

Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

Coloured covers/  
Couverture de couleur

Coloured pages/  
Pages de couleur

Covers damaged/  
Couverture endommagée

Pages damaged/  
Pages endommagées

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

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

Cover title missing/  
Le titre de couverture manque

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

Coloured maps/  
Cartes géographiques en couleur

Pages detached/  
Pages détachées

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

Show-through/  
Transparence

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

Quality of print varies/  
Qualité inégale de l'impression

Bound with other material/  
Relié avec d'autres documents

Continuous pagination/  
Pagination continue

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

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

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

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

Additional comments:  
Commentaires supplémentaires:

Title page of issue/  
Page de titre de la livraison

Caption of issue/  
Titre de départ de la livraison

Masthead/  
Générique (périodiques) de la livraison

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

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

**ROYAL OIL CO. TORONTO and MONTREAL**      **CYLINDER DYNAMO ENGINE**      **OILS**

**SPECIAL**  
 The best Electric Motor in Town  
 Manufactured by  
**The John Abell Engine and Machine Works Co., Ltd.**  
 TORONTO ONT.  
 The "Improved Easton" system of Electrical Machinery.

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

Vol. 31.      TORONTO, JULY 19, 1895.      No. 2.

ESTABLISHED FIFTY-SEVEN YEARS

**THEO. H. EATON & SON**  
 WINDSOR, ONT.

Importers and Manufacturers OF

**Dyes, Dyeing Drugs, Acids, Dyewoods, Chemicals, Solid and Liquid Extracts.**

Sole Agents for  
**THE CROWN ANILINE AND ALIZARINE DYES.**

**ANILINES      EXTRACTS**

**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.**

**OAK TANNED BELTING**

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

CHARLES F. CLARK, President.      EDW. F. RANDOLPH, 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. F.  
 THOS. C. IRVING, Superintendent.

**THE GUTTA PERCHA & RUBBER MFG CO.**  
 HD WARREN, OF TORONTO LTD      C. N. CANDEE, SECTY.  
 PREST & TREAS.      MANUFACTURERS OF THE CELEBRATED

**BELTING      PACKING      STEAM FIRE ENGINES      CLOTHING ROSE**

INDIA RUBBER GOODS OF EVERY DESCRIPTION. WRITE FOR PRICE LIST AND DISCOUNTS.      FACTORIES AT PARKDALE, E.

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. G. RIDOUT, (Late O. E.)      J. EDW. MAYBEE,

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

**PATENTS**

A. C. LESLIE & CO. MONTREAL  
 Special Grades for all Manufacturing Purposes  
 at Close Prices.  
 Imported Promptly  
 Giving a full feel with weight to woolen goods—Flannels, Blankets, Etc., Etc.  
 LONDON, ENGLAND.  
 ANGLES      RODS      HOOPS & C.  
 BARS      SHEETS      PLATES  
**IRON & STEEL**  
 Victoria Street East  
 TORONTO AGENTS

Tetlow's  
English

Card Clothing  
Fancy, Worsted and Mohair Yarns,

Mill Supplies.  
Largest Stock in Canada.

Wools, Camel Hair, Noils, Peruvian Cotton,

: ROBT. S. FRASER,

3 ST. HELEN STREET, MONTREAL.

R. C. Jamieson A. T. Higginson  
**R. C. JAMIESON & CO.,**

MANUFACTURERS OF  
**Varnishes and Japans.**  
Importers of Oils, Paints, Colors, Turpen-  
tine, 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.**

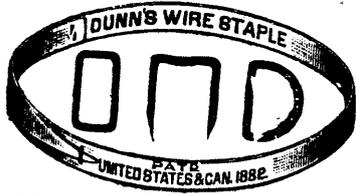
**The Paris Electro Plating Co.**  
Manufacturers of  
**STOVE TRIMMINGS**  
and Novelties. Orders Solicited.  
PARIS STATION - - ONT.

**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 Sus-  
pender Rings.

**WM. BARBER & BROS.,**  
GEORGETOWN, ONTARIO,

Manufacturers of  
**BOOK AND FINE PAPERS.**

**The Toronto Paper Mfg. Co.**  
CORNWALL, ONT.

Manufacturers of . . .  
**ENGINE SIZED SUPERFINE PAPERS**  
**WHITE AND TINTED BOOK PAPERS**  
Blue and Cream Laid and Wove Foolscaps, Account  
Envelope and Lithographic Papers etc.

**BROWN & CO.**



MANUFACTURERS  
OF  
**Square and Hexagon**  
**HOT PRESSED NUTS**  
Paris, Ont.

**Smith Wool Stock Co.**

219 FRONT STREET EAST - - TORONTO  
...MAKERS OF...

**Wool Stock, Shoddies, Etc.**

All lines of Graded Woolen Rags. Carbonizing and  
Neutralizing. Buyers of Wool Pickings, all lines of  
Hard and Soft Wastes.

**McARTHUR,**  
**CORNEILLE & CO.**

Manufacturers and Importers

310-316 St. Paul Street

AND

147-151 Commissioners Street

**MONTREAL**

OFFER AT CLOSEST PRICES

**Pure Olive Oil, Winter Press-**  
**ed Lard Oil, Extra Fine**  
**Spindle Oil and a**  
**Full Assortment**  
**of Other**  
**Lubricating Oils,**  
**Greases, Mill Soaps, etc.**  
**Also Chemicals, Dye Stuffs,**  
**Dye Woods, Extracts, etc.**

SOLE AGENTS IN CANADA FOR

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

PARIS,

A. POIRRIER, - PRESIDENT.

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

**BRITISH ALIZARINE CO. LONDON**

**Paste and Dry**  
**Alizarine**

Stamford M'fg Co., New York.

**Dyewoods and**  
**Extracts**

**GOIGNET & CO., PARIS**

**Glues, Gelatines,**  
**Etc.**

**Watson, Walker & Quickfall, Leeds**

**Indigo**  
**Extracts**

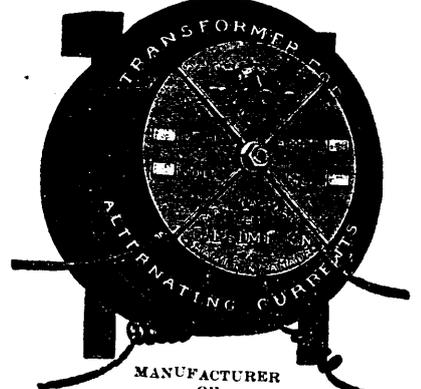
**MILLERTON, TANNIN EXTRACT CO.**

**Hemlock**  
**Extract**

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

**G. T. SIMPSON**

HAMILTON, ONTARIO.



MANUFACTURER  
OF

**TRANSFORMERS**

**F. W. HORE'S SONS**

HAMILTON - - ONT.

Manufacturers of

**Wheels, Wheel Materials, Shafts, &c**

**W. H. STOREY & SON**

ACTON, ONT.

Manufacturers of Fine Gloves  
and Mitts

In every variety and style. **Moccasins.**



For Iron Fencing, Bank and Office Railings and all kinds  
of Ironwork, address Toronto Fence and Ornamenta  
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,**  
**Burglar 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,*

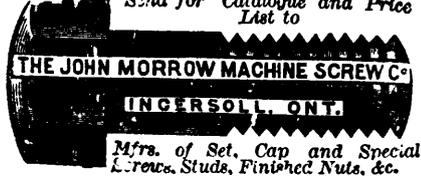
OFFICE SUPPLIES.

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  
L. Screws, Studs, Finished Nuts, &c.

## Emery

Emery Wheels, Grinding Ma-  
chines, Grinders' Supplies...  
Quick process and large stock.

WHEN IN A HURRY  
ORDER OF

The Tanite Co., Stroudsburg,  
Monroe Co.,  
New York, 161 Washington Street. Pa., U. S. A.  
Cincinnati, 1 West Pearl Street.  
London, Eng., 1 hos. Hamilton, 90 Cannon St., E. C.

## Leitch & Turnbull,

CANADA ELEVATOR WORKS,

QUEEN AND PETER STS. HAMILTON. ONT.

Patent Safety Hydraulic Hand and  
POWER ELEVATORS.

Telephone connection.

McLaughlin Bros.

## Teasels

Skaneateles Falls, N. Y.

Business Established in 1832.

# ALBERT MANUFACTURING CO.

Manufacturers of the Well Known

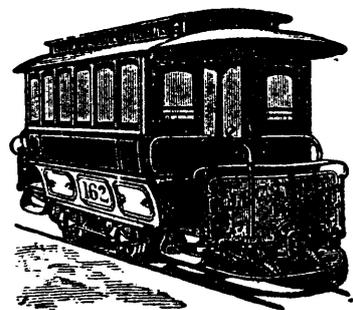
"HAMMER BRAND"

Calcined Plaster and  
Patent Rock Wall Plaster.

HILLSBOROUGH, N. B., CANADA.

## PATTERSON & CORBIN

FINE  
ELECTRIC  
CARS



OUR SPECIALTY

St. Catharines, Ont.

MANUFACTURERS OF

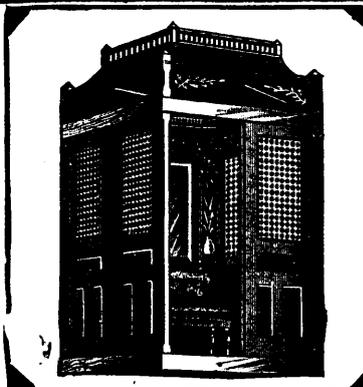
## Horse and Trail Cars

— OF —

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.  
JL JONES TORONTO



# ELEVATORS

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

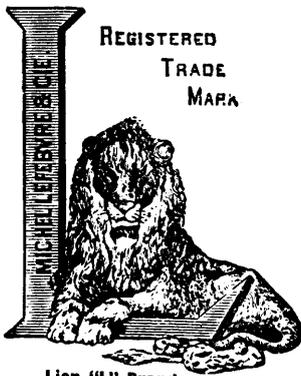
ELECTRIC HYDRAULIC  
STEAM & HAND-POWER  
PASSENGER & GOODS  
ELEVATORS. DUMB WAITERS

The Largest Factory of the kind in the Dominion

**Lion "L" Brand**

PURE 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'frs, MONTREAL, QUE.

Also BEET SUGAR Manufacturers at Berthierville, Que.  
ESTABLISHED 1849.

... 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 Ave.** Representative for Toronto.



**ROCK**

Trade  
Mark.

**EMERY**

MILL  
STONES

MADE TO FIT ANY MILL FRAME.

**FASTEST GRINDERS KNOWN. CHEAP. DURABLE**

**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.

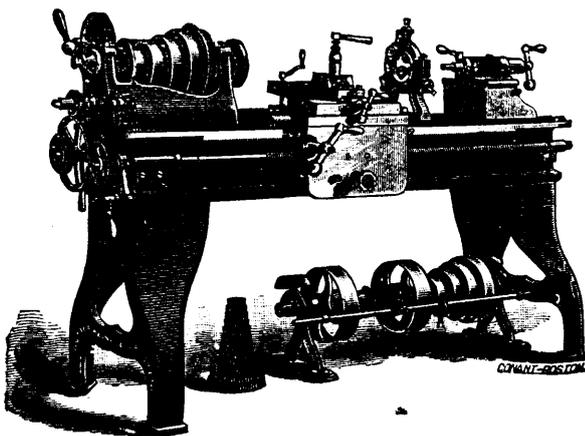
Send for Circular **B** to STURTEVANT MILL CO., Boston, Mass.

ESTABLISHED 1850

**Robert Gardner & Son,**

MANUFACTURERS OF

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



Nazareth, Brennan & Dalhousie Sts., MONTREAL.

**BELTING**

W.A. FLEMING.

57 ST. FRAS. XAVIER S. (24 FRONTS 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.

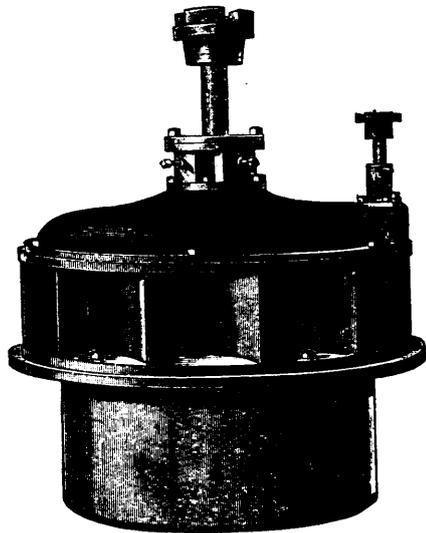
**The Springfield Emery Wheel Co.,** Bridgeport, Conn.

# ROBERT 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*

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

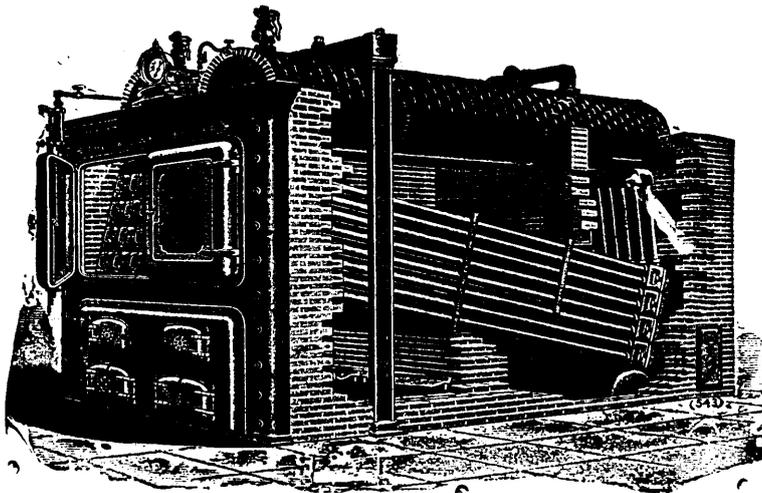
Water put on full gate or shut completely off with half-turn of hand wheel, and as easily governed as any engine.

Write for Estimates, References and Catalogues 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.

## 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 MCDUGALL,**  
**CALEDONIAN IRON WORKS,**



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

**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.

## Boiler Shop For Sale

WITH THE FOLLOWING TOOLS :

Four Spindle Drilling Machine, Bertram's make.  
Suspension Drill, " "  
Acme 2 in. Bolt Cutter, " "  
Double Punch and Shear, " "  
Power Bending Rolls, " "  
Hand Bending Rolls, " "  
20 H.P. Engine and Boiler.

For Particulars Address

# Law Bros. & Co.,

FOUNDERS AND MACHINISTS,  
OTTAWA, ONTARIO.

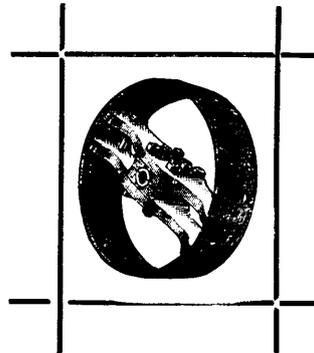


**THE STANDARD DRAIN PIPE CO., St. John's, P. Q.**

Manufacturers of Salt Glazed Vitrified Sewer Pipes, 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

**BENT RIM WOOD SPLIT PULLEYS.**  
REID'S PATENT.



The Strongest, Lightest and Best  
Belt Surface in the world.

No Glue, No Nails in Rim like Segment Rim Pulleys, to be affected by Steam, Dampness or Moist Temperature.

Every Pulley Guaranteed.

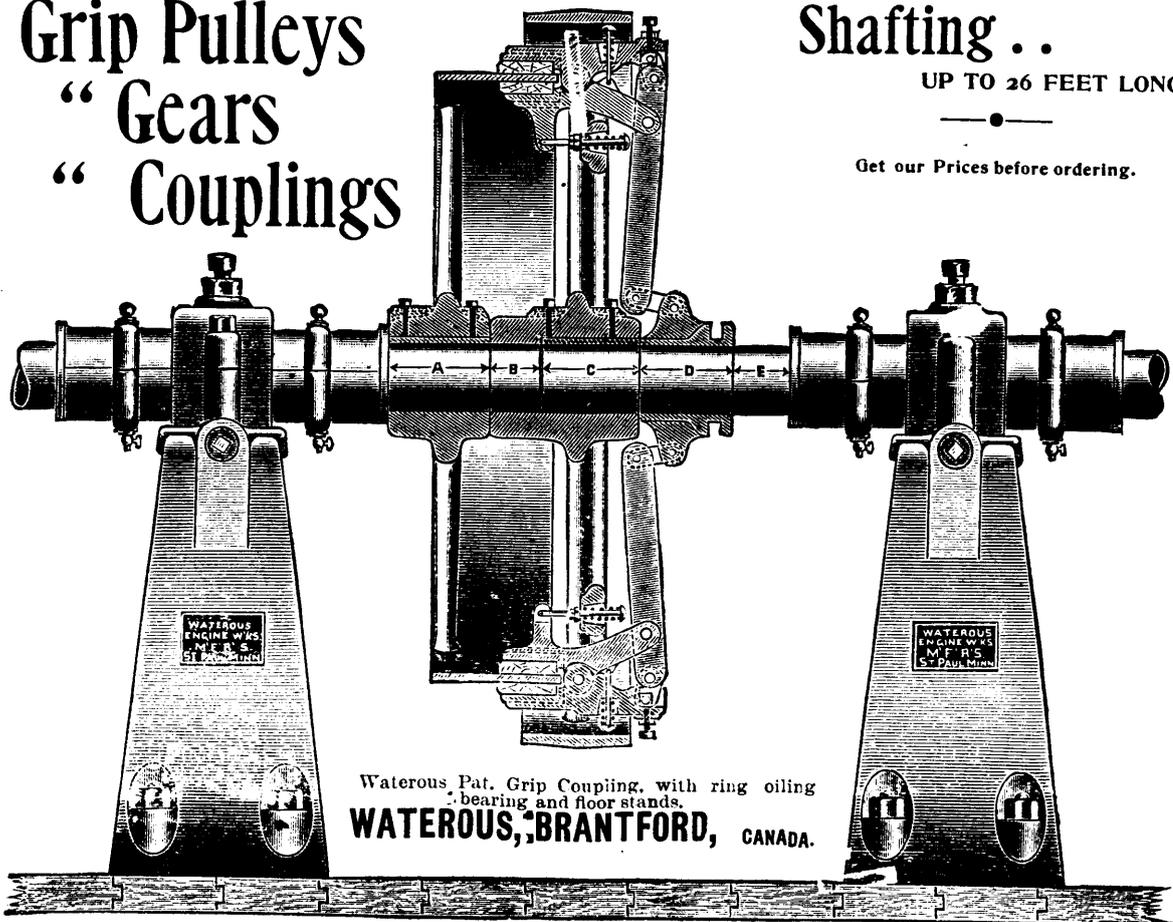
THE REID BROS. MFG. CO., Ltd., Toronto, Ont.

Grip Pulleys  
" Gears  
" 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.**

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.

**17 COTE PLACE D'ARMES,  
MONTREAL.**

**NOTICE**

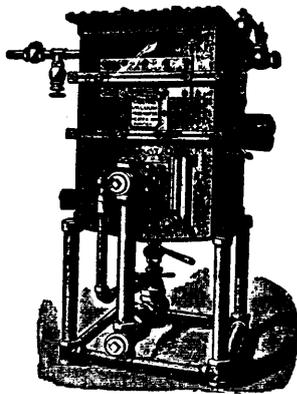
Manufacturers and Capitalists Patent Acts of 1872,  
and Amendments, Section 28.

NOTICE is hereby given to all persons desirous of practising the invention in the manufacture of Aluminum and Alloys thereof, for which certain letters patent of the Dominion of Canada were granted on June 7th, 1889, 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 manufacture thereof, for which certain letters patent of the Dominion of Canada were granted on July 20th, 1892, to John W. Langley, assignor to the Pittsburg Reduction Company, to wit, No. 39,402, that the undersigned is prepared to grant licenses upon reasonable terms under each and all of same letters patent, and otherwise place the patent inventions 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 condenses 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.



**THE PENBERTHY**

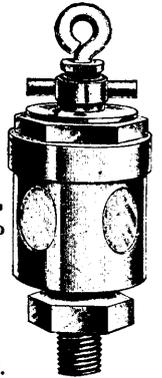
Automatic Injector.

85,000 IN USE.  
AND ALL GIVING SATISFACTION.  
ONCE TRIED ALWAYS USED.

IT HAS NO EQUAL.

Safety Automatic  
Double Feed  
Crank Pin Oiler.

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



**PENBERTHY INJECTOR CO.,**

Franch Factory : WINDSOR, ONT.

DETROIT, MICH.

... 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 product 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.

**WINDOW GUARDS**

- Basement Window Guards.
- Factory and Mill Window Guards.
- School and Church Window Guards.
- Store Front Guards.
- Office Counter Railing.
- Inside Fine Woven Blinds, Lettered or Plain.

WRITE FOR CATALOGUE.

Manufactured By **THE B. GREENING WIRE CO., LTD.,**  
HAMILTON, ONT.

**The Attention** of Woollen Manufacturers is called to **THE TORRANCE PATENT SELF-ACTING BALLING**

**MACHINE** and positive Creel Feed for Wool cards. The latest, best and only feed on the market that will make yarn positively even. These machines are built by **The Torrance Mfg. Co.,** Harrison, (East Newark), N.J., U.S.A., for the States, and by **The St. Hyacinthe Mfg. Co.,** St. Hyacinthe, Que., Canada, for the Canadian market.

# THE COWAN PATENT MATCHING HEADS

With the Richardson Patent Cutters, for Tonguing and Grooving.

