
BRANTFORD, ONT., BY CANADIAN MACHINERY & SUPPLY CO.
MONTREAL, QUE., BY CANADA MACHINERY AGENCY.
CHICAGO STORE, 22 and 24 WEST RANDOLPH STREET.

McEachren's System of Heating, Ventilating and Drying

SOMETHING NEW

Cheap and Effective.

Highly approved by practical and unbiased men. The following is a sample of letters I get from customers.



For Particulars Address

J. D. McEACHREN, =: Galt, Ont.

J. D. McEachren, Esq., Galt.

Clinton, January 24th, 1895.

Dear Sir.—Replying to your enquiry of the 21st inst., we may say the **HOT BLAST HEATING SYSTEM** we purchased from you about 15 months ago is giving entire satisfaction. Our factories contain about 200,000 cubic feet of space which we heat with exhaust steam, except in very severe weather when we use live steam in one half of the heater in the morning only.

As regards the **DRY KILN, the Heater and 42 inch Fan** you supplied us, they are doing excellent work. We dry out 8 carloads of weather-seasoned lumber, chiefly 1, 1½ and 2 inch walnut per week. We use exhaust steam exclusively in the dry kiln and that during working hours only. It does not require much power to run the fans and they handle a very large quantity of air. We find yours to be a great improvement on the old system of heating with pipes around the factory and under the lumber in the dry kiln.

Yours truly,

W. DOHERTY & Co.,
Organ Manufacturers

W.J. Moses Vernon, Ont., will erect a sawmill and factory at that place.

Harding & Son, Simcoe, Ont., propose to erect a shoddy mill at that place.

The capital stock of the Galt and Preston street railway will be increased to \$100,000.

D. W. Stickey's agricultural works at Newbury, Ont., were destroyed by fire March 7th, loss about \$10,000

Gilmour & Hewson, lumbermen, Hull, Que., propose enlarging their boiler house, and adding two new boilers.

An electric railway is proposed to be built between Nanaimo and Wellington, B.C., by the Nanaimo Electric Tramway Co.

Bay City, Michigan, capitalists are endeavoring to organize a company in Stratford, Ont., to build a street railway extending to adjacent towns.

The Black Creek Hydraulic Mining Co., Cariboo, B.C., are applying for incorporation with a capital stock of \$300,000 to carry on the business of hydraulic mining, etc.

The name of the Carey Wire Sewing Process Co., has been changed to The Carey Wire Sewing Machine Co., and is to carry on the business of manufacturers of sewing and other machines.

The Colonial Iron and Coal Company propose to spend nearly a million dollars in Queen's County, N. B., developing mines and establishing blast works at St. John, provided the Legislature will grant them a charter.

The Fredericton Boom Co., Fredericton, N.B., propose asking the Legislature for authority to transfer their operations from Oromocto Island to the eastern shore of St. John River. The change involves \$70,000 for new work.

The Victoria, Vancouver and Westminster Railway Co. has been incorporated to build a line from a place near Garry Point on the Fraser River, through Richmond, South Vancouver and Burnaby to Westminster, with a branch to Vancouver.

In the new catalogue of the Penberthy Injector Co., Detroit, Mich., two pages are devoted to facts not generally known about injectors. Hot feed water, hot delivered water, and water supply from pressure are the subjects discussed. The book contains descriptions and price lists of a number of new water gauges and oil cups that this company is placing on the market. Any engineer who cares for a copy of the catalogue can have it by writing the Penberthy company and mentioning the Marine Review.

The works of the Gilbert Boat Company of Gananoque, Ont., is being removed to Brockville.

Leading business men of Nelson, B. C., are advertising an offer to guarantee the raising of a bonus of \$100,000 for the erection of a smelter to be operated at that place.

The plant and stock of the Reid & Currie Iron Works Co., New Westminster, B. C., have been sold to John Wilson, manager of the Brunette Sawmill, New Westminster, for \$5,000, or about 25 per cent. of the original valuation.

The Langenburg & Southern Railway Co. are applying for incorporation to construct and operate a line of railway from Langenburg, Assa., to join the Canadian Pacific Railway at some point between Red Jacket, Assa., and Elkhorn, Man., and also a branch to Binscarth, Man., etc.

The Vancouver Cement Works, of which Mr. Warsap is the manager, are about being put in operation; the output of which will be about 1200 barrels of cement per month, the most of which will be used in the construction work on the line of the Canadian Pacific Railway in that province.

We are informed that The Thos. Davidson Co., Montreal, who have recently engaged in the manufacture of enamel ware, have that department of their works in operation. They give employment to a large number of expert workmen some of whom they have brought from Germany, and they are enjoying a large business in that line.

A factory for the production of body Brussels is, we understand, to be erected in Canada, ten of the Brussels looms patented by the late Mr. J. C. Duckworth, who was brought into prominence by the late Mr. E. S. Higgins, the American millionaire carpet manufacturer, having already been shipped from the Higgins' Mill, in New York City. The machinery will have to pay a duty of 30 per cent.—The Textile Mercury.

The Electric Heat Alarm Co., Boston, Mass., have sent us their descriptive catalogue No. 4 having reference to the electric apparatus manufactured by them for mills, factories, grain elevators, hotels, stables, storage warehouses, residences, etc. This apparatus consists chiefly of automatic devices by which any undue amount of heat at the point where the thermostat may be located, is instantly made known in the central office. This system is coming into very general use in the United States and to some extent in Canada. Those who may be interested in it would do well to ask for further particulars of the company, who will take pleasure in sending illustrated descriptions thereof.

BRUNNER, MOND & CO., LTD., NORTHWICH, ENG.

MANUFACTURERS OF



PURE ALKALI

GUARANTEED 58 DEGREES.

and BLEACHING POWDER.

The Strongest and Purest Form of SODA ASH in the Market, and the Most Economical Form of SODA for the Manufacture of

SOAP, GLASS, PAPER, WOOD PULP AND COLORS,

also for PRINTERS AND BLEACHERS.

WINN & HOLLAND, Montreal

Sole Agents for the Dominion of Canada

THE PAUL FRIND Woolen Machinery Company, Ltd.

.....TORONTO.....

Dealers in and Manufacturers of

WOOLEN MACHINERY. MILL SUPPLIES.

Specialties:

English H & T Steel Card Clothing.

Williams' Heddles, Shuttles, Reeds, Heddle-frames, Loom Repairs.

DODGE WOOD SPLIT PULLEYS

Best Oak Tanned Belting and Lace Leather.

Canada Chemical Mnfg. Co.

Manufacturers of

Sulphuric, Nitric and Muriatic Acids, Commercial and Chemically Pure. Mixed Acids for Explosives, Liquid Ammonia, Glauber Salts. Copperas, Muriate Tin, Tin Crystals, Acetic Acid, Nitrate Iron, Bisulphite Soda, Acid Phosphate for Baking Powders and General Chemicals. Fertilizers, Etc.

LONDON,

ONTARIO

The Bloomingdale Furniture Mfg. Co., Bloomingdale, Ont., will in a new engine and boiler.

The Babcock & Wilcox Co., New York, advise us that they have appointed Mr. Wm. T. Bonner as their General Agent for Canada in place of Mr. E. C. French, resigned. Mr. Bonner's address is at 415 Board of Trade Bldg., Montreal.

The Toronto Steel Clad Bath & Metal Co., Toronto, have sent us their illustrated and descriptive catalogue having reference to the steel clad baths manufactured by them. The catalogue contains full descriptions of all the lines of baths manufactured by this concern; a large number of references from those who have them in use; and also illustrations of all of the appliances necessary in a well ordered bathroom. In fact the inspection of the catalogue would be a strong incentive for a person to take a bath at least once a year whether he needs it or not.

Mr. Tretheway, of Vancouver, B. C., has invented a machine for labelling cans of all sorts, and a company has been formed, with a capital stock of \$25,000, to manufacture the same. The bed of the machine, which is made to suit the size of the can to be labelled, contains the gumming apparatus and the labels, while above is a series of wheels connected by a broad rubber belt which is grooved on the outside. The cans are rolled down a shoot where they are caught by a disc, in which a couple of semi-circular grooves, have been cut, and are passed along, one at a time, under the belt which carries them over the gumming apparatus and then over the labels which attach themselves immediately to the tins. The operation is then complete, and they are carried along another shoot to the boxes waiting to receive them. It is claimed that 120 tins can be labelled per minute, and that the machine can do the work of 20 men in the same space of time.

GEO. WHITE FRASER,
Consulting Electrical Engineer.

C. E., D. T. S.,
A. Am. Inst. Elec. Eng.

Electric Railways and Electric Light Construction Superintended.
18 Imperial Loan Building, Toronto.

TORONTO CARPET MFG. CO., Ltd.

TORONTO

Were awarded Gold Medals at the World's Columbian Exhibition, Chicago, for their

INGRAIN

and --

"Imperatrix" Axminster

CARPETS

SEVEN QUALITIES OF INGRAINS

Kensington Art Squares, Axminster Mats, Rugs,
Squares, Body Border and Stairs.

Esplanade and Jarvis Sts., - Toronto

The Dominion Cotton Mills Co., Limited

MAGOG PRINTS

A Full Range of **.. Pure Indigo Prints**

Is now being shown to the trade.
Ask Wholesale Houses for Samples.

All Goods Guaranteed, and Stamped "Warranted Indigo Blue"

D. Morrice, Sons & Co. Selling Agts.

Montreal and Toronto

A marine railway is now being erected at Nanaimo, B.C., which will have capacity to draw out of the water the largest iron ships that visit that port.

Mr. W. Brown, shipbuilder, Vancouver, B. C., has just launched a fine three mast schooner built by him, and which has been called The Queen City. The vessel is 128 ft. long, 23 ft. 6 in. beam, and 10 ft. depth of hold, with capacity to carry 250,000 feet of lumber. She is constructed of pine and oak obtained in that province. The Queen City sails under the Hawaiian flag, and is now loading lumber at Vancouver for Japan. Mr. Brown is also building a barkentine, the dimensions of which are 160 ft. long, 38 ft. beam, 15 ft. depth of hold, and will carry 800,000 feet of lumber.

Attention is directed to the business card of Mr. Geo. White-Fraser, Toronto, which appears in another column. Mr. White-Fraser was at one time in charge of the engineering department of the old Thomson-Houston International Electric Co.; has superintended and managed large electric light and power stations and companies; has built electric railways, surveyed for water powers, and operated a water power station. He was appointed chief engineer of the Osaku (Japan) Electric Co. to build and operate several electric railways in that country, the carrying out of which was interrupted by the war of that country with China. He has had large experience in designing and constructing both large and small electric plants, and is prepared to do all kinds of electrical work for individuals, companies and municipalities, including the superintendence of small stations. This latter feature of his business secures his advice and supervision at small cost for small plants where the income will not guarantee sufficient to pay salary of resident electrician, but whose operating expenses can be kept low by being in the care of an experienced electrician.

Cassidy, Bonner & Co.,

Manufacturers of

Leather Belting, Lace Leather & Mill Supplies,

MONTREAL.

ALEX. P. MENDE & COMPANY 14 Water St.,
NEW YORK,

MANUFACTURING CHEMISTS.

FAST ONE DIP COLORS,	F	Dyeing and Printing of Cotton, Woolen, Mixed Fibres, Etc., &c.
BLACKS AND CHEMICALS	O	SHADES MATCHED.
	R	

German Finishing Paste
German Warp Dressing
Cotton and Merino Softeners
Wool and Cloth Scouring, etc., etc.

Cordage and Carpet Size
Shade Cloth Colors and Size
Belt Dressing

The Industrial Economizer Apparatus patented, for reclaiming the valuable products from waste waters. Apparatus in operation at our works, Patented June 26th, 1894.
This means a saving to you of thousands of dollars every year.

I. Butler & Co. Distillers of Benzole, Na

and Manufacturers of Carbolic Acid and Varnish.

303 Front St. East, - - - TORONTO.

FERGUSON & PATTINSON

FRETON : : : ONT.

Manufacturers of....

Fine and Medium TWEEDS.

R. A. Bell, of Sturgeon, Man., is projecting a new flour mill at Fort Saskatchewan, Alberta.

S. E. Holmes, Harwich, Ont., is rebuilding his sawmill, and it will be ready for use in a few weeks.

The steamer Lorelei will be cut in two and lengthened fifteen feet. R. Davis & Son, of Brockville, Ont., will do the work.

The Thos. F. G. Foisy Piano Mfg. Co., Montreal, Que., has been incorporated with a capital stock of \$300,000 to manufacture pianos, etc.

The Savanne Lumber Co., Penetanguishene, Ont., has been incorporated with a capital stock of \$48,000 to manufacture lumber and to build sawmills, etc.

The Hamilton Storage Battery Co., Hamilton, Ont., are applying for incorporation with a capital stock of \$10,000 to manufacture electric storage batteries, and electric apparatus generally.

The Mica Boiler Covering Co., with a capital stock of \$50,000, headquarters at Toronto, Ont., has been incorporated to manufacture boiler and steam pipe covering, insulators for cold storage, refrigerators, etc.

The Williams' Cheese Box Machine Co., Belleville, Ont., has been incorporated with a capital stock of \$3,000 to manufacture machines for the manufacture of barrels and boxes made from wood or other material, and to manufacture barrels, boxes, etc.

The Penberthy Injector Co., Detroit, Mich., informs us that their new line of water gauges, oil cups, etc., is meeting with so great a success that they are several weeks behind their orders, and have been compelled to increase their force by putting on ten additional men since the 1st of January, and expect to make another increase in working force of about the same number in a few weeks.

A joint stock company is being formed at Elkhorn, Man., with capital stock of \$25,000 to build a flour mill at that place.

The Hudson Bay Co.'s flour mill at Prince Albert, Sask., recently remodelled, was destroyed by fire a few days ago; loss about \$25,000.

The Pratte Piano Co., with a capital stock of \$200,000, headquarters at Montreal, Que., has been incorporated to manufacture pianos, organs and other musical instruments, etc.

The Pedlar Metal Roofing Co., Oshawa, Ont., have sent us their new illustrated catalogue having reference to the metal ceiling manufactured by them. It includes a great variety of styles and patterns, many of which are exceedingly beautiful. Several pages show interior views of workshops, business offices, rooms in residences, etc., and several other pages show some of the very many beautiful designs in which ceilings may be decorated. These goods are applicable to all styles of buildings and for all purposes. These metal ceilings are permanent, beautiful and fire proof, combining economy and beauty, and are fast supplanting other styles of ceiling, as with it designs and effects may be produced not obtainable with other methods. They can be decorated and decorated as changes may be desired; they do not crack and fall off like plaster, or dry up and shrink like wood; they do not hold diseased germs or vermin, and can be cleaned with sponge and water. In addition to this specialty of the Pedlar Metal Roofing Co., they also manufacture in metals, shingles, siding, lathes, building fronts, corrugated conductor pipes, etc. Those who may be interested in this line of goods would do well to obtain catalogues from the company. We understand that the company have a catalogue of about 100 pages now in press, relating to metal roofing, siding, etc., which will be issued in a few days.

== CUTTERS ==

Stylish, Roomy,
Light, Comfortable
and Strong.

PIANO BODY,
PORTLAND BODY,
QUELPH BODY AND
ADJUSTABLE SEAT BODY.
CUTTERS TO SUIT ALL
REQUIREMENTS.

ASK FOR CIRCULAR DESCRIBING.
J. B. ARMSTRONG MFG. CO. Ltd., QUELPH, CANADA.

... FOR SALE ...

Owing to the large number of New Machines that we have placed during the last two months, we have a large stock of second-hand machines which we are running off very cheap, and it would be to the interest of all persons needing second-hand machinery in good condition to consult our prices in **Engines, Boilers, Wood and Iron Working Machinery** of every description.

We also have a medium size Planing-Mill in Toronto fully equipped with the most modern machinery, which we will sell on easy terms, or will give a long lease to reliable party. Address:

THE TORONTO MACHINERY SUPPLY CO.
164 King Street West, Toronto,
A. J. LINDSAY, Mgr.

Special agents for the celebrated Toronto Portable Oven which we guarantee to give satisfaction or no sale.

... CHAINS ...

Coil, 7 sizes; Trace, Halter,
Tie-Out, Post, Heel and Cow Ties,
Tie Weights, Evener Chains, Etc.

MANUFACTURED BY

The B. Greening Wire Co., Ltd.
HAMIL ON, ONT.

WE MANUFACTURE

THE MOST PERFECT

... Watchman's Clock ...

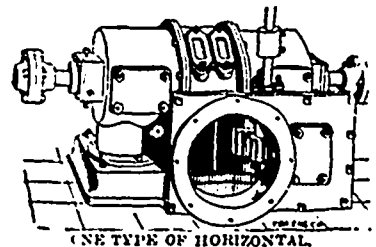
IN THE MARKET.

Send for full information and prices to

The E. Howard Watch and Clock Co.,

MANUFACTURERS : 383 Washington St., Boston, Mass.
FINE WATCHES & CLOCKS : 41 Maiden Lane, New York, N.Y.
: 34 Washington St., Chicago, Ill.

SAMUEL LITTLE, Pres. RUPUS B. CARR, Gen. Mgr
ARTHUR M. LITTLE, Treas.



(ONE TYPE OF HORIZONTAL)

"LITTLE GIANT" TURBINE.

Built in 17 Standard Sizes and 27 Special Sizes, making a range of 44 different wheels in vertical and horizontal cases.

We solicit correspondence from those interested in developing or improving water power

Address **J. C. WILSON & CO.,** GLENORA, ONTARIO.

The people of Vancouver, B. C., propose starting a paper mill in that city.

Messrs. Carveth & Tebb, Peterboro, Ont., are going into the manufacture of canoes, etc.

H. C. Reeves, South Woodslee, Ont., will rebuild his saw mill which was recently destroyed by fire.

The Danville Asbestos & Slate Co., Montreal, Que., are applying for incorporation with a capital stock of \$250,000 to manufacture asbestos, and all kinds of slate goods.

The British Columbia Auer Light Co., with a capital stock of \$30,000, headquarters at Vancouver, B.C., has been organized to carry on the Auer system of incandescent gas lighting.

The new glass works at Wallaceburg, Ont., are nearing completion, it being expected that they will be in operation about the 15th of April. The building and plant has been erected at a cost of about \$50,000, and employment will be given to about 700 hands. The machinery is all of the most modern style, and it is claimed that the company will turn out glass at a lower cost than at any other place in Canada. Mr. J. W. Steinhoff is the President of the company.

CANADIAN PATENTS.

The following patents have been issued from the Canadian Patent Office, from January 3 to January 17, 1895, inclusive.

Information regarding any of these patents may be had on application as follows:

Fetherstonhaugh & Co., Bank of Commerce Building, Toronto.
 Ridout & Maybee, 103 Bay street, Toronto.
 A. Harvey, Central Chambers, Ottawa.
 J. A. Grenier, Imperial Building, Montreal.

Copies of American patents corresponding to Canadian patents can be procured from either of these attorneys for the sum of twenty-five cents each.

47,790 Steam boiler, Eugene Shydecker and H. S. Brown, San Francisco, Cal.

47,791 Cultivator teeth, The Massey Harris Co., Toronto, Ont.

47,792 Street car, Edward Julien and Tressle Berthiaume, Montreal, Que.

47,793 Valve gear for steam-engines, L. O. Burk and Douglas Hobson, both of Boring, Arkansas.

FETHERSTONHAUGH & CO.

Patent Barristers and Solicitors

Electrical and Mechanical Experts and Draughtsmen

Cable Address "Invention, Toronto."

Telephone 2589

PATENTS Procured in Canada and all Foreign Countries

Head Office: Canadian Bank of Commerce Bldg., TORONTO

PATENTS

Caveats, Trade Marks, Designs, Etc.

We possess unsurpassed facilities for procuring patents in Canada, United States and all foreign countries. Moderate terms. Report as to patentability of invention FREE of charge. Be ore applying for patent write us for circular. All information and advice free. Rejected applications a speciality.

GLASCOCK & CO., 606 F St. N. W., Washington, D. C.

Established 1881 with Twenty Years' Professional Experience in Canada, England and Germany.

A. HARVEY, C.E.

PATENT ATTORNEY

Ottawa, Canada

Offices: Rooms 33 and 34 Central Chambers

Address: Postal Box 1071

TELEPHONE

Send for Circular 48a "How to Obtain a Patent."

Fire Bricks, Cement, Drainpipes

AT LOWEST PRICES.

F. HYDE & CO., 31 Wellington St., Montreal.

DIAMOND ROCK DRILLS.

WE UNDERTAKE TO TEST MINERAL GROUND

at price per foot to 1,500 feet.

We Lease Drills and Supply Operator. We offer complete drilling outfits at low prices.

COMPLETE PLANING, SAW MILL AND MINING PLANTS.

THE JENCKES MACHINE CO., Sherbrooke, Que.

Montreal Branch: 16 Victoria Sq

WHEN WERE

YOUR

Boilers

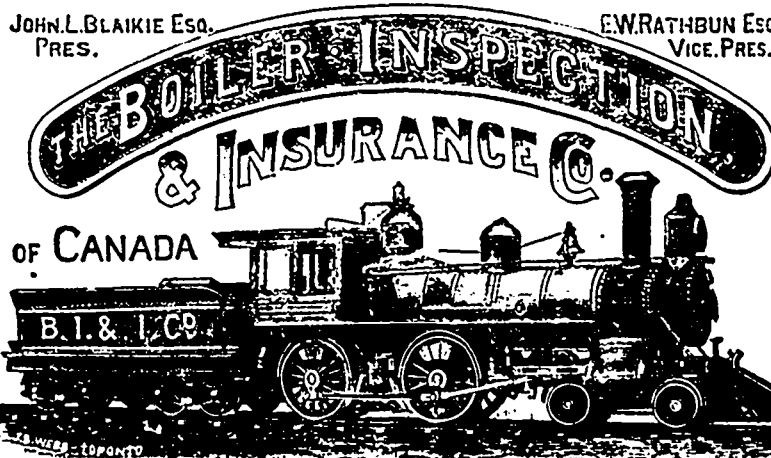
LAST

INSPECTED.

CONSULTING ENGINEERS:
 G. C. ROBB, Chief Engineer
 A. FRASER, Secretary-Treasurer

JOHN L. BLAIKIE ESQ.
 PRES.

EW RATHBUN ESQ.
 VICE-PRES.



ARE YOU

SURE

THEY ARE

SAFE

AND

IN GOOD

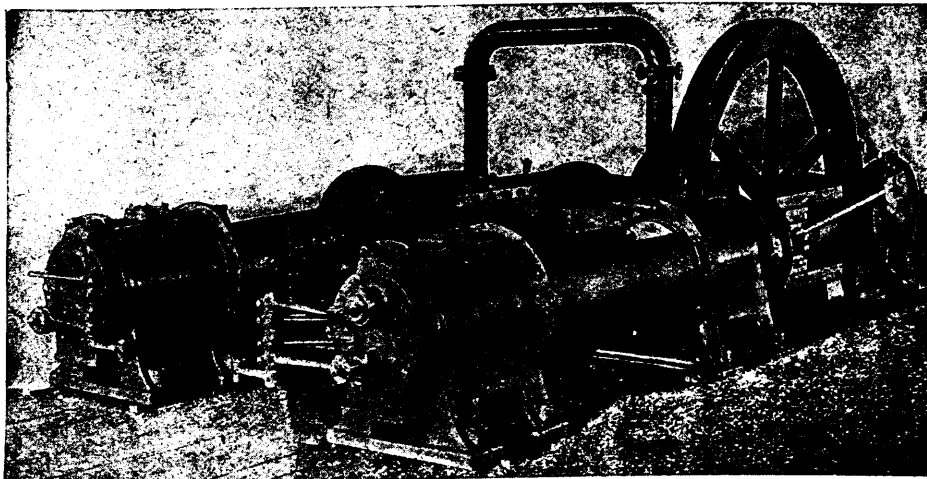
CONDITION?

Head Office: TORONTO

- 47,794 Wire fence, E. L. Schanck, Lewis Center and H. F. Cwen, Delaware, O.
- 47,795 Controller for electric motors, Chas. E. Davis, Chicago, Ill.
- 47,796 Gas engine, F. S. Mead, Montreal, Que.
- 47,797 Wrench, L. L. Stambaugh, Standart, Texas.
- 47,798 Hammer, W. H. Burgess, Steamboat Springs, Col.
- 47,799 Scales, J. H. Swihart, Dayton, O.
- 47,800 Pool-table racks and tallies, G. F. Goss, Wallacetown, Pa.
- 47,801 Girder clamp and hanger, Chas. MacTaggart, Philadelphia, Pa.
- 47,802 Drying machine, A. G. Paul, Boston, Mass.
- 47,803 Sewing machine needle threader, Patrick Bralley, Oakland, Cal.
- 47,804 Saw handle, John Watt Miller, Penfield, Pa.
- 47,805 Distillation of fluids, Jas. Alfred and Wm J. Cooper, both of Derby Villas, Surrey, Eng.
- 47,806 Gas burner, Robt. B. Uile, Main, Glasgow, Scotland.
- 47,807 Electric heater, Peter McGregor, Ottawa, Ont.
- 47,808 Dinner kettle, A. W. Way, Halifax, N.S.
- 47,809 Nasal expander, Emma S. Dayton, N. Farrytown, N.Y.
- 47,810 Apparatus for extracting weevil from grain, etc., D. R. Bowker, Brooklyn, N.Y.
- 47,811 Dish-drainer, bread-board and cutting board, J. D. Johnston, Newport, R.I.
- 47,812 Rubber blank for dental plates, Jos. Spryer, Mexico.
- 47,813 Sash fastener, Nels Johnson Chippewa Falls, Wis.
- 47,814 Process of preserving meat, A. B. Pinto, Rio de Janeiro, Brazil.
- 47,815 Steam boiler, J. A. Caldwell, Bay Ridge, N.Y.
- 47,816 Storm and screen door combined, Jos. Deritis, Detroit, Mich.
- 47,817 Method of preparing iron derivatives of albumen, Friedrich Engelhorn, Waldhof, Germany.
- 47,818 Range boiler, Geo Booth, Toronto Ont.
- 47,819 Furnace and boiler combined, James Cotter, Kansas, Mo.
- 47,820 Water heater and purifier, Geo. F. Day and Wm. Hunter, San Francisco, Cal.
- 47,821 Stamp for bread, J. A. Schaffer, Washington, D.C.
- 47,822 Stamp for cigars, E. N. Cusson, Montreal, Que.
- 47,823 Churn motor, Frank Elliott and John G. Schierling, jr., North Vernon, Ind.
- 47,824 Milking machine, Josiah C. Fay, Southborough, Mass.
- 47,825 Machine for softening skins, Geo. Geyer, Brooklyn, N.Y.
- 47,826 Magneto-electric inductive apparatus, Chas. J. Reed and Gustav Stahl, Philadelphia, Pa.
- 47,827 System of telegraphy, Chas. J. Reed and Gustav Stahl, Philadelphia, Pa.
- 47,828 Subaqueous rock-breaking chisel, P. S. Ross, Newark, N. J.
- 47,829 Insect powder distributor, S.E. Hotchkiss, Wallingford, Conn.
- 47,830 Running gear for sleighs, Jos. Juneau, Montreal, Que.
- 47,831 Wagon seat fixture, Wm. Wallace Simpson, Chatham, Ont.
- 47,832 Automatic railway car protector, Chas. Klettner, Cincinnati, O.
- 47,833 Feed water purifier, Sterling L. Bailey, Chicago, Ill.
- 47,834 Feed water purifier, Sterling L. Bailey, Chicago, Ill.
- 47,835 Slitting machine, John Torrent, Muskegon, Mich.
- 47,836 Convertible table, A. C. Dedo Seifert, Chemnitz, Germany.
- 47,837 Curd cutting machine, Michel I. Montreuil, Plessisville, de Somerset, Que.
- 47,838 Rope buckle, Chas. W. Baker, Waverly, Mich.
- 47,839 Machine for crushing, pulverizing and mixing minerals, seeds and other substances, Wm. Hinrichs, Milwaukee, Wis.
- 47,840 Bung stopper and bung bush, Simon Schlangen and Ignatz Neumann, Chicago, Ill.
- 47,841 Switch, Geo. Hargreaves, Syracuse, N.Y.
- 47,842 Aquatic bicycle, J.E. Ronk, and H. L. Shultis, Fort Wingate, New Mexico.

The Canadian Rand Drill Company, SHERBROOKE, QUE CANADA

Straight-Line
and
Duplex
Air
Compressors.



The "Slugger"
and
"Little Giant"
Rock Drills
For Mining and
Tunneling.

Duplex 12" x 18" Compound Condensing Steam Air Compressor, WITH HALSEY'S PATENT POSITIVE MOTION AIR VALVES.

We furnish a line of belt and steam actuated compressors for mechanical purposes in connection with manufacturing plants for compressing gasses and for use in chemical works, breweries and other establishments where large bodies of liquids are to be moved.

Branches.—16 Victoria Sq, MONTREAL, 129 Hollis St., HAL'FAX. N. S, 632 Cordovia St., VANCOUVER, B.C.

DOMINION SUSPENDER CO.

Canada NIAGARA FALLS United States

Trade D Mark

The largest, oldest and most progressive Manufacturers of Suspenders and all kinds of Elastic Goods.

Toronto Office: E. Stovel, 45 Canada Life Bld'g | Montreal Office: Phillip De Gruchy, 162 St. James Street.

WRITE TO THE

Paton Manufacturing Co'y

of SHERBROOKE, QUE., for

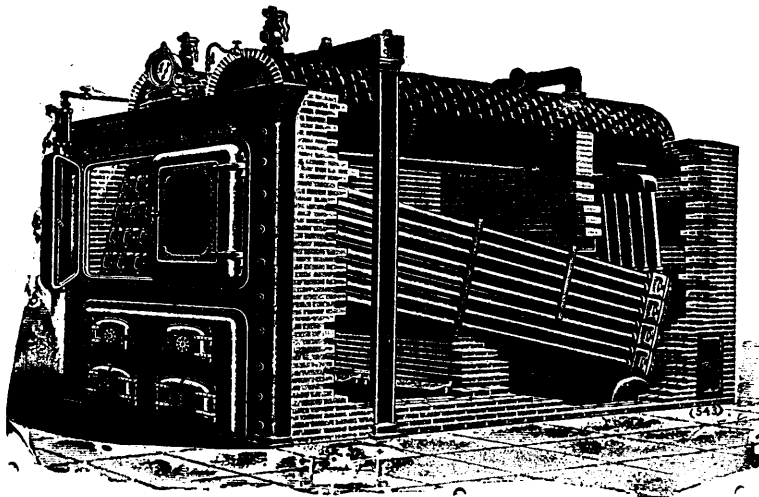
WORSTED • KNITTING AND FINGERING YARN

Montreal Office 409 Board of Trade Building.

Toronto Office, 23 Melinda Street.

- 47,843 Photography by artificial light, Barnett McPhee, Washington, D.C.
- 47,844 Hasp lock, Thos. Mounce, Toronto, Ont.
- 47,845 Band cutter and feeder, Ed. J. Vraalstad, Hillsboro', N. Dakota.
- 47,846 Drying kiln, The Reliance Dry Kiln Co., Baltimore, Md.
- 47,847 Car fender, Wm. Hofmeister and Wm. F. Madams, New York, N.Y.
- 46,848 Pulping and slicing machine, The Massey-Harris Co., Toronto, Ont.
- 47,849 Machine for spreading plaster, Paris green, etc., Walter E. Everett, Buffalo, N.Y.
- 47,850 Closed conduit electric railway, Jas. Francis McLaughlin, Philadelphia, Pa.
- 47,851 Bicycle, H. W. Libbey, Boston, Mass.
- 47,852 Nail, Willard C. Lipe, Syracuse, N.Y.
- 47,853 Barrel cover, J. O. Cooper, Guthrie, Oklahoma, and A. S. Jacoby, Mount Rock, Pa.
- 47,854 Coffin, O. F. Naumann, Zschwitz, Germany.
- 47,855 Roofing, Saml. R. Hawthorne, Hartford, Conn.
- 47,856 Supplemental stopper for ink bottles, H. B. Leadbetter, Kincardine, Ont.
- 47,857 Calculating, Otto Steiger, Munich, Germany.
- 47,858 Electric switch or circuit breaker, Frank Stevens, and Robt. R. Kesteven, Philadelphia, Pa.
- 47,859 Electric motor, Jas. Harry K. McCollum, Edwin Crickmore, Thos. E. B. McCollum, M. B. P. Gordon, J. W. Sweatman and Thos. W. Hector, Toronto, Ont.
- 47,860 Potato planter, S. H. Fish, Finsdale, and Hy. C. Middaugh, Clarendon Hills, both of Illinois.
- 47,861 Trolley, Carl Ast, Gorlitz, German Empire.
- 47,862 Process of and apparatus for electro-plating, Clarence M. Barber, Cleveland, O.
- 47,863 Multiphase motor, The Canadian General Electric Co., Toronto, Ont.
- 47,864 Forgery proof bank note paper, R. G. Beker and Alex. M. Farewell, Montreal, Que.
- 47,865 Electro magnetic reciprocating pump, The Thomson-Houston Electric Co., Portland, Maine.
- 47,866 Fumigator, A. Lamoureux, et Adolphe Ouimet, Montreal, Que.
- 47,867 Car brake, Geo. H. Kinter, Geo. D. Teller and Geo. Tait, Buffalo, N.Y.
- 47,868 Cycle driving mechanism, Thos. Browne and Francis R. Martino, Heath House, Yardley Wood, Birmingham, Eng.
- 47,869 Blasting powder, B.C. Pettingell, Victoria, B.C.
- 47,870 Compound locomotive engine, Karl Golsdorf, Favoritenstrasse, Austria, Hungary.
- 47,871 Boot and shoe polishing machine, F.B. Skinner, Guelph, Ont.
- 47,872 Walking beam iron, Thos. Bicknell, Petrolea, Ont.
- 47,873 Electric uterine battery, C.E. Hebarb, Grand Rapids, Mich.
- 47,874 Device for closing bottles, etc., Alexander Frankl, Budapest, Hungary.
- 47,875 Car coupler, A.D. Alden, Brockport, Pa.
- 47,876 Snow guard, Hy. M. Esseren, Boston, Mass.
- 47,877 Foothold for dust pans, O. M. Barber, Port Richmond, N. Y.
- 47,878 Heating apparatus, H.R. Luther, Cambridge, Mass.
- 47,879 Bed for infants, A.J. McDonagh, Toronto, Ont.
- 47,880 Folding chair, Ronald Gillis, Sydney, N.S.
- 47,881 Device for burning and ejecting cinders, Robt. Hartley McPerson, Turner, Ill.
- 47,882 Nut lock, Julius Evinof, London, Eng.
- 47,883 Steam boiler, Chas. L. Seabury, Nyack, N.Y.
- 47,884 Milk can, J.C. Thibault, Arthabaskaville, Que.
- 47,885 Stump extractor, Mathias Joanis, Maniwaki, Que.
- 47,886 Wagon jack, S.J. Johnston, Leesburg, Virginia.
- 47,887 Hook and eye, Chas. E. Hallowell, Philadelphia, Pa.
- 47,888 Cooking vessel, Archibald Fairgrieve, Toronto, Ont.
- 47,889 Directory posts and call boxes, Jno. T. Field, St. Louis, Mo.
- 47,890 Nut lock, M.E. Odgers, and Peter A. Benham, Bonne Terre, Mo.
- 47,891 Machine for cutting coal, stone, etc., Thos. Heppell, Leafield House, Wm. Patterson and Jno. G. Patterson, Hardwicke Terrace, Gateshead, Eng.
- 47,892 Telephonic relay, Geo. Gillmore, Douglas, Isle of Man.
- 47,893 Shirt collar fastener and adjusting device, J. B. Wolgemuth, Pierre, and Geo. S. Engle, Aberdeen, S. Dakota.

The Caldwell Standard Water Tube Boiler.



THE BEST WATER BOILER IN THE MARKET.

**IRON FOUNDERS,
BOILER MAKERS,
MACHINISTS,
ENGINEERS, ETC.**

General and Manufacturing Agents in Canada for the Famous Worthington Pumps, Hydraulic Machinery, Water Meters, Water Works Supplies and Condensers.

Worthington Pumps are Unequaled for Efficiency and Economy.

JOHN McDougall,

CALEDONIAN IRON WORKS,

Office: Cor. William and Seigneurs Sts., MONTREAL.

- 47,894 Car coupler, C.A. Lower, Cleveland, O.
- 47,895 Method of making articles from veneer, C.W. Luther, Reval, Russia.
- 47,896 Lathe, Wm. T. Wood, Washington, D. C.
- 47,897 Flying target, B.F. Saylor, Lancaster, Pa.
- 47,898 Typewriter, R.J. Fisher, Athens, Tenn.
- 47,899 Holster spring, A.G. North, Pontiac, Mich.
- 47,900 Car brake, Chas. Luyers, Brussels, Belgium.
- 47,901 Husking roller, P.H. Conner and Leroy Clark, Monticello, Ia.
- 47,902 Adjustable feet for tables, F.C. Lueth and Jno. M.E. Riedel, Fort Wayne, Ind.
- 47,903 Washer and gummer combined, A.H. Barton, Radcliffe Road, Northam, Hants, Eng.
- 47,904 Boiler flue cleaner, Phillip H. Enochs, Fernwood, Miss.
- 47,905 Kitchen cabinet, J.M. Curtice, Kansas, Mo.
- 47,906 Pneumatic elevator, J.H. Finley, Buffalo, N.Y.
- 47,907 Packing case, S.A. Durfee, Decatur, Ill.
- 47,908 Telephone annunciator and call bell, F. G. Warrell, Philadelphia, Pa.
- 47,909 Telegraphic transmitter, F. F. Howe, Marietta, O.
- 47,910 Portable gas generating lamp, Conrad Schinz, St. Petersburg, Russia.
- 47,911 Damping device for musical instruments, M. C. R. Andorff, Markenkirchen, Saxony, Germany.
- 47,912 Combination case, A.J. Estlow, Hartford, Conn.
- 47,913 Combination case, A.J. Estlow, Hartford, Conn.
- 47,914 Shingle edging machine, J.H. Ackert, Lucknow, Ont.

- 47,915 Fireproof floor, Thos. A. Lee, New York, N.Y.
- 47,916 Electric lamp bracket, The Faries Mfg. Co., Decatur, Ill.
- 47,917 Plough sulky, Albert Bess, Hamilton, O.
- 47,918 Multiphase motor, The Canadian Genl. Electric Co., Toronto, Ont.
- 47,919 Churn and butter worker combined, Chas. Owens, Carlaw, Ill.
- 47,920 Driving gear and brake mechanism for velocipedes, etc., Birjer Ljunstrum, Stockholm, Sweden.
- 47,921 Stove fire back, Donald McLennan, F.B. Goodham and Wm. C. McLeod, Woodstock, Ont.
- 47,922 Can labelling machine, E.W. Cornell and F.H. Knapp, Adrian, Mich.
- 47,923 Machine for straightening boots and shoes, G. T. Baguley, Toronto, Ont.
- 47,924 Finger and wrist exercising appliances, Robt. Barclay, Fort Howard, Wis.
- 47,925 Electric switch, E. W. Barker, Chas. P. Frank, Duluth, Me., E.T. Fenwick, Washington, D.C.
- 47,926 Electric bell, Erastus Monroe Miles, Chicago, Ill.
- 47,927 Harness saddle, Wm. Taylor, Buffalo, N.Y.
- 47,928 Sap spout, J.F. Warner, Essex, Vt.
- 47,929 Machine for drying brewer's refuse, etc., Richard Cunliffe, Weaste, Manchester, Eng.
- 47,930 Boot-jack, Charles Bisanz, Red Lodge, Montana.
- 47,931 Churn, M.F. Kelly, Blossburgh, Pa.
- 47,932 Ball joint for disc harrows, J.H. Whitney, Prescott, Ont.
- 47,933 Furnace for burning coal dust, Carl Wegener, Berlin, Germany.

"The Reeves Pat. Wood Split Pulley"

EXTRA LARGE PULLEYS A SPECIALTY.

SOLE MANUFACTURERS

Lightest and Strongest

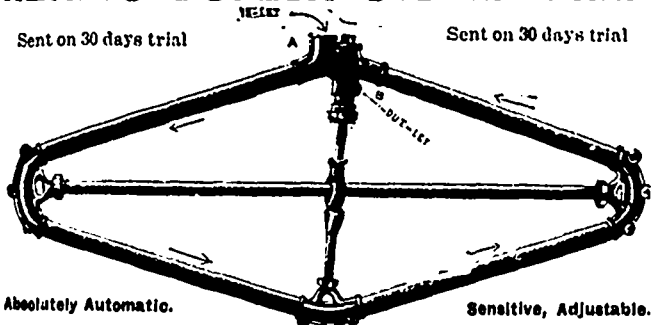
Latest and Best . . .

Fully Guaranteed . .

THE REEVES PULLEY CO., Toronto, Ontario, ALSO COLUMBUS, INDIANA.

REHM'S DUPLEX STEAM TRAP

Sent on 30 days trial



Absolutely Automatic.

Sensitive, Adjustable.

THOS. DOWN & CO.

Sole Manufacturers for the Dominion

28 AND 30 DALHOUSIE ST., TORONTO, ONT

FINE BRASS CASTINGS.

A Trial Order Solicited

R. C. Jamieson

A. T. Higginson

R. C. JAMIESON & CO.

MANUFACTURERS OF

Varnishes and Japans

Importers of Oils, Paints, Colors, Turpentine, Shellacs, Methylated Spirits, Rosins, Glues, Gold Leaf, Bronze, Etc., Etc.

Office, 13 St. John Street,
Factory and Warehouse, 23 to 29 St. Thomas St.

MONTREAL

WM. BARBER & BROS.

GEORGETOWN - - - ONT.

Manufacturers of **Book and Fine Papers**

TINGLEY & STEWART MFG CO.

RUBBER STAMPS, SEALS,

Steel Stamps, Stencils, Brands, Etc.

10 KING STREET WEST, Up-Stairs, TORONTO.

PHENIX Assurance Company

OF LONDON, ENGLAND.

Established 1782. Agency Established in Canada 1804

PATERSON & SON

General Agents for the Dominion,

LEWIS MOFFATT & CO.,

35 St. Francois Xavier St.,

Agent at Toronto.

MONTREAL.

Kerr & Morgan,

--- MONTREAL, QUE.,

MANUFACTURERS OF

ELEVATORS

Hydraulic, Belt Power, Electric and Hand Elevators for Passenger and Freight Service

AND **General Machinery.**

Established 1849

SINGER, NIMICK & CO.

LIMITED

PITTSBURGH, Pa., U.S.A.

MANUFACTURERS OF

Soft Centre Cruc. Cast

PLOW STEELS

Solid Cast, Open Hearth.

Steel for **SCUFFLERS** Cut to all Patterns

HARROW DISCS ROLLING COILERS

MR. HUGH RUSSEL

Temple Building

185 St. James Street MONTREAL

STEEL STEEL

LaBelle Steel Co.

PITTSBURGH, Pa.

Manufacturers of

CRUCIBLE, SOFT CENTRE and SOLID

STEEL

For Plows and Agricultural Imple-
ments of all kinds

Harrow Discs (plain and finished), Machinery Steel, Tool Steel, Axe Steel, Rake Teeth, and Miscellaneous Steel of all descriptions. For prices write to

W. G BLYTH

CANADIAN AGENT

34 YONGE STREET TORONTO

Smith Wool Stock Co.

219 FRONT STREET EAST, TORONTO

MANUFACTURERS OF

Wool Stock, Shoddies, Etc.

All lines of Gravel Woollen Bags Carbonizing and Neutralizing Buyers of Wool Pickings, all lines of Hard and Soft Waxes.

C. G. ELRICK & CO.

Factory: Sheppard Street, Toronto

Montreal Office: Fraser Building

MANUFACTURERS OF

HORN AND RUBBER COMBS, ETC.

The Toronto Paper Mfg. Co.

CORNWALL, ONT.

Manufacturers of
**ENGIN-SIZED SUPERFINE PAPERS
WHITE AND TINTED BOOK PAPERS**
Blue and Cream Laid and Wove Endpapers, Account Book, Envelope and Lithographic Papers etc.

CROWN SMELTING CO.

CHESTER, PA.

Bronze and Brass Castings

Inventors and **CROWN BRONZE**
Sole Makers of..

FOR ALL MACHINERY BEARINGS

Makers of Phosphor Bronze, Babbit Metal and White Brass.
HEAVY CASTINGS A SPECIALTY.

QUATIER STEEL DEPARTMENT OF CAMBRIA IRON CO.

JOHNSTOWN, PA.

Manufacturers of

MERCHANT BAR STEEL . . .

Including Tire, Toe Calk, Machinery, Carriage Spring, Railroad Spring, Hoe, Rake, Fork, Etc.

AGRICULTURAL STEEL AND SHAPES . . .

Finger Bars, Knife Backs, Rake Teeth, Bundle Carrier Teeth, Tedder Forks and Springs, Spring Harrow Teeth, Harrow (Drag) Teeth, Seat Springs, Etc.,

PLOW STEEL . . .

Flat and Finished Plow Shapes, Digger Blades, Slabs, (Penn and Penn) Hammered Lay, Rolled Lay, Etc.

COLD ROLLED STEEL SHAFTING. STEEL HARROW DISCS.

: : Cambria Link Barb Wire. : :

New York Office,
102 Chambers St.

Philadelphia Office,
S. W. Cor. 5th and Commerce Sts.

Chicago Office,
209 Phenix Building.

Southern Office
Chattanooga, Tenn.

**STEEL
CASTINGS**

From 1 to 40,000 pounds weight, of Open Hearth, Chester or Bessemer Steel.

TRUE TO PATTERN. SOUND. SOLID

Gearings of all kinds, Crank Shafts, Knuckles for Car Couplers, Cross-Heads, Rockers, Piston Heads, etc., for Locomotives. Steel Castings of every description.

CHESTER STEEL CASTINGS CO.

Works: Chester, Pa. Office: 407 Library St., PHILADELPHIA, Pa.

Locomotive Tires, Axles, Crank-Pins,

Cast Steel Driving Wheel Centres,

Steel-Tired Wheels,

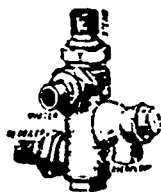
STEEL FORGINGS

... UP TO SEVENTY TONS ...

Jas. W. PYKE & Co., 35 St. Francois Xavier St., Montreal

Sole Canadian Representatives of—

FRIED KRUPP, Essen and Magdeburg, Germany.



THE PENBERTHY



Automatic Injector. Safety Automatic

Double Feed

Crank Pin Oiler.

A universal favorite. Spills no Oil. Wastes no Oil. But Saves Oil.

85,000 IN USE.

AND ALL GIVING SATISFACTION.
ONCE TRIED ALWAYS USED.

IT HAS NO EQUAL.

PENBERTHY INJECTOR CO.,

Branch Factory: WINDSOR, ONT.

DETROIT, MICH.

Drummond-McCall Pipe Foundry Co. Limited

Manufacturers of



"SPECIALS," HYDRANTS, VALVES, ETC.
Offices, - NEW YORK LIFE BUILDING, MONTREAL.
Works, Lachine, Quebec.

The LONDON MACHINE TOOL CO. .. LONDON, ONT., CANADA ..

MANUFACTURERS OF

MACHINE-SHOP EQUIPMENTS

Lathes, Planers, Drills, Column, Radial and Suspension Shapers, Slotters, Bolt Cutters, Milling Machines, Turret Lathes, Automatic Gear Cutters and Cutting-off Machines, Boring and Turning Mills (up to 20 feet swing), Driving-wheel Lathes, Tire-boring and Turning Mills, Cylinder Boring Machines, Frame Slotters, Slab Millers,

... BOILER EQUIPMENTS ...

Punches and Shears, Binding Rolls, Straightening Rolls, Lathe Planers, Multiple Drills, BRASS FINISHERS' EQUIPMENTS, Fox Monitor Lathes, Plain Turret Lathes, Valve Millers, Vertical Milling Machines, Valve Chuck, Box Chucks, etc., for cutting and stamping and drawing tin and metal tools up to the heaviest work required.

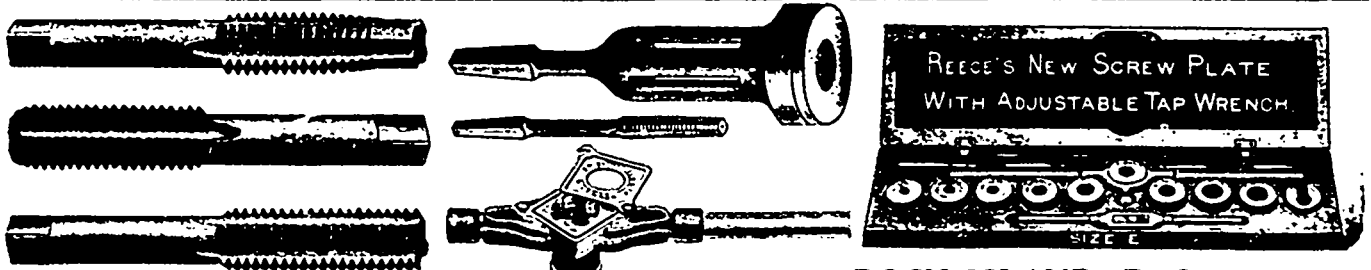
... GENERAL AGENT FOR THE DOMINION ...

A. R. WILLIAMS, = = = Toronto, Ont.

THE CANADA PIPE & FOUNDRY CO.

MONTREAL

Manufacturers CAST IRON WATER and GAS PIPES SPECIAL CASTINGS



BUTTERFIELD & CO.,

ROCK ISLAND, P. Q.,
Manufacturers of

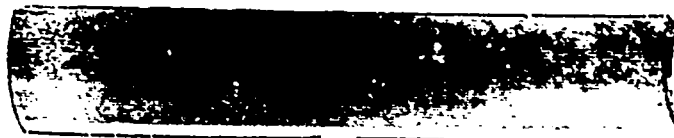


Blacksmith Stocks and Dies, Pipe Stocks in all sizes, New Reece Screw Plate, Pipe Tops, Hand Tops, Machine Tops, Pipe Cutters, Pipe Vises, all kinds of Tops and Dies—Regular and Special.

GALT MACHINE KNIFE WORKS

Planing..
Machine..
Knives...

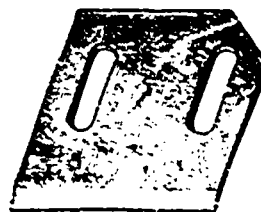
Stave Cutter Knives



Stave Jointer Knives

Send for Price List

All Work Warranted



Moulding,
Tenoning,
Mitreing

Shingle - - - -
Jointer - - - -

AND OTHER IRREGULAR SHAPES

Cheese-box and Veneer, Paper Cutting, Leather Splitting, and any special Knife made to order.

PETER HAY, - - GALT, ONT.

THE LONDONDERRY IRON CO., Ltd.

A. T. PATERSON,
President and Man. Dir.

JAS. PHYMISTER,
Secretary.

MANUFACTURERS OF

PIC IRON, PUDDLED BARS
BAR IRON, NAIL PLATES,
WATER PIPES, ETC.

OFFICE **MONTREAL** WORKS **LONDONDERRY, NOVA SCOTIA**

Canada Iron Furnace Co., Ltd.

MONTREAL, RADNOR and THREE RIVERS

Manufacturers of the well known

"C.I.F." Three Rivers Charcoal Pig Iron

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

Unsurpassed in Strength by Swedish, Russian, or American Charcoal Iron

Offices: New York Life Insurance Building, Montreal

Nova Scotia Steel & Forge Co. Offer Bright Compressed Steel Shafting as per Following List

PRICE LIST. BRIGHT COMPRESSED STEEL SHAFTING. Every Bar Guaranteed Straight and True to Size within $\frac{1}{32}$ of an inch.

Nominal Size of Shaft	Actual Size of Shaft	Weight per ft.	Price per lb.	Nominal Size of Shaft	Actual Size of Shaft	Weight per ft.	Price per lb.
1 1/4	1 1/4	4.13	4 1/2 cts.	2 3/4	2 1/2	18.01	4 cts.
1 3/8	1 3/8	5.01	"	3	2 7/8	22.70	"
1 1/2	1 1/2	5.94	"	3 1/4	3 1/8	26.60	"
1 3/4	1 1/2	7.46	"	3 1/2	3 1/8	30.94	"
2	1 7/8	9.83	4 cts.	4	4	42.33	5 cts.
2 1/4	2 1/8	12.53	"	4 1/2	4 1/2	53.57	"
2 1/2	2 1/8	15.55	"	5	5	66.13	"

NOTE--Shafting as per Actual Size Column, up to 3 in. dia., always kept in stock.

BOXING EXTRA AT COST.

Stock Lengths 12, 14, 16 and 18 feet.

On orders from stock cut to other lengths, we charge for length from which we cut.

Prices for Special Sizes, varying from list of actual sizes given above, will be furnished upon application.

All orders filled as per Actual Size column unless otherwise specified.

Prices Subject to Change Without Notice.

This is not Hot Polished or Cold Rolled Steel, and will not spring when keyseated. If your Wholesale Hardware Firm cannot supply you write direct to the Works, **New Glasgow, Nova Scotia.**

PICTOU CHARCOAL IRON CO. Ltd.

BRIDGEVILLE, NOVA SCOTIA

WORKS:

Bridgeville, N. S.

HEAD OFFICE

New Glasgow, N. S.

Manufacturers of all grades of

Charcoal Pig Iron

SUITABLE FOR

CAR WHEELS, CYLINDERS, Etc.

Suspender Buckles

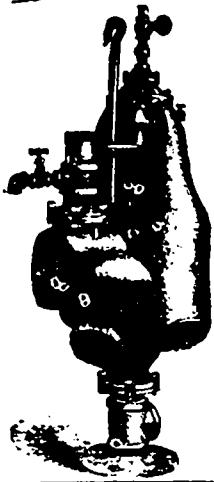
AND....

Wire Shapes OF All Kinds.

We have put in a complete plant of **AUTOMATIC MACHINERY** for making above articles. . . .

Write for Quotations

McKinnon Dash & Hardware Company
St. Catharines, Ont.



**THE PULSOMETER
STEAM PUMP**

Often Imitated, but Never Equalled

-O-
The handiest, simplest, and most efficient steam pump for general Mining, Quarrying, and Contractors' purposes.

-O-
**MUDDY OR GRITTY LIQUIDS
HANDLED WITHOUT WEAR**

Descriptive Catalogue, with Prices, Furnished on Application

Pulsometer Steam Pump Co.

NEW YORK, U.S.A.

A. R. WILLIAMS, Toronto and Montreal,
Selling Agent for Canada.

Dominion Bridge Co.

LIMITED

MONTREAL and LACHINE LOCKS, P.Q.

Steel Bridges for Railways and Highways
Steel Piers and Trestles

Steel Water Towers and Tanks

Steel Roofs, Girders, Beams

Columns for Buildings

A large stock of

**ROLLED STEEL BEAMS, JOISTS, GIRDERS
CHANNELS, ANGLES, TIES, Z BARS,
AND PLATES**

Always on hand

IN LENGTHS TO THIRTY-FIVE FEET

Tables, giving sizes and strength of Rolled Steel Beams, on application.
Post Office Address, Montreal.

J. H. MCGREGOR

AGENT

85 York Street

Toronto, Ont



**CROSBY Steam Gage
& Valve Co.**

Sole Proprietors and Manufacturers of Crosby Pop Safety Valves, for all kinds of boilers Water Relief Valves, including the Underwriter, which is fully approved by the Associated Factory Mutual Ins. Cos.; Crosby Steam Engine Indicators, with Sargent's Electrical Attachment; Crosby Improved Steam Gages and Patent Gage Testers; The Original Single Bell Chime Whistles.

BRANDEN PATENT PUMP VALVES

All kinds of Pressure and Vacuum Gages used in the various arts.

Sole Agents for

Clark's Linen Fire Hose and Adjustable Couplings.

Cold Medal, Paris Exposition, 1889. Ten Highest awards, Columbian Expo., 1893
Branch Offices at New York, Chicago and London, Eng.

Main Office and Works, **BOSTON, MASS., U.S.**

THE CENTRAL BRIDGE AND ENGINEERING COMPANY, Ltd.,

Capital Stock

PETERBOROUGH, ONT.

\$200,000.00.

Capacity 5,000 Tons
Per Annum.



Capacity 5,000 Tons
Per Annum.

MANUFACTURERS OF **Bridges, Roofs, Viaducts, Piers, Girders, Turntables, Architectural Work, Forgings, and all kinds of General Engineering Work; also Law's Patent Surface Cattle Guards and Law's Patent "Optimates" Power Hammers.**

W. H. LAW, - - Engineer and Man. Director.



The Webber Patent
STRAITWAY VALVE

for Steam, Water or Gas.

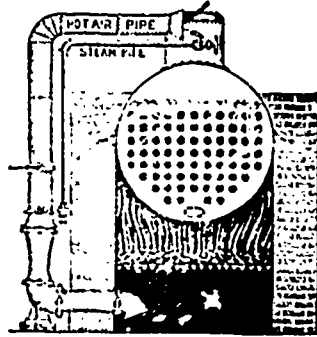
~~~~~  
**EVERY VALVE TESTED.**  
~~~~~

The Kerr Engine Co. (Ltd.)
WALKERVILLE, ONTARIO.

~~~~~  
Sole Manufacturers for Canada.

Send for Price List.

**Earle's Steam and Air Injectors, Exhausters, etc.**



For burning hard and soft screenings, run mine and lump coal under steam boilers, exhausting air, and vapors from buildings, ventilating ships, mines, etc.

Highest Medal and Diplomas given at the World's Columbian Exposition, Chicago, 1893.

The Best Blower in the market for Steam Boilers.

Send for Illustrated Catalogue to

**S. R. EARLE, - - - Belleville, Ont.**

The **Brown Bros.,** (Ltd.)  
Manufacturing Stationers.

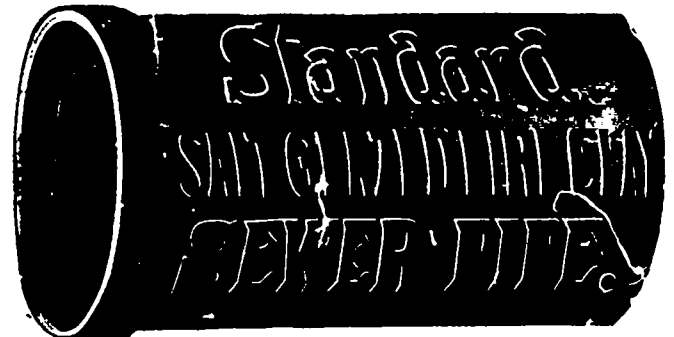
**Our Specialties are:**

- ACCOUNT BOOKS—Full stock always on hand or special patterns made to order.
- STATIONERY AND OFFICE SUPPLIES—Paper, Envelopes, Office Stationery, complete stock of every requisite.
- BOOK BINDING—Every kind.
- LEATHER COVERS—Bill Cases, Etc.
- DIARIES—Office and Pocket.

CANADIAN AGENTS FOR

Calligraph Typewriter, Edison Mimeograph, Wirt Fountain Pens.

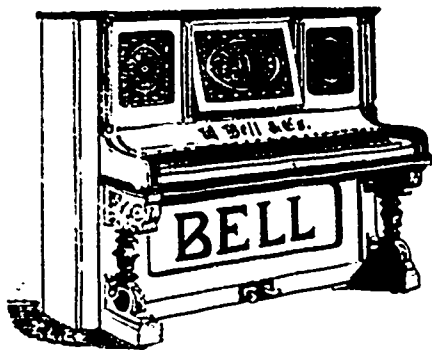
64-68 King Street East, TORONTO.



**THE STANDARD DRAIN PIPE CO., St. John's, P.Q.**

Manufacturers of Salt Glazed Vitrified Sewer Pipe, Double Strength Railway Culvert Pipes, Inverts, Vents, and all kinds of Fire Clay Goods.

The Standard Drain Pipe Co., of St. John's, P.Q., (Ltd.) W. C. TROTTER, President



**BELL**  
High Class  
**INSTRUMENTS**

USED AND  
RECOMMENDED BY  
Leading Musicians.

• •  
Send for Catalogue.

**THE BELL ORGAN & PIANO CO., Ltd.**  
Guelph, Ontario.

**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, Ltd.,** WELLINGTON MILLS,  
Westminster Bridge Road,  
LONDON, ENGLAND.

Enquiries should be addressed to

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

**GALVANIZING . . .**

**Done For the Trade.**

**KEMP MANUFACTURING CO.,**  
TORONTO, ONT.

# The CANADIAN MANUFACTURERS' ASSOCIATION



W. H. LAW, President. GEORGE BOOTH, Treasurer. J. J. CASSIDY, Secretary.

Office, Room 66 Canada Life Building

KING STREET WEST, TORONTO TELEPHONE 1274

THE OBJECTS OF THIS ASSOCIATION ARE

To secure by all legitimate means the aid of both Public Opinion and Governmental Policy in favor of the development of home industry and the promotion of Canadian manufacturing enterprises.

To enable those in all branches of manufacturing enterprises to act in concert as a united body whenever action in behalf of any particular industry, or of the whole body, is necessary.

To maintain Canada for Canadians.

Any person directly interested in any Canadian manufacturing industry is eligible for membership.

Manufacturers desiring to hold meetings for the promotion of their business are invited to avail themselves of the Board Room of the Association for the purpose, which is offered to them free of charge.

J. J. CASSIDY, Secretary.



## Manufacturers' Life Insurance Company.

### Comparative Statement. Five Years' Record.

|                          | ASSETS.      |              |
|--------------------------|--------------|--------------|
|                          | 1889.        | 1891.        |
| Cash.....                | \$ 6,370 44  | \$ 39,310 03 |
| Bonds and Mortgages..... | 228,473 21   | 692,751 45   |
| Other Assets.....        | 58,839 88    | 89,340 40    |
| Total.....               | \$293,592 53 | \$821,320 88 |

| LIABILITIES.                              |                           |
|-------------------------------------------|---------------------------|
| Reserve, and on acct. of Policy holders.. | \$180,401 00 2542,218 68  |
| Other Liabilities.....                    | 5,864 78 1,232 48         |
| Net Surplus.....                          | NIL 50,469 72             |
| Income.....                               | 157,354 97 306,715 63     |
| Expenditure, Total.....                   | 147,158 37 153,493 37     |
| Insurance in force.....                   | 6,110,109 00 9,635,300 00 |

Head Office: TORONTO.

GEO. GOODERHAM, President.

JOHN F. ELLIS, Managing Director.

GEO. A. STERLING, Secretary.

## IT LEADS THEM ALL

THE OLDEST  
THE LARGEST

THE SAFEST  
THE CHEAPEST

Canadian Life Assurance Co. is

The CANADA LIFE ASSURANCE CO.

Capital and Funds over \$13,000,000.

WRITE FOR PROSPECTUS

A. G. RAMSAY,

GEO. A. & E. W. COX,

President

M'grs for Toronto and Eastern Ont.

Established 1812

... THE ...

## Accident Insurance Company

OF NORTH AMERICA

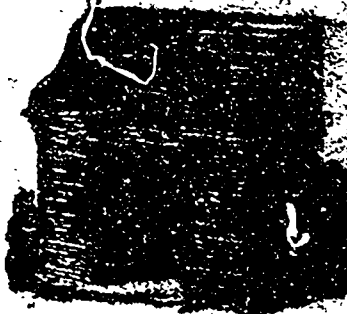
NEW FEATURE...

...JOINT INSURANCE FOR PARTNERSHIPS

Important to Manufacturing Firms

MEDLAND & JONES, General Agents

MAIL BUILDING, TORONTO.



DEMING'S TYPEWRITER

SIMPLE - RAPID,  
DURABLE

Copying and Reporting executed promptly.

Attention of Manufacturers called to our process for Duplicating Letters, Circulars, etc., under a long hand or type-writing.

GEORGE BENOUGH

44 ADELAIDE STREET EAST.

Telephone 1207



SHANNON

LETTER - FILING - CABINETS

Office Desks, Chairs, Rotary Book Cases.

Convenience - Security.

RAPID ROLLER COPIERS

All kinds of Labor Saving Office Devices.

OFFICE SPECIALTY MFG CO.

8 BAY ST., TORONTO.

**HOBBS MANUFACTURING CO.**

London,  
Ont.

Mirrors  
Advertising Signs  
Glass Paper Weights

Wire Nails  
Roofing Material  
Bolts of Every Description

JAMES LESLIE  
428 ST. PAUL STREET  
MONTREAL.

send for  
Special  
Price.  
of Every Description.  
quality Guaranteed

**CARD CLOTHING**

**Bellhouse, Dillon & Co.**

30 ST. FRANCOIS XAVIER ST.  
MONTREAL

**CHEMICALS**  
**DYE STUFFS**  
**... ACIDS**

AGENTS FOR  
The UNITED ALKALI Co's  
VARIOUS BRANDS OF  
**BLEACHING POWDER**  
ALSO  
The Badische Anilin, Soda-Fabrik,  
... ALIZARINES...  
ANILINES AND COLORS.



**The Ontario  
Malleable Iron Co.**  
Limited

MANUFACTURERS OF

**MALLEABLE  
IRON** . . . . .  
Coatings to  
Order for all  
Kinds of

**AGRICULTURAL  
IMPLEMENTS:**

—AND—

Miscellaneous  
Purposes : : : : :

OSHAWA . . . . . ONT.

**SCALES**

PLATFORM,  
DORMANT,  
ROLLING MILL  
HOPPER,  
COAL,  
Track Scales,  
Etc., Etc.

MANUFACTURED BY  
**The Gurney Scale Co.**  
HAMILTON, ONT.

Write for Illustrated Catalogue.

BRISTOL'S PATENT

**Steel Belt Lacing**

... 100 SIZES ...



READY TO APPLY FINISHED JOINT

**Greatly Reduced Prices**

Is a grand success. Try it and see  
for yourself.

Saves Time, Saves Belts, Saves Money  
... SIMPLE SHOW FIRST

**The BRISTOL CO.**

Waterbury, Conn.

SMITH'S FALLS

Malleable..  
Iron....  
Works..



Capacity

**2,000 Tons..**

**WILLIAM H. FROST**

Proprietor

SMITH'S FALLS : Ontario, Can.

MANUFACTURED BY  
**FINE VARNISHES**  
JAPANS, ASPHALTUMS, SHELLACS.

**Maple Leaf Brand Seach Varnishes**

**J. H. FARR & CO.**

**Armature Insulating Compound**

Insulating Compound for Motors, Generators, etc.

...  
...  
...