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TORONTO  
and  
MONTREAL

CYLINDER  
DYNAMO  
ENGINE.....

OILS

Clay, Fire Sand, etc. Classes  
Core Compound and Foundry Supplies  
MONTREAL, ONT.

A. B. JARVILLE & CO.  
MONTREAL, ONT.  
MACHINISTS' TAPS  
SEND FOR CATALOGUE.

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

THE MANUFACTURER WHO PROSPERS  
MAY BE PROUD TO SAY  
"I RIDE IT"  
NATION THAT  
MANUFACTURES FOR ITSELF  
PROSPERS

Vol. 38.

TORONTO, JUNE 2, 1899.

No. 11.

### Express Parcels

In the interest of economy your express parcels should be addressed with our famous....

### Invoice Tag Envelopes

Ask your stationer for these goods. If he does not handle them write for sample to

**The Barber and Ellis Co., Limited,**  
TORONTO

**ANILINE**  
DOMINION DYEWOOD & CHEMICAL CO.  
TRADE MARK  
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**LIZARINES**  
PRODUCTS OF  
The Farbenfabriken vorm. F. Bayer & Co.  
DOMINION DYEWOOD & CHEMICAL CO.  
SOLE AGENTS FOR CANADA TORONTO.

### SANDERSON'S CAST STEEL

The Oldest and Best on the Market.  
Full Assortment in Stock.  
Prompt shipment of special sizes or Grades from Mill.

**A. C. LESLIE & CO.,**  
MONTREAL.

**OAK EXTRA TANNED**  
ESTD 1856  
THE J. G. MELAREN BELTING CO. MANUFACTURERS  
MONTREAL TORONTO

### CARD CLOTHING

SET IN IMPORTED OAK LEATHER BACKING.

LOOM REEDS, ETC.

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**MILL SUPPLIES.**

**THISTLE BRAND**  
THE J. G. MELAREN BELTING CO.  
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### Fensom's

**ELECTRIC HYDRAULIC STEAM HAND-POWER**

All made of the best material and finest workman-ship.

The Fensom Elevator Works... 32, 34, 36 Duke Street, Toronto, Ont.

### Elevators

### RUBBER GOODS OF ALL KINDS.



61 and 63 FRONT ST. WEST, TORONTO.

### Walkerville Malleable Iron Co., (Limited)

Manufacturers of.

REFINED AIR FURNACE

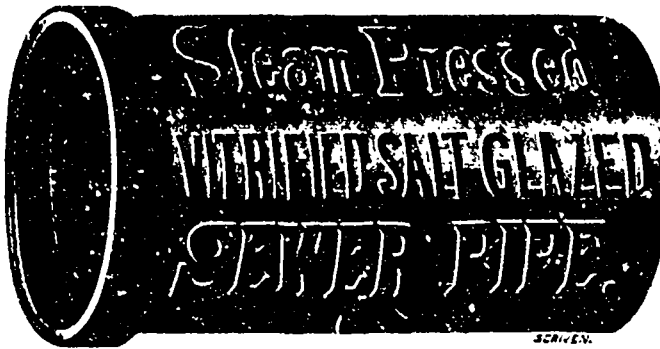
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**PATENTS** Fetherstonhaugh & Co.

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Samson Brand Portland Cement

Manufactured by the

Owen Sound Portland Cement Co. LIMITED OWEN SOUND, ONT.

Is Equal to any Cement made in the WORLD.

Write to us for Test Prices and other Information.

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— 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.

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Yarn Manufacturers, DYERS AND BLEACHERS.

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

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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.

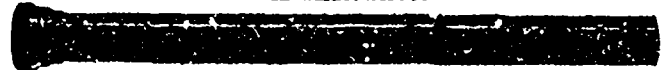
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MONTREAL PIPE FOUNDRY CO... (Limited)

SUCCESSORS TO

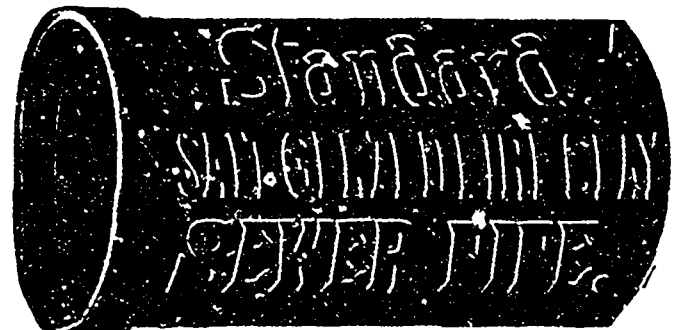
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Offices: - - - Canada Life Building, MONTREAL



THE STANDARD DRAIN PIPE COMPANY, ST. JOHNS, 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. Johns, P.Q., Ltd. W. C. TROTTER President.

The Whitelaw-Shepherd

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SIMPLICITY, COMPACTNESS, PERFECT REGULATION, ECONOMY, AUTOMATIC LUBRICATION.



For Electric Lighting Mills, Factories, and other purposes where Economy, close regulation and enduring service is required.

Manufactured by... R. WHITELAW, Woodstock, Ont.

**THE GOLDIE & McCULLOCH CO., LIMITED**  
GALT, - ONTARIO.

Extensive builders of Wheelock Engines, Ideal Engines, Gas and Gasoline Engines, Boilers, Pumps, Water Wheels, Oatmeal Mill Machinery, Flour Mill Machinery, Wood-working Machines, Saw Mill Machinery, Wool Machinery, Wood Rim Split Pulleys, Iron Pulleys, Sh. Ring Hangers, Gearing, Friction Clutch Pulleys, etc. Safes, Vaults and Vault Doors.

Catalogues, Estimates, etc., Cheerfully Furnished on Application.

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**THE IMPERIAL OIL COMPANY, Limited.**  
Highest Awards at the World's Fair, Chicago, U. S.

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

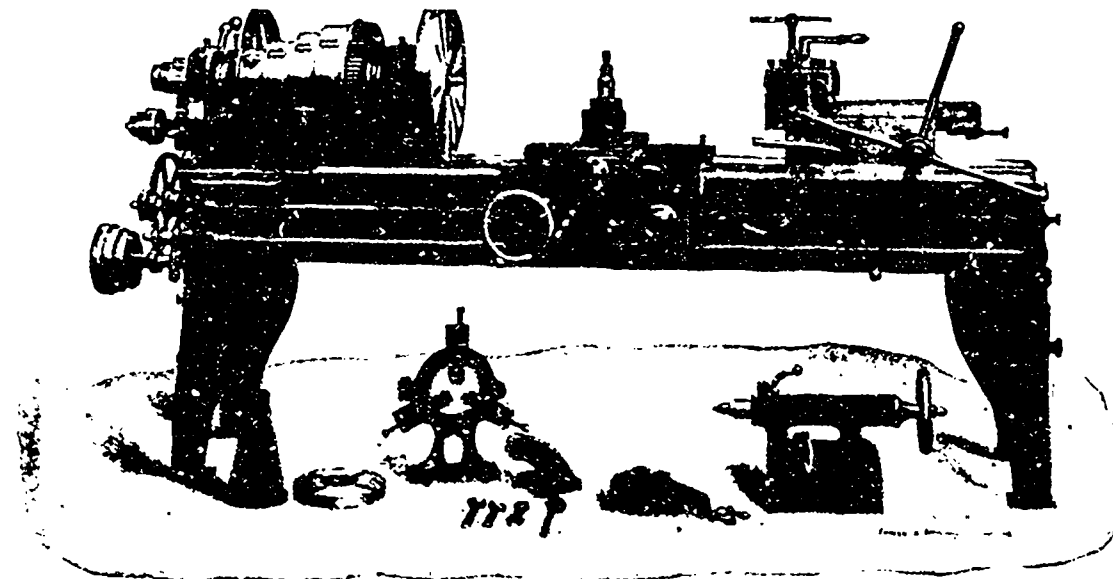
We manufacture all grades of oils, greases, soap stocks, candles, wool stocks, leather and tanners' oils, fuel gas, machinery, cylinder oils, &c. And solicit opportunity to compete against any oil on the market. Write for prices and samples.

Refineries at **SARNIA and PETROLIA, CANADA.** Merchandising Branches at:  
HALIFAX, N. S. HAMILTON, ONT. QUEBEC, QUE. LONDON, ONT. TORONTO, ONT. WINNIPEG, MAN. ST. JOHN, N. B. QUELPH, ONT.  
MONTREAL, QUE. CHATHAM, ONT. PETERBORO, ONT. VASCOUVER, B. C. MONCTON, N. B. STRATFORD, ONT. KINGSTON, ONT. WINDSOR, ONT.

**JOHN BERTRAM & SONS,**  
DUNDAS, - - ONTARIO.

We have a number of

**Second-Hand Tools**



Which being in Good Order are offered at

**Very Low Prices**

To clear out Stock quickly.

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MANUFACTURERS OF

## BRIGHT COMPRESSED STEEL SHAFTING

FROM 1/2 TO 6 INCHES IN DIAMETER. GUARANTEED STRAIGHT AND TRUE TO WITHIN 1/100 OF AN INCH.

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

### RAILWAY AND ELECTRIC RAILWAY CAR AXLES

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

## HEAVY FORGINGS a SPECIALTY.

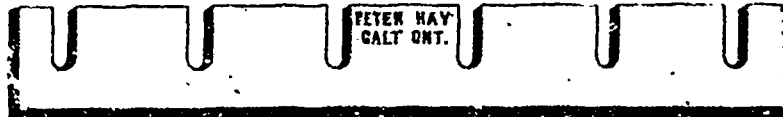
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Works—NEW GLASGOW, N.S., and FERRONA, N.S.

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PETER HAY,



GALT, ONT.

Manufacturers of Every Description of.....

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



BARK KNIVES  
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RAQ KNIVES  
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Shear Blades,  
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Paper Knives,  
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Quality Guaranteed. Special Knives Made to Order. Send for Price List

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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, TEES, Z BARS and PLATES

Tables, giving Sizes and Strength of Rolled Beams on application.

**ALWAYS ON HAND** IN LENGTHS TO THIRTY-FIVE FEET.

Post Office Address,  
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# BRUNNER MOND & CO.'S

Pure Alkali,  
 Bleaching Powder,  
 Caustic Soda, ALL STRENGTHS.  
 Bicarbonate of Soda,  
 Concentrated Sal Soda,  
 Soda Crystals.



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 PHILADELPHIA  
 PROVIDENCE  
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# DYE . . . STUFFS

# The Polson Iron Works, TORONTO CANADA.

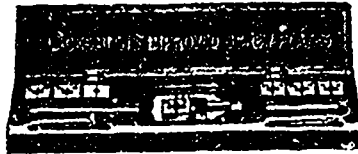
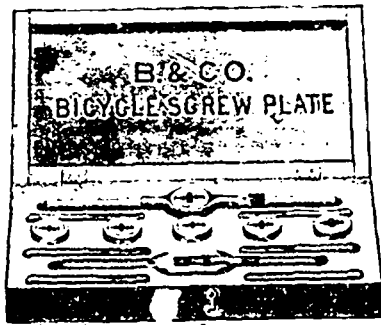
THE BEST EQUIPPED BOILER AND ENGINE WORKS IN CANADA.

We Manufacture— **STEEL BOILERS**

The BROWN AUTOMATIC ENGINE, MARINE ENGINES (SINGLE, COMPOUND AND TRIPLE), Hoisting and Mining Engines  
 STEEL STEAM VESSELS OF EVERY DESCRIPTION. STEAM YACHTS AND LAUNCHES.

GET OUR PRICES BEFORE ORDERING.