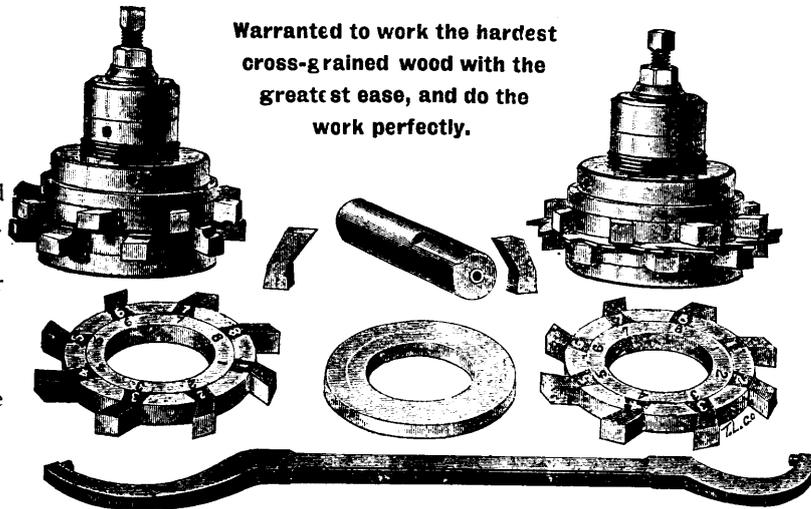
## TONGUE HEAD.

16 CUTTERS.

Tongue can be adjusted to any desired thickness.

Will not spawl or tear and makes a round nose tongue.

Head fastens on Spindle with our Patent Lock. No Set Screws used.



Warranted to work the hardest cross-grained wood with the greatest ease, and do the work perfectly.

## GROOVE HEAD.

32 CUTTERS.

Makes the cleanest groove of any Cutter in the world.

Can be adjusted to any width.

Does the most perfect work of any Head made, for uniformity and smoothness.

Can be applied to any machine.

MANUFACTURED ONLY BY

# COWAN & CO., GALT, ONTARIO, CANADA.

The Cheapest, Strongest, most Durable and Easiest Running Matcher Heads ever produced.

Write for prices and descriptions of our Engines, Boilers, Heaters, Saw-Mills and Wood-Working Machinery.

# The Dodge Split Friction Clutch.

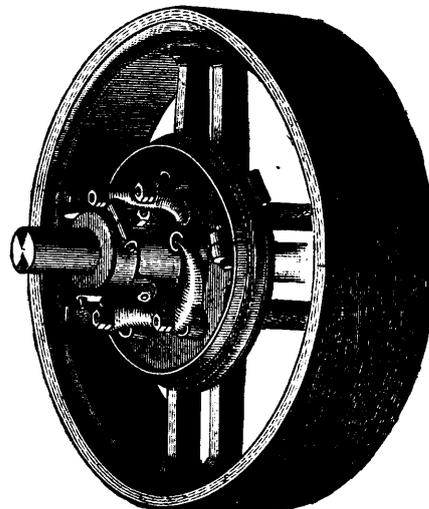
POINTS OF SUPERIORITY AND MERIT:

PERFECT BALANCE.

EASY OF ADJUSTMENT.

EXCELLENT LUBRICATION.

REPAIRS MADE EASY.



POSITIVE FRICTION.

THE SPLIT FEATURE.

REASONABLE FIRST COST.

DETACHABLE SLEEVE.

SPLIT FRICTION-CLUTCH PULLEY.

SIMPLE, POSITIVE, DURABLE. WRITE FOR DISCOUNTS.

# DODGE WOOD SPLIT PULLEY CO.

Office: 68 King Street West, TORONTO.

# 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, Parrafine 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 —

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

## Telephones

THE "UNIQUE"

MAIN LINE AND WAREHOUSE

TELEPHONES.

These Telephones are thoroughly well made and will stand the constant use to which they are subjected.

There is no economy in buying instruments that will give out after short use and become a constant source of worry and expense.

Competitive tests have proved the "Unique" to be superior to others.

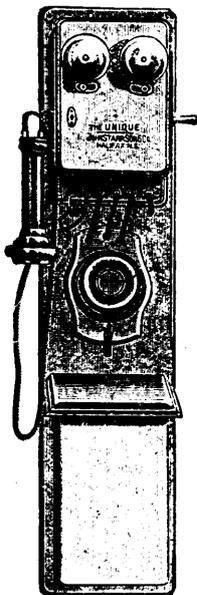
The "UNIQUE" is the simplest and most efficient Electric Telephone made. It has no spring or screw adjustment in Transmitter to work loose.

**SOLD OUTRIGHT. NO EXORBITANT ROYALTIES.**

The "UNIQUE" has the only Transmitter that never gets out of adjustment, and is always the same, viz., clear and distinct, either on long or short distances.

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<sup>n</sup>'rs,  
2, 4, 6 Duke St., Cor. Water, HALIFAX, N. S.



## 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

**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  
RUMFORD PLACE, LIVERPOOL

# NORTHEY MFG. CO. Ltd.

TORONTO, = ONTARIO.

## Steam and Power

# Pumps

& HYDRAULIC  
MACHINERY

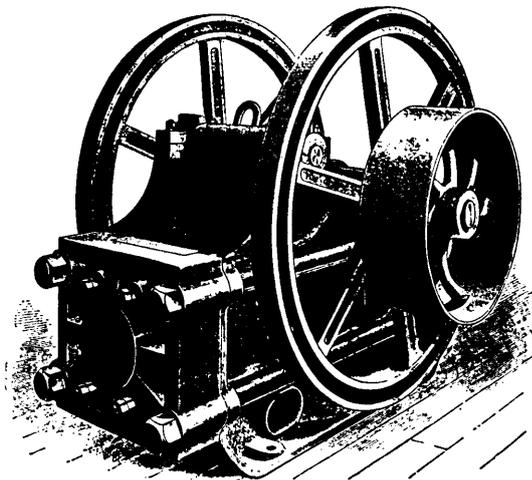
## FOR ALL DUTIES.

DODGE'S

GIANT

ROCK

CRUSHER



FOR

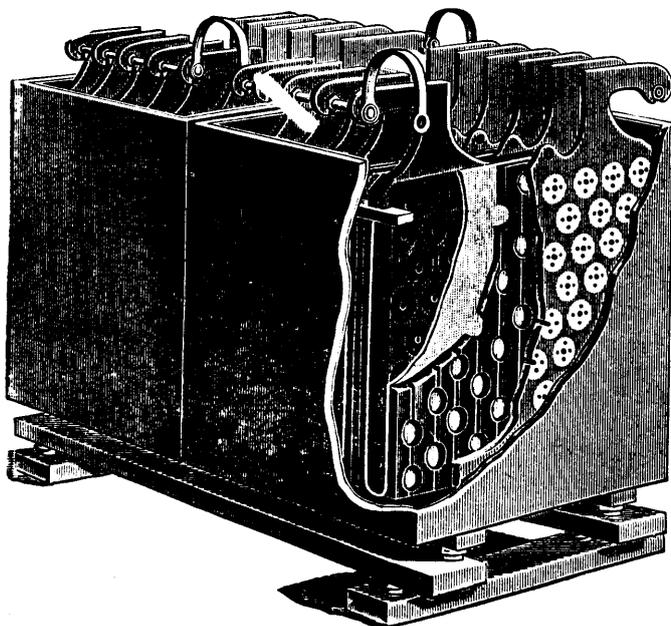
MINES

QUARRIES AND

CONTRACTORS

Manufactured  
By

# INGERSOLL ROCK DRILL CO., MONTREAL.



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.

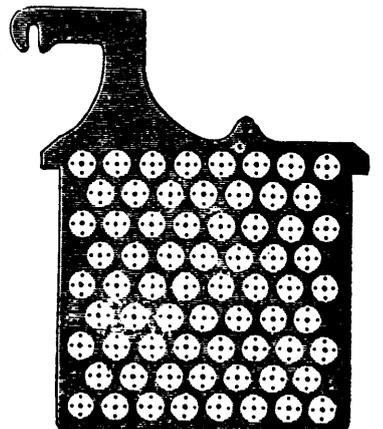
Trade Mark

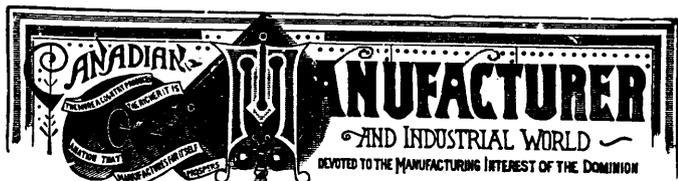
## CHLORIDE ACCUMULATOR

Registered September 11th, 1894.

Electrical Storage Cells of any  
Desired Capacity.

Catalogue giving capacities, dimen-  
sions, weights, prices, etc.,  
on application.





ESTABLISHED IN 1880.

PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

J. J. CASSIDEY, - - - - - 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. CASSIDEY, - - 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. CASSIDEY.

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

**WOOLEN MANUFACTURERS' ASSOCIATION**

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

**KNIT GOODS MANUFACTURERS' ASSOCIATION**

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

**CARPET MANUFACTURERS' ASSOCIATION**

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

**GLOVE MANUFACTURERS' ASSOCIATION**

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

REPRESENTATIVES TO

**TORONTO INDUSTRIAL EXHIBITION ASSOCIATION**

R. W. ELLIOT.	GEORGE BOOTH.
W. K. MCNAUGHT.	SAMUEL MAY.
J. J. CASSIDEY.	

**THE DRAWBACK OF DUTY UPON EXPORTS.**

A few days ago in the House of Commons, Mr. Wallace, the Controller of Customs, in answer to a question, said that 3,385 self-binding harvesters were exported from Canada during 1894. All were exported by the Massey-Harris Co. The average amount of drawback on account of duty paid on the raw material allowed and paid by the Government on each harvester was \$2.98. The payment of the drawback for the year ended December 31st, 1894, was yet under consideration, and unpaid, but the total amount would equal \$10,083.

It will be remembered that pending the last revision of the tariff, while that matter was under consideration by the Government, the Massey-Harris people manipulated the Toronto Board of Trade into endorsing a demand that pig iron and bar iron and steel be placed in the free list. Of course this was an exceedingly cheeky thing for them to do, and a most remarkably foolish thing for the Board of Trade to indulge in; but fortunately for the country Mr. Foster, the Finance Minister, turned a deaf ear to their entreaties. It was then that the Massey-Harris concern inaugurated what was by some called a bulldozing process by which they sought to influence or compel the Government to grant to them certain tariff concessions such as no other concerns had ever asked for; one feature of their efforts being threats of the removal of their works across the line into American territory. Those who best understood the situation never entertained the idea that these threats would be carried out, but what we believe to have been without due consideration, and against the best interests of the country, an Order-in-Council was passed, by which ninety-nine per cent. of all duties paid upon imported material entering into the production of agricultural implements and other merchandise, exported from the country, should be remitted to the manufacturer. Of course this was done to pacify the Massey-Harris concern; but it struck a very heavy blow at many other industries. The claim of this patriotic concern was, in part, that the duties upon the various forms of iron and steel entering into the construction of agricultural implements were of such an onerous character as to imperil their export business, and that if pig iron and bar iron and steel were not placed in the free list the ultimatum would be either a return of duties paid upon imported materials, or the transfer of the industry to the United States. In an hour of weakness Mr. Foster had already, in the revised tariff, greatly reduced the duty upon malleable iron, and the next concession was the Order-in-Council.

It might be supposed that the Massey-Harris people really had a grievance, or honestly thought they had, in this matter, and that, in consideration of the large capital they have invested in their manufacturing enterprise in Canada, and the large number of workmen and others whom they have in their employ, their views should have some weight with the Government; but the statement made by Controller Wallace in the House of Commons that the drawback on account of duty paid on the raw materials entering into the construction of all the harvesters exported by the Massey-Harris company during 1894, 3,385 in number, amounted to less than \$3 upon each machine, the total amount equaling only \$10,083.

It would, we think, have been in the interests of Canada if the Government had enriched this concern by a free grant of \$10,000 rather than have passed that Order-in-Council. At the time that Order was passed Canada had a well organized and efficient malleable iron industry, judiciously distributed, supplied with sufficient capital, giving remunerative employment to large numbers of skilled Canadian workmen, and producing goods at exceedingly reasonable prices. But the Order-in-Council interfered very disastrously with this most desirable result of the National Policy. It is true the imports of malleable iron, as indicated by the

figures given by Mr. Wallace, could not have been very large, but they were sufficient to bring the Canadian price down to the American level, and to disorganize and demoralize the industry without one single compensating feature to any Canadian industry, except that of the Massey-Harris people, and that to a ridiculously small extent, or to Canadian consumers.

Another result of this unfortunate Order-in-Council, an a most important one to the Government, has been a feeling of dissatisfaction with the Government, and an impression that an avoidable breach has been made in the walls of the National Policy. And this disquieting feeling extends to the producers of all the materials that enter into the construction of agricultural implements. The Order was made at a time when a most fearful industrial depression prevailed in the United States, and the manufacturers there were glad to dispose of even small quantities of their products at sacrifice prices to enable them to weather the storm. The depression also affected Canada, but the tariff was a bulwark that our manufacturers felt would prevent the swamping of their home market with foreign goods; and the makers not only of the various forms of iron and steel, but also of paints, oils, varnishes, cottons, etc., are now experiencing a feeling that they have been unfairly dealt with at the hands of the Government in this matter. They feel that their interests were ignored to propitiate a concern who have shown themselves to be insincere and inconsistent bluffers.

PIG IRON IN CANADA.

The following facts obtained from official sources, show the production of pig iron in Canada for the fiscal years named ending June 30, and the bounty paid thereon; and the quantities and value of pig iron imported into Canada entered for consumption in the same years, and the duty collected thereon:—

DOMESTIC PRODUCTION.			
Fiscal Year.	Tons—Pounds.	Bounty Paid.	
1889-90.....	24,373—1002	\$ 25,697.27	
1890-91.....	20,153—0147	20,153.05	
1891-92.....	30,294—0835	30,294.37	
1892-93.....	48,420—1806	93,896.48	
1893-94.....	62,522—0510	125,044.49	
<b>Totals</b>	<b>185,764—0300</b>	<b>\$295,085.66</b>	
ENTERED FOR CONSUMPTION.			
Fiscal Year.	Tons.	Value.	Duty Paid.
1889-90.....	87,613	\$1,148,078	\$350,453.97
1890-91.....	81,317	1,085,929	325,385.12
1891-92.....	68,918	886,485	275,797.72
1892-93.....	62,793	766,567	251,180.44
1893-94.....	45,282	518,755	181,206.03
<b>Totals.....</b>	<b>345,923</b>	<b>\$4,405,814</b>	<b>\$1,384,023.28</b>

If the value of the domestic iron were the same as that of the imported iron with \$4 per ton duty added the value of the home production would be as follows:—

Fiscal Year.	Tons.	Pounds.	Value.
1889-90.....	24,373	1002	\$416,786.87
1890-91.....	20,153	0147	349,655.82
1891-92.....	30,294	0835	510,763.88
1892-93.....	48,420	1806	784,418.63
1893-94.....	62,522	0510	965,968.77
<b>Totals.....</b>	<b>185,764</b>	<b>0300</b>	<b>\$3,027,593.97</b>

During the five years referred to, the consumption of pig iron in Canada and the value thereof was as follows:—

Imported.....	Tons	Value
345,923	\$4,405,814	
Domestic.....	185,764	3,027,594
	<b>531,687</b>	<b>\$7,433,308</b>

The average value of the pig iron consumed in Canada, including duty, was as follows:—

Year.....	per ton	Value
1889-90.....	\$17.10	
1890-91.....	17.35	
1891-92.....	16.86	
1892-93.....	16.20	
1893-94.....	15.45	

Average of five years.....16.59.

The proportion of pig iron produced in Canada as compared with the imports and the consumption was as follows:—

Year.....	Imports.	Consumption.
	per cent.	per cent.
1889-90.....	27.8	21.7
1890-91.....	24.78	19.8
1891-92.....	43.95	30.5
1892-93.....	77.1	43.53
1893-94.....	138.	58.

The ad valorem duty paid upon the pig iron imported into Canada in the following named years was as follows:—

Year.....	per cent.
1889-90.....	30.5
1890-91.....	30.
1891-92.....	31.11
1892-93.....	32.76
1893-94.....	34.9

Average for five years..... 31.4

The growth of the pig iron industry in Canada is shown in the fact that during the year ending with June 30, 1891, the home production supplied but 19.8 per cent. of the consumptive requirement of the country, while during the year ending with June 30, 1894, only three years later, the home production was 58 per cent. of the requirement. In the first named year the home production equalled only 24.78 per cent. of the imports, while in the latter named year the home production was 138 per cent. greater than the imports.

Is it desirable to encourage and build up the manufacture of pig iron in Canada? Is the industry receiving more tariff protection than the general average accorded to the protected industries of the country? Until the last revision of the tariff the ad valorem duties imposed upon such articles as agricultural implements, etc., were not higher than 35 per cent. The highest average cost of the pig iron imported into Canada during the years named was in 1890-91, to wit, \$13.35 per ton, the specific duty upon which—\$4 per ton—equaled 30 per cent. The lowest average cost of imports was \$11.45 per ton in 1893-94, the ad valorem duty upon which was less than 35 per cent., to be exact, only 34.9 per cent. If 35 per cent. is a fair duty to be levied upon general lines of imports, certainly the levy upon pig iron can not be considered exorbitant. But that rate prevailed in only one of the years named, while the average for the five years amounted to only 31.4 per cent.

That protection is having the effect desired of it in developing the domestic industry is seen in the figures produced. The lowest production of domestic iron in the

years named was in 1890-91, when 20,153 tons were made; the highest production being 62,522 tons in 1893-94. This shows an increase of more than 200 per cent. in three years. Corresponding with the increase of home made iron a notable decrease of imported iron is to be observed. In 1889-90 the imports were 87,613 tons, and each year marked a steady decrease until, in 1893-94, the minimum of 5,282 tons was reached, the decrease being greater than per cent. in four years.

The consumption of pig iron in Canada in the years named, of both home made and imported, and the value thereof, including duty upon imported, was as follows:—

Year	Tons	Value
1889-90.....	111,986	\$1,915,318.84
1890-91.....	101,470	1,760,968.94
1891-92.....	99,212	1,673,046.60
1892-93.....	111,213	1,802,166.07
1893-94.....	107,804	1,665,929.80
	531,685	\$8,817,430.25
Average for 5 years.....	106,337	1,763,486.05

Estimating the population of Canada to be 5,000,000, the average annual consumption of pig iron per capita is about 42.5 pounds valued at 35.3 cents.

*MANUFACTURERS IN PARLIAMENT.*

Mr. William H. Frost, proprietor of the Smith's Falls, Ont., Malleable Iron Works, has issued an address to the constituency of Leeds and Grenville, in which he resides, announcing himself as a National Policy candidate for the Dominion House of Commons at the next general election. Mr. Frost is one of the most energetic and enterprising manufacturers in Canada, and has been a strong National Policy man for many years. In his address he declares his belief that tariff protection is essential not only to the manufacturers, but also to the farmers and the merchants, and he advances strong arguments for his belief.

It is one of the most encouraging signs of the times to observe a movement on the part of our manufacturers towards an active participation in the making of our laws and in directing the affairs of the Government; and already we have as members of Parliament in both the Senate and the House of Commons, quite a number of able men who are manufacturers, representing constituencies in New Brunswick, Nova Scotia, Quebec and Ontario.

It is to be regretted, however, that what may be called only a corporal's guard is not a large and important wing of the army of legislators at Ottawa. When, under Sir John Macdonald, tariff protection was adopted as the policy of his party, it was naturally to be supposed that the representatives of the people and of the provinces would include a respectably large proportion of manufacturers; but while these latter were appealed to to produce the sinews of war in the ever recurring fights to establish and maintain the policy, they were elbowed aside to make room for professional politicians. As has been repeatedly shown in these pages, Sir John and his party could never have attained to power without the active assistance of the manufacturers. At the beginning of the struggle but very few manufacturers were in affiliation with Sir John's party, and it was only in the belief that a policy of tariff protection to our industrial interests would be adopted and persevered in that a very large proportion of the manufacturers,

abandoning their old party ties in national politics, went over to the Conservative party and became staunch adherents of the National Policy.

It is well to remember that the conversion of this element to the Conservative party did not imply that the manufacturers attached themselves to that party for any other purpose than that mentioned; and it should also be remembered that but very few if any of them detached themselves from their old party friends, as far as provincial politics were concerned; and it is to be observed that with these men while they vote with the Conservative party in all Dominion elections, when the principles of the National Policy are at stake, they quite as persistently vote with the Liberal party in provincial elections upon all occasions. This is emphasized in the fact that Mr. Frost, who has always been an adherent of the Liberal party in provincial politics, has for years been a supporter of the National Policy, and is now a candidate for the Dominion House of Commons upon that platform.

It is to be regretted, we repeat, that the number of National Policy manufacturers in the Dominion Parliament is not much larger than it really is. The representation is not sufficiently large to properly conserve and influence legislation. No doubt many of the Conservative members are sincerely devoted and attached to the National Policy, but we fear that in many instances many of them, not being practical men, act upon varying theories which at times places the policy in great danger. Then again some of them become possessed of the idea that because the development of our manufacturing industries has not been more marked and pronounced, the effort to make them so should be relaxed or abandoned. This is queer doctrine for statesmen of any creed to preach, but it has been and is advanced by such men as Mr. G. R. R. Cockburn, who was elected as a National Policy advocate, and who could not possibly have been elected without the active support of the manufacturers in his constituency. Mr. Cockburn and such as he may be very good pedagogues, lawyers and theorists, and they may think themselves good Conservatives, but manufacturers may well doubt the rigidity of their spinal columns when tariff protection is at stake.

There are many constituencies in Canada, particularly in Ontario and more Eastern provinces, that could be and should be represented by manufacturers in the Dominion Parliament, and therefore the candidacy of Mr. Frost is to be commended and his example followed. To ensure success the announcement upon the standard of the candidate need imply nothing more than a determination to support and maintain a policy of tariff protection to our industrial interests, as Mr. Frost has done, and to declare that beside this he will hold himself entirely independent, and will, if elected, vote for measures which in his judgment will be in the best interests of the country, no matter from which party they may emanate.

*COMMERCE OF THE EMPIRE.*

The London Chamber of Commerce have extended an invitation to the Canadian Manufacturers' Association to send delegates and be represented at the third Congress of Chambers of Commerce of the British Empire that is to

convene in London in June 1896. There are about two hundred different commercial associations included in the list of those invited to participate in the forthcoming Congress, and they are located in every portion of the British Empire.

The first of these Congresses of Chambers of Commerce of the Empire was held in 1886 and the second in 1892, and it is interesting to recall and note the consideration which has been given to the various questions which were discussed at these Congresses, particularly that of 1892. At that Congress much prominence was given to the subject of commercial relations between the Mother Country and her Colonies and Possessions, and the recent Colonial Conference held in Ottawa last year, was undoubtedly the outgrowth of the London Congress. Other incidents traceable to that Congress were the negotiations opened up between Canada and the Cape of Good Hope for closer commercial relations and the discussion of inter-Colonial free trade by the governments of the Australian Colonies, which, it is to be hoped, will ultimately result in the confederation of those Colonies after the style of our own Dominion. Since 1892 not only have Boards of Labor, Conciliation and Arbitration been formed in Great Britain, but also in the Colonies, and several legislative measures have been introduced into the British House of Commons, and special legislation has been passed in several of the Colonies, conferring needed powers upon such Boards.

It was recommended by the second Congress that strong endeavors should be made to codify the commercial law of the Empire; and this idea has been developing in the United Kingdom as shown by certain Acts that have been passed there; and although there appears to be insurmountable obstacles to having any general or uniform law apply alike to all British Possessions, yet the discussions already had are having a tendency towards the materialization of a uniformity in such laws in the different Possessions that will be of incalculable benefit in all commercial intercourse.

The Second Congress recommended that the British Merchandise Marks Act should be extended to and enacted in all the Possessions and this has now been accomplished in nearly all of them.

Although Imperial penny postage, as approved by the Congress, has not yet been made universal within the Empire, it is to be noted that the Colonial rates of postage, to and from Great Britain, have been made uniform since 1892.

The Council of the London Chamber of Commerce think that the incidents here but briefly alluded to, and others more local in their character, that have demonstrated the good that has been and is being accomplished by the Congress, while perhaps not quite as satisfactory as the more sanguine might have desired, are sufficient to justify them in again inviting the commercial associations of the Empire to participate in a Third Congress, to again be held in London, on some days to be fixed, during June 1896.

The Council think that some, if not all, of the following questions might be usefully discussed by the Congress, preference being naturally given to questions of Imperial rather than to those of a merely local character:—

1. Commercial Relations between the Mother Country and her Colonies and Dependencies.

2. Boards of Labour Conciliation and Arbitration.
3. Codification of the Commercial Law of the Empire.
4. Bills of Lading Reform.
5. Commercial Education.
6. The Decimal System of Weights, Measures and Currency.
7. Imperial Penny Postage.
8. Light Dues.
9. Railways—Light Railways—Railway communication with India and the East.
10. Inter-Colonial Trade Relations.
11. Arbitration for International Disputes.
12. Imperial Trade Marks Registration and Patent Law.
13. Cable communication—Construction—Rates—Codes.
14. Steamship communication—Rates—Subsidies—War Risks—Insurance.
15. Closer connection between Governments and Chambers of Commerce—by establishment of Commercial Advisory or Consultative Councils, Home and Colonial.
16. Bills of Exchange—uniform procedure.
17. Supply of Government publications to Chambers of Commerce and mutual interchange of own documents.
18. Parliamentary Commercial parties, Home and Colonial.
19. Representation of United Kingdom in Colonies, and of Colonies in the United Kingdom, to make up for want of Consular Officers who are only appointed to Foreign Countries.
20. Appointment of an Imperial Council to consider questions of Imperial interest.
21. Copyright.

The topics are merely suggestive as to the directions the discussions may take, and Council of the London Chamber request that they be informed whether the commercial associations invited to the forthcoming Congress approve of these subjects being brought forward for consideration, and if so, whether they desire to submit any special resolutions thereon, and what suggestions, if any, they have to make as to changes or additions to the programme of business. This in order that the Organizing Committee of the London Chamber may prepare a definite programme for discussion and circulation before hand.

We feel quite safe in saying that the Canadian Manufacturers' Association will co-operate in this the Third Congress of Chambers of Commerce of the Empire, and will send delegates as their representatives to this most important meeting.

#### THE FAKIRS AND THE FAIR.

It will be too bad if manufacturers who exhibit at the forthcoming Toronto Fair are again handicapped by the unwise and selfish system prevailing with the Toronto daily papers of endeavoring to reap a large benefit by what might very properly be called blackmailing the manufacturers for writing up notices of their exhibits. It might reasonably be supposed that these papers, having the general welfare of the city and country at heart, and desiring to benefit the city and the Fair, would refrain from a practice that is exceedingly disagreeable and obnoxious to the exhibiting manufacturers, and detrimental to the success of the Fair.

They do not observe this practise upon other occasions nor is it observed towards all exhibitors at the Fair. Usually when a circus comes to town, or performances are being exhibited in the dime museums and theatres, the

representatives of the daily papers are well supplied with admission tickets, for the purpose of affording them opportunity to give fair notice of the entertainments presented; but they are not supposed to blackmail the individual performers, and absolutely abstain from giving credit and praise to them where they are due, unless they allow themselves to be financially bled for whatever they may say or refrain from saying about them in the papers.

All newspaper men are supplied with admission tickets to the Fair, and while there they are entertained with the utmost hospitality. They are not only admitted to the grounds, and have free access to all that is to be seen wherever the general public are admitted, but they are also given tickets to the grand stand, dog show, side shows, etc. What more do they want? It would seem that they should be satisfied with these favors, and with the facilities accorded them for making correct reports of all that is transpiring there.

When sensational murder trials are being heard in the courts of Justice, or when civic corruptions are being investigated, the more disgusting the details the greater the space devoted by the daily papers to recounting the same, and this regardless of the pernicious effects such recitals may have upon the morals of the community, and the unnecessary and unjust laceration of the feelings of some of those whose names may be involved as witnesses or otherwise. The effect of this pandering to the prurient tastes of the multitude is to debase the young and the viciously inclined, and the general demoralization of the community, that is unnecessary and that should be avoided; and it is indulged in by these so-called conservators of the public morals, not for any good that may result from such publications, but that dollars may flow into the pockets of the publishers from the sale of increased numbers of their papers.

And this is the spirit that actuates them at the Toronto Fair. It is no small item in the expense of conducting their business that manufacturers incur in exhibiting their machines, machinery and products at the Fair, and this expense is the cause of many of them declining to exhibit.

Exhibitors of horses, cattle, sheep, hogs and poultry, cabbage, pumpkins and potatoes, are awarded prizes of more or less value for what they show, but, unlike these, the manufacturers do not compete for prizes, medals, diplomas or anything else. They exhibit at the Fair at the request of the Exhibition Association, but they have to shoulder all their expenses for so doing, including hotel bills, salaries for attendants, railway freights, drayage, etc. To our mind, in view of the facts, they should be therefore spared the infliction of any expense that could possibly be avoided. But being exhibitors at the Fair the manufacturers are esteemed fair and fat game for the lean and hungry wolves of the Toronto daily papers, and the vampire-like bleeding goes on during every day of the Fair at so much per line per day for whatever may be said in the papers regarding the displays under the penalty of a total ignoring of the presence of the exhibits.

It might be supposed that a sense of justice would impel the management of the Fair to make an effort to protect the manufacturers who exhibit there from this harpy-like imposition, and no doubt they would endeavor to abate the nuisance, were it not for the threat that such a

move would be the signal for the Toronto daily papers completely ignoring and boycotting the Fair, and declining to make any mention of it whatever in their columns. These threats display the height and breadth of the kindly care the gentry have for the institution and of the best interests of Toronto; but being Shylocks, and possessing the opportunity, they do not hesitate to exact the full pound of flesh that they consider themselves entitled to.

There appears to be but two ways open by which this blackmailing can be circumvented: one by the manufacturers resolutely refusing to be bled; the other by the management of the Fair buying off the gang by paying out of the funds of the Association agreed upon sums for the abatement of the nuisance. It is scarcely to be supposed that a sense of propriety will ever induce the Toronto daily paper to abandon their pernicious system.

#### *TORONTO INDUSTRIAL FAIR.*

The numerous applications from leading manufacturing and mercantile establishments for space at the Toronto Industrial Exhibition is a pleasing indication of business activity and the probability of a large fall and winter trade. The comparison with last year is highly encouraging and one of the noteworthy features is that in very many cases exhibitors are extremely desirous of increasing their allotments of space so as to make larger and finer showing than before. The departments devoted to manufacturers bid fair to be filled to overflowing, and those who delay their applications until the last are certain to meet with disappointment.

The interior of the Main Building is being completely rearranged so as to secure the largest amount of space for exhibits combined with the most tasteful and artistic effect.

It will consequently present an entirely novel appearance. A new wing has been added to the carriage building for the purpose of accommodating the great display of bicycles which will be a fresh and interesting feature and afford some insight into the tremendous development of the bicycle industry during the year. A very large number of bicycle manufacturers and dealers will be represented and almost every kind and quality of wheel on the market will be in evidence.

The vast resources of our North-West Territories are hardly realized even by those who are specially interested in that region. The Fair will bring them before the attention of the people of the older Provinces in a concrete form, through the large and comprehensive collection of their natural products especially in minerals which has been secured and will be placed on view. This display cannot fail to stimulate an interest in Canada's North-Western domain, which it is to be hoped will not be without some practical result.

#### *RE OUR SHIPPING LAWS.*

It seems that our "absurd coasting laws" are standing in the way of trade. The facts are revealed by the Toronto Globe, and the Government is duly chastised for the injury that is being done. Some time ago there was wheat at Fort William awaiting shipment to a Canadian port. A vessel of the United States could have carried it; but the absurd coasting laws stood in the way of the transaction because they do not allow foreign vessels to transport car-

goes from ports in Canada to other ports in Canada. If the Toronto Globe happened to be in a position to right our various wrongs it would alter the coasting laws. We should then have freedom of transportation in addition to freedom of trade as they have it in England. There is every reason to believe that the abolition of the coasting restrictions would be a very good thing. But if we are to abolish our coasting restrictions our neighbours must remove theirs. As it is, we are excluded from the coasting trade of the United States. If we abolish our coasting laws the United States vessels will take possession of our lake trade, and we shall get nothing in return. The Mail and Empire favours freedom in transportation, but it cannot join with The Globe in demanding a franchise for the American vessel-owners while our vessel-owners are excluded from the corresponding franchise on the other side of the lake. What our contemporary wants is foreign competition for our own carriers, and no reciprocal action to balance the account. Anything more foolish it is difficult to imagine.—Mail and Empire.

The United States laws affecting shipping prevent any but vessels of that country engaging in carrying either freight or passengers between domestic ports. Thus a Canadian vessel may carry and bring between Toronto and Buffalo but not between Buffalo and Cleveland. A similar law prevails in Canada, and although an American vessel may bring and carry between Buffalo and Toronto, it may not do so between Toronto and Kingston. Whatever the effect of the American law may be upon American shipping employed in the foreign commerce of that country it has certainly built up a coastwise and lake commerce of the utmost value and importance. No finer steamers float on water than those plying between New York and Fall River or from Buffalo and Cleveland to Chicago and Duluth; and in case of emergency there are hundreds of fine, large, staunch steamers belonging to the merchant marine of the United States that could be converted into gunboats and commerce destroyers on very short notice. We know that although the St. Mary's Canal is open to navigation but about only eight months in the year the tonnage of American vessels passing through it during that time is much greater than the tonnage of the whole world passing through the Suez Canal during the whole year. We know that the American tonnage passing the city of Detroit during the season of navigation is greatly in excess of the tonnage of the whole world entered and cleared at Liverpool or any other British port in a whole year. This condition prevails simply because the United States does not permit any other nation to participate in its domestic waterborne commerce. While similar laws prevail in Canada there is this difference, that no vessel sailing under the British flag can be excluded from trading in any British waters. Canada could allow American vessels to engage in her internal commerce, but she cannot exclude British vessels. If she could we would not see British built vessels, and naturalized vessels of the United States and other nations plying exclusively in Canadian waters as may be observed in Toronto and Montreal any day. In the United States every facility is extended to the shipbuilding industry, and that country has an immense merchant marine. In Canada we enjoy no such exclusive facilities, and we have no valuable merchant marine.

#### EDITORIAL NOTES.

The Toronto papers announced a few days ago that the Canadian Packers' Association had disbanded. This as-

sociation was composed of concerns engaged in canning fruits, vegetables, etc., in Ontario. Ever since the organization of the association in March of last year dissatisfaction has existed among the members with regard to the disposal of their respective outputs. It was intended that the goods should all be disposed of by a general agent, and that uniform and agreed upon prices should be adhered to. Perhaps this method might have worked all right if the products of all the factories were of equal excellence and value, which, it is said, is not the case. But purchasers are unreasonable enough to demand the privilege of selecting their goods and are unwilling to accept an indifferent article when a better and more saleable can be had at the same price. The makers of poor goods were dissatisfied when their products remained unsold while the better class of goods found ready sale; and the makers of the superior goods were unwilling that prices should be reduced to the best obtainable for the poorer article. The incident is an object lesson in politics. All of these manufacturers of canned goods are, very properly, quite willing to accept the protection afforded by the tariff, and the more sensible of them produce as excellent goods as can be made in any country. But there are others who do not view the matter in this light, and who are content to produce what cannot be called a first-class article, foolishly believing that the consuming public, some of them, will accept an inferior article, paying therefor a price enhanced by the tariff, in which they hope to find a profit. Of course this is a mistake, and such manufacturers would do well to at once retire from business. The competition among manufacturers who produce strictly first-class goods will always give conservative prices to consumers.

According to the St. Thomas Journal, "It's a game of draw. The railway draws the member, the member draws his mileage allowance, and the unlucky taxpayer draws a blank." And Mr. Mulock's abortive effort to prevent all these evils draws little but ridicule.—Mail and Empire.

No matter what motive may instigate Mr. Mulock in his endeavor to correct some of the evils from which the people of Canada suffer at the hands of the railroads, it is quite evident that the potent power of a railway pass in the pocket of a legislator is sufficient to control his vote in all emergencies.

During the past fiscal year the duty on imported books amounted to close on \$230,000. This makes an average rate of about 22 per cent. The worst feature of the present duty is that the rate, being specific, is so high as to be almost prohibitive on the cheaper publications.—Toronto Globe.

It would be a blessing to Canada if the duty upon cheap publications were made absolutely prohibitive. The country is flooded with the cheap and pernicious publications of other countries which effect much harm and but little good. A good book can bear a specific duty of six cents per pound. An objectionable book should be excluded from the country.

United States protectionists are excited over the importations of woollen goods under the new tariff. They say that the quantity imported is disastrous, such as no truly American tariff would allow to come in. But if the Am-

ericans import woolen goods it is because they want them and have something to give in exchange, while they can spend their time to better advantage than in making them for themselves.—Montreal Herald.

the United States produced a very large proportion of the woolen goods consumed in that country, and the people acquainted with that kind of work spent their time to the very best advantage in working in woolen factories. Now that McKinleyism does not prevail, and as near an approach as possible has been made to free trade, the occupation of the woolen worker is transferred from that country chiefly to Germany. As to the giving of something in exchange, the American citizens had as much then as now, the difference being that under protection the products were sold at home where the best prices could be obtained, while now it is exported. The nation that manufactures for itself prospers.

In the year here named the exports of hay from Canada were as follows :—

1891	Great Britain.....	tons	11,852	val. \$	150,291
1892	" .....	"	14,969	"	167,604
1893	" .....	"	50,892	"	515,461
1894	" .....	"	175,559	"	\$1,704,409
		tons	253,272		\$2,537,765

or an average of \$10 per ton.

1891	United States.....	tons	50,070	val. \$	375,813
1892	" .....	"	67,067	"	598,567
1893	" .....	"	94,282	"	854,958
1894	" .....	"	87,847	"	753,575
		tons	299,266		\$2,582,913

or an average of \$8.63 per ton.

In 1891 the exports to Great Britain were but 16 per cent. of the total quantities exported to the two countries and 26 per cent. of the values. In 1894 the exports to Great Britain amounted to 70 per cent. of the total exports and the value to 68 per cent.

Which is the better market for Canadian hay ?

An interesting report on taxation in France is given in a report by United States Consul Wiley, at Bordeaux, to the State Department. According to this report every form of legal paper, checks, notes and documents, bills of lading, even lithograph posters, must have a revenue stamp affixed. From this source the Treasury draws its principal revenue, amounting last year to \$140,000,000. The spirit and wine tax amounted to \$120,000,000. The custom house receipts were \$100,000,000. Tobacco, matches, playing cards and other government monopolies yielded \$130,000,000. Sugar paid an internal revenue tax of .052c. per pound, \$29,000,000 in all. The land tax brought in \$39,600,000 and personal property \$28,000,000. If a clerk occupies a hall room he pays a tax of \$2 per annum, while his landlady not only has to pay for her poodle, but for every door and window in the house. As the Treasury receives \$12,000,000 per annum for windows alone, the architect who can design a house with the least possible amount of ventilation does the best business. If you own a horse, carriage, billiard table or bicycle you are taxed—the government collects \$6,400,000 annually for permitting such luxuries to exist, and a bill was recently intro-

duced in the chamber to tax the wearing of corsets. Business licenses bring in \$24,000,000 per annum. Evidently the tax collector is a more ubiquitous individual in France than in the United States.

In speaking of the very troublesome competition that Great Britain is meeting from Belgium and Germany, the American Economist calls attention to the fact that Belgium is, by free traders, always mentioned first, because, it says, Germany, as lately as 1879, adopted Protection, and under the combined influence of Protection and a liberal policy of subsidizing its steamer lines German production and exportation has increased, while British production and exportation has decreased. The persistence, however, with which British papers mention Belgium first, and the practice is repeated here, leads many people to think that Belgium is of equal account with Germany in the markets of the world. The extent to which this is a mistaken view may be seen from the following clipping, which is part of an article in the Coal and Iron Trades Review of London :

On making an analysis of the total exports to England and her colonies, I find that whereas Germany sent us last year a total of 236,000 tons of iron and steel, of which 147,000 tons were sent direct to England, Belgium only sent us 56,500 tons, of which 47,500 tons were sent direct to England. In other words, England and her colonies import more than four times the quantity of iron from Germany than we do from Belgium.

It will seem from the above that Belgium does not export quite one-fourth the volume of iron to British possessions that Germany does, and while Germany is gaining quite as notorious a reputation for Brummagen wares as England, the value per ton of its iron and steel is probably greater than in the case of Belgium. But there is no mistake about the quantity, and when some Free-Trade orator tells you that foreign manufacturing countries have so much at stake that the so-called campaign of education will be renewed; when their orator tells you that Free-Trade Belgium has more prosperous industries and a greater export trade than Protected Germany, just refer him to the facts as set forth in the above-mentioned paper of February 22, 1895. You can remember the date easily.

When one American-built steamer, carrying the American flag, creates the excitement that attended the St. Louis on her initial trip, what will be the condition of the American mind when our commerce upon the seas once more assumes its old-time importance? When the seas are once more dotted with American merchantmen, sailing under the Stars and Stripes? That desired time seems close at hand.—Hardware, New York.

One swallow does not make a summer.

In England the straw of a wheat crop often brings more per acre than the entire crop in Western Canada and the United States. If our farmers could share some of what the British farmers call "ruin" they would have cause to be thankful.—Toronto Globe

If the straw of a wheat crop in England is worth more per acre than the entire wheat crop in Canada, both grain and straw, and in view of the fact that the consumption of both straw and grain in England is many times the volume of the home production, why is it that the areas of wheat farming there are constantly being reduced?

It is a somewhat singular fact that Canada exports several million dollars' worth of lumber each year more to the United States than to Great Britain. Thus in 1893 Canada's total export of forest products to Great Britain figured \$11,105,482, while to the United States that aggregate showed \$14,841,455 worth. Yet with this enormous export of lumber to the United States and to Great Britain, the value of Canada's forest products is about \$80,000,000 per annum, leaving a balance for local consumption of about \$55,000,000, nearly 70 per cent. of its forest products, equaling more than \$11 per head of population. It is somewhat surprising to note that Canada uses twice as much lumber at home as she ships abroad. This is a similar fact to that which we have noted concerning the largely increasing local consumption of lumber in the New England states.—*Manufacturers' Gazette.*

Recently in the Supreme Court at Camden, N. J., Walter M. Wood was non-suited in his case for damages against the Camden Horse Car Company on a novel point. He testified that he boarded a car of the company and tendered the conductor a \$5 bill in payment for his fare. The conductor did not have the change for the bill, and returned it to Mr. Wood, informing him that if he had no other change he would have to get off. He refused to get off, and was put off by the conductor. Hence the suit. Judge Garrison, in granting the non-suit, said that the plaintiff should produce proof that he had offered legal tender money. The company was not compelled to accept a promissory note in payment of fare, and a bank note was

nothing more than a promissory note. Neither was a silver certificate legal tender, and the company would not be compelled to accept it as such.

The American Economist speaking of the value of the home market to American producers, says :—

The total American consumption of our own manufactured goods, of our farm products and the foreign goods which we imported in 1890 reached nearly twelve billions of dollars. The total foreign imports of all other countries in the world, representing foreign markets, aggregate a little more than seven and a half billions of dollars. Our own home market is worth to us nearly four and a half billions of dollars a year more than the foreign trade of all other markets of the world, even if we could hope to secure the whole of it. The policy of Free-Trade is to throw our great twelve-billion-dollar market away to grasp a cheaper seven-billion-dollar market which would pauperize our high priced workmen by competition with the low wages of Europe. The policy of Protection is to prevent this.

The Iron Age comes to us with the appalling statement that the Waterous Engine Company which had entertained the idea of building a branch factory on the other side of the border have given up that idea. One should go abroad to learn home news. Our impression is that the Waterous Company have for many years maintained, and yet operate, a large branch of their establishment in the United States.

# 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.

# A REVIVAL OF TRADE.

**NOW IS THE TIME** to bring your business prominently before the people, and the best way to do so is to

**EXHIBIT AT**

# Canada's Great Industrial Fair ... Toronto ...

## September 2nd to 14th, 1895.

**Early Applicants for Space Will Secure the Best Positions**

**ALL ENTRIES CLOSE AUGUST 10th.**

Visitors are coming from all parts of the continent.

This year's Fair will be greater than ever.

Excursions on all Railways in Canada and the Northern States.

**All Space Free. No Charge For Power.**

For Prize Lists, Entry Forms and all information address,

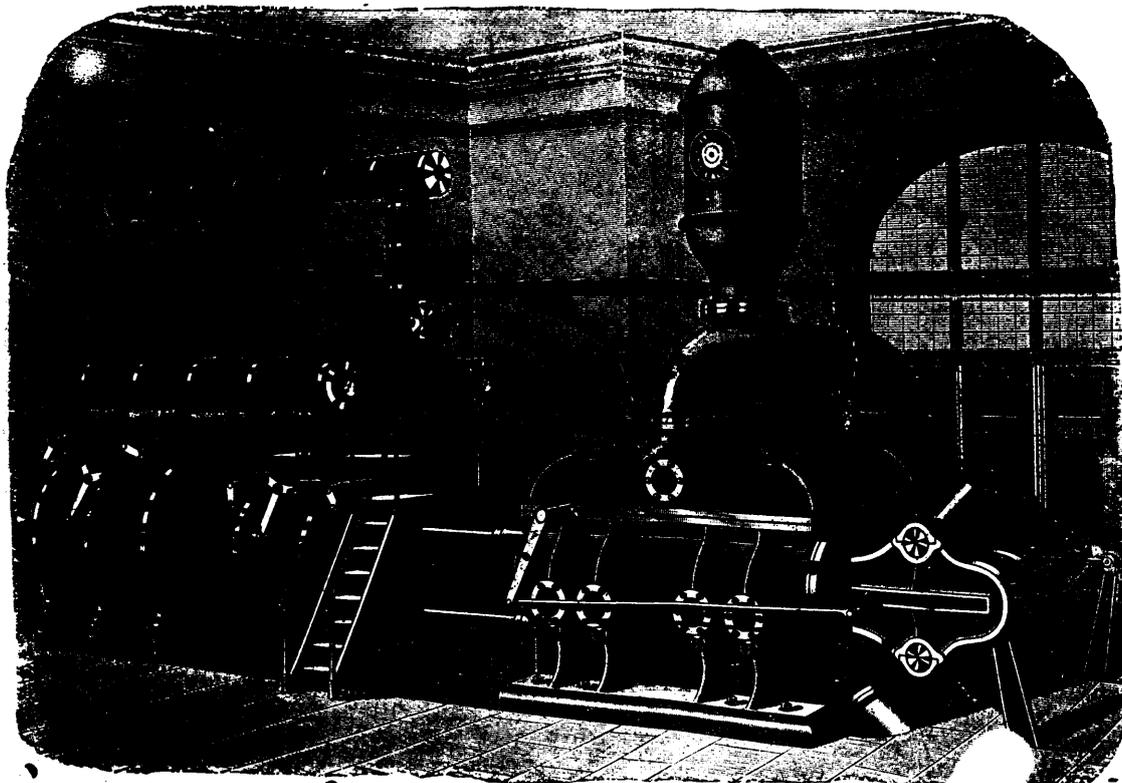
**J. J. Withrow,**  
President.

**H. J. Hill,**  
Manager, Toronto

# JOHN M<sup>c</sup>DOUGALL,

CALEDONIAN IRON WORKS,

MONTREAL, QUEBEC.



General Agents

In Canada for

THE FAMOUS

Worthington

Pumps

Hydraulic

Machinery

Condensers and

Water Works

Supplies.

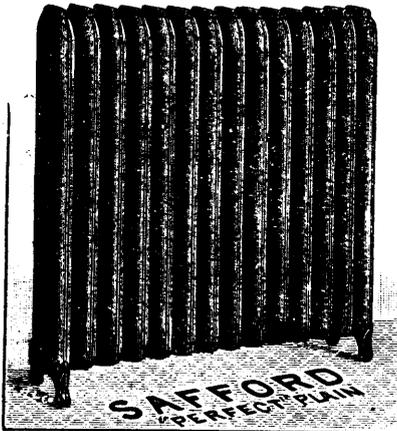
WORTHINGTON PUMPS ARE UNEQUALLED FOR EFFICIENCY AND ECONOMY

# HEATING APPARATUS

# Safford : Radiators

RECEIVED THE HIGHEST AWARDS :

ANTWERP	(BELGIUM)	EXPOSITION	1894.
TORONTO	(ONTARIO)	EXHIBITION	1894.
OTTAWA	(ONTARIO)	EXHIBITION	1892.
SHERBROOKE	(QUEBEC)	EXHIBITION	1893.



## ALL IRON.



Largest Radiator Manufacturers

Under the British Flag.



THE **TORONTO RADIATOR MFG. CO. LTD.**, Toronto, Ontario

# WM. & J. G. GREY

2 CHURCH ST., TORONTO, ONTARIO.

BUILDERS OF

## Model Roller Flour Mills

OF ALL CAPACITIES.



MANUFACTURERS OF

High Grade Improved Flour Mill Machinery.

DEALERS IN

MILL FURNISHINGS AND SUPPLIES.

SOLE AGENTS FOR

GENUINE DUFOR BOLTING CLOTHS.



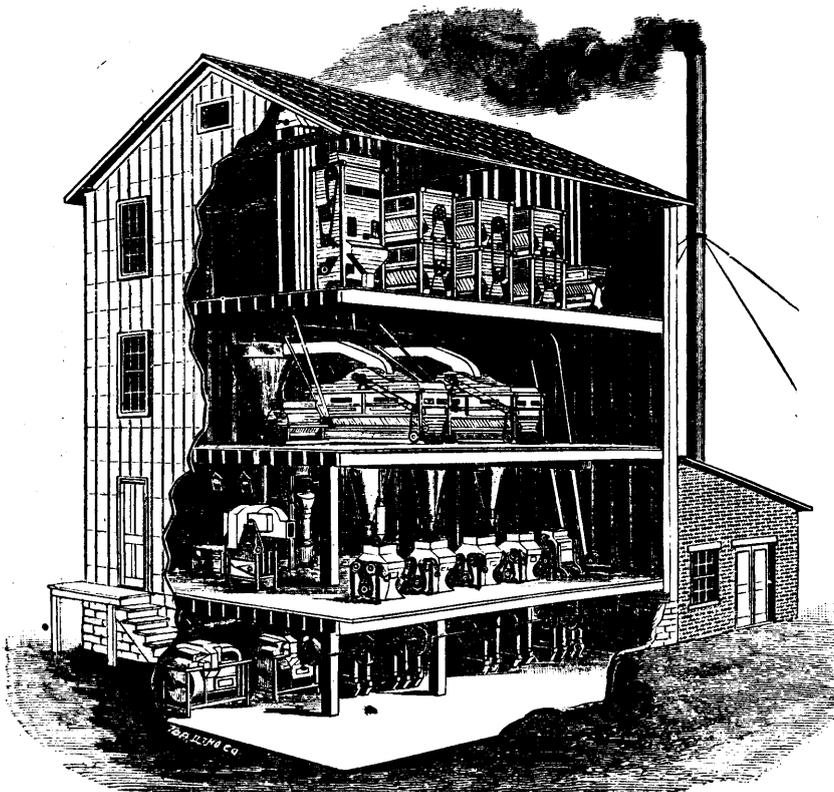
Large and Varied Stock Ready for Immediate Shipment.



Rolls Elegantly Ground and Corrugated with Despatch.



ORDERS SOLICITED.



50 BBL. MODEL ROLLER MILL.

Regarding legislation restricting the hours of labor for women, the Legislature of Illinois in 1893, passed a law containing such a prohibition, and the Supreme Court of the State has just decided unanimously that the act is unconstitutional. The Court holds that a woman is entitled to work as many hours in a day or in a week as may happen to suit her own convenience or interest; and that any act which attempts to abridge the freedom of contract between employer and workmen in a lawful occupation is unconstitutional. Thus the decision affects not only male, but female laborers; and whatever may be the consequence of the declaration of the Court, no reasonable man can deny that it is based upon considerations of equity. The State may properly control and impose limitations upon the labor of minor persons; but when it undertakes to deny to a grown person the right to sell his labor-power upon his own terms, it engages in intolerable interference with the personal liberty of free men and free women. Were the attempt made to subject to such restrictions professional men, store-keepers, and others who do not work for fixed wages, it would be fiercely resented and resisted; but the rights of these persons are not more sacred than, nor do they in any manner differ from, the rights of men and women who work in humble positions in manufacturing establishments. There can be hardly any doubt that the Supreme Court of the United States would fully justify the decision of the Supreme Court of Illinois.

The import duty on spirits is 62½ cents higher than the excise duty, that difference being the encouragement given to Canadian distillers. It amounts in all to one and

three-quarter million dollars. Were this diverted for one year to the public treasury it would defray the expense of many prohibition commissions.—The Globe.

If people will drink whisky it is better that they consume a really pure and first class article of Canadian production than poor and adulterated foreign stuff. But there is no person in Canada who is under compulsion to imbibe either.

Farmers in the vicinity of Gretna, on the Dakota side of the boundary, are hauling their wheat to the Canadian town, paying the fifteen cents duty, and selling at a gain of four cents a bushel over the Dakota price. In Gretna wheat is selling for 87 cents a bushel; across the border in Neche it brings only 68 cents.—Winnipeg Nor'-Wester.

The Canadian duty upon imported wheat being fifteen cents per bushel, the National Policy seems to be working very favorably for the Canadian farmer.

The curiosities of American exports to Europe are illustrated by the recent shipment of twenty one bicycles to Genoa, displacing the make of Coventry. Seven windmills went to this same place, one hundred and twelve packages of electrical materials and nine ice cream freezers. Havre takes seventeen typewriters, fifty-one bicycles and thirteen windmills. Hull takes one hundred and fifty barrels of shoe pegs and sixty-five packages of agricultural implements. Liverpool takes twenty cases of chewing gum, one hundred and eighty packages agricultural implements and fifty-two sewing machines. Rotterdam takes twenty-three clothes wringers, twelve ice cream freezers and forty-one barrels of hungs. It seems strange that while they make such good casks in Europe they prefer American bungs. Can any one tell why just such articles should not be exported from Canada to those countries?

**.. 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.

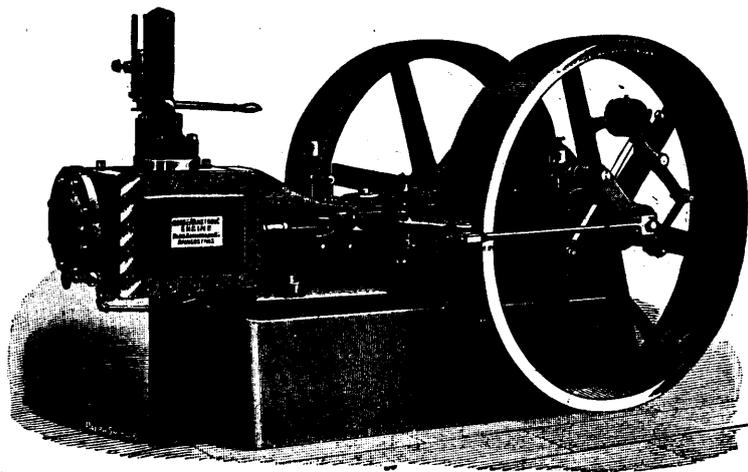
**WHITNEY**  
**ELECTRICAL INSTRUMENT CO.**

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 Poole 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.

**Robb==Armstrong**  
**= = Automatic Engines**

**SIMPLE, TANDEM AND CROSS COMPOUND.**



The following sizes ready for immediate delivery :

10, 15, 20, 30, 60, 80, 100, 125, 150 and 175 H.P.

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

**AGENTS:**

The Canada Machinery Agency, 321 St. James Street, Montreal,  
Wm. McKay, Seaforth, Ont., Travelling.

# The Packard Lamp.

WE are prepared to furnish you with the best LAMP in this market, the "PACKARD," at extremely low prices, and can prove our claims.

## THE PACKARD TRANSFORMER.

It is impossible to burn out one of our Converters; and in efficiency and regulation they far excel all others.

WRITE US FOR QUOTATIONS.

# The Packard Electric Co'y, Ltd.

ST. CATHARINES, ONTARIO.

## 1895.

THE LATEST INVENTION IN COAL SAVING APPLIANCES.

# “MICA”

The well-known **Electrical Insulator** successfully adapted as an Insulator of **Steam** heat. **Enormous saving of fuel guaranteed** by the use of **Mica** boiler and steam pipe covering

**Patented 1894 and 1895.**

Now being used with great success by The Toronto Street Railway Co., Niagara Navigation Co., Toronto Ferry Co., etc., etc. Has been tested and thoroughly examined by the highest authorities and pronounced the most effective in the market. Impervious to the extremes of heat or cold, damp or vibration. Made in any size mats in any shape. Can be applied and removed as often as desired without injury.

..... SOLE MANUFACTURERS .....

# The Mica-Boiler Covering Co. Ltd.,

2 BAY STREET, TORONTO.

An improvement has been patented in the United States by Thomas Kelly, by which a telephone is mounted on a slate backing which is held out from the wall by rubber washers around the screws. This deadens all foreign sounds that constantly interfere with conversation, and increases the volume of the words uttered in front of the diaphragm.

It will be observed by reference to another page that Messrs. Boswell, Cross & Co., of Sydney, New South Wales, a commercial house who have good references in this country, are offering their services to Canadian manufacturers as agents for the sale of their products in Australia. Sir Mackenzie Bowell, the Canadian Premier, has already rendered, and his Government is still rendering, every possible facility to our manufacturers for the sale of their goods in Australia; and the Canadian representative there, Mr. John S. Larke, whose headquarters are at Sydney, is doing all in his power to assist in the matter. Messrs. Boswell, Cross & Co., who are well known in Canada, are there too, and are giving their personal attention to the disposal of the products of our manufacturers, and invite correspondence with that object in view.

In order to find an intelligent answer to the query, Has the National Policy made you rich? our esteemed contemporary the Globe cannot do better than appeal to Mr. W. H. Frost, a Liberal manufacturer of Smith's Falls, who has recently come to the front as a supporter of protection. In an address to the electors of Leeds and Grenville he gives the reasons for his position, and declares his belief that

protection should be given to the representatives of the great divisions of Canadian industry—the farmer, the merchant, and the manufacturer. Mr. Frost will be able to give the Globe some valuable information.—The Mail and Empire.

The Montreal Gazette, speaking of Mr. Frost's candidacy for the House of Commons, says:

Mr. W. H. Frost, a manufacturer of Smith's Falls, is the latest Liberal business man to come to the front as a supporter of protection.

It is wonderfully strange how much the average daily newspaper don't know. Mr. Frost has been an ardent supporter of protection for many years; and, like many other Liberal manufacturers who are believers in the National Policy, is a member of the Canadian Manufacturers' Association, whose chief mission is to support and defend that policy.

.....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.

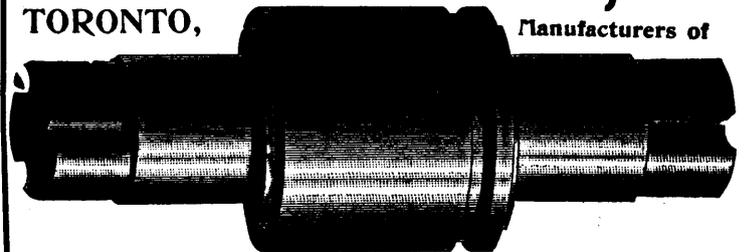
**“Dumfries - Foundry,”**

Galt, Ontario, Canada.

## WM. & J. G. GREY,

TORONTO,

Manufacturers of



### SUPERIOR CHILLED ROLLS.

FOR ALL PURPOSES.

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

Have the Largest and Most Complete Plant for Grinding and Corrugating Rolls in Canada.

ALSO  
SPECIAL  
AGENTS  
FOR

EWART  
LINK  
CHAIN  
BELTING.



# Incandescent Lamps - - -

**Swan and Ediswan,**

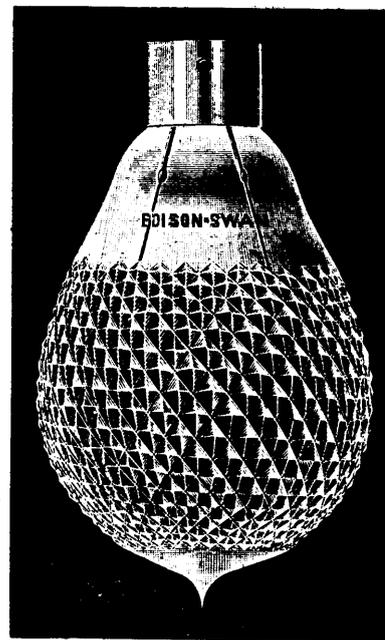
MANUFACTURED BY THE

**EDISON and SWAN**

**United Electric Light Co.**

RUBBER COVERED WIRE,  
WEATHER-PROOF WIRE,  
MAGNET WIRE.

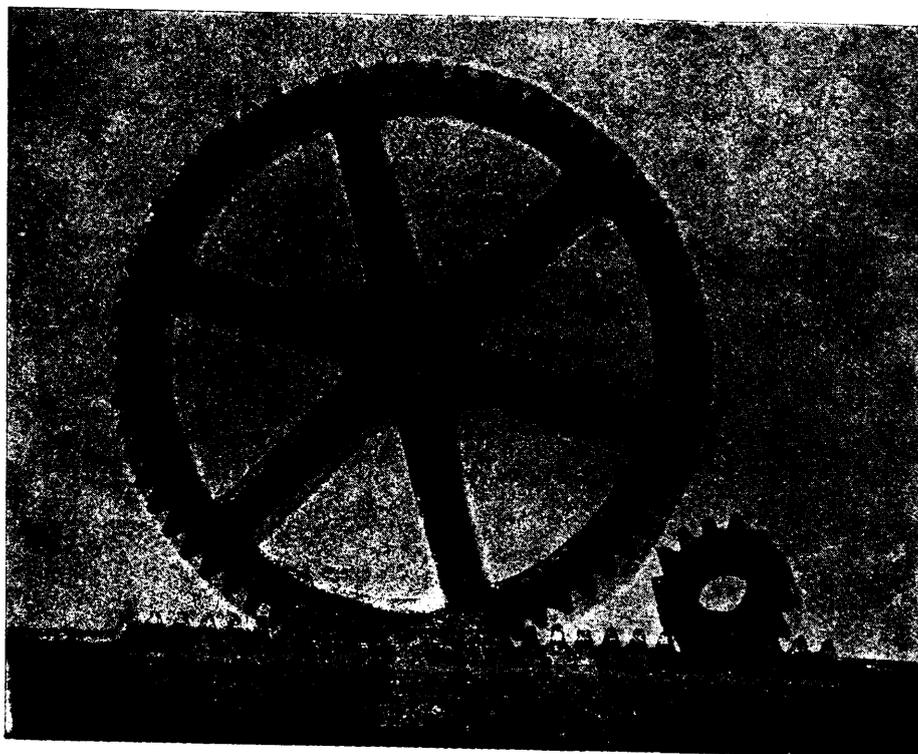
Electrical Supplies of Every Description.



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

## 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.

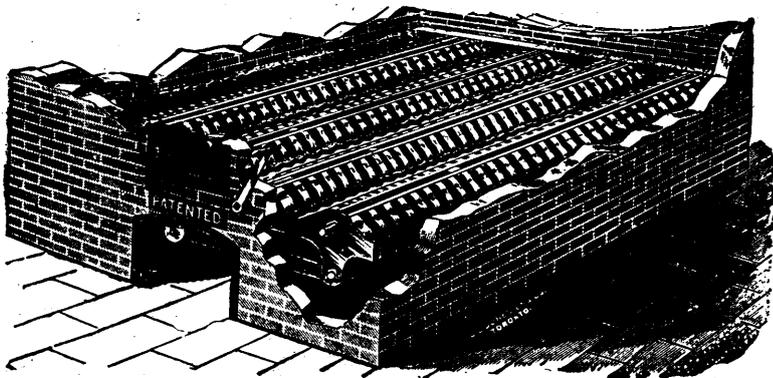
Gear and Rack Cutting to  
Order.

Correspondence solicited.

Municipal financing is seldom brilliant, and perhaps the source of least remunerative investment to which town councils apply the funds of ratepayers is in bonuses. The fallacy of the bonus system has so often been exposed, that the subject has become hackneyed; municipalities have been deceived so often, that one would expect the question of granting a bonus to be discussed in a common sense way, and business-like stipulations made. And yet the regularity with which industrial corporations seek bonuses is only equalled by the regularity with which Canadian towns grant them. The credulity of town councillors on this side the line has apparently become a by-word in the United States, and American firms of every description "seeking a new site" or "wishing to extend their business by establishing a Canadian branch," have only to make

public their designs and be inundated by letters from Canadian municipal authorities. Some of the propositions made are utterly absurd. A company purporting to hail from Michigan town has been tempting several Canadian municipalities with an offer to establish a branch of their works upon condition that they be loaned \$13,300, given free site and power, and exemption from taxes for twenty years. The estimated cost of the company's plant is \$16,000. It is probable that these enterprising makers of novelty wares will never see Canada, for there are more attractive bids on the market. A company a little more guarded in describing their wants and less honest in describing their dimensions would succeed where this concern will, let us hope, fail. Bankruptcy is the ultimate end of most concerns established in this way, while a heavy debt and oppressive taxation linger to mark the absurd policy which called them into being.—Monetary Times.

NEW TESTIMONY EVERY ISSUE.



THE HEESON GRATE BAR CO.

TORONTO, March 21, 1895.

DEAR SIRS,—I have much pleasure in recommending your Rocking Grate, as I have given it a fair trial and find it to be a great saving both in labor and in fuel. With this grate under one boiler we can now heat our building with one-half the fuel used with our old bars and two boilers when it took us all our time to keep up the heat. I am satisfied that the Heeson Grate is the best in the market, and will be glad to have anyone call and see them work.

Yours respectfully,

B. STOKES,

Horticultural Pavilion, Toronto.

THE HEESON ROCKING GRATE BARS

Will be placed on trial under any boiler in the Dominion for thirty days, at the end of which time, if they are not satisfactory, we will remove them and return the old bars to their place free of expense.

Office: 133 Bay Street.

THE HEESON ROCKING GRATE BAR CO. OF TORONTO (LTD.)

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,

als for PRINTERS AND BLEACHERS.

WINN & HOLLAND, Montreal

Sole Agents for the Dominion of Canada

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.

WE MANUFACTURE AND IMPORT

Every  
Modern  
Dye Stuff

Sole U.S. and Canada Agents for

Leopold Cassela & Co., Frankfort-on-the-Main, Germany.

W. C. Barnes & Co., London, England.  
Manufacture Lyonnaise de Matieres Colorantes,  
Lyons, France.

Albany Coal Tar Dye & Chemical Co., Albany, N. Y.

**LAURIE ENGINE CO.** St. Catherine Street East, MONTREAL,  
ENGINEERS AND CONTRACTORS

COMPLETE MOTIVE PLANTS, ETC.

IMPROVED **CORLISS ENGINES**

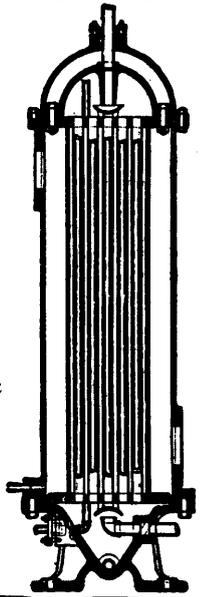
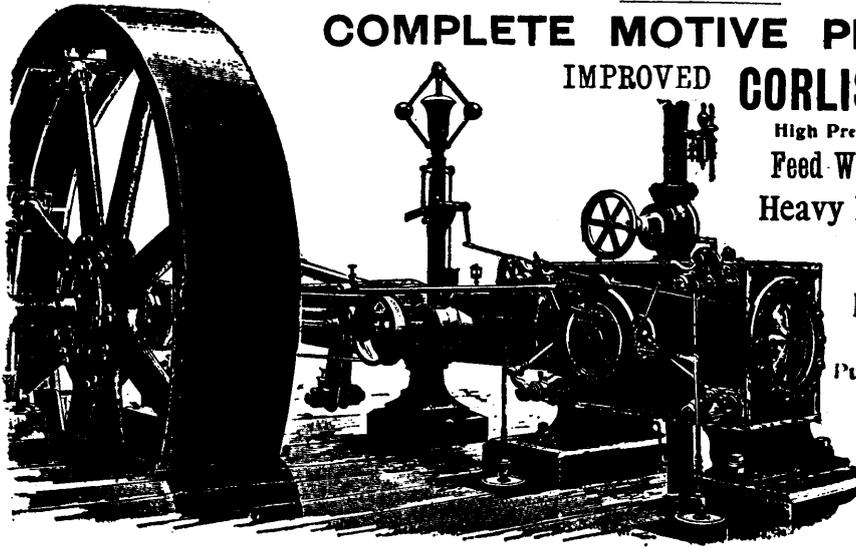
High Pressure, Condensing and Compound  
Feed Water Heaters and Purifiers.  
Heavy Fly-Wheels a Specialty.

Sole Agents in Prov. of Quebec for  
**NORTHEY CO. Ltd.**

Manufacturers of all kinds of  
Pumps, Condensers and Hydraulic  
Machinery.

Sole Agents in Canada for the  
**HOLLY GRAVITY**

RETURN SYSTEM.



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

Manufacture  
THE VICTOR  
WHEAT  
HEATER,

The benefits  
secured are

**WHITER  
FLOUR,  
UNIFORM  
GRADES,**

**CLEANER  
OFFALS,**

**BROADER  
BRAN.**

**STEAM  
TRAPS**

Pipe Machines  
Buffing and Polishing Lathes  
Strapping Machines  
Shafting Hangers.

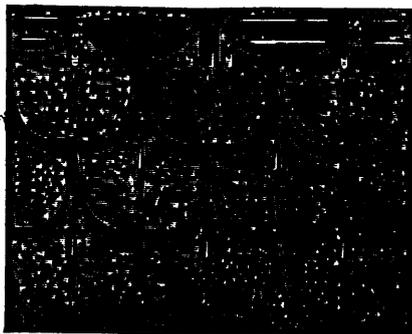
**G. T. PENDRITH**

MANUFACTURER,

73 to 81 Adelaide Street West,  
TORONTO.

**METAL ROOFING.**

Those contemplating building the coming sea-  
son would do well to send for our catalogue.  
Cheaper a wooden shingle. Will last a lifetime.



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.

**BARGAINS MACHINERY**  
-IN-  
NEW & SECOND-HAND

- 23x60 inch Double Corliss Engine, with Condenser, 800 H. P.
  - 16x32 inch Double Cumper Automatic Engine, 300 H. P.
  - 20x30 inch Automatic Engine, 150 to 200 H. P.
  - 16x32 inch Buckeye Automatic Engine, 150 H. P.
  - 12x20 inch Automatic Engine, 75 H. P.
  - 12x19 inch Automatic Engine, 75 H. P.
  - 12x19 inch Ball Automatic Engine, 80 H. P.
  - 12x15 inch Beck Automatic Engine, 80 H. P.
  - 16x36 inch Allis Corliss Engine, 150 H. P.
  - 12x24 inch Wetherill Corliss Engine, 50 H. P.
  - 10x18 inch Buckeye Automatic Engine, 60 H. P.
  - Westinghouse Automatic Engine, 60 H. P.
  - 9 1/2 x 12 inch Beck Automatic Engine, 50 H. P.
  - 9 x 9 inch New York Safety Automatic Engine, 30 H. P.
  - 8 x 12 inch Trenton Automatic Engine, 35 H. P.
  - Slide Valve Engines, Vertical and Horizontal, 200 to 300 H. P.
  - Hoisting Engines, 5 to 50 H. P.
  - Sacht and Marine Engines.
  - Boilers, all styles and sizes.
  - Planers, 24x6 inch, 30x6 inch, 36x9 inch, 72x25 inch, 72x34 inch.
  - Lathes, 14x6 inch, 16x6 inch, 20x10 inch, 24x20 inch, 28x30 inch, 36x24 inch, 36x16 inch.
  - 24 inch, 36 inch, and 48 inch Drill Presses.
  - 36 inch, 3 and 4 ft. Radial Drills.
  - Universal Index and Plain Milling Machine.
  - 26 inch and 18 inch Lodge & Davis Turret Lathes.
  - Fox Lathes.
  - 300, 600 and 3000 lbs. Steam Hammer.
  - Large stock of Steam and Centrifugal Pumps, feed water heaters, tanks.
  - 4-foot Vacuum Fan.
- FRANK TOOMEY,**  
131 NORTH THIRD STREET.  
WARFHOUSES,  
159 AND 161 CANAL STREET,  
976-982 BEACH STREET  
PHILADELPHIA.

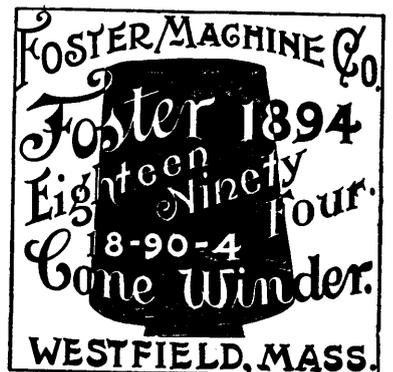
**Mills For Sale.**

**A ONE SET WOOLLEN MILL** in thriving town with population of 3,000—good local business. Established over 25 years. Brick building, water power, etc.

**A CUSTOM WOOLLEN MILL** in town with population of 2,800, in good farming locality. Building of concrete 60x50 feet with Grain Crushing Mill attached.

PRICES AWAY DOWN.—Terms to suit purchaser. Reason of selling, old age. For full particulars address,

**GEO. TANNER,**  
Mount Forest, Ont.

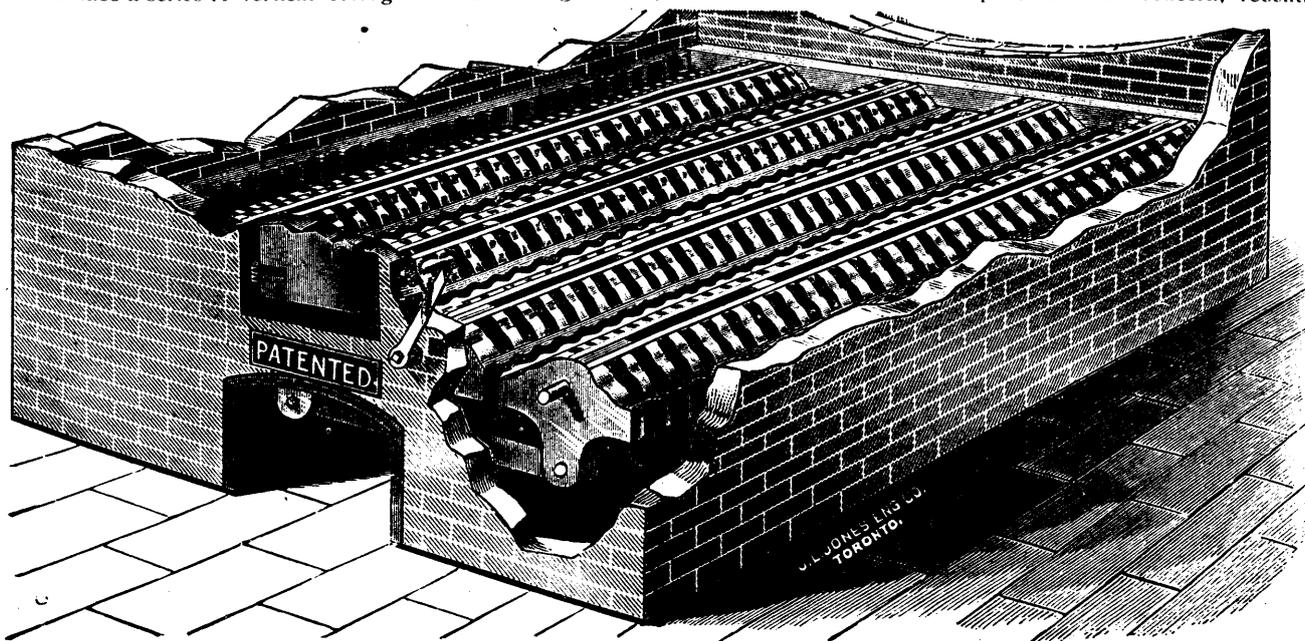


ADVERTISE IN THE  
**Canadian Manufacturer.**

### Heeson Rocking Grate Bar.

The accompanying illustration is of the Heeson patent rocking grate bar, manufactured by the Heeson Rocking Grate Bar Company, Toronto.

In its construction each of the grate bars consists of two central longitudinal webs extending from the front to the rear of the furnace and coupled together at each end and at the middle. Between the central longitudinal webs are the passages for the admission of air from the underside of the bars, centrally through the web to the fire. The bottoms of their passages are larger than the tops for the purpose of giving force to the air admitted through. A series of laterally extending ribs are connected at their inner ends and to each of the central longitudinal webs, and are connected at the outer ends by a longitudinal web. Each of the lateral extending ribs has formed on its upper face two steps, and each of the longitudinal webs has formed on its outer face a series of vertical corrugations. Extending down-



ward, from one end of the bars are legs which are linked together. The spindle of the middle bar is provided with a square shoulder to which is fitted the cranked shaker. The movement of the middle bar causes a similar and spontaneous movement on the part of the remaining bars; and the clinkers and ashes are moved toward the opening formed between the bars during the operation of shaking.

The steps on the lateral ribs prevent the return of the clinkers and ashes to their original position, in the event of clinkers binding between the upper face of the lateral ribs and the corrugated longitudinal web, but are firmly held by the steps and are ground into small pieces between the upper face of the lateral ribs and the corrugated face of the longitudinal web, thus reaching the ash pit without the furnace door being opened. The Heeson Grate Bars are constructed so as to afford the largest area of air space without materially affecting the strength of the bars; and, owing to the easy manner of shaking, the fireman can handle his fires with shut doors and keep them

free and bright all over, every corner and square inch doing good work, insuring perfect combustion of coal and quick generation of steam, saving with absolute certainty both labor and fuel as the following letters testify:—

From Wm. Clendenning and Son, Founders, Montreal:—"It gives us much pleasure to recommend the Heeson Rocking Grate Bars. We had them fitted to one of our boilers last year, and there was such a marked improvement in the work done by the boiler over that done when we used other grates that we had them put in all our furnaces, with a saving of one-third of the fuel used. In all our experience we have not known a grate that comes nearer perfection."

The Consumers Gas Co., Toronto, says:—"Our superintendent informs me that the Heeson Rocking Grate is the best grate we have ever used, and we have used a number of different kinds. It effects a considerable saving of fuel and labor."

W.H. PEARSON, Gen. Mgr.

The Heeson Grate Bar Company is a new concern, recently in-

corporated in Canada, with headquarters at 133 Bay street, Toronto, with Mr. H.R. Franklin at its head as president, and Mr. J.H. Banes as manager. The company have acquired the patent of this invention for both Canada and the United States; and as it is the intention of the company to push their business with the utmost energy, they have already interested steam users all over the country in the device. Their policy is to allow manufacturers of steam boilers to make and use the Heeson grate bars for all new boilers. Heretofore boiler-makers, we are told, have not enjoyed that privilege, or no doubt this style of bars would have been more extensively used. In their list of patrons are the names of many prominent concerns and persons who testify to its merits, including the Toronto Railway Company, Consumers' Gas Company and H. A. Massey, Toronto. Wm. Clendenning and Son, and the Globe Woolen Mills Company, Montreal, and many others. For further information regarding the Heeson Grate Bars apply to the manufacturers as above.

### A Valuable Canadian Industry.

The Toronto Carpet Manufacturing Co., of which Mr. James P. Murray is president, have sent us a beautiful brochure having reference to the different brands and styles of carpet made by them. They call special attention to their "Imperatrix" Axminster, regarding which they say: "There has been a great demand for a serviceable carpet to sell at the price of a low Brussels, and in the Imperatrix is found a genuine chenille Axminster with a French back, in which may be had as many colors and shades as can be found in the most expensive Royal Gobelin Axminster. The nature of its manufacture insures wear. The experience of years has proven that cut pile carpets wear longer than any other class, and in the Imperatrix is found the best value in a cut pile carpet ever offered to the trade." It is made in choice effects and designs for the library, dining-room and bedroom, also for churches, clubs and societies, and special designs are prepared on request. The company were awarded a gold medal for "Imperatrix" Axminster at the World's Fair at Chicago in 1893.

Their Imperial is a warranted all wool, three-ply ingrain carpet, in which only the very best yarn is used. It is described as being a very serviceable cloth weighing 26 ounces to the yard. Regarding this article the company inform us that they are always sold ahead of their capacity to produce it.

"Oriental," a heavy, three-ply ingrain, is a new fabric embodying a fine Brussels effect. It is made of pure wool, face and back, with a heavy stuffer, made by a patented process.

The "Maple Leaf" is a very heavy extra super, warranted all

wool, two-ply ingrain. This is the carpet that brought to the company the confidence of the entire carpet trade of the Dominion. The Maple Leaf was awarded a gold medal at the World's Fair.

Other carpets manufactured by this company are the "Dominion," a light, extra super, warranted all wool, two-ply ingrain; "Beaver," a heavy, fine wool, warranted all wool, two-ply ingrain; "Standard," a heavy, extra super union, two-ply ingrain, warranted pure wool and cotton; "Victor," a heavy, extra super, two-ply ingrain, a very strong, serviceable carpet at a very low price, and the "Challenge," containing the same stock as in the "Victor," but of less weight.

The company also enumerate "Kensington" art squares made in the "Maple Leaf" and the "Standard" styles, the qualities of stock being the same as in the carpets, made in all the usual sizes.

Mr. Murray informs us that a couple of years ago his company found some difficulty in inducing the trade in Canada to handle the "Imperatrix" Axminster, a doubt being felt that such an article, made in Canada, could not be equal to the products of English and American looms. But this objection has been overcome by the knowledge that the product of the Toronto Carpet Manufacturing Company is the equal in every respect of the best made any where else, and they are now operating their looms to their fullest capacity. In fact there is strong emulation among the largest carpet dealers throughout Canada to obtain exclusive control in their respective localities of the "Imperatrix." The Hudson Bay Company now control the Winnipeg market, and will make an attractive exhibit of the Toronto Carpet Manufacturing Company's goods at the forthcoming Winnipeg Fair.

When the company began the manufacture of carpets but a few

years ago it was in a very much smaller mill than that they now occupy. The excellence of their product and the high reliability of the concern soon created for them a most enviable reputation, with the result that they removed their machinery to the place they now occupy. But they had not been there long before they about doubled their floor space and machinery, and now they find that their present premises are entirely too small for them, and they will either make a still further enlargement or seek other quarters.

**Union Black S. Patented.**

Messrs. W.J. Matheson & Co., New York, have favored us with a circular regarding this dye which reads as follows:—

Although our Union Black, pat., which has been on the market for some time, has in many cases been successfully adopted for the dyeing of unions of cotton and wool both for blacks and for compound shades such as all kinds of greys, browns, etc., in combination with our other dyestuffs suitable for this purpose, we have nevertheless repeatedly been asked for a similar, but cheaper, product dyeing very deep shades and especially blacks. Such a product we are now enabled to put before you in our Union Black S. patented, which will meet these requirements to the fullest extent.

Union Black S dyes both wool and cotton quite evenly in a single bath containing

3¼ ozs. Glauber's Salt or  
3¼ ozs. Glauber's Salt and ¼ d. oz. borax } per gallon of water.

With only 3 to 4% of dyestuff a full black of a beautiful cast is obtained, which is fastness to light, air, washing, acids and perspiration will be found sufficient for all ordinary requirements. Practical trials on various kinds of union cloth have proved the great usefulness of this new color and established the fact that without difficulty in all cases a full deep black is obtained by dyeing in concentrated baths, containing about 20 to 25 times as much water as the weight of the goods.

Union Black S is also well adapted for dyeing cotton and silk mixed goods and on this material works similar to our Diamine Jet Black SS. For this purpose we recommend to dye with 5% soap and 10 to 15% Glauber's Salt; thus a jet black is produced on the cotton, while the silk is dyed somewhat lighter and may afterwards be shaded at will to a black in an acid bath.

For cotton and silk mixed goods, which are to be dyed a direct black in one bath, it is only necessary to add to the Union Black S a little Oxy-Diamine Black N which dyes the silk somewhat deeper than the cotton; thus a uniformly deep black is produced on both materials.

**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.*

The Smith Wool Stock Co.'s buildings, Toronto, were damaged by fire July 10, to the extent of about \$2,000.

The Dumfries Cannery, Steveston, B. C. and the Phoenix cannery adjoining, were destroyed by fire July 3; loss about \$45,000.

J. A. Gurd, London, Ont., is adding more special machinery to his broom factory. The Diamond Machine and Tool Co., Wellington St. West, Toronto, are building the machines.

The Light, Heat and Power Co., Lindsay, Ont., has been incorporated with a capital stock of \$70,000 to supply electricity for light, heat and power, and to construct works for the production of electricity.

A cut of 76,000 shingles in 10½ hours (including stoppages) was recently made in Mr. Geo. Kielty's mill, Muskoka Falls. This astonishing cut was made on a Gravenhurst Boss machine with a saw made by Burns of Toronto.

The Bay of Quinte Hedge Co., Belleville, Ont., are applying for incorporation with a capital stock of \$35,000 to construct hedge and wire fences combined, and to manufacture implements or wire used in the construction thereof, etc.

The Walker Foundry Co., Belleville, Ont., are applying for incorporation with a capital stock of \$20,000, to acquire the business heretofore carried on by the Walker Co., Belleville, and to manufacture agricultural implements, etc.

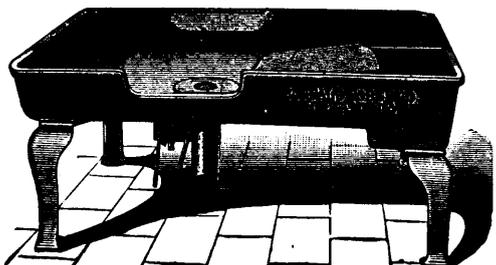
The Canadian Electric Forging and Smelting Co. of Toronto, are applying for incorporation; and it is their expectation to very soon have their works in operation in this city. They control the patents granted to George D. Burton, which includes a process for working metals by means of a watery liquid and an electric current which decomposes the liquid and forms a gas envelope and an electric arc between the liquid and the metal to be worked. A full description of this process, and the character of the work to be accomplished by it, will appear in a future issue of this journal.



**Buffalo Planing Mill Exhaust Fans**

EFFICIENCY  
UNEQUALLED  
DURABILITY  
UNSURPASSED  
SMOOTH  
RUNNING  
INCOM-  
PARABLE.

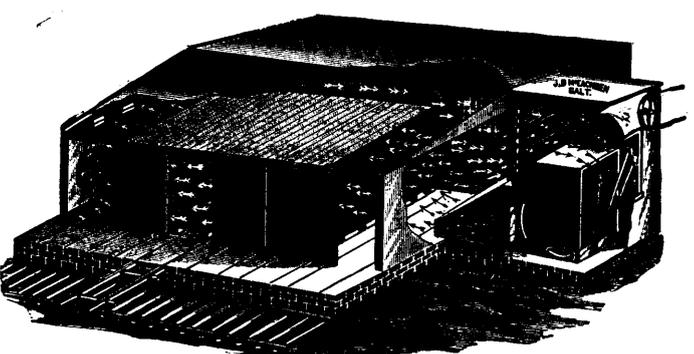
THE LARGEST  
**FORGE**  
in the World



Thirty-Eight Other  
Designs of  
Portable and Stationary Types.  
**BUFFALO LUMBER DRY KILNS**  
Blowers, Blacksmiths' Tools, etc.

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 Drying, Heating and Ventilating**  
Under Recent Patents.



CHEAP AND EFFECTIVE.  
Highly approved of by practical men.  
The following is a specimen of letters received from customers:

Ottawa, April 1, 1895.  
J. D. McEachren, Esq., Galt, Ont.  
Dear Sir,—Replying to your enquiry regarding Dry-Kiln purchased from you last summer, we beg to state that our lumber is stained hard wood, principally birch, which is put through a chemical process thereby rendering seasoning a very difficult operation. We tried to have it dried in the several styles of kilns used by factories in this district, all of which failed to take the moisture out of the core of the wood. In August last we put in one of your kilns with a capacity of 10 cars, or 30,000 feet and since that time have seasoned most satisfactorily about 200,000 feet. The boards come out free from checks and warps and we are now thoroughly convinced that it is the only dry-kiln in the market which fills the bill both as to efficiency and economy.  
Yours truly,

McRAE BROS. & Co.  
For particulars address  
**MCEACHREN HEATING AND VENTILATING CO.,**  
GALT, - - - - - ONTARIO.

Charles A. Price, Aylmer, Ont., will erect a planing mill.  
Mr. Shaw, Bracebridge, Ont., is adding new machinery to his tannery.

J. C. Anderson intends building a saw mill at San Juan, Vancouver Island, B.C.

An electric motor has been introduced into Dayfoot's shoe factory, Georgetown, Ont., and is doing satisfactory work.

The Windsor, Ont., Council will advertise for tenders for a new boiler and other increased facilities in the city lighting plant to the extent of \$6,000.

The Crescent Watch Case Co., Montreal, are applying for incorporation with a capital stock of \$25,000 to manufacture watches, watch cases, jewelry, etc.

The Winnipeg, Man., Street Railway Co. will build a brick addition to their power house, roofed with iron, and a brick chimney, 150 feet high, at a cost of \$60,000.

The Robb Engineering Co., Amherst, N.S., have recently built a rotary screen, conveyor and elevator for the Cumberland Railway & Coal Co., Springhill Mines, N.S.

The flour mill at Moosomin, Assa., formerly operated by Smith & Brigham, has been sold to a firm at Elkhorn, Man., and will be taken down and moved to that place. It is quite probable that a larger mill will be built at Moosomin to take the place of the old one.

The Breithaupt Leather Co. are adding a new tan yard, and also a fine new beam house, with all improved machinery, to their Eagle Tannery in Berlin, Ont. The Listowel, Ont., and Penetang, Ont., tanneries of this company, are also being subjected to extensive alterations in the way of improvement and enlargement, and when completed will be up-to-date in every detail.

The Farbenfabriken, vorm Frieder, Bayer & Co. have commenced the publication of a guide to the use of their dyestuffs in handy form. Part I, relating to the employment of their specialties in wool and cotton dyeing has already been issued, and is a well got up and thoroughly indexed book; in fact, it is a very perfect dictionary of their coal tar colors. The first or general part of this presents to the dyer in an abbreviated form, those methods of work on which particular stress is to be laid. Then follows a special part giving the process of applying particular colors recommended by the firm as being the best to use. The book contains a vast amount of general information which will be found extremely useful by the dyer. The Dominion Dyewood and Chemical Co., Toronto, are sole agents for Canada.

Messrs. Witteman & Hoffman, contemplate erecting a brewery near Prince Albert, Sas.

The Kamloops, B. C., Mining and development Co. has been incorporated with a capital stock of \$30,000.

Messrs. T. & J. Taylor's sawmill, Pleasant Grove, Ont., was destroyed by fire June 30. The firm will rebuild immediately.

The O. K. Gold Mining Co., capital stock \$1,000,000, has been incorporated at Spokane to operate in the United States and British Columbia.

The Steel Clad Bath Company, Toronto, will erect a three-storey brick addition to their factory at 125 Queen street east, which will cost \$4,700.

It is rumored that the Macdonald Tobacco Co., Montreal, have purchased the cotton mill building at Dundas, Ont. and propose to establish a branch tobacco factory there.

The Toronto Dredging & Contracting Co., Toronto, has been incorporated with a capital stock of \$50,000 to manufacture machinery and rolling stock used by contractors, etc.

The Niagara Falls Electric Street Railway Co., has been incorporated with a capital stock of \$125,000, to construct an electric street railway within the limits of the town of Niagara Falls and Stamford, Ont., and to erect works for the production of electricity for heat, power, etc.

The Elkhorn Milling Co., Elkhorn, Man., has been incorporated with a capital stock of \$10,000 and are erecting a flour mill which is 30x40 covered outside with metallic steel siding and shingles. The engine house 26x30 is built of solid stone and the roof covered with metal. The company have purchased the mill building and machinery of the Assiniboia Flour mills at Moosomin, including the electric light plant and steam heating apparatus. The capacity of the mill will be 75 barrels per day.

The new steam launch Hiawatha, which was launched July 9 in the Bertram Engine Works yard, was built by the Bertram Engine Works Co., Toronto, for the Royal Canadian Yacht Club. Her length is 65 feet over all, beam 13 feet, draught four feet, compound engines, seven and fourteen by nine inches, with Fitzgibbons boiler. She has a government working allowance of 150 lbs. steam pressure, and will easily speed ten miles an hour. The hull is steel throughout, and she is flush decked, with a wooden awning roof aft, cabin amidships, and pilot house forward, all joined as one. This arrangement is considered very neat and advantageous. The woodwork is polished hardwood throughout, and when finished the Hiawatha will be one of the prettiest crafts on the lakes.

# THE ROYAL ELECTRIC COMPANY,

MONTREAL, QUE.

WESTERN OFFICE, TORONTO, ONT.

Are now prepared to receive orders for the justly celebrated

## STANLEY TRANSFORMERS,

A MONEY MAKER FOR THE CENTRAL STATION.

None equal them. They increase station capacity. They diminish operating expenses.

**ECONOMY. EFFICIENCY. REGULATION.**

Also a full line of Electrical Apparatus.

**ARC DYNAMOS,**

**RAILWAY GENERATORS,**

**ARC LAMPS,**

**RAILWAY MOTORS.**

**"S. K. C." Two Phase Alternating Generators and Motors.**

Direct Current Generators and Motors. Switchboards, Instruments, Wire, Electrical Supplies.

Correspondence solicited for **Electric Lighting, Railway, Manufacturing and Mining Work. Isolated Plants. Central Stations. Long Distance Transmission For Light and Power.**

**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 Warpe

**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

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 &amp; DALLYN

AGENTS

HAMILTON, ONT.

**THE PAUL FRIND****Woolen Machinery Company, Ltd.**

. . . . . TORONTO . . . . .

Dealers in and Manufacturers of

WOOLEN MACHINERY. MILL SUPPLIES.

Specialties:

English H &amp; T Steel Card Clothing.

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

DODGE WOOD SPLIT PULLEYS

Best Oak Tanned Belting and Lace Leather

**Cook's Albany Grease**

5, 10, 25 lb. Cans.

FRANKLIN CYLINDER,  
ENGINE and DYNAMO **OILS**

Rainbow Sheet and Gasket ;

Ring Spiral and Square Flax Packing.

**WILLIAM C. WILSON,** 24 Front St. East,  
TORONTO.

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,  
33 Melinda Street.**I. Butler & Co.** Distillers of  
Benzole, Naptha,

and Manufacturers of Carbolic Acid and Varnish.

303 Front St. East, - - - TORONTO.

**AUBURN WOOLEN CO. . . . .**

PETERBOROUGH, ONT.

MANUFACTURERS OF

**FANCY TWEEDS, ETC.**

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

**Penman Manufacturing Co., Ltd.**

. . . . . PARIS, ONT. . . . .

Manufacturers of...

**Hosiery, Shirts, Drawers  
Glove Linings and Yarns**

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

**ROSAMOND WOOLEN CO.**

. . . ALMONTE, ONT. . . .

Fine Tweeds, Cassimères and Fancy Worsted Suitings  
and Trouserings.**FERGUSON & PATTINSON**

PRESTON : : : ONT.

Manufacturers of....

**Fine and Medium TWEEDS.****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 &amp; Co., TORONTO

Mr. Koller is erecting a brewery at Brandon, Man.  
 McArthur & Sons' saw mill at Monklands, Ont., was destroyed by fire a few days ago.  
 Messrs. Laidlaw & Co.'s cannery, New Westminster, B. C., was destroyed by fire July 3; loss about \$40,000.  
 The Ironside elevator at Manitou, Man., is to be strengthened by the construction of a stone foundation and a new cleaner will be introduced.  
 The Don Valley Pressed Brick Works, Toronto have been awarded the contract for supplying bricks and terra cotta for the new Presbyterian Church, Battle Creek, Mich.  
 The rolling mill business of J. Harris & Co., and the tack and nail works of S. R. Foster & Sons, at St. John, N. B., have been amalgamated, and hereafter will be operated under the name of The Portland Rolling Mills Co. J. C. Robertson is president, S. Hayward, vice-president, and James Mowat, treasurer.  
 Mr. Alex Cunningham of Messrs. Merry & Cunningham, iron manufacturers in Scotland, was in Montreal looking after machinery for making coke in connection with the coal mines at Comox, Vancouver Island, B.C. They expect to spend \$150,000 and be ready for operations by the end of the year. San Francisco alone takes 40,000 tons of coke yearly, and, together with the numerous smelters now being established in the west, a heavy demand will spring up. Mr. Cunningham will also go to Ottawa.

The Stafford Furniture factory, Arnprior, Ont., was destroyed by fire July 3; loss about \$8,000.  
 The Thackeray Incineration Co., Montreal, has been incorporated with a capital stock of \$500,000 to build incinerators, etc.  
 The R. A. MacCreedy Co., Toronto, are applying for incorporation with a capital stock of \$25,000 to manufacture bicycles, supplies, etc.  
 The Midgley Vapor Burner Co., Paris, Ont., are applying for incorporation with a capital stock of \$20,000 to acquire Wm. G. Midgley's patent of an improvement in vapor burners, and to manufacture vapor burners, etc.  
 The Brunette Mill Co.'s sawmill, New Westminster, B. C., together with the drying kiln, box shed, and blacksmith shop, were destroyed by fire July 3. The sash and door factory adjoining, owned also by this company was damaged; loss about \$120,000.

Mr. Robert Graham, Ottawa, iron founder and machinist, and manufacturer of the Standard water wheel, has sent us a copy of the following circular that he has issued to the trade that explains itself:—I beg to inform you that the partnership heretofore existing between Mr. Geo. Roe and myself as "Roe & Graham," has been dissolved—Mr. Roe retiring. The business will be continued, however, by me the same as before. I respectfully solicit your esteemed orders, and by strict attention, the best of material and first class workmanship, trust to give entire satisfaction.

**THE JOHN ABELL**  
**Engine and Machine Works Co., Ltd.,**  
**TORONTO, ONTARIO.**

We Manufacture the  
**IMPROVED EASTON SYSTEM OF**  
**ELECTRICAL MACHINERY and the**  
**GRAND ABELL AUTOMATIC ENGINES.**  
 World's Fair Medal for this Engine.  
**ROLLER MILLS, BOILERS, SAW MILLS.**

**THE JOHN ABELL ENGINE AND MACHINE WORKS CO., LTD.,**  
 TORONTO, - - - CANADA.

**AUSTRALIA**  
**Boswell, Cross & Co.**

Canadian Manufacturers' Agents,  
**WYNARD SQUARE, SYDNEY,**  
**NEW SOUTH WALES.**

All communications promptly attended to.

References } **Menzle, Turner & Company, Toronto.**  
 } **Dom. Suspender Co., Niagara Falls, Ont.**

**CANADIAN RUBBER CO., OF MONTREAL.**

A. ALLAN, President.  
 CAPITAL \$2,000,000.

F. SCHOLLES, Managing Director.

J. O. GRAVEL, Secretary-Treasurer.

J. J. MCGILL, General Manager.

Manufacturers of Superior  
 Quality  
**RUBBER BELTING**  
 Of following grades.

"Extra Star," "Fine Para"  
 "Extra Heavy Star"  
 "Forsyth Patent" Seamless  
 "C.R. Co. Stitched"

All kinds of  
**RUBBER HOSE**  
 Made with our Patent Process Seamless Tube, including

Engine Hose, Hydrant Hose,  
 Conducting Hose, Steam Hose,  
 Suction Hose Galvanized Wire,  
 Suction Hose Galvanized Smooth Bore,  
 Suction Hose Hard Rubber,  
 Rubber Valves, Gaskets, Packings, etc.

WESTERN BRANCH:  
**Cor. Front and Yonge Sts., TORONTO.**

== J. H. WALKER, Manager.

**DO YOU WANT A Canoe or Row-Boat?**



WE HAVE THEM in all sizes, and at prices which should induce YOU TO BUY.  
**The "Canadian" Canoe Co., Ltd.**  
**BOX 107, : PETERBORO, ONT.**  
 Send stamp for catalogue and mention this paper.

**FIRSTBROOK BROS.**  
**Mnfrs of Dovetail**  
**and Packing Boxes**  
 Top-Pins, Side Blocks and Cross Arms. Wood  
 Printers, Etc.  
 CIGAR BOXES, SHIPPING CASES.  
**TORONTO : : ONT.**  
 ADVERTISE IN  
**The Canadian Manufacturer.**

Wm. Smyth will erect a sawmill and shingle factory at Bensfort, Ont.

Thos. McClay's planing mill at Woodstock, Ont., has been destroyed by fire.

The Globe cigar factory, at Levis, Que., has been burned; loss about \$5,000.

The Toronto Lock Co., Toronto, have increased their capital stock from \$3,000 to \$25,000.

The O'Keefe Brewery Co., Toronto, have increased their capital stock from \$550,000 to \$600,000.

Robert Simpson's portable sawmill, Waterdown, Ont., was destroyed by fire July 11; loss about \$1,000.

The British Columbia Iron Works, Vancouver, B.C., propose erecting a foundry and machine shop at Nelson, B.C.

The Alpha people, New Denver, B.C., will build a concentrator at Four Mile this summer. The British Columbia Iron Works at Victoria have the contract.

The Britannia Mining Co., Windsor, N.S., are applying for incorporation with a capital stock of \$150,000 to mine, smelt and manufacture gold, silver, lead, iron, etc.

The Dominion Cold Storage Co., Montreal, are applying for incorporation with a capital stock of \$300,000 to carry on the business of preserving by means of cold storage, etc.

The Bradley-Garretson Co., Brantford, Ont., has been incorporated with a capital stock of \$75,000 to carry on the business heretofore carried on by Bradley, Garretson & Co., and to manufacture stationery supplies, etc.

The contract for the construction of the extension to the St. Croix, Que., cotton dye house has been given to Jas. McKenzie. The contract price is nearly \$7,000. The brick will be supplied by Hartford Bros. The dimensions will be 60x62, two stories high. The old building will also be altered and about \$10,000 will be expended for new machinery.

Down at the Albion Iron Works, says the Victoria, B.C., Times, they are completing two big marine boilers for the collier Wellington. The force in the boiler shop has been at work on them for three months past, and it will be two weeks before they are taken to the ship at Spratt's wharf. They are 13 feet 9 inches in diameter and 10 feet 6 inches in length, making the second largest contract of the kind ever turned out here. The building of the boilers of the Costa Rica was a successful experiment, for it earned the present big contract for the Albion Iron Works and will win more. The big Corliss valve winding engines, built by the Albion Iron Works will, with four boilers, be shipped to Union at once.

Cleophas Rochette's tannery, Quebec, Que., has been damaged by fire.

B. A Booth's woolen mill, Odessa, Ont., was badly damaged by fire July 5.

Hulbert's shingle mill, Sprucedale, Ont., recently destroyed by fire, is to be re-built.

The Slocan Store Company has opened a branch at Sandon, B.C., with L. Dansereau as manager.

The Wallaceburg Flax Co., Wallaceburg, Ont., has been incorporated with a capital stock of \$10,000 to produce articles manufactured from flax seed, etc.

The Guelph-Norway Iron and Steel Co., Guelph, Ont., has been incorporated with a capital stock of \$80,000 to manufacture by rolling, etc., iron and steel, etc.

The Canadian General Electric Co., Toronto, will add another large building to their works at Peterboro', Ont., for the purpose of manufacturing street cars. It will measure 60x300; work on it to commence at once.

The Shipe Wood Rim Company are starting a factory in Toronto, at 66 Esplanade St. W., for making wood rims for bicycles, the machinery for which is all special, and is being made by the Diamond Machine and Tool Co., Toronto.

The Ontario Chemists' Mfg. Co. have located their headquarters at Hamilton, Ont. The members of the company, who reside in other cities, were anxious to secure the head office and manufacturing department for their localities; but the board of directors showed good judgment in locating in Hamilton, as no better point in the province could have been selected. Besides its premises there, it has depots for its goods in Toronto, London and Vancouver, B.C.—Spec tator.

The bicycle factory to be built by the Massey-Harris Co., Toronto, will have a frontage of 108 feet on King street west, running back in the form of an L 186 feet, being the equivalent of a building 234 feet long by 60 feet wide, and five stories high. In addition to this there will be a wing for the manipulation of steel parts. To accommodate these buildings an additional frontage of 300 feet on King street running back over 200 feet to the railway tracks had to be purchased. This gives the company a total frontage of over 1,000 feet on King street. The factory will be fitted with the latest and best machinery and appliances for turning out strictly high-class wheels, it being the intention of Massey-Harris Co. to make no other. The capacity of the plant will be 5,000 to 10,000 per annum. The company have been awarded large space at the Toronto Industria Exhibition where samples of their bicycles will be shown.

# VALVES and - Pipe :: Fittings

Write for Latest Prices.

## RICE LEWIS AND SON (LIMITED)

Cor. King and Victoria Sts. - TORONTO.

## Armington & Sims

AUTOMATIC HIGH SPEED ENGINES

—FOR—  
ELECTRIC LIGHTING

—AND—

GENERAL FACTORY  
PURPOSES

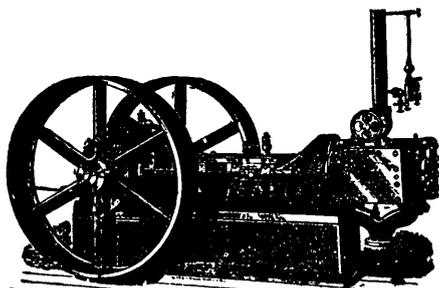
Perfect Regulation and  
Highest Economy.

Steam Pumps  
SHAFTING, PULLEYS

—AND—

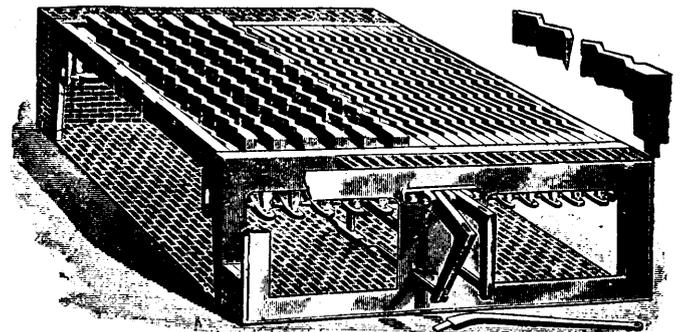
General Machinery

Nie & Whitfield - HAMILTON, ONT.



## THE VOLCANIC PATENT SHAKING GRATE

MANUFACTURED BY The Gurney Foundry Co., Ltd., TORONTO



Toronto, June 17th, '95.

The Gurney Foundry Co., Toronto, Ont.:  
Gentlemen,—With reference to the Volcanic Patent Shaking Grates, I am glad to say that I am well satisfied with the working of these Grates and am convinced that there is a very considerable saving of fuel by their use.

I have observed that the grates make a very clean, thin fire, and that the coal is almost completely consumed, leaving very little to fall in the ashpit. I have in use a second boiler with ordinary fixed grates, and can readily compare results. After a day's run there will be about 6 or 7 barrow loads of ashes and clinkers to be taken from under the ordinary bars, and under the Volcanic we only take out two barrow loads. There is a saving of 15 to 20 per cent. in fuel. Your grates consume a very large portion of the smoke. When putting on a fresh fire over the Volcanic grates there is only half as much smoke produced as compared with the other boiler having the ordinary grates.

Since putting in the "Volcanic" we have no clinkers at all, and use common, uncleaned, slack coal. We only clean out the fire once a week. When shutting down at night, the dampers are closed to shut off the fire, and the next morning a few shavings thrown on top with a little fresh coal is all that is needed to start the fire. This alone adds materially to economy in coal consumption. My first impression, that it was a first class device, and the best I had ever seen, has been fully confirmed by the work the bars have done. I have no hesitation in recommending them as the best grate bars I have seen or used since I first entered the engine business eight years ago.

(Sgd.) FRED W. BARRETT,

Late of the Polson Iron Works Co.

THE GURNEY FOUNDRY CO., Ltd., TORONTO.

VOLCANIC SHAKING GRATE.

The accompanying illustrations are of the Volcanic patent shaking grate, manufactured by the Gurney Foundry Company, (Ltd.), Toronto.

6. The corrugated bars secure fifteen per cent. more air space than stationary bars, and also braces the bar so that it will not warp.

7. The grate stands in its own frame and does not depend upon the boiler walls or furnace for its support.

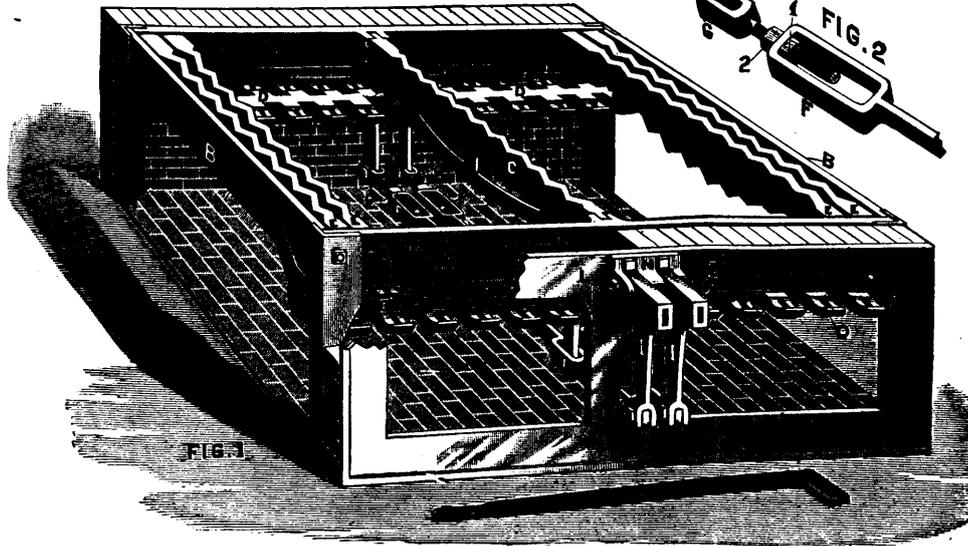
8. In use on locomotives, grates are so constructed that the motion of the locomotive, when running, secures a perfectly clean fire.

9. Any quality of coal can be burned, including hard or soft coal slack.

10. To put in a set of grates, it is not necessary to tear down any of the boiler wall.

By reference to the sectional view of the grate, here shown, it will be seen that in setting it up the following directions should be observed:—

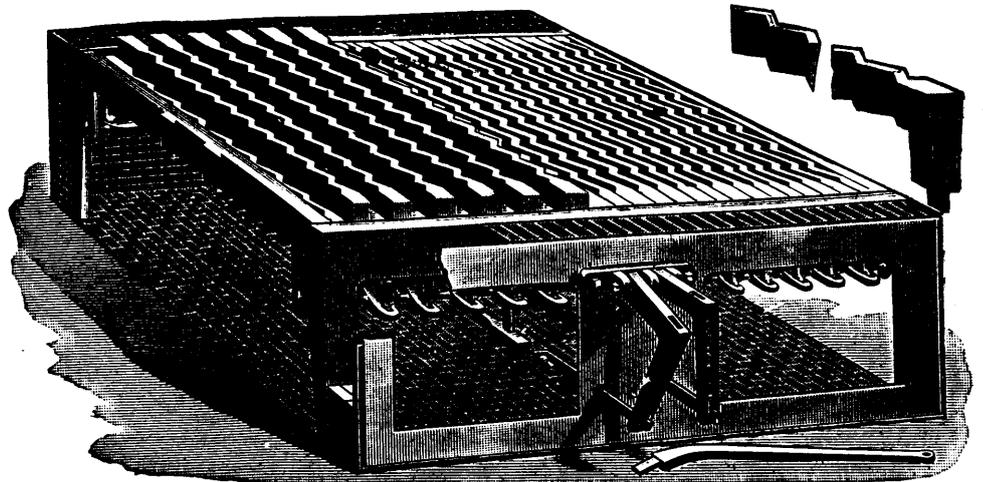
A A are the two end frames. B B are the two side frames that bolt on to the end frames after the side frames are in place. C and D castings are next put in place. Next put in place two bars on each side marked E E. Level the bars E E at both ends. F F bolts on the front rocker. G G, the double nut connection is next made. When the outside bars are perfectly level the double nut connection G G must be made tight. Next place bracket "H" on boiler front. Then castings I I are connected to bracket "H" with lock pin J. Then attach connecting rods K to castings I I. Place balance of bars in position and key them on. The grate is now ready for use.



It is described as embodying perfect construction, very durable and exceedingly economical, so much so that it will outlast from three to six sets of ordinary grates, and save from ten to twenty per cent. of fuel. Screenings or the poorest coal may be used to advantage, and no clinker can be formed. To keep the fire under the boiler clean and in good condition it is not necessary to open the fire doors, therefore the bottom of the boiler does not become chilled by a cold draft striking it, causing loss of steam and damage to the boiler. Each bar is independent of every other bar. It has an up and down movement, so when operated by means of the lever, clinkers are broken and fall into the ash pit.

Some of the points of merit in the Volcanic grate are:—

1. They are very simple in construction, there being no fingers, clips or complicated parts to get out of order.
2. It presents a perfectly level surface when at rest.
3. It has a perpendicular motion.
4. The bars are corrugated and taper from above downward.
5. By the combination of the perpendicular motion, together with the corrugated tapering bar, the toughest clinkers are broken and with the ashes drop easily into the ash pit.



For further information and testimonials, apply to the Gurney Foundry Company, (Ltd.), Toronto.

Are You Looking FOR ANY KIND OF MACHINERY?

We call attention specially to the following:

- UPRIGHT ENGINE 6 H.P. and BOILER 8 H.P.
- 1 HORIZONTAL ENGINE 8 1/2' x 16".
- 1 HORIZONTAL BOILER 10' x 42".
- 1 NORTHEY STEAM PUMP 5" x 3" x 5".
- 1 NATIONAL HEATER No. 4.
- 1 ROPE DRIVE. Transmits 20 H.P.
- IRON AND WOOD PULLEYS, New and Old.
- SHAFTING, HANGERS and BELTING, All Sizes.

Full assortment of Iron and Wood Working Machinery always on hand.

WRITE **W. R. SCOTT,** 489 CHURCH ST. TORONTO.

A GOOD INVESTMENT REQUIRING BUT LITTLE CAPITAL.

The Inventor of a very ingenious and novel **HASP LOCK** offers the Canadian Patent for sale at a reasonable price.

It has proven itself to be a great seller in the United States.

Hardware dealers generally handle this lock and railway and car companies are adopting it.

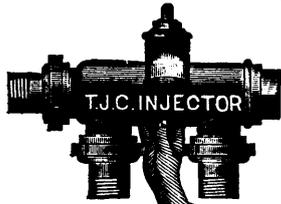
The cost of machinery and tools to manufacture it is light while the profits are large.

Full information as to the machinery and tool furnished if desired.

The closest investigation as to its merits invited.

Address **Wm. E. Deibert,** Shamokin, Pa., U. S. A.

Above  
all  
Competitors



Coal is money, why not save it by using the

**T. J. C. INJECTOR**

the most economical boiler feeder in the world.

20 per cent.

saved in coal over any other make. Absolutely automatic. Easily attached. Applicable to all kinds of boilers.

NOT EXPENSIVE.

Will outwear any other make and is simple in construction. It is easy to operate, and is the most powerful feeder in the world.

**The T. J. C. Injector**

is the best because you cannot possibly go wrong with it. With high or low steam the result is equally satisfactory.

It combines the utmost simplicity with perfect efficiency, and any boy can operate it.

**PRICE LIST.**

No.	PRICE.	HORSE POWER.
7	\$ 7 00	4 to 8
10	7 00	8 to 16
15	10 50	16 to 40
20	15 00	40 to 72
25	22 50	72 to 120
35	30 00	120 to 220
45	45 00	220 to 300

**Hamilton Brass Mfg. Co.,**  
LIMITED,  
HAMILTON, ONTARIO.

**THE PULSOMETER**  
STEAM PUMP

Often Imitated, but Never Equalled

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

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.



**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.

UNDERWRITER.

Sole Agents for Clark's Linen Fire Hose and Adjustable Couplings. Old Medal, Paris Exposition, 1889. Ten Highest awards, Columbian Expos., 1893

Branch Offices at New York, Chicago and London, Eng.

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

T. C. STEWART, Electrical Expert.

G. M. ARNOLD, M. E.

F. J. CROSS, E. E.

**STEWART, ARNOLD & CO.,**

CONSULTING ELECTRICAL ENGINEERS

... AND ...  
MANUFACTURERS OF **ELECTRICAL APARATUS**

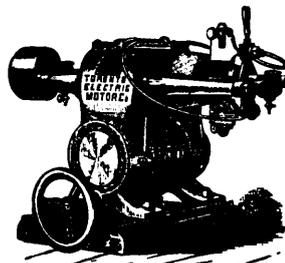
And Dealers in all kinds of Electrical Supplies.

We make a speciality of  
**ARMATURE AND ARC LAMPS.**

All Work Guaranteed.  
Repairs Promptly Executed.

164 KING STREET WEST.

**Toronto Electric Motor Co.**



We Manufacture  
**INCANDESCENT DYNAMOS**  
**ARC DYNAMOS,**  
**AND MOTORS,**  
**ANY VOLTAGE.**

Our record is not equalled by any manufacturer.  
Our Success our Proof.

107 and 109 Adelaide Street West,  
TORONTO, ONT.

**Trolley Versus Steam Roads.**

We made mention some time ago of the fact that the steam roads in Connecticut were waking up to the extent of the travel they are losing through the extensions of the electric roads, and were endeavoring to retain their grasp on this local traffic by an appeal to the legislature. Such a course would appear ridiculous anywhere but in Connecticut, but as it is annually charged that the Consolidated road has for many years owned the legislature and the best portion of the State, such action on their part was not to be wondered at. They claim they are giving the public all the traveling facilities that are necessary, and on the ground of prior construction should be allowed all the benefits accruing therefrom. Their claim that their service is unsatisfactory is most thoroughly refuted in the falling off of travel immediately upon the inauguration of other means of communication between the flourishing towns within easy reach of each other, and the magnitude of this change of patronage may be gathered from the following figures, which are taken from the report of President J. M. Hall, of the Consolidated, at a recent hearing before the Railroad Committee of the legislature. Mr. Hall reports the falling off of 50 per cent. of the regular traffic between Norwalk and Rowayton, a loss of 80 per cent. between Bridgeport and Southport, 50 per cent. between New Haven and Woodmont, and between New Haven and West Haven a loss of 70 per cent.; between Wallingford and Meriden there is a difference of 30 per cent.; New Haven and Yalesville comes next with a loss of 45 per cent.; between Meriden and Yalesville there is a falling of 90 per cent.; between Waterbury and Naugatuck 05 per cent., and between Southington and Plantsville the electric roads have gathered in all the traffic, as the New Haven road reports

a loss of 100 per cent. This statement, if it shows the situation as it really is, should prove the strongest possible argument in refutation of

the claim that the steam roads are furnishing, as they say they are all the facilities required. The public are not slow to take advantage of improved methods of rapid transit, and these figures prove conclusively that the electric roads are an improvement. While the action of the railroad officials may be perfectly understood in the light of these developments, and while they are undoubtedly justified in doing all they can to retrieve such losses as are here indicated, it would seem that not even the Connecticut Legislature would voluntarily be guilty of throwing obstructions in the way of rapid transit facilities which are so evidently appreciated by the traveling public. The fact that between the towns of Naugatuck and Waterbury the sale of tickets has fallen off at the rate of 7,000 per month ought to demonstrate to their satisfaction that the service of the steam roads was not what it is claimed to be. There is considerable satisfaction to be obtained, on the other hand, by the managers of inter-urban electric roads from the careful perusal of these figures, as it shows conclusively the business that can be built up between New England towns by a satisfactory electric service.

**Making Birch Oil.**

The farmers of Connecticut have found a profitable side issue to their farming in gathering birch saplings and branches for the birch-oil distilleries that have been established in that State. There are altogether about to brick mills or distilleries in this country, several of which are located in Connecticut, and they have created such a demand for the black or sugar birch that all farmers owning woodlands producing these trees cultivate them for the annual harvest of branches and saplings. Black birch flourishes in many parts of the country, and if properly attended to annual crops of the twigs and young branches can be gathered without injuring the trees. With the farmers of Connecticut it has become a science and a study to gather the crop without injuring the wood permanently.

The branches have to be gathered when bare of foliage, and they must not measure more than two inches in diameter at the utmost to be saleable at the mills. As the young saplings grow rapidly, the farmers can produce crops very easily by protecting the small growths. The manufacturers of birch oil make a big profit, the oil

**A. C. NEFF,** CHARTERED ACCOUNTANT  
 Canada Life Bldgs., Toronto.  
 A specialty of Audits and investigations or work requiring expert knowledge of Accounts of Manufacturers, Companies, Estates, Municipalities, etc.

**GEORGE WHITE FRASER,**  
 C. E., D. T. S., A. Am. Inst. Elec. Eng.  
**Consulting Electrical Engineer.**  
 Electric Railways and Electric Light Construction Superintended.  
 18 Imperial Loan Building, Toronto.

**SPECIAL SALE OF MACHINERY.**

We have no opposition in prices on the following:—1 4 h.p. Doty Engine and Boiler with all connections; 1 18 h.p. Plain Horizontal Engine and 30 h.p. Boiler with all connections; 1 12 h.p. Engine and Boiler on wheels.

The above have been thoroughly overhauled and are in fine condition. We also have a large stock of wood and iron working machines, new and second-hand; also a large quantity of 1" Steam Pipe and Shafting. Bargains in all.

**THE TORONTO MACHINERY SUPPLY CO.** 164 KING STREET WEST, TORONTO.  
 A. J. LINDSAY, Manager.

**The Canadian Rand Drill Company, SHERBROOKE, QUEBEC CANADA**

Straight-Line and Duplex Air Compressors.



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

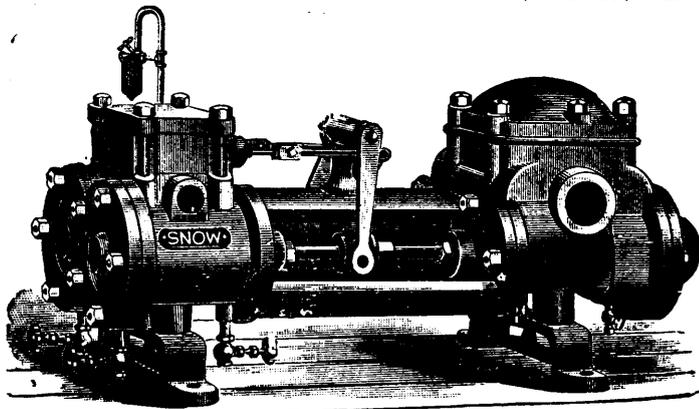
Duplex 12" x 18" Compound Condensing Steam Air Compressor, WITH HALSEY'S PATENT POSITIVE MOTION AIR VALVES.

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.—18 Victoria Sq., MONTREAL, 129 Hollis St., HALIFAX, N. S., 632 Cordovia St., VANCOUVER, B. C.

# CANADA MACHINERY AGENCY,

321 ST. JAMES STREET, MONTREAL.



**"SNOW"  
DUPLEX  
STEAM  
PUMPS**

for every service.

Iron Tools, Wood Working Machinery, Steam Engines, Boilers of every type, Saw Mill Machinery, Etc.

CANADA MACHINERY AGENCY,

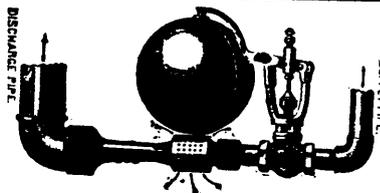
W. H. NOLAN, Mgr.,

321 ST. JAMES STREET, MONTREAL.

## THE BRAENDER

**JET PUMP, WATER ELEVATOR AND  
CELLAR DRAINER.**

PATENTED MAY 8, 1894.



This automatic device for removing water from Cellars, Excavations, Trenches, Wheel-pits, or any depression where water accumulates, either from Springs, Surface Water, Leakages, or Tide Water, is so constructed as to be not only reliable at all times, but will, with a very small amount of water under moderate pressure, remove a large body of water and discharge it to a higher level. It will prevent the accumulation of water, and its construction is Strong, Durable, Uncorrosive, and is so simple, that it will last for years without attention. Send for Catalogues and Price Lists.

**GARTH & CO.,** AGENTS AND MANUFACTURERS,  
536 to 542 Craig Street, MONTREAL

**WILLIAM GRABB & CO.,** Manufacturers of all kinds of

Hackle, Gill, Comb and Card Pins, Picker Teeth, Needle Pointed  
Card Clothing in Wood and Leather for Flax, Jute, Tow, Etc.

Hackles, Gill and Wool Combs made and repaired; also Rope Makers' Pins, Picker Pins, Special Springs, Loom and Shuttle Springs, English Cast-Steel Wire, Cotton Banding and General Mill Furnishings.  
Bloomfield Avenue and Morris Canal, . . . . . NEWARK, N. J.

**JAMES WILSON,** Manufacturer of  
A NEW PATENT WIRE ROPE.

Merritton, **"POWER"** Buffalo,  
ONT. WIRE ROPE N. Y.

Made of the best brands of Iron, Bessemer, Seimens, Mart'n and Crucible Steel for all purposes: for Dredging and Con- for Transmission of Power; for Hoists and Hoisting; for Mining, Railway Switch Ropes; Plough Ropes; steel Hawsera. Special Ropes Made to Order on Short Notice. These Ropes are Warranted to Stand Greater Strain than Any Other Made.

**C. G. ELRICK & CO.**

Factory: Sheppard Street, Toronto

Montreal Office: Fraser Building

MANUFACTURERS OF

HORN AND RUBBER COMBS, ETC.

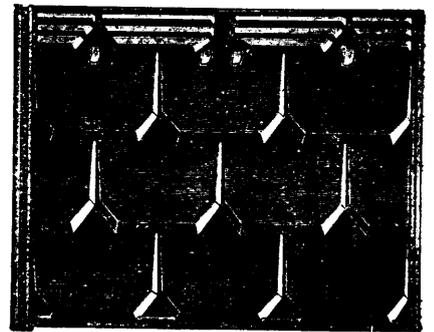
**WELLAND VALE MANUFACTURING CO**

LOCK No. 2, ST. CATHARINES, Ont.

Manufacturers of

**Axes, Scythes, Forks, Hoes,  
Rakes and Edge Tools.**

## EASTLAKE STEEL SHINGLES.



Beware of Worthless Imitations.

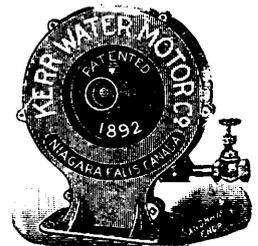
**METALLIC ROOFING CO., LTD.**

TORONTO,

SOLE MANUFACTURERS.

# KERR WATER MOTORS

1/8 TO 20 HORSE POWER.



Noiseless Running, Require No Attention operated with water at a pressure of 30 pounds and upwards.

**RELIABLE** intending purchasers can have our Motors on trial by writing us, stating water pressure available, power required and class of work to be done

Our Motors are sold on their merits Our prices are low.

Write us. Enquiries solicited and cheer- fully answered.

**KERR WATER MOTOR CO.,  
NIAGARA FALLS, CANADA.**

## 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.

**HACKNEY POWER HAMMERS**

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

**STEVENS, HAMILTON & CO.**

Manufacturers of Iron Working Machinery.  
GALT : : ONT.

bringing from five to eight dollars a pound. When the distilleries were first established the farmers were paid \$1.50 per ton for birch brush, but now they receive \$3 a ton. As the brush frequently has to be carted a long distance over rough country roads to the mills, the farmers do not consider their pay too large. Of late years other oils on the market have reduced the demand for birch oil so that the manufacturers receive less for their products. As the result of this some mills are paying much less than the regulation \$3 a ton for brush.

A few farmers near the mills have planted their woodlands with birch trees, and where the haul is short they make a good living. But as only about 600 pounds can be carried on a one-horse wagon, it follows that there is little money in the work when the brush must be carried seven or eight miles. Among the mountains of Connecticut there are large patches of birch woods that seem to be free to any one, and many poor people go there to gather the birch brush for the market. But their work is irregular and at starvation rates. It takes them all day to gather one load and cart it to the factory, for which they get 91 cents.

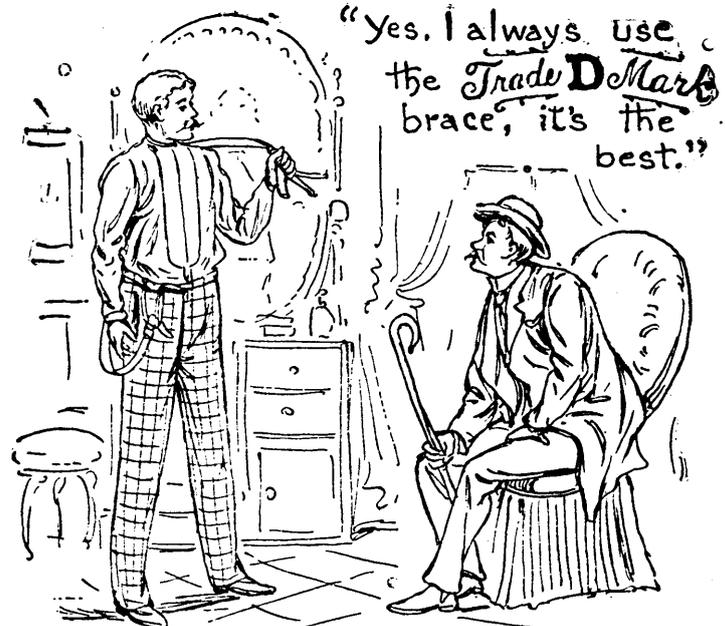
There is no reason why the farmers should not co-operate in manufacturing the birch oil themselves. The work is of the simplest kind, and a plant costs very little. A distillery is never anything more than a rough, old frame building, much less expensive than the farmers' barns. The machinery inside is equally inexpensive. The work of making the oil is as follows: The birch twigs are cut into even lengths of five inches, and then thrown into water tight tanks with copper bottoms. A coil of steam pipes is arranged in the bottom, and three feet of water poured in. The tops are hermetically sealed, and steam is then turned on. The water is kept boiling for six hours. Into the side of each boiling tank a steam pipe is inserted and runs in the form of a worm into a barrel of cold water. Cold water is flowing continually into this barrel. The steam rising from the boiling birch twigs passes through this pipe, and is condensed in the worm, while the oil drops from the end of the pipe into a small receiving jar or pail. As the oil drips down it is a dull brown, and it must be clarified until it is a very light green. The oil is no longer clarified by chemical processes, but by simply spreading a heavy woolen blanket over the wood inside the tank. In a properly-constructed mill the oil now drips out pure and ready for market. This oil will always bring \$3 a pound, and sometimes much more, and one ton of birch yields four pounds of oil. Surely farmers ought to be bright enough to construct a mill of this character, and make their own oil at a big profit.

**The First Three-Phase Plant in Canada.**

The town of St. Hyacinthe, Que., at which place is located the first three-phase plant installed in Canada, is on the Portland line of the Grand Trunk Railroad about thirty-five miles from Montreal. A branch line of the Canadian Pacific also reaches the town, and a new line of railway called the United Counties passes through it, connecting it with the town of Sorel on the west and Iberville on the south. The population, at present about 11,000, is rapidly increasing. A fine water power on the Yamaska River is utilized to operate the

Granite Mills owned by Feodore Boas & Co., manufacturers of woolen goods, and several other factories.

There has been for some time, however, a demand for more power than was available in the town itself, and in the Fall of 1893 the transmission of power from the Rapid Plat, 4 1/2 miles below the city, was first discussed. In February, 1894, this power was acquired by Mr. A.M. Morin, and in April of that year a company, called La Com-



MANUFACTURED BY THE  
**DOMINION SUSPENDER CO.**  
CANADA - NIAGARA FALLS. UNITED STATES.

**FRICION BOARD**      **FRICION BOARD**      **FRICION BOARD**  
Manufactured by **Dominion Leather Board Co.,**  
— MONTREAL. —  
**Proprietors Sault Au Recollet Paper Mills.**  
ROOFING, SHEATHING AND FLOORING FELTS.

**FETHERSTONHAUGH & CO.**

Patent Barristers and Solicitors  
Electrical and Mechanical Experts and Draughtsmen

Cable Address "Invention, Toronto." Telephone: 589

**PATENTS** Procured in Canada and all Foreign Countries

Head Office: Canadian Bank of Commerce Bldg., TORONTO

Established 1884 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."

WHEN WERE  
YOUR  
**Boilers**  
LAST  
INSPECTED.

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

**JOHN L. BLAIKIE Esq.**  
PRES.

**E.W. RATHBUN Esq.**  
VICE-PRES.



Head Office: TORONTO

ARE YOU  
SURE  
THEY ARE  
**SAFE**  
AND  
IN GOOD  
CONDITION?

pagnie des Pouvoirs Hydrauliques de St. Hyacinthe, was formed to improve and distribute it for motive purposes and lighting in the town. Work was commenced at once on the water power and in July a contract was closed for the necessary electrical apparatus for the plant. A thorough investigation was made of the different systems of electrical transmission, and the president of the Company, Mr. Louis Cote, and their consulting engineer, Rev. Father Choquette, visited a number of power transmission plants before a decision was reached.

The power had formerly been utilized for the operation of a grist mill and woolen factory on one side of the river and for a small grist mill on the opposite side. No change was necessary in the dam, although it will be possible by raising this to greatly increase the power available. The canal leading to the mill was almost entirely reconstructed and deepened so that its capacity is nearly three times that of the old canal. In addition to this a long tail-race was excavated, greatly increasing the head, which is now about 17 feet.

The water is led directly to the wheels which are four in number, 50 inches in diameter and running at a speed of 100 revolutions per minute. These wheels are on vertical shafts and placed in wooden penstocks with separate gates. At the top of the vertical shaft is placed a crown wheel 6 feet 2 inches in diameter having 78 iron-wood teeth. This is geared to a pinion  $24\frac{1}{2}$  inches in diameter having 26 teeth, and connected to a horizontal shaft by means of clutch coupling. The shaft is divided into two sections connected by a Hill cut-off clutch, two wheels being geared to each section. The main driving pulleys which are four in number and each provided with Hill clutches are placed on an extension of this shaft under the dynamo room. Hand wheels controlling each of the four wheels and the four clutch pulleys, are placed in a convenient position in the dynamo room, so that the entire operation of the plant can be absolutely controlled from the switchboard. Two electric governors, one for each pair of wheels, are connected to controlling mechanism, which is also placed in the dynamo room. It is intended to connect a tachometer to the shafting which will at all times indicate the speed.

The electrical equipment of the power house consists at present of three standard three-phase alternators, each being of a capacity of 150 k.w. at 2,500 volts. They are compound wound in the same manner as the Thomson-Houston type; the commutator, however, being in three sections to accommodate the three-phase current. The separate exciting current is supplied by two 6 k.w. standard Edison dynamos, either of which is capable of exciting the fields of all three machines.

The periodicity of these alternators is 60 cycles per second, this having been adopted in place of the old standard of 125 cycles, as it

has been found from experience that motors operate very much more satisfactorily the lower the periodicity; and this number was decided upon as being more suitable for the combination of motors, arc lamps and incandescent lamps, the steadiness of the latter being affected when the periodicity is much further reduced. The current from these machines is led to the centre panel of the switchboard, as shown in the accompanying engraving, and is there connected to the main bus bars in multiple through three high potential triple pole switches. On this panel is also placed a current indicator and potential indicator for each machine, together with the phase indicator by which the machines are thrown together. The feeder panel is to the right and is equipped with three current indicators, one for each leg of the system, a ground detector, lightning arresters and feeders blocks. On the left are the three station transformers and the exciter current indicators and switches.

The distance between the power plant and the town, as stated above, is  $4\frac{1}{2}$  miles. The line consists of four No. 00 B. & S. bare copper wires placed on double petticoat insulators. The poles are all of cedar 30 feet in height above the ground, and a double set of cross arms, pins and insulators are placed on each pole. Only three of the wires are normally in use, the fourth being kept as a spare in case of accident. The line is of the most solid and substantial construction throughout and has been built with the object of providing amply for any addition to the circuits which may be required at any future time.

The primary wires are brought to the centre of distribution in the town, and from this point primary mains extend over the district which is to be furnished with light and power. The greater portion of the lighting is from a four-wire system of secondary mains fed by banks of transformers at suitable points. This system combines the economy of both the three-wire and three-phase systems and insures a uniform potential at all points. All large motors will be connected to separate banks of transformers, only the smaller sizes being operated from the secondary mains.

The directorate of the company includes the names of nearly all the prominent business men of the town. Mr. Louis Cote, the president, is well-known as the inventor of several important labor-saving machines for shoe manufacturing. Mr. Payan, vice-president, is a member of the firm of Duclos & Payan, tanners and manufacturers of leather. The construction work and wiring has been done under the supervision of Mr. R. Duperouzel, Supt. of the Hydraulique company, to whom much credit is due for the manner in which he has carried out an installation having so many novel features—The Electrical Engineer.

## Boiler Plates and Tubes,

## Wrought Iron, Steam and Gas Pipe,

## Cotton Waste.

## JAS. W. PYKE,

Merchant in Iron and Steel,

35 St. Francois Xavier St., Montreal.

Established 1848

## 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 COLTERS

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 Implements 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

18 FRONT ST. E.,

TORONTO

THE PETERBOROUGH

## CARBON AND PORCELAIN CO.,

LIMITED

MANUFACTURERS OF

Carbon Points for All Systems of Arc Lights

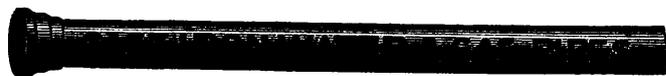
BATTERY PLATES, CARBON BRUSHES, and all kinds of PORCELAIN for Electrical and Hardware Lines.

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

PETERBOROUGH, ONTARIO.

# Drummond-McCall Pipe Foundry Co. Limited

Manufacturers of



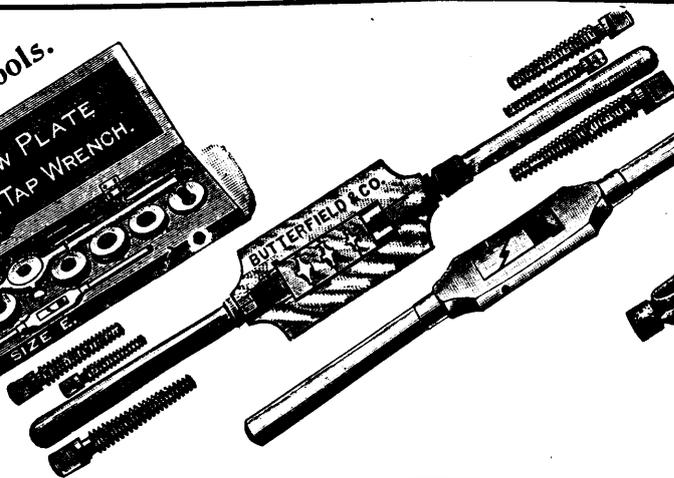
"SPECIALS," HYDRANTS, VALVES, ETC.  
Offices, - NEW YORK LIFE BUILDING, MONTREAL  
Works, Laohine, Quebec.

## THE CANADA PIPE & FOUNDRY CO.

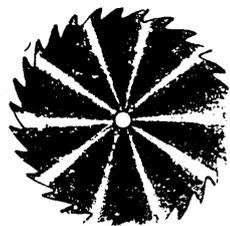
MONTREAL

Manufacturers **CAST IRON WATER and GAS PIPES** SPECIAL CASTINGS

All kinds of ...  
Taps and Dies  
—AND—  
Thread Cutting Tools.



**BUTTERFIELD & CO.**  
ROCK ISLAND,  
P. Q.



MIDDLE STREET, OTTAWA,

Manufacturers of  
all descriptions of



Write us before buying elsewhere.

CIRCULAR,  
MILL and GANG,  
SHINGLE,  
BUTTING,  
CONCAVE,  
BAND,  
CROSS-CUT,  
BILLET WEBS.

# Fire Bricks, Cement, Drainpipes

AT LOWEST PRICES.

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

## DIAMOND ROCK DRILLS.

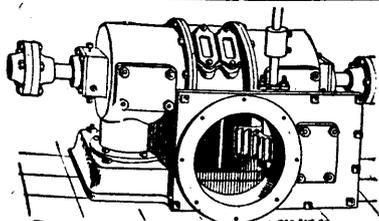
WE UNDERTAKE TO  
TEST MINERAL GROUND

We Lease Drills and Supply Operator. We offer complete drilling outfits at low prices.  
COMPLETE PLANING, SAW MILL AND MINING PLANTS.

at price per foot to 1,500 feet.

**THE JENCKES MACHINE CO., Sherbrooke, Que.**

Montreal Branch: 16 Victoria Sq.



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 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  $\frac{1}{1000}$  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	18.91	4 cts.
1 3/8	1 3/8	5.01	"	3	2 7/8	22.59	"
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.

# 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

Canada Life Building, Toronto, Ont

... THE ...

# Hamilton Bridge Works

(LIMITED.)

Cable Address: "HENDRIE"

HAMILTON, - - - CANADA,

Constructors of

# Railway and Highway Bridges

of Every Size and Design, and all kinds of

**Structural Work in steel and iron.  
Observation and Water Towers.  
Tanks, Caissons, Piers, Turntables,  
Boilers, Buoys, Roofs, Girders  
and Columns for Buildings, Inclines.**



Every Facility for the Construction and Launching of  
Steel and Iron Ships.

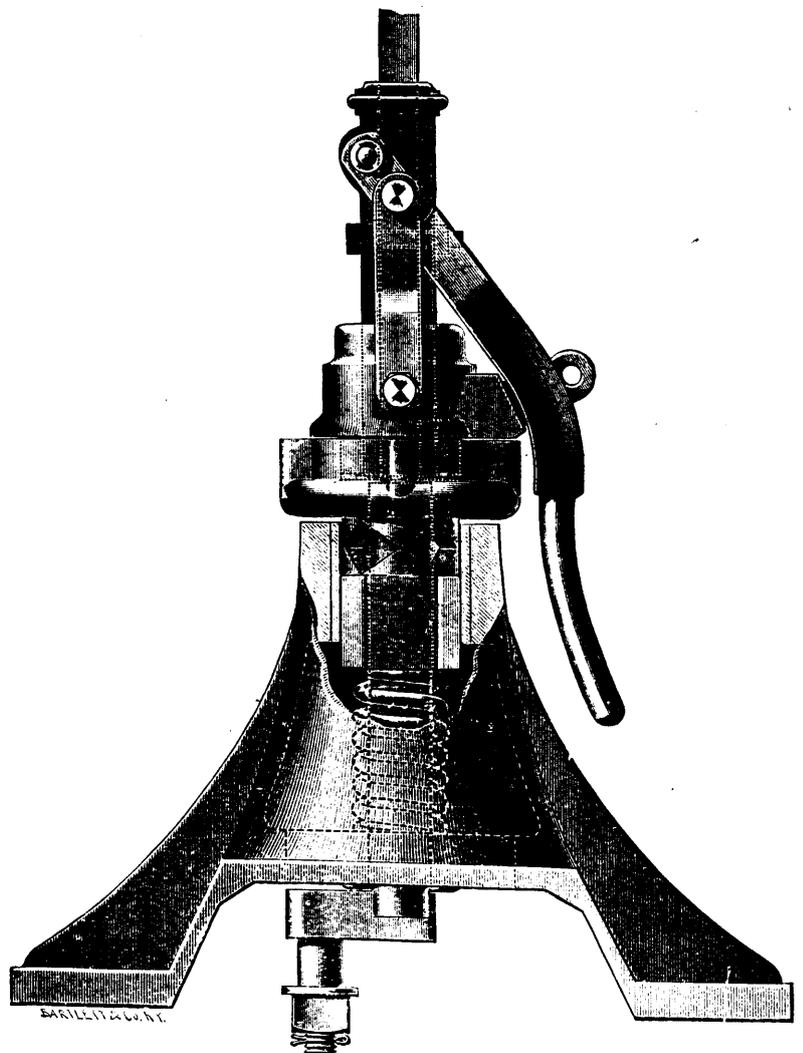


... REFERENCES ...

Grand Trunk Railway Co.  
Canadian Pacific Railway Co.  
Dominion and Ontario Governments,  
and nearly all Municipalities and Contractors in the Dominion.

# Ramapo Safety ... Switch Stand

FOR RAILROADS



MANUFACTURED IN CANADA BY

**Central Bridge & Engineering Co., Ltd.**

PETERBOROUGH, ONT.

W. H. LAW, - Engineer and Manager.

**GALT MACHINE KNIFE WORKS**

Planing..  
Machine.  
Knives...



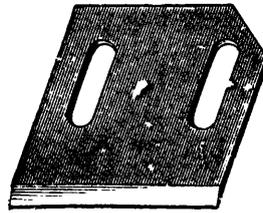
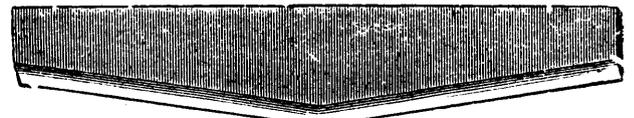
**Stave Cutter Knives**



**Stave Jointer Knives**

Send for Price List

All Work Warranted



**Moulding,  
Tenoning,  
Mitreing**

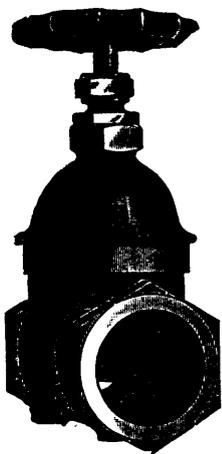
**Shingle - - - - -  
Jointer - - - - -**

AND OTHER IRREGULAR SHAPES

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

**PETER HAY,**

**GALT, ONT**



The Webber Patent  
**STRAITWAY VALVE**  
for Steam, Water or Gas.

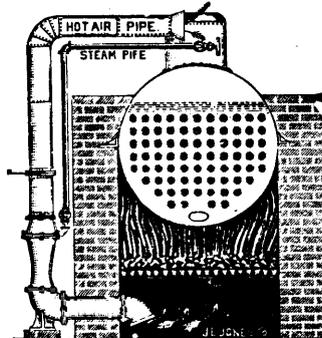
EVERY VALVE TESTED.

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

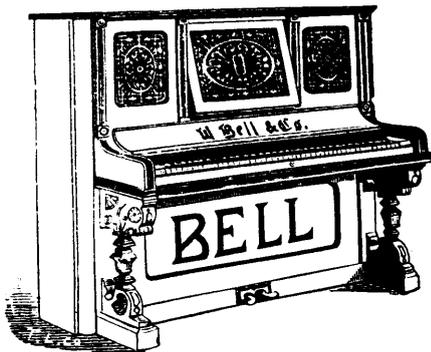
Highest Medal and Diplomas given at the World's Columbian Exposition, Chicago, 1893.

The Best Blower in the market for Steam Boilers.

Send for Illustrated Catalogue to

**S. R. EARLE,**

**Belleville, Ont.**



**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 Class 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



ALBERT E. KEMP, President. J. J. CASSIDY, Secretary.  
 GEORGE BOOTH, Treasurer.

**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.		LIABILITIES.	
	1930.	1894.	
Cash.....	\$ 6,179 44	\$ 39,210 03	Reserve, and on acct. of Policyholders..
Bonds and Mortgages.....	228,473 21	692,751 45	Other Liabilities.....
Other Assets.....	58,939 88	89,359 40	
Total.....	\$293,592 53	\$821,320 88	Net Surplus.....
			Income.....
			Expenditure, Total.....
			Insurance in force.....

Head Office: TORONTO.

GEO. GOODERHAM, President.

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.

## F. P. SAVERY & CO.

WOOLLENS.

HUDDERSFIELD & BRADFORD,

ENGLAND.

Represented in Canada by

**Jas. A. Cantlie & Co.**

MONTREAL AND TORONTO.

Full range of Samples always on hand for inspection.

# WOOL

**A. T. PATERSON & CO.**

MERCHANTS.

35 Francois Xavier Street, MONTREAL

Represented by

MR. DAVID GUTHRIE.

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

**Pure Extract Logwood**  
 Write for Samples and Prices.  
**Bellhouse, Dillon & Co.**  
 30 ST. FRANCOIS XAVIER ST.  
**MONTREAL**



**The Ontario Malleable Iron Co.**  
 Limited

MANUFACTURERS OF  
**MALLEABLE IRON . . . .** Castings 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 . . .



**Greatly Reduced Prices**

Is a grand success. Try it and see for yourself.  
**Saves Time, Saves Belts, Saves Money**  
 SAMPLES SENT FREE

**The BRISTOL CO.**  
 Waterbury, Conn.

SMITH'S FALLS

Malleable..  
 Iron . . . .  
 Works..

Capacity  
**2,000 Tons..**

**WILLIAM H. FROST**  
 Proprietor

**SMITH'S FALLS : Ontario, Can.**

MANUFACTURERS OF  
 FINE VARNISHES  
 JAPANS, ASPHALTUMS, SHELLACS,  
**Maple Leaf Brand Coach Varnishes**

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

**Armature Insulating Compound**  
 Insulating Compound for Weather-Proof Wire, Tube Compound,  
 Glica Paste, etc., etc.  
 8 to 16 Morse Street,  
**TORONTO.**

**HAMILTON SUPPLIERS. DITCH MANNING. A. C. LESLIE & CO. MONTREAL.**  
 Special Grades for all Manufacturing Purposes  
 Imported Promptly at Close Prices.  
 LONDON, ENGLAND.  
**ALFRED BOYD**  
 Wellington Street East  
 TORONTO AGENTS?  
**IRON & STEEL**  
 ANGLES  
 RODS  
 HOOPS &c.  
 BARS  
 SHEETS  
 PLATES