ESPLANADE EAST, Foot of Sherbourne St., - - Toronto, Canada



Bicycle Screw Plates, Reece Screw Plates, Derby Screw Plates, Blacksmiths' Stocks and Dies, Blacksmiths' Improved Screw Plates, Hand Taps, Machine Taps, Pipe Taps, every kind of Taps and Dies are manufactured by

## BUTTERFIELD & CO., Rock Island, P.Q.

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# ALBERT MANUFACTURING CO.

Manufacturers of the well-known

"HAMMER BRAND"

## Calcined PLASTER

—AND—

## Patent Rock Wall Plaster

HILLSBOROUGH, N.B.,  
CANADA.

**GET THE BEST**  
And at Same Time the **CHEAPEST**  
**HEARLE'S ANTI-SCALE POWDER**  
The unequalled Boiler Purge.  
Send for Circulars with Testimonials.  
**C. C. HEARLE,**  
823 LaGauchetiere St., Montreal, P. Q.

THE.....

Toronto Paper Manufacturing Co.,  
Cornwall, Ont.

Manufacturers of Engine Sized Superfine Papers, White and Tinted Book Papers, Blue and Cream Laid and Wave Fool-caps, Account, Envelope and Lithographic Papers, etc.

## KEMP MNFG. CO. TORONTO.

### Galvanizing

DONE FOR THE TRADE.

GET OUR PRICES.

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Manufacturers of....  
Axes, Edge Tools, Saws,  
Farming Implements  
and Bicycles.

F. W. Hore's Sons, HAMILTON, ONT.  
Manufacturers of  
Wheels, Wheel Materials, Shafts, etc.

W. H. Storey & Son, ACTON, ONT.  
Manufacturers of..... **FINE GLOVES AND MITTS**  
In every variety and style. **Moccasins.**

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

# WEBSTER VACUUM Feed Water Heater

IN PROPORTION

MAXIMUM EFFICIENCY  
ECONOMY  
DURABILITY  
CONVENIENCE  
SIMPLICITY

To the extent that Feed Water Heaters in general are investigated and understood the more the WEBSTER VACUUM FEED WATER HEATER and PURIFIER is appreciated.

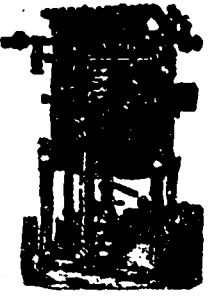
MINIMUM ATTENTION  
SPACE  
WASTE  
REPAIRS  
COST

<—FOR THE REASON THAT IT REPRESENTS—>

BEFORE PURCHASING ELSEWHERE GET A BID FROM US.

Particular experience for ten years in this department of engineering, and the fact that over 1,000 Webster Heaters are in use is self-explanatory.

Satisfying particulars, embracing details of construction, material, operation, and exclusive results will be sent on application. Built in several types and construction for special needs and service.



**DARLING BROS., RELIANCE WORKS, Montreal.**

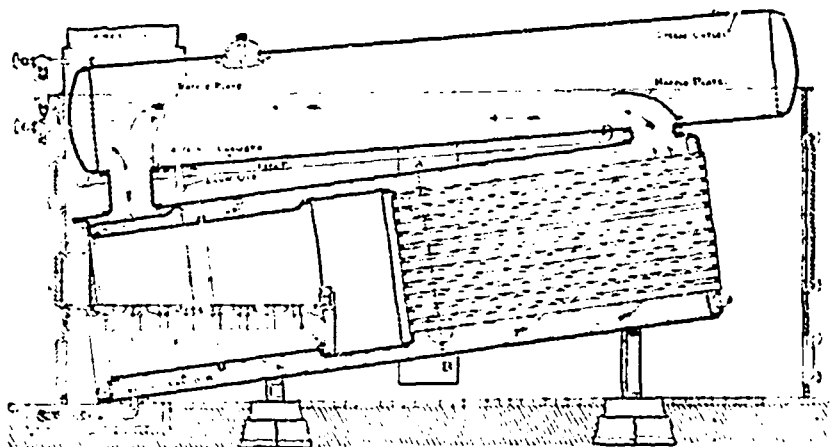
## The Packard Electric Co., Limited.

MAKERS OF

# Lamps and Transformers

Sole Agents for SCHEEFFER RECORDING WATT METERS  
ST. CATHARINES, ONT.

## Mumford's Improved Boiler.



Usually built with a steel sheet case, but, if preferred, the case may be left off and bricksetting substituted.

**HIGH ECONOMY** is obtained on account of being internally fired, and having perfect water circulation, as shown in cut.

**TWO SETTling CHAMBERS** are provided for catching deposits of scale, and every part of the Boiler is accessible for cleaning.

## ROBB ENGINEERING CO., Limited, AMHERST, N. S.

WM. McKAY, Seaforth, Ont., Traveller.

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

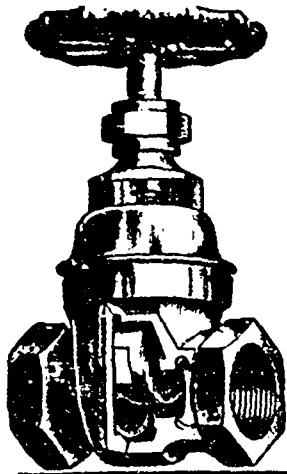
Oakey's Flexible Twilled Emery Cloth.  
Oakey's Flint Paper and Glass Paper.  
Oakey's Emery Paper, Black Lead, Etc.

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

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

Inquiries should be addressed to

**JOHN FORMAN,** 850 CRAIG ST., MONTREAL.



## The WEBBER Patent **STRAITWAY VALVE**

For  
...Steam, Water or Gas...

**EVERY VALVE TESTED.**

The Kepp Engine Co., Limited

WALKERVILLE, ONT.

Solo Manufacturers for Canada. Send for Price List.

# The CANADIAN RUBBER COMPANY

OF MONTREAL



This is a facsimile of the Brand upon our Fast-running ELECTRIC BELT.

Manufacturers of  
**RUBBER BELTS**  
FOR ALL PURPOSES,  
**RUBBER HOSE**

OF ANY DESCRIPTION,  
AND  
A FULL LINE OF

**.. RUBBER GOODS ..**

Factories and Head Offices, - **MONTREAL.**

BRANCHES:

**TORONTO**—Cor. Front and Yonge Sts.

**WINNIPEG**—Princess Street.

# The Royal Electric Co'y

MONTREAL, QUE.

Western Office.... **TORONTO, ONT.**

## S.K.C. Two-Phase Alternators

Incandescent Light, Arc Light and Power from same Dynamo and Circuit.

**Highest Efficiency**

**Best Regulation**

**Slow Speed**

**Least Attention**



**No Collector**

**No Moving Wire**

**No Exposed Parts**

**No Compounding**

S.K.C. 50 Kilowatt Two-Phase Generator

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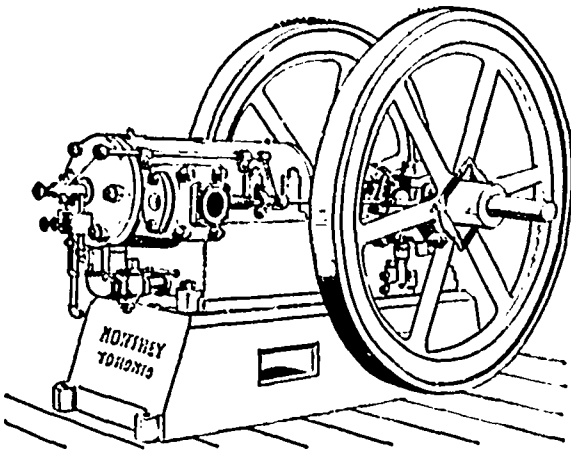


## Our Horizontal

# NORTHEY GAS OR GASOLINE ENGINE

4 TO 100 H. P.

It is CHEAPER than any other power, whether you want 4 h.p. or 200 h.p. It is replacing even Water Power. Let us hear from you as to your power needs. We furnish SMALL POWERS, geared to Electric Plants, for factory and house lighting.



**Northey Mnfg. Co., Limited,** 1000 King St. W.  
Toronto.

Manufacturers of STEAM AND POWER PUMPS OF ALL KINDS.

## TO MANUFACTURERS!

**Do You** Publish Catalogues and Circulars ?  
Advertise in Trade Journals ?

We can Supply You with Artistic and Mechanically Correct

**PHOTO ENGRAVINGS, WOOD CUTS,**

*ELECTROTYPES, ZINC ETCHINGS, ETC.*

OF ANYTHING THAT YOU MAY DESIRE.

FIRST-CLASS IN EVERY PARTICULAR.

AT PRICES THAT DEFY COMPETITION. ASK FOR ESTIMATES.

The Canadian Manufacturer Publishing Co., Limited, - Toronto, Can.

# Manufacturers

**IMPERIAL LAMPS  
ARE GOOD  
LAMPS.**

We Have a Catalogue.

We are not manufacturers of everything electrical, but we sell for the factory.

We have very close connections, and can sell ELECTRIC SUPPLIES, HOUSE GOODS, etc., at bottom prices.

**JOHN FORMAN, - 644 Craig Street, - Montreal.**

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ESTABLISHED IN 1880.

PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

Official Organ of the Canadian Manufacturers' Association.

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ALL OTHER COUNTRIES IN POSTAL UNION, EIGHT SHILLINGS  
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J. D. MORRISON, Jr., Winthrop Building, Boston, Mass., Sole  
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and Baltimore, Md.

C. A. G. BROWNE, 145 Fleet St., London, E.C., Eng., Sole Agent  
in Great Britain.

CANADIAN CHANNELS OF TRADE

Following is a statement showing the value of the under-mentioned articles of dutiable merchandise imported into Canada, from Great Britain and the United States respectively, during the fiscal year ending June 30, 1898:

| Articles.  | G. Britain. | U. States. |
|--|-------------|------------|
|  | Value.      | Value.     |
| <b>Metals and manufactures therefrom.</b>  |             |            |
| Brass, manufactures of .....   | \$35,550    | \$201,184  |
| Bicycles and tricycles and parts thereof .....   | 11,226      | 865,454    |
| Copper, manufactures of .....  | 5,518       | 83,131     |
| Electric apparatus, motor, etc .....   | 6,705       | 410,432    |
| Bar iron or steel rolled, not elsewhere specified .....  | 48,722      | 313,019    |
| Castings, iron or steel, in the rough ..   | 777         | 78,940     |
| Canada Slates (black sheets) .....   | 552,469     | 144,466    |
| Chairs .....   | 27,505      | 71,001     |
| Engines, locomotive .....  |             | 576,091    |
| Engine Fittings, steel or iron .....   | 809         | 84,572     |
| Hardware, builders', cabinet makers', upholsterers', harness and saddle makers', including curry combs and horse boots ..... | 37,236      | 383,044    |
| Iron or steel bridges, and structural work .....   |             | 438,634    |
| Iron in pigs .....   | 51,236      | 330,172    |
| Sewing machines .....  | 3,254       | 117,263    |
| Typewriting machines .....   | 103         | 63,961     |
| Machinery, not elsewhere specified ..  | 170,567     | 1,530,404  |
| Mould boards or plough plates .....  | 42          | 96,680     |
| Pumps .....  | 672         | 92,599     |
| Iron or steel railway bars, for street and tram railways .....   | 35,905      | 50,843     |
| Railway fish plates and tie plates .....   | 9,579       | 161,783    |
| Rolled iron or steel angles, beams, girders, etc. ....   | 5,054       | 234,246    |
| Rolled iron or steel hoop or band .....  | 9,807       | 77,956     |
| “ “ plates or sheets ..  | 16,122      | 66,337     |
| “ “ “ not less than thirty inches wide .....   | 13,253      | 171,913    |
| Rolled iron or steel plates or sheets, No 17 gauge or thinner .....  | 162,231     | 115,001    |
| Stoves, all kinds and parts .....  | 476         | 88,034     |
| Boiler tubes .....   | 9,180       | 118,937    |
| Tubing, all other .....  | 9,228       | 421,882    |
| Enamelled hollow ware .....  | 2,268       | 53,669     |
| Wire, covered .....  | 40,586      | 169,111    |
| “ all other, including wire rope ..  | 39,972      | 123,262    |
| Iron or steel nuts, washers, rivets, bolts .....   | 2,078       | 66,883     |

| Articles.   | G. Britain. | U. States.   |
|---|-------------|--------------|
|   | Value.      | Value.       |
| Iron or steel, scrap, wrought .....   | \$77,397    | \$451,139    |
| Pocket knives .....   | 45,111      | 1,200        |
| Table cutlery .....   | 77,284      | 14,070       |
| Other cutlery .....   | 70,129      | 30,948       |
| Guns, rifles, pistols .....   | 18,741      | 80,050       |
| Steel plate, universal mill for bridges ..                                    | 698         | 71,238       |
| Steel in bars, bands, hoops, when not valued over 2 1/2 cents per pound ..... | 110,929     | 138,916      |
| Tools, adzes, hatchets, axes, saws, files and rasps .....                     | 12,183      | 213,669      |
| Tools, hand or machine, all other .....                                       | 28,256      | 311,346      |
| All other articles of iron or steel, not elsewhere specified .....            | 54,702      | 680,693      |
| Lead, old scrap, pig and block .....  | 101,388     | 158,085      |
| “ manufactures of .....   | 33,576      | 26,741       |
| Gas and oil fixtures .....  | 2,598       | 77,115       |
| Lamps, side and head lights .....   | 4,913       | 159,284      |
| Type printing .....   | 7,062       | 47,274       |
| Printing presses and printers' supplies ..                                    | 4,278       | 171,733      |
| Tinware .....   | 8,585       | 68,542       |
|   | \$1,087,662 | \$10,601,867 |

MERCHANDISE free of duty.

|  |             |             |
|--|-------------|-------------|
| Brass, scrap, bolts, strips, tubing .....  | \$22,315    | \$190,165   |
| Copper, ingots, bolts, strips, tubing .....  | 45,513      | 732,635     |
| Iron, hoop, three-eighth inch and thinner .....  | 860         | 657,193     |
| Iron rolled tubes for bedsteads .....  | 6,074       | 501,528     |
| Steel bowls for cream separators .....   | 56,895      | 75,625      |
| Iron or steel for ship building .....  | 11,109      | 57,585      |
| “ “ “ (of kinds not made in Canada) .....  | 7,274       | 30,196      |
| Mining, smelting and refining machinery (of specified description) ..  | 22,063      | 177,046     |
| Ribs for umbrellas and parasols .....  | 26,527      | 26,321      |
| Steel rails, not less than forty-five lbs. per yard, for steam railways .....  | 96,328      | 1,714,277   |
| Steel for saws, straw cutters, fencing, mattresses, knives for mowers and reapers, corsets, skates, cutlery, castors, tubular bow sockets (International bridge) bicycle chains, loots, carriage springs ..... | 76,240      | 468,331     |
| Tin, blocks, pigs, bars .....  | 125,560     | 133,155     |
| Tin plates and sheets .....  | 1,110,209   | 40,532      |
| Wire, crucible cast steel, for boots and shoes, galvanized, No. 9, 12, and 13, and wire rigging .....  | 36,181      | 283,558     |
| Yellow metal for sheathing .....   | 46,918      | 8,265       |
| Zinc, blocks, pigs, sheets, plates .....   | 47,034      | 13,185      |
|  | \$1,738,106 | \$4,658,597 |

The above statement only includes the principal articles imported. The total value of metals and manufactures of, and general hardware, including oils, paints and colors, was, for the year alluded to:—

|                      | G. Britain. | U. States.   |
|----------------------|-------------|--------------|
| Dutiable ..          | \$3,152,924 | \$16,271,746 |
| Free of duty ..      | 2,132,710   | 5,306,014    |
| Total ..             | \$5,285,634 | \$21,577,360 |
| For the year 1897 .. | 5,335,491   | 15,232,077   |
| “ “ 1896 ..          | 5,920,077   | 11,545,102   |

CANADA AND BRITISH TRADE.

In our preceding article re “Canadian Channels of Trade,” is given in tabulated form a statement showing the value of articles therein mentioned imported into Canada from Great Britain and from the United States during the fiscal year 1898. These articles were mostly products of iron and steel, including building and other hardware, and articles composed chiefly of iron and steel. This class of merchandise was selected for our illustration because until recent years Great Britain stood pre-eminent above all other countries in the production of them, and the imports of such articles into Canada were chiefly from that country.

It is not to be supposed that the quality of any of these articles made in Great Britain has deteriorated, nor that such articles produced in the United States were of superior value

to the others, but the fact that the values of imports into Canada from Great Britain are at a virtual standstill, notwithstanding the greater purchasing power of this country and the twenty-five per cent. tariff preference accorded to British goods, and the other fact that the United States is fast wresting the Canadian market from its British competitors, is the cause for much speculation and anxiety both in Great Britain and Canada. The natural love of Canadians for the Mother Country was, probably, the impelling cause in the matter of our tariff preference for her, but we find that with this great discrimination in her favor she does not keep step to the music played by American manufacturers.

Why?

Some attribute it to the exceedingly conservative methods of British trade, wherein British manufactures and exporting merchants decline to pay as close attention to the demands of this country as their American competitors. They seem to think that Canada should continue to accept British methods as implicitly as it did before the advent of American methods. They seem to think that methods that are effective in Australia and South Africa should be equally effective in Canada, and they decline to swerve from their old and well beaten path. In fact, they blame Canada for the whole business. They think that articles that are good enough for the Australian and African markets are quite good enough for the Canadian market, and—in fact they live in a fool's paradise. Canada desires to trade with the Mother Country and to cultivate that trade has given it a very valuable tariff preference, and that seems to be about as far as we can conveniently go. But if British manufacturers decline to produce the precise articles required by the Canadian market, and American manufacturers study Canadian tastes and requirements, it is not surprising that British trade is rapidly falling off. In fact, under existing conditions it is bound to fall off, even if Canada showed a fifty per cent. tariff preference to British products. If British trade methods are not as effective as American trade methods, if British goods do not come up to the Canadian requirements as American goods do, it remains with British manufacturers, not Canadian consumers, to remedy the evil.

The vicissitudes of Canadian trade with Great Britain and the United States in the last three fiscal years are remarkably suggestive. In the lines of articles alluded to in our preceding editorial, the value of Canadian imports were as follows:

| In 1896.                 |              |                |
|--------------------------|--------------|----------------|
| From Great Britain ..... | \$5,920,077  | - 34 per cent. |
| " United States .....    | 11,545,102   | + 66 "         |
| Total .....              | \$17,465,179 | 100 "          |
| In 1897.                 |              |                |
| From Great Britain ..... | \$5,335,401  | - 26 per cent. |
| " United States .....    | 15,232,071   | + 74 "         |
| Total .....              | \$20,567,478 | 100 "          |
| In 1898.                 |              |                |
| From Great Britain ..... | \$5,285,634  | - 20 per cent. |
| " United States .....    | 21,578,360   | + 80 "         |
| Total .....              | \$26,863,994 | 100 "          |

If British manufacturers want a gratifying share of this Canadian trade, they will have to fight for it and fight hard, for their American competitors are hard fighters.

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### CANADA'S FOREIGN TRADE.

The trade returns compiled by the Dominion Customs Department for the month of April indicate that the growing time in Canada's commerce continues. The value of dutiable goods imported for home consumption amounted to \$8,032,734, upon which duty to the amount of \$2,320,419.02 was collected; free goods, \$4,381,305, and coin and bullion, \$38,078, making total imports of \$12,452,117, as compared with dutiable goods, \$6,082,404, upon which \$1,753,653.90 was collected; free goods, \$3,550,124, and coin and bullion, \$495,104, with a total of \$10,127,634 in April, 1898. This gives an increase of \$2,324,483 for the month, as compared with the corresponding period of last year. The total imports for the ten months ending April 30 show an increase over the total for the corresponding period of the previous year, as shown by the following summary:—

|                        | 1898.         | 1899.         |
|------------------------|---------------|---------------|
| Dutiable .....         | \$8,032,734   | \$72,805,331  |
| Free .....             | 40,055,245    | 48,321,021    |
| Coin and bullion ..... | 3,611,187     | 4,115,777     |
| Total .....            | \$106,283,515 | \$125,242,129 |
| Duty .....             | 18,339,592    | 21,072,127    |
| Increase of duty ..... |               | 2,733,000     |

An analysis of the schedule of goods entered free of duty for consumption in Canada shows a heavy increase in the goods which constitute the raw material of various industries, the principal increases over April, 1898, in certain leading articles being as follows:—India rubber and gutta percha, crude, \$97,000; fur skins, not dressed, \$75,000; metal, iron and steel, other than steel rails for railways, \$102,000; sisal, manilla and hemp, undressed, \$56,000; wool, \$30,000; dyes and chemicals, \$30,000; hides and skins, \$30,000; anthracite coal, \$190,000. In fact, every article specified in the returns which may be classed as raw material, with the exception of raw cotton, shows an increase.

The exports for April were \$6,517,608 of goods the product of Canada, and \$198,574 the produce of other countries, making a total of \$6,716,182, as compared with \$6,756,960 the produce of Canada, \$237,039 the produce of other countries, and a total of \$6,992,993 for April of last year. Coin and bullion exported during April, 1899, amounted to \$226,720, as compared with \$218,165 during the corresponding month of last year, bringing the total exports to \$6,942,902 and \$7,121,164 respectively, a falling off of \$269,262. The comparative statement details follow:—

|                                 | 1898.       | 1899.       |
|---------------------------------|-------------|-------------|
| Produce of the mine .....       | \$714,591   | \$808,206   |
| Produce of the fisheries .....  | 360,196     | 307,331     |
| Produce of the forests .....    | 1,094,434   | 916,262     |
| Animals and their produce ..... | 2,128,564   | 2,018,327   |
| Agricultural products .....     | 1,249,430   | 1,770,692   |
| Manufactures .....              | 1,131,931   | 125,630     |
| Miscellaneous articles .....    | 37,032      | 137,551     |
| Totals .....                    | \$6,716,182 | \$6,992,993 |
| Bullion .....                   | 80,460      | 58,129      |
| Coin .....                      | 146,260     | 160,036     |
| Grand total .....               | \$6,942,902 | \$7,212,164 |

The comparative statement of exports for the ten months ending April 30 is as follows:—

|                        | 1898.         | 1899.         |
|------------------------|---------------|---------------|
| Canadian .....         | \$119,331,992 | \$111,662,315 |
| Foreign .....          | 10,738,085    | 15,006,518    |
| Coin and bullion ..... | 4,463,289     | 3,746,416     |
| Total .....            | \$134,533,366 | \$129,815,219 |

The total trade of Canada for the ten months ending April 30, 1899, as compared with the corresponding period of the previous year, shows as follows:—

|                | 1898.         | 1899.         |
|----------------|---------------|---------------|
| Imports .....  | \$106,283,515 | \$125,242,123 |
| Exports .....  | 134,553,366   | 129,815,249   |
| Totals .....   | \$240,836,881 | \$255,057,372 |
| Increase ..... |               | 14,220,491    |

Reviewing this exhibit the Mail and Empire says:—

The trade returns continue the serial story of diminishing exports and increasing imports. In the last ten months we we sold in outside markets Canadian products aggregating \$111,662,315 in value, as against \$119,331,992, the value of our sales in the corresponding ten months of 1898. That is, up to the end of April in the current fiscal year our exports have been \$7,669,677 less than those for the like period of the last fiscal year. For the same two periods the merchandise import accounts compare thus:—\$121,126,352 for 1899 and \$102,672,328 for 1898. That is, the value of the goods imported during the last ten months is \$18,454,024 greater than that of the goods imported during the corresponding ten months of the fiscal year 1897-98.

The shrinkage of \$7,669,677 in our exports measures the ground our producers have lost to their foreign competitors in the outside markets, and the gain of \$18,454,024 in our imports measures the ground they have lost to their foreign competitors in the home market. The two amounts added together, making a sum of \$26,123,701, show how much our producers have lost in all markets. A demand for twenty-six million dollars' worth of goods which they supplied last year has fallen into the hands of their competitors this year.

We do not agree with the argument that the shrinkage of our exports measures the ground our producers have lost to their foreign competitors; but it shows that our consumptive ability had increased. Certainly there was no diminution in our products of the mine, the fisheries, the forests, of animals and their produce, of agricultural products or of manufactures. All these industries enjoyed a remarkable degree of prosperity, and the country really enjoyed what The Globe calls a "growing time." No one believes for a moment that a dollar's worth of these products was prevented shipment abroad because of foreign competition; and we all know that such products obtained higher prices abroad last year than they did the year before. Undoubtedly the goods were consumed at home. The prosperity of the country certified to the fact.

We likewise disagree with the argument that the increase of imports measures the ground our producers lost to their competitors in our home market. This may be true to a slight extent, but the fact that for a year past all our industrial establishments were operated to their fullest capacity; that many additions were made to existing plants, and many new enterprises started, indicates that the consumptive requirements of the country were greater than our ability to produce, and that it was essential that outside aid be called in to supply the shortage.

Canada is all right.

#### WHAT WE HAVE WE'LL HOLD.

In a discussion of the relations subsisting between Canada and the United States, the London Times says:

"Canada possesses in great quantity certain raw materials which are essential to the maintenance of some important American industries. Among these none are more important than timber. It is a fact that in the Northern Hemis-

phere Canada is rapidly becoming the only country which can afford to export timber. The other countries which possess it in excess of their manufacturing requirements are Russia, Norway and Sweden. It is a topographical peculiarity of the Russian Empire that the rivers traversing the principal timber districts flow into the Arctic Ocean. They are, therefore, useless for the purpose of floating out logs to the markets of the world, and, so far, no method of land transport has ever been devised which will carry timber for long distances cheaply enough to bring it into practical competition with water-carried logs. The forests of Russia may for the present be regarded as commercially inaccessible. Norway and Sweden, which do export timber, are hardly able to supply the deficiency of Germany. All other nations requiring timber of the sorts grown in the Northern Hemisphere must look to Canada for their supply.

"First among these nations will soon rank the United States. It is fully recognized that owing to the depletion of the forests of the Northern States the timber supply of the United States for all ordinary purposes of building and manufacture will not last more than a very limited number of years. The American supply of spruce for pulp wood will fall far below present requirements in five or six years, and within ten years, assuming the present rate of manufacture to remain unchanged, will be entirely exhausted. This being the case the United States must evidently within a very short period look to outside supplies for the raw material upon which many of her most important industries are based. When it is considered to how many of these a full supply of timber is an essential condition of existence, it will be seen that there is little exaggeration in the statements commonly made by the far-sighted lumberman that the position hitherto held by cotton in the markets of the world is as nothing compared with that which timber is destined within a few years to occupy. The extraordinary development of the single manufacture of wood pulp, which only a few years ago was practically unknown and is now used not only for making paper but for clothing and an immense diversity of other articles, is a sufficient indication of the practically limitless extension of the already widely-varied uses of timber. 'Cotton,' it is said on the other side of the Atlantic, 'was once called king; but King Cotton is a lesser potentate than King Timber must soon become.'

"If this appreciation of the position be correct—and it is one commonly admitted on both sides of the Canadian frontier—it becomes clear that the possession of great timber reserves by Canada is a matter of immense importance. Nearly two-thirds of the territory of the Dominion is occupied by a geological area known as the Laurentian plateau. It is a shield-shaped body of granite rock stretching from the Labrador coast to the chain of the great Canadian lakes, having its southern point on the international frontier, draining on its southwestern side to the prairies of Manitoba and on its southeastern side to the valley of the St. Lawrence. Hudson's Bay forms an important depression, of which the harbors are accessible to the ships of the world, in the middle of this region, and the whole covers a territory of not less than 2,000,000 square miles. Over this enormous forests of commercial value extend to a depth varying from 120 to 200 miles measured from its outer edge. Again to the west of the Rocky Mountains the pine of commerce presents itself in

great quantities throughout the valleys of British Columbia. Spruce cotton-wood and less valuable kinds of pine spread northwards to the confines of the Arctic Circle. Already the possessors of Canadian pulp mills have learned the valuable lesson of supplying themselves by decennial cuttings which will give time for the young trees to grow and enable the mills to work upon the same timber limits for ever. It may be said that with care in the administration of the provincial Crown lands the timber supply of Canada should be inexhaustible.

"The question at issue between Canada and the United States in regard to lumber resolves itself, when it is crudely stated, into whether this inexhaustible supply is to be at the disposal of Canada or of the United States. The technicalities of the controversy may be left aside. The main points of it are not difficult to grasp.

"The richest timber States of America were those which border the Canadian frontier in its middle and eastern parts. In these States, notably in Michigan and Wisconsin, a very large timber industry established itself. To protect this industry from Canadian competition an import duty of two dollars per 1,000 feet of sawn lumber was imposed under the original McKinley tariff; a duty was also imposed upon wood pulp. Canada replied by imposing an export duty of one dollar per 1,000 feet on raw logs. But it became evident that the Michigan and Wisconsin forests were in danger of exhaustion. Michigan saw mills went out of commission for want of raw material. The American situation began to grow acute, and it came to be recognized that logs for the supply of the American pulp and lumber mills must at all cost be drawn from the Canadian forests, across the frontier. An offer was made to Canada and accepted, under the terms of which the American import duty on semi-manufactured wood products was reduced by one-half on condition that the Canadian export duty on raw logs should be altogether abolished. Under the conditions of this agreement Michigan mill owners bought large areas of Ontario forests. Canadian logs went to feed American mills, and the Canadian manufacture of wood products declined. The Canadian mill owners, having discovered the effect upon their industry of an agreement that shut their sawn lumber and wood pulp out of a market which their natural supply of raw material was taken from them to feed, raised the demand that if Canadian logs were allowed to go out free across the American border Canadian lumber should also be allowed to go in free and compete on equal terms with the American manufactured product.

"They have obtained no satisfaction of their demand; on the contrary, the election of President McKinley and the consequent protectionist reaction has had for one consequence the reimposition of the full two-dollar duty upon Canadian lumber, and of an increased duty upon other wood products. To guard against a return on the part of Canada to the export duty on logs, it was provided that the amount of such export duty, if any, should be added to the American import duty on pulp and lumber. This brings the matter up to date as regards the action of the governments of the United States and of the Dominion. The Canadian Government has allowed a session of the Federal Parliament to pass without taking any action, and the lumber question was understood to be one of the most important, the settlement of which Sir Wilfrid Laurier hoped to effect by friendly negotiations at Quebec and Washington.

"But in Canada the provincial governments have power distinct from those which are exercised by the Federal government. Among these are included all that appertains to the administration of Crown lands, and the government of the Province of Ontario, upon whose Crown lands the most important of the timber limits purchased by American mill owners are situated, has roughly stepped into the breach by prohibiting the manufacture of the products of these lands elsewhere than on Canadian soil. Notwithstanding the protests of the Federal government, strong local pressure is now being brought to bear to induce the provincial government of New Brunswick and Quebec to follow the example of Ontario, and it is believed that, in the event of an acceptance by the Dominion government of any treaty stipulation limiting the right of Canada to impose retaliatory export duties on her raw materials, the measure will be generally adopted by the provinces. The existing position is resented throughout the vast lumber districts of Canada as indicating an attempt on the part of the United States to take for itself all the advantages in which the Canadian lumber industry has at least a right to share. It is believed that a policy of absolute prohibition to export logs for manufacture, if persevered in for a few years, would inflict a blow so heavy on the United States industry as to offer to capital a splendid opportunity for investment in Canada, and it is pointed out that the wood products are not the only forms of the preparation of raw materials for which the conditions of Canada offer advantageous openings. The great natural water power of the lumber districts is attracting the attention of manufacturers, and mills for the preparation of asbestos and plumbago may, it is thought, be profitably added to the pulp and paper mills already in process of erection.

"While the provincial governments of Canada, influenced of necessity by local interests, are showing themselves disposed to fight the lumber question in the East with as little inclination to compromise as British Columbia has shown in fighting the mining question in the West, it will be felt by all who are disposed to take a broader view that the interests of both nations would be better served by a policy of mutual consideration. 'Free logs for free lumber' is the cry of the Canadian lumber provinces. The principle of fair exchange which it embodies would be wisely applied to the whole negotiation. Canada happens to possess certain supplies of raw material which are necessary to American industries. If America desires free access to these supplies the price to be paid as between the two protectionist countries is clearly a free field in the manufactured article for Canadian competition. Otherwise the Canadian authorities will have obvious difficulty in resisting the pressure put upon them at home to keep the raw material in Canada and force the American manufacturers to establish their factories in Canadian territory for the benefit of Canadian labor."

#### A LESSON IN ECONOMICS.

All taxes on wealth have the effect of a clog on industry, hampering productive effort by its unseen but pernicious effects, and giving an insidious but very real encouragement to monopoly. For not only is industry burdened by the tax when levied on wealth, making its production more difficult, placing barriers in the way of employing labor and lowering

wages, but the laborer has to pay the tax plus a profit when he becomes a consumer; for in the end all taxes which increase the cost of goods must increase their price, and, as the workers furnish the great market for these things, their purchasing powers being limited to their wages, they are hurt in three ways:—(1) By the lower wages which follow restricted opportunities for employment; (2) By the reduced purchasing power of their wages; and (3) By the further reduction of the opportunities for employment which follows a falling off in the demand for labor products consequent on reduced purchasing power of their wages.

Home and Country, observing that taxing wealth does not prevent its accumulation, says:—

“A tax on wealth cannot materially reduce the wealth possessed by those who acquire it from labor by monopoly, as long as the monopoly by which they obtain it is left to them. Possessed of their monopoly, they will continue to live upon others' labor and pile up the wealth which they do not consume.

“But tax their special privileges—their monopolies—and then in proportion as the tax approaches the amount of the tribute which they levy on labor will their unjust gains cease, and their position as private tax gatherers will be abolished.

“All attempts to tax rich men simply because they are rich without taking into account how their wealth is obtained are wrong and must fail. If their methods of getting wealth are just, why tax them? If wrong, why permit them to continue?

“Most modern governments seek to tax both wealth and monopoly. The taxing of one counteracts the effect of the tax on the other, and so conditions are neither as good nor as bad they would be if either alone were taxed.

“The taxation of the first and greatest monopoly, that is, of the earth—coupled with the abolition of all taxes on wealth—would have a marvellous effect on our civilization. It would have precisely the reverse effect of the taxation of wealth. The mere owners of land could then no longer get a profit by exacting payment from industry for the right to use it; for they would be compelled to pay to the people all they collected for such rights, and in addition they would have to pay at the same rate for all land they kept idle. This would open up opportunities for employment on every hand. The taxes being taken off goods, the price would fall and their consumption would increase, creating a greater demand for labor, and that too at a time when the land owners would be seeking men to help them improve their land in order to pay the tax, and when much land both in the city and country formerly kept idle for purposes of speculation could be available for use to any who would pay the taxes. As a result, laborers would be benefited in three ways:—(1) By increased opportunities for employment; (2) By the increased purchasing power of their wages; (3) The increased amount of wages, coupled with their increased purchasing power, would cause a great increase in the demand for goods and produce a fresh demand for workers. These combined would cause high wages and constant employment, and the millionaire and the tramp would both disappear.”

THE CANADIAN MANUFACTURER Publishing Company, Limited, will, at an early date, begin the publication of an Export Edition of THE CANADIAN MANUFACTURER.

## MEETING OF THE SHAREHOLDERS

OF THE

## CANADIAN MANUFACTURER PUBLISHING CO., Limited.

The Shareholders of the Canadian Manufacturer Publishing Co., Limited, are hereby notified that a General Meeting of the Company will be held on Monday, the 5th day of June, 1899, at the hour of 11 o'clock in the forenoon, at the Head Office of the Company, Room 408 McKinnon Building, corner Jordan and Melinda Streets, Toronto, for the purpose of receiving and considering a report from the Directors upon the affairs of the Company, to elect a Board of Directors for the ensuing year, and generally to consider other business of importance to the Company.

ARTA CASSIDEY,  
Secretary.

Dated this 19th day of May, A.D. 1899.

## EDITORIAL NOTES.

An election was held on May 23rd in the riding of North Waterloo, Ont., for a member of the Ontario Legislature, at which Mr. L. J. Breithaupt received a majority of 116 over his opponent, Dr. Lackner. At the last general election in that riding, Dr. Lackner was elected by a majority of sixty-five over Dr. Clemens. Dr. Lackner is a Conservative and a physician—Mr. Breithaupt is a Liberal and a manufacturer, being the head of one of the most extensive leather manufacturing concerns in Canada. He is also an active member of the Canadian Manufacturers' Association. This Association is now represented by two members in the Ontario Legislature—Mr. John R. Barber and Mr. Louis J. Breithaupt, and by two members in the Dominion House of Commons—Mr. Bennett Rosamond and Mr. James Kendrey, and these gentlemen can be depended upon at all times as advocates of tariff protection to Canadian manufacturing enterprises.

A press telegram from Buffalo, N.Y., under date of May 27th says:—

John R. DeBarry, Immigration Inspector, escorted George Hunt, a Canadian bricklayer, to the International bridge this morning and saw him safely on a train bound for the Queen's Dominion. Hunt arrived in Buffalo early this morning and carried a kit of tools. He was promptly held up by the customs men and turned over to Inspector DeBarry. Hunt told the Inspector that he had been invited to visit his uncle, a bricklayer, of Cleveland.

“What do you need tools for if you are just going to visit your uncle?” asked Inspector DeBarry.

“Oh, I thought I might do a little work to pay expenses,” replied Hunt.

“Well,” said Mr. DeBarry, “I consider that a violation of the Alien Labor Law. You will have to go back to Canada.”

Some months ago a Toronto manufacturer who had established a branch factory in Buffalo, sent a lady office-assistant who was familiar with the details of his business, to perform similar duty in Buffalo, but Mr. DeBarry very unceremoniously deported her. This matter was duly brought to the attention of the United States authorities at Washington by Sir Julian Pauncefote, the British Ambassador. About the same time another Toronto gentleman found it necessary to take some evidence in Buffalo in a case at law in which he was interested, and took a lady stenographer from his Toronto office to Buffalo with him to assist him in his business, but Mr. DeBarry very unceremoniously deported her. It is such ex-

hibitions of friendship and brotherly love that makes us love our neighbors and yearn for closer relationship with them. We just adore such nobility of character.

In the House of Commons last week the attention of the Premier was called to some current newspaper reports to the effect that owing to the firm stand the Canadian Commissioners to the International Convention had taken in insisting upon fair treatment to Canada it was probable the Convention would not again assemble, in reply to which Sir Wilfrid Laurier said that the cablegrams contained nothing new. As he had already stated several times, the matters referred to the Commission were in a fair way to adjustment when the commissioners came to the point that they could not agree regarding the Alaska boundary. The Canadian members then took the ground that until the American Government agreed to a settlement of that question or agreed to refer it to arbitration the Canadians could not deal with any other question. On that ground they still stood. Standing upon that ground Sir Wilfrid may be assured that he has the unanimous backing of all Canada.

La Patrie, of Montreal, is the property of Hon. Mr. Tarte, Minister of Public Works, and evidently voices his sentiments and intentions in what it says regarding making Port Colborne, Ont., at the south end of the Welland Canal, a strong competitor with Buffalo in the grain carrying trade. La Patrie says:—

It is to be regretted that some members who have not given to this question the study it merits, saw fit to declare that the Welland and St. Lawrence Canals will never be able to compete successfully with the Americans. When Port Colborne harbor has been deepened and improved generally, it will be, from a geographical point of view, in the same position as Buffalo, which is only twenty miles distant, and from Port Colborne to Montreal is 370 miles, while the distance between Buffalo and New York by the Erie Canal and the Hudson is more than 590 miles, and by rail it is 440 miles. The Erie, after being deepened to nine feet, will still be an inferior waterway to the Welland and other Canadian routes.

La Patrie concludes with the statement that Port Colborne should be placed in a position to compete with Buffalo, as Montreal should be able to compete with New York, Boston and Philadelphia.

A Canadian correspondent of The Paper Mill, New York, writing how pulp manufacturers in the Dominion are at the mercy of the railways, says:—

A common theme with those manufacturers of pulp whose mills are far away from the timber limits on which they depend for raw material is the extortion of the railway companies. "Extortion" is the word used in designating the charges which the roads make for freight, and their last change in the system of assessing their freight rates has not made them more popular with their customers at the pulp mills. The rate per ton is stiffer than was the rate per cord, and is not liked on this side of the line more than by the importers of Canadian pulp wood from the North Shore is liked on the other. The freight from North Shore to Merritton adds about \$3 per cord to the cost of the wood, which is far more than the whole initial cost is. The effect of this heavy tax, as a manufacturer pointed out to the writer the other day, must be to make it increasingly difficult for mills far from their wood supplies to hold their own against their competitors who are more favorably situated. It will have a direct and swift tendency to cause the former to move their mills from the bare spots in which they are now located to the wooded districts. The move of the Riordans in going to the Ottawa to build their new pulp mill must, in a short time, be the general rule, if the mills now far from the woods desire to continue in business.

The manufacturer in question considered that the desire to

avoid the heavy transportation charges would, in time, do all that an export tax would do. All those American mills depending on railway transportation for their supply of Canadian pulp wood will, he considers, soon be induced by considerations of economy to bring their mills to Canadian limits. It is generally understood that the railway companies threw their influence against the agitation for an export duty as they saw it would kill their remunerative pulp wood traffic. Their own high rates may have the same effect. The great necessity nowadays is to lessen the cost of production, and we can trust to that necessity, argues the manufacturer referred to, to bring mills to the fine spruce limits of this country. Legislation for the purpose will be unnecessary. Not only will pulp mills gravitate towards the limits, but also paper mills will develop from these, and all under the operation of the same cause, namely, the desire to eliminate as much as possible of the railways' heavy charges.

Golfers, anglers, yachtsmen, cyclers, canoers, and followers of every seasonable sport will find something of especial interest in *Outing* for June. The great authority upon gentlemanly sports and pastimes has never appeared in a handsomer dress. Notable features include articles on "Golf," by Champion Findlay S. Douglas and Hanson Hiss; "Where the Ouananiche is Waiting," by Ed. W. Sandys; "New Yachts of the Year," by Capt. A. J. Kenealy; "Practical Camping," by T. C. Yord; "Cycling in France," by Norman Cross; "Black Bass," by Percy Sanford; "Canoeing," by Geo. Hyde; and "Lawn Tennis," by J. P. Paret. There is a complete story, "The Last Jump," by Caroline Shelley, and the travel, editorial and other departments are up to the usual high standard.

The June Ladies' Home Journal opens with a page drawing of Longfellow's "Evangeline," and gives a group of pictures showing some "Fetes of College Girls." An interesting description is given of "The Creole Girl of New Orleans," and "Housekeeping on an Ocean Steamship" is graphically portrayed. "How a Young Man Can Work His Way Through College" has a practical value for every poor boy ambitious for higher education, and "Telling the Character from Handwriting" is interesting and entertaining. Mrs. S. T. Rorer teaches "the ABC of Ice Cream Making," and gives menus for outdoor gatherings. "The Journal's Prize Model House" is shown, with others built from plans previously published. The Curtis Publishing Company, Philadelphia. One dollar per year.

Scribner's Magazine for June opens with an article by Cecilia Wacera, under the title of "The Modern Group of Scandinavian Painters." William Allen White writes a tale of Western political life, "A Victory for the People," and gives the inside history of the appointment of a United States senator. The illustrations are by W. R. Leigh. Another story is "A Burial by Friendless Post," by Robert Shackleton, a New York journalist who has made a particular study of the strange life on Blackwell's Island. Joel Chandler Harris contributes another "Aunt Minerva Ann" story, which is illustrated by Frost.

The Methodist Magazine for June has eight illustrated articles. One of the most thrilling tales of adventure ever told is that of Dr. Sven Hedin in Central Asia in the article on "The Roof of the World." "Felix the Tanner" is a clever character sketch of the late President Faure. "Quebec and its Memories," by the Editor, recounts the stirring story of the ancient Capital. The Rev. J. T. Pitcher has a capital study of Kipling. These articles are all illustrated, as are also the fate of Andree, and the Cromwell tercentenary. Toronto: William Briggs. \$2.00 a year.

The Self-Proving Accounting System is a large octavo volume containing 4 fac simile insets and numerous other illustrations relating to higher accounting. This work describes and illustrates a system of accounts adapted to all lines of business, which has for its foundation a perpetual balance sheet. This balance sheet, in place of being made up at intervals, is an integral and going part of the system and keeps the net results of the business constantly before the eye of the manager. It introduces no new elements, but makes various new applications of old principles. A rigid classification of accounts upon balance sheet principles is enforced, and the columnar method of condensation and summarizing is intelligently applied. A given business is represented by the smallest possible number of accounts, and each class of accounts is furnished with books adapted to its special requirements. All the secrets of the business are in the Balance Sheet Ledger. This book, which is the central feature of the system, always shows the condition of the business in regard to resources and liabilities, and, in addition, in regard to profits and losses, the same as a balance sheet of ordinary form. It is not necessary to stop the business in order to close or balance the books. The results are always shown. Profits or losses to date may be instantly ascertained at any time and as often as desired. Published by the Account, Audit and Assurance Co., 25 Pine St., New York, and 3 Queen St. East, Toronto.

# CANADIAN MANUFACTURERS' ASSOCIATION.

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The Executive Committee meet on the Second Tuesday of each month.

## OFFICES

*McKinnon Building,*  
TORONTO.  
Tel. 1274.

J. J. CASSIDEY, - SECRETARY.

## 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.

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## CANADA'S COMMERCIAL AGENTS.

The following Canadian Commercial Agents (whose addresses are given) will answer correspondence relative to commercial and trade matters, and give information to those interested as to local trade requirements in the districts they represent.

- J. S. Larko, Sydney, N.S.W., agent for Australasia.
- G. Eustace Burke, Kingston, Jamaica, agent for Jamaica.
- Robert Bryson, St. John, Antigua, agent for Antigua, Montserrat and Dominica.
- S. L. Horsford, St. Kitts, agent for St. Kitts, Nevis and Virgin Islands.
- Edgar Tripp, Port of Spain, Trinidad, agent for Trinidad and Tobago.
- C. E. Sontum, Christiania, Norway, agent for Sweden and Denmark.
- D. M. Ronnie, Buenos Ayres, Argentine Republic, agent for Argentine Republic and Uruguay.

In addition to their other duties, the undermentioned will answer inquiries relative to trade matters, and their services are available in furthering the interests of Canadian traders.

- J. G. Colmer, 17 Victoria Street, London, S.W., England.
- Thomas Moffat, 16 Church Street, Cape Town, South Africa.
- G. H. Mitchell, 15 Water Street, Liverpool, England.
- H. M. Murray, 49 St. Enoch Square, Glasgow, Scotland.
- Harrison Watson, Curator Imperial Institute, London, England.

**IMPORTANT.**—An enquiry addressed to J. J. Cassidey, Secretary Canadian Manufacturers' Association, Toronto, Canada, will place you in communication with the leading Canadian Manufacturers of the articles you mention. Merchants and Importers in all parts of the world are invited to make free and full use of the facilities afforded by this Association when they desire information about anything produced in Canada. No charge whatever for answering inquiries.

## THE EXECUTIVE COMMITTEE.

At a meeting of the Executive Committee of the Canadian Manufacturers' Association held May 1<sup>st</sup>, the following resolutions were passed:—

### RE INSOLVENCY LEGISLATION.

"Resolved that the Executive Committee of the Canadian Manufacturers' Association exceedingly regret that the Dominion Government have thought proper to request Mr. Fortier to withdraw the insolvency bill he had introduced into the House of Commons.

"This Association, in harmony with the Boards of Trade and manufacturing and commercial organizations throughout Canada, has for many years besought the Government to enact some insolvency legislation that would apply equally in every province of the Dominion. If we are to enjoy unobstructed inter-provincial trade, and, if the fundamental idea of a federated Dominion is to be carried out to the fullest extent, our commerce should not be hampered and handicapped with the enforcement of obnoxious provincial laws that discriminate most unjustly in favor of some and against others; and the abatement of this evil is all the more important in view of the rapid industrial and commercial development now progressing in our great North-West, and the trade that is being developed between that section and the older provinces.

"And not only is our inter-provincial trade obstructed and retarded through lack of insolvency legislation that should operate alike in all parts of the country, but our trade with Great Britain and other countries is retarded and obstructed through the same cause.

"This association is well aware that many difficulties surround the question, but it is not creditable to the intelligence

of Canadians that they cannot overcome the obstacles that stand in the way, and we respectfully suggest to the Government the propriety of appointing a commission, whose duty it would be to confer with the representatives of the different manufacturing, commercial, banking and transportation organizations of the country, with a view to drafting an insolvency bill that would be satisfactory to those interests, and which the Government would be pleased to endorse."

Copies of this resolution were sent to the Premier and the Minister of Justice in Canada.

### RE THE PACIFIC CABLE.

"Resolved, that the Executive Committee of the Canadian Manufacturers' Association regret to learn of the apparently lukewarm support which the Imperial Government seem disposed to render towards the construction of a Pacific cable to connect Canada with Australia.

"This association has always looked to the British Government, and especially to the Colonial Secretary, the Honorable Joseph Chamberlain, as being favorably disposed towards any enterprise intended to foster and cultivate the Imperial idea and the unity of the British Empire.

"The association believe that it is in the interests of Great Britain, as well as of her over-sea colonies and possessions, to have independent and all-British communication between them and the Mother Country. In cultivating this idea Canada has already made very large expenditure in the construction of an all-British railway across the North American continent, and has now agreed to assume a large proportion of the cost of the proposed Pacific cable. These expenditures are, in proportion to our population and resources, such as to demonstrate the earnestness of our efforts to contribute our



full quota towards the unification of the Empire. Therefore, this association respectfully urge the Home Government to reconsider their decision in this matter, and to supply the amount necessary to provide for the immediate construction and operation of the proposed Pacific cable."

Copies of this resolution were sent to the Premier and the Postmaster General of Canada and to the Hon. Joseph Chamberlain at London.

#### BRITISH-CANADIAN TRADE.

The following enquiries have been received at the office of the High Commissioner of Canada in London, England.

NOTE—Those who may wish to correspond with any of these inquirers can obtain their names and addresses by applying to the CANADIAN MANUFACTURER, Toronto. No charge for giving information. When writing refer to the numerals opposite the inquiries.

40. Enquiry is made for the names of lumber firms who are prepared to quote for and supply large quantities of wood blocks suitable for paving purposes and railway sleepers.

41. A firm in Scotland, who claim to be in touch with the principal users of wood flour, ask for addresses of Canadian firms who are prepared to quote prices and submit samples.

42. A general agency firm in Warsaw (Russia) offer their services as agents for the sale of Canadian produce and manufactured goods. They point out that Warsaw is an important market for Heneers, rolling boards, etc., and are willing to furnish satisfactory references.

43. A firm of fish and poultry salesmen in the Midlands are desirous of opening up trade with Canadian exporters of eggs, turkeys and frozen salmon.

44. The London agents for a large cape firm, who ship merino wools to the English and other markets, are desirous of entering into business relations with Canadian importers or to place them in communication with their South African principals.

#### DAIRY PRODUCTS OF CANADA.

United States Consul-General John L. Bittinger, at Montreal, writes a most interesting official communication to his Government regarding the dairying industry of Canada, in which he says:—

"The great sources of wealth in Canada may be said to be four, viz., fisheries, mines, forests and farms. The amount annually derived from them is, in round figures, \$20,000,000 from the fisheries, \$30,000,000 from the mines, \$80,000,000 from the forests, while agriculture scars above all the others combined with a grand total of over \$600,000,000. The products of the erstwhile despised 'few arpents of snow' are now well known in the markets of the world. Manitoba wheats are found everywhere, the products of what but a few years ago was regarded as so much waste land.

"While wheat has made enormous progress, it is equalled, if not outdistanced, by the rapid increase of the cheese business, the phenomenal increase of which will be clearly seen by reference to annexed tables. A comparison of the cheese exports for the past ten years, as given in the official returns of the United States and Canada herewith following, shows the decrease in United States exports as compared with the evolution among our cousins in Canada.

"It is well to look for the reason of this. One fact has often been lost sight of by manufacturers, and that is the absolute necessity of pleasing customers by manufacturing what they like instead of adopting the too often vain, and always lengthy, process of endeavoring to educate them to appreciate the producer's notions of what ought to be. Business houses are not primarily pulpits for the elevation of the benighted foreigner, who prefers his cheese a little browner or his butter of a flavor rich and rare. Too often large fields for business extension are untouched simply because a manufacturer sent out what he thought ought to succeed, and,

because it did not, the attempt was given up without further inquiry. To my knowledge, a first class cheese sent to a German trader failed for no other reason than that, when cut, it would not make a good cheese sandwich. If the shape had been right the cheese would have been a success. As it is, the sender to-day declares, 'There is no market there.' In another case a consignment of butter was avoided like the plague by the peasants because it was in barrels like those in which Finnish butter had formerly been sent, at a time when that brand had an exceedingly unsavory reputation. Dozens of other examples are familiar to everyone who has travelled with his eyes open.

"There is no doubt that the decrease of imports of United States cheese into Great Britain is due to exactly the same sort of thing, together with an unfortunate remissness on the part of some manufacturers to remember it was cheese that was being made.

"A few shipments of apples rotten at the bottom of the barrel, hidden by a layer of rosy cheeks, will damage the national credit to a marvellous extent; so with everything else. It may not appear of importance to a man in his factory or orchard in the middle of a vast continent, but if that same man could transport himself a few thousand miles and see his package offered for sale to a crowd of costers from East End, London, 'waken as a wasp' and sharp as an 'awk,' he would learn a lesson as he watched the effects on the prices of everything else that came from that district—nay, even nation.

"In Canada wise action has been taken in the enactment and rigid enforcement of laws in regard to dairy products, and consequently Canadian cheese has obtained a high reputation with an ever-increasing sale. The old 'bee,' by means of which neighbors helped one another in the young settlement, has developed into the present co-operative system, which has had such good results. By this means the farmer on the prairie has all the benefit accruing from the use of the best machinery, which otherwise he never could have had, and consequently is able to compete on fair terms with the rest of the world. The part played by machinery in agricultural work has been shown by the well-known statistician W. G. Mulhall, who, writing of "Industrial Advance in Germany," in the North American Review of January, 1898, estimates the rural products of Germany in 1895 at \$2,000,000,000, and adds:

"The sum total is \$50,000,000 less than the value of farm products of the twenty-three Western States of the American Union; but the number of hands in Germany is two and a half times as great, while the improved area of the United States is three times that of Germany. In Germany the productive area is equal to no more than 8 acres per farming hand; in the Western States it is 62 acres. The value of product per acre is, of course, higher in Germany, namely \$31, as compared with \$10 in the Western States; but the product per farming hand is \$620 in the latter, against \$250 in Germany."

"He attributes this great difference to the use of improved machinery on the large farms in the United States, and in a secondary degree to the military system in Germany, which takes from agriculture the flower of the peasantry.

"In improved machinery, of course, is included such benefits as arise from cold storage in transit in trains and ships.

"In Canada the cheese and butter production could never have attained its present position but for the great interest taken in it by the Government, which has afforded every aid possible to the farmers. The present Minister of Agriculture—Hon. Sydney Fisher—being a practical farmer, has given immense impetus to the trade in farm products—particularly cheese and butter; and, moreover, his knowledge has enabled him to give help that could never have been given by anyone without practical experience. The scattered and heterogeneous population of the northwestern portion of the Dominion of Canada had more than ordinary difficulties to overcome. They were isolated and in many cases remote from the railroad. The Finns, Magyars and Galleicians, as well as the

French-Canadians, had to be taught every step in the method of making cheese and butter for exportation, and that task can only be appreciated by those acquainted with their conservative habits.

"The rapid progress made is best told by statistics, which show that 65 per cent. of the cheese in the British market is supplied by Canada. In the year 1871 there were but 353 factories in the country, turning out but \$1,600,000 worth of cheese; while in 1897 the number had increased to 2,759 factories, producing over \$16,000,000 worth of cheese.

"The returns furnished to me December 22, 1898, by the Minister of Agriculture of Ontario show the great strides made in this province. I have a list of 1,123 cheese factories and 234 butter factories. Ten years ago not a tenth of them were in existence. Many of the cheese factories are putting in creamery plants. The Local Legislature is very vigorous in all matters connected with agriculture, having spent \$1,509,090 in the last thirty years over the agricultural college, dairy schools, farmers' institutes, fruit-experiment stations and collection of agricultural statistics. This province stands head and shoulders over all the rest in the completeness of its reports.

"A great deal of money has been spent by the Legislature of Quebec, according to the public accounts, on lectures, schools, etc., with varying success. Now, however, the Dominion Government gives a grant of \$3,000 per annum for lectures, and much good work has been done by the two Governments in co-operation. In this province there are syndicates of cheese factories and creameries. A syndicate is a group of from fifteen to thirty factories, the representatives of which agree to contribute a stated amount for the payment of an inspector. These have been assisted by the Provincial Government to the extent of half the expenses, up to \$250 for each syndicate, as the Government's share.

"In 1892 the Government of New Brunswick undertook a programme of work for the extension of agricultural knowledge, which has been productive of good results. The building of cheese factories and creameries has progressed, and their work has been successful. The travelling dairy was introduced in 1893, giving instruction in sparsely settled districts on butter-making, etc., with excellent results.

"The Secretary of Agriculture of Nova Scotia reports:— 'We have co-operative creameries subsidized by the Government to the extent of three in each county. So far only about one-half the counties have availed themselves of this opportunity.' The approximate return of butter and cheese by the creameries last year was \$100,000.

"The Manchester Steamship Line will run steamers with cold storage to Montreal in connection with the Manchester Canal. During the winter the service is to be fortnightly to Halifax and St. John. This new venture is likely to be a great boon to the fruit and dairy men.

"Cooperative dairying has been a great success in Prince Edward Island. Up to 1891 it was unknown. It was then arranged that the farmers erect a suitable building for a cheese factory and the Department fit it up with machinery and manage it. In 1896 the Department withdrew from the larger factories and in 1897 from all. At present all are flourishing and increasing. It is interesting to note that in 1890 there were not 10 acres of Indian corn for fodder in the island. Thanks to departmental aid, in 1896 there were over 10,000 acres.

In the North-West Territories, in order to assist the farmers, the Government appropriated \$15,000 in 1896. The system is briefly outlined as follows—Carts go around and collect the milk, which is brought either to separating stations or the creamery. The Government officials then take charge of it, manufacture the butter and ship it to the best markets. By means of cold storage on the trains and steamers a market is reached which could never be by the individual settler. The charge is fixed at 4 cents per pound and 1 cent extra to go into a sinking fund, so that in due course the creamery may become the property of the district. In many cases cream

eries already in existence and failures have been taken hold of by the Department and operated successfully. During the 1897 season the Department advanced 10 cents per pound on the butter markets at the end of each month. These payments are made by Dominion checks, which are payable at par everywhere. These checks are often used as currency in the North-West.

"In Manitoba in 1894 two experts visited the new creameries and cheese factories, and, as they were furnished with travelling dairy outfits, they were able to give valuable instruction. The remarks made on the North-West Territory practically apply to this Province.

In British Columbia in 1894 work of instruction by means of a travelling dairy was done on the mainland and on Vancouver Island. In 1895 an expert instructor assisted in establishing creameries and spent several weeks in giving instructions to those who wished to learn butter-making. In 1896 further work with the travelling dairy was done.

"Professor Robertson, Commissioner of Dairying, has had some packages of butter sent to Japan in tins, and, as the reports regarding them have been favorable, it is proposed to pack 1, 2 and 5 pound tins in a similar manner for the Klondike. The butter is wrapped up in waxed paper and then placed in hermetically sealed tins, which, it is claimed, will keep the butter good in any climate. A number of tins have been manufactured in Montreal, and a shipment has been sent from Calgary to the Yukon. Tinned butter has been a success in France and there seems to be no good reason why it should not be so here. Professor Robertson thinks a large trade may be developed with China and Japan, but, as neither Chinese nor Japanese include butter or cheese in their bill of fare, it would appear that they need education in that direction first.

"A large trade in tinned butter has existed for years in Ireland.

"The highest price realized for cheese during the past year (1898) was 9½ cents, at Brockville, September 28, and the lowest 6½ cents, which was taken for cheese from some of the French countries early in June. London took the largest part and Liverpool followed.

"Butter prices fluctuated widely, but ruled for the season practically the same as during last year, i. e., \$12.50 for a 70-pound tub. Most of it went to Bristol, London being second.

"During the fiscal year ended June 30, 1897, the exports of Canadian-made cheese amounted to 164,220,699 pounds, valued at \$14,676,239, of which 163,942,649 pounds, valued at \$14,645,859, went to Great Britain.

"In 1897 the imports of cheese into Great Britain amounted to 360,393,824 pounds, of which Canada supplied 12,253,024 pounds. In the same year Canada supplied that country with 170,986,368 pounds out of a total import of 291,555,936 pounds."

#### PACKING FOR EXPORT.

Another thing that is hurting us is the gross carelessness of some of our exporters in the United States. When preparing my annual report of trade I visited the stores here and asked if they had any complaints or suggestions relating to American goods. One of the largest importers took me into his receiving wareroom and showed me five cases of cheese that had just been received. Each case held six cheeses and all were absolutely useless—full of worms, eaten out, decomposed and covered with green mould; only two cases had been opened before I came, so, at my request, the other four were opened in my presence; they were worse, if possible. I said to the merchant, "That is a shame." He said, "Yes, and it is a dead loss to me." He then told me that the same thing had happened many times before; that he had written to the shippers asking for a rebate, but none was given. This merchant was positive that the cheeses were bad when put on board ship at San Francisco, because it would have been impossible for them to get into that condition in five or six weeks. Such goods are supposed to keep good for years. We

then went into another large room, where I saw foreigners (Germans) unpacking cases of canned fish—anchovies. The smell was horrible, for out of forty or fifty tins I saw the tops off of at least four-fifths, and the contents oozing all over the boxes. Each tin was securely placed and had not been removed from the box. The merchant said: "This is the way I am treated, and yet this is part of a \$5,000 order. These goods are from San Francisco (showing me the firm's name). I buy there because I can get the goods a month quicker than from my country (Germany), and, as you know, time is everything to me. These cheeses were bought to go to Port Arthur (this firm has the contract for provisioning the Russians over there and the Germans at Kyo-chau). I had to telegraph to Shanghai for cheese. The anchovies were for Kyo-chau, and all are a dead loss." I went into another large importer's—a British house. Here I was shown tabloids in paper boxes melting with the heat and damp, and the comment was: "Surely Americans ought to know that tabloids being sent to Asia should be put into glass bottles, as the English send theirs." Here I was told that the Eastern firms pack the best, and that some Californian shippers are extremely careless. A bicycle sent to me, when unpacked, was found to be completely covered with rust and the front tyre full of cracks. A box of watches was received in this port; on being opened in my presence several of the crystals were found to be broken. These watches were very cheap—from \$2 to \$6. They were packed in a thin cardboard box, and when it is known that watches can be repaired in only a very few places in China, that a crystal costs 50 to 60 cents, and to send a watch to Shanghai involves another 50 cents, it is easy to see that the original cost mounts up very rapidly before the dealer can even place it on the counter. The bicycle referred to had to be sent to Shanghai for a new tyre, costing \$24 Mexican; the machine in the first place cost only \$140 Mexican. Here was an addition of \$24 before it could be used, besides the loss of its use for five weeks, due entirely to the carelessness of the shippers. It is such cases as the above (I have only detailed those that I have personally seen in the past two months) that hurt our trade. I never hear of such complaints about English goods. In the United States the remedy is to return the purchase; but in China that is out of the question on account of distance and freight. I understand that German merchants have a method of settling such cases by arbitration at their consulates. A merchant in China receiving a consignment from Germany not up to the mark, lays the matter before the German consul, who, after an examination into the case, gives his decision, which is sent to the shipper in Germany and by him honored. I believe that this would be a good plan for American merchants to adopt. I recently saw an order for 500 wheelbarrows, 1,500 shovels and 1,000 picks; and I am inclined to think that a market can be made here for a far greater number. Wheelbarrows used here are heavy, clumsy affairs, all wood. They cannot be oiled and the noise caused by the turning of the wheel in the hub is unpleasant; besides, wood turning on wood does not make an easy wheel.—United States Consul at Chefoo, China.

#### OPENINGS FOR TRADE IN FORMOSA.

The following is a copy of part of a letter by Consul Davidson, of Tamsui:

A few days ago the Imperial Japanese Diet passed the loan bill which gives to Formosa the sum of 35,000,000 yen (\$17,500,000, in United States gold) to be spent in public improvements in the island. This will undoubtedly result in an increased import trade. While the larger proportion of the above sum will be expended in railway and harbor work, trade in all lines will be stimulated, and a considerable commercial boom is to be expected during the period of construction.

A very important experiment is now being made, the success of which depends much upon assistance given by manufacturers. I refer to the establishment in this city (Tamsui) of a general supply house, something entirely new to Formosa.

Commodious quarters have been obtained, and a large sample room arranged, in which will be placed on exhibition manufactured goods of all kinds. The manager, Mr. H. W. S. Edmunds, is an experienced merchant from Japan. He is desirous of entering into communication with American manufacturers, and has handed me the enclosed list of goods in which he thinks something may be done. He solicits from manufacturers catalogues and commercial literature, with prices and best discounts and other information necessary for effecting sales, and would like catalogues in duplicate wherever possible. He is particularly desirous of obtaining samples, and requests that same may be sent him wherever practicable. The sample room will, he believes, lead to more satisfactory results than any other method of business which he could adopt; and with this, I agree wholly. Of course, there are some lines in which samples are out of the question. For such, he desires photographs or other pictorial representation. The Edmunds establishment will be the only house working on this basis in the island, and, as both Japanese and Chinese like to see style of goods before ordering, I have great confidence in its ultimate success.

As to the advantage of manufacturers sending commercial literature to this consulate, I might state that catalogues which are loaned to inquirers frequently lead to sales. Requests for catalogues and information regarding certain American manufactures are often made, and, while they are mostly for single articles of machinery of no great value, still these are of importance in introducing to the island a large variety of goods which may lead to more profitable business later.

#### LIST OF GOODS REGARDING WHICH INFORMATION IS DESIRED.

- Cheap paints of all kinds.
- Good, cheap lumber, suited for general building purposes, which will resist the damp and white ant.
- Railway and bridge timbers and other railway and bridge material.
- Light and portable railways (Decauville) and railway and bridge supplies of all kinds.
- Building material and builder's hardware.
- Cheap ceiling and roofing material.
- Cheap dredging machinery.
- Cheap drain and ditch machinery; also road-making machinery.
- Water pipes and water-pipe fittings.
- Malleable iron and steel castings.
- Galvanized wire and wire rope.
- Hoisting engines and hoisting and hauling devices.
- Pipe threading and cutting machines.
- Water wheels, motors, turbines, etc.
- Electrical machinery, apparatus, and supplies.
- Rope, binder twine, etc.
- Files, axes, hammers, shovels, spades, scoops, etc.
- Leather belting, cheap cement, glue, etc.
- Coal-mining, coal-handling, and gold-washing machinery.
- Derricks, cranes, and other unloading machinery.
- Well-boring and prospecting machinery.
- Clay-working and brick machinery.
- Cheap gang mill, vertical preferred, to cut boards 1 inch thick out of timber 12 inches in diameter; also larger mills.
- Light portable sawmills and wood-working machinery generally.
- Machinery for the manufacture of seedoil, cocoanut oil, etc.
- Arrowroot and corn-flour machinery.
- Rice hulling and rice polishing machinery.
- Match-making machinery (automatic preferred).
- Paper machinery.
- Steam boilers, engines, pumps, heaters, and steam appliances of all kinds.
- Hot-air machinery.
- Kerosene engines and other cheap power, including small kerosene motors for narrow-gauge railways (about 2-horse-power).
- Small kerosene launches for river use.

Cheap jewellery, bicycles, tricycles, sewing machines, etc.  
 Cheap door bolts, hinges, locks, etc.; also cheap cabinet locks and hinges.  
 Cheap lamps for wall and table and for street lighting.  
 Cheap water heaters, using oil, wood, or charcoal for fuel.  
 Sanitary appliances of all kinds, especially those suited for tropical climates.  
 Ready-made buildings adapted to the Tropics.  
 Cheap wooden furniture, such as can be shipped "knocked down;" also furniture-making machinery.  
 Rubber boots, rubber suits, and miscellaneous rubber goods.  
 Cheap boots and shoes; must be good and strong.  
 Woolen and cotton hose, etc.  
 Sugar, confectionery, canned fruits, and preserved goods generally.  
 Photographic apparatus and supplies.  
 Drugs, medicines, and proprietary articles.  
 Gasoline, acetylene, and other lighting apparatus.  
 Best lubricating oils.  
 Mechanics' tools, farming implements, etc.  
 Also notions, sundries, and labor-saving devices of all kinds.

TRADE IN ADEN.

The following extracts are from a letter to the director of the Philadelphia Museum (to whom the original has been sent) by Consul Cunningham, dated Aden, March 21, 1899:  
 Aden is not a market for a large quantity of imports, while the territory supplied from here is immense, the demands of the inhabitants are not great or diversified. The entire import trade by sea amounted last year to only \$11,722,223. When Abyssinia and Somaliland are opened up, the trade will become much larger. Cotton goods represent by far the most important article of import. Of shirts, T cloths, and domestics, the United States has almost a monopoly, and a fair share of sheetings and drills. In the lines of white bleached and colored, printed or dyed cottons, however, we have practically nothing.  
 Cutlery.—This is of a substantial quality, but not the best, and comprises of all kinds. The trade amounts to over \$4,000 a year. Austria supplies about two-thirds of the imports, and the remainder comes from England. Tools for mechanics, carpenters, etc., also, I think, find ready sale.  
 Sewing machines.—The American machine has never been introduced here. Of the 93 which were brought last year, 54 came from Austria, and sold at a very high price.  
 Carriages and carts.—Two-seated covered buggies and the cheaper class of traps are most used here. Heavy two-wheel carts are also imported, mostly from Italy. These are meant to be drawn by bullocks, and the wheels are very large, much like those of a logging wagon in the United States, only con-

siderably higher. The trade in these two articles amounted last year to over \$11,000, of which some \$4,700 came from the United States.  
 Shoes and lasts.—There are some of the American manufacture here, recently imported by a native firm, and they have met with ready sale. Men's coarse shoes and finer qualities for Europeans are introduced. Cheap but showy articles are desired—low shoes in patent leather of inexpensive qualities, for instance.  
 Lamps.—I have often thought that this was a promising market for these goods, if some energetic firm would manufacture a good lamp of the kind in use. The lamps must be storm and punkah proof, and sell for from 50 cents to \$7. All grades, from the ordinary hand lantern to the huge wall lamp, are in demand. The plain ones are used.  
 Canned fruits, meats, and such vegetables as corn, tomatoes, beans, etc., are imported to some extent from the United States; but I am sure that the trade could be largely increased with proper efforts.

STUDY OF COMMERCE IN FRANCE.

Consul Skinner writes from Marseilles:—  
 "The commercial organizations of France are doing all within their power to promote the study of foreign commerce and foreign languages and to overcome the national habit of indifference to the latter. To this end the Society for the Defence of Commerce in Marseilles maintains a free commercial school, and the National Ministry of Commerce grants 'purses for residence in foreign lands.' Purses of the first category (4,000 francs—\$772—for the first year, 3,000 francs—\$579—for the second), are reserved for young men of not less than 16 and not more than 18 years who desire to establish themselves in some country beyond Europe, and who by virtue of the law of July 15, 1889, are relieved of the obligation of active military service if they reside regularly in foreign parts until they shall have attained 30 years. The purses of the second category (varying from 2,500 to 4,000 francs—\$482.50 to \$772) are for young men aged not more than 26 years, graduates of a high school of commerce, who, after having accomplished their military service, are desirous of completing, by a practical apprenticeship, their theoretical knowledge gained at the school. This year two purses are to be granted for each category."

As will be seen by his card on another page, Mr. C. B. Thistlethwayte, a general commission and selling merchant and agent, of Sydney, N.S.W., expects to be in Canada at an early day, where he will remain until the month of September. While in Toronto and vicinity all mail matter intended for him should be addressed care the CANADIAN MANUFACTURER. Mr. Thistlethwayte comes well recommended, and would be pleased to consult with manufacturers and exporters who desire to carry on an Australian trade.

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 TRADE MARKS, DECORATIONS, NAME PLATES, ETC. Guaranteed Quality.

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## CAPTAINS OF INDUSTRY.

The following items of information, which are classified under the title "Captains of Industry," relate to matters that are of special interest to every advertiser in these pages, and to every concern in Canada interested in any manufacturing industry whatever, this interest extending to supply houses also.

If a new manufacturing enterprise of any kind is being started, or an electric lighting plant instituted, or an electric railroad, or a telephonic, or a telegraph line is being constructed; or a saw mill, a woolen, cotton, or knitting mill; or if any industrial establishment has been destroyed by fire with a probability of its being rebuilt, our friends should understand that possibly there may be something in the event for them. Do you catch on to the idea?

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

Mr. John Corcoran of the Farmers' Binder Twine Company, Brantford, Ont., has invented an improvement on the main driving chain of self-binders, which may be used also wherever a sprocket is required. It does away with much of the friction and liability to accident attending the use of the present link chain. The improvement consists in the adoption of a rolling bearer, on which it is impossible for the sprocket to stick. As the bearing rolls whenever the sprocket touches it, the latter can no longer lift the chain. Mr. Corcoran calls his invention the rolling bearing hub chain, and has patented it in Canada and the United States. It has been tested by the Massey-Harris Company, and Mr. Corcoran expects that it will be adopted by them.

The Bell Telephone Company have begun the work of erecting a heavy copper long-distance metallic line from Ottawa to Brockville, Ont., which will greatly improve the facilities for long-distance talking between those cities, as well as with Toronto, London, Buffalo, and points in Western Ontario.

The Windsor Bent Goods Co., Windsor, Ont., has been incorporated with a capital stock of \$20,000.

The Imperial Vinegar and Pickling Co., Hamilton, Ont., has been incorporated with a capital stock of \$30,000.

The Ever Ready Dress Stay Co., Windsor, Ont., has been incorporated with a capital stock of \$20,000.

The Canadian Electro-Chemical Co., Sault Ste. Marie, Ont., has been incorporated with a capital stock of \$1,000,000.

The Lynn Shoe Co., Montreal, has been incorporated with a capital stock of \$30,000, to manufacture boots and shoes.

The Diamond Light & Heat Co., Montreal, has been incorporated with a capital stock of \$200,000, to manufacture burners, radiators, stoves, grates, etc.

The Colonial Bleaching & Printing Co., Montreal, has been incorporated with a capital stock of \$500,000, to manufacture, bleach, dye and print cotton and other textile fabrics.

The Wingate Chemical Co., Montreal, has been incorporated with a capital stock of \$30,000, to manufacture drugs, chemicals, etc.

The Eclipse Acetylene Gas Co., Montreal, has been incorporated with a capital stock of \$50,000, to manufacture acetylene gas machines, etc.

The San Paulo Railway, Light & Power Co., Toronto, has been incorporated with a capital stock of \$6,000,000, to construct railway and similar works outside of the Dominion of Canada.

The Firstbrook Box Co. Toronto, has been incorporated with a capital stock of \$300,000, to take over and carry on the box making, saw-milling and planing mill business of Messrs. Firstbrook Bros.

An order has been placed by the Ottawa, Arnprior & Parry Sound Railway Company for the construction of a thousand freight cars which are to be built in Ottawa. The company has recently placed an order for ten new locomotives for freight purposes.

The Gillies foundry at Carleton Place, Ont., was recently destroyed by fire, loss about \$1,800. The building will be rebuilt immediately.

The Ottawa Carbide Co., Ottawa, Ont., has been incorporated with a capital stock of \$200,000 to manufacture calcium carbide, etc.

The Canadian General Electric Co., Toronto, recently received an order from the Guelph Light and Power Co., Guelph, Ont., to install a generator of 100 horse power capacity.

The Stuart & A. R. Williams Machinery Co., Winnipeg, Man., has been incorporated with a capital stock of \$490,000, to manufacture all kinds of mill machinery, boilers and engines, etc.

Charles H. Wellman and William Garrett, of Cleveland, Ohio, are in the city. Mr. Wellman is a steel expert, and his mission here is in connection with the plant to be established by the Hamilton Steel and Iron Company. It is proposed to build a plant with a capacity of 100 tons a day. The mill will be built on the site of the blast furnace, and will be finished in six months. Hamilton Spectator.

The Canadian Rand Drill Co., Montreal, is increasing its capital stock from \$18,000 to \$50,000.

The Toronto Street Railway Company did a very satisfactory business on the Queen's birthday. During the day 158,700 passengers put their five-cent piece or its equivalent in the conductors' boxes. This is exclusive of transfers, and is an increase in passengers over the corresponding day's receipts last year of more than 10,000.

The steamer Tecumseh and schooner J. I. Case are loading rock elm and oak timber at Green Bay, Wis., consigned to England. The cargoes arrived over the St. Paul and Northwestern railroads from Wausau. The first portion of this consignment amounts to 1,050 sticks of timber. Later cargoes will be shipped when the timber reaches Green Bay from Ashland, Marquette, Manistique and other points, from whence it will be carried by lake and canal to Kingston, Ont., there rafted to Quebec and be reloaded for British ports. —Cleveland, O., Marine Record.

The Eastern Townships Electric Co., North Hatley, Que., has been incorporated with a capital stock of \$30,000, to manufacture electricity and other illuminants.

The Government intends to complete the telegraph service between Quebec and Belle Isle within the next two years. The line has already been built to a point 160 miles below Quebec; an additional 200 miles will be strung this year; and the summer of 1899 will see the finishing touches put to the work.

The Seymour Metre Co., Brampton, Ont., has been incorporated with a capital stock of \$40,000, to manufacture gas and electrical metres, etc.

The Ogilvie Milling Co. will install a new 1,200 horse-power steam engine in its mill at Winnipeg, Man., after which it will resume operations with a capacity of 3,000 barrels of flour daily.

## INGERSOLL-SERGEANT Rock Drills

FOR MINES, TUNNELS AND QUARRIES

PISTON INLET **Air Compressors** STRAIGHT LINE  
 DUPLEX and  
 COMPOUND.

FOR ALL DUTIES.

... COMPLETE MINE EQUIPMENT ...

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Other Offices - - - ROSSLAND, B.C. RAT PORTAGE, ONT. HALIFAX, N.S.

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Whatever may be the outcome of Mr. Pushie's visit to South Africa, the Dominion Coal Co., by sending him, have established the suitability of their coal for locomotive purposes. The coal sent out gave the highest satisfaction.—Mining Record.

Riordan's sulphite fibre mill at Hawkesbury, Ont., is to be ready for business by the first of July. The daily output is to be forty tons, up to the first of next January, after which it is to be eighty tons. There is a mistaken impression that the product of this mill is to be ordinary sulphite pulp, such as is used in news. It is, however, to be a superior book pulp. It appears that the Riordans discovered, when marketing in the United States the surplus of the Merritton mills, that the grades affording the most profit were the higher ones. They found competition too keen in the ordinary qualities, and therefore kept exclusively to the finer kinds. The twenty tons per day that they could spare from the Merritton mills have been disposed of in the United States for

more than the last twelve months, and it was a class of pulp that could be used for book paper. This quantity from the old mill will continue to be marketed across the line, as well as the whole output of the new mill. A salesman will be kept in the United States all the time. At Hawkesbury, of course, production will be cheaper than at Merritton. For the Merritton mill wood had formerly to be brought all the way from the north shore of Georgian Bay, and cost about \$6 per cord, laid down. At Hawkesbury, contiguous to the company's own limits on the Rouge, wood will cost not more than \$2.50 per cord delivered.

The B. F. Sturtevant Co., whose well known "chimneyless" factory is situated at Jamaica Plain, near Boston, is making an addition to its already large floor space for electrical work. Another story is being added to two of its shops, one 125 feet by 50 feet, and the other 100 feet square, both of which will be used for this purpose. The increase in this department has been

enormous. The company is now making electric motors up to 125 h.p., and generators up to 100 k.w.

The Maritime Fire-Brick and Tile Company of Stellarton have an order for 50,000 fire bricks for the Nova Scotia Steel Co. It has also received an order for various sized fire bricks—for Ferrona—which formerly were imported from abroad.—Halifax Mining Record.

Wilson & George have placed the contract for the machinery in their new flour mill at Indian Head, Assa. The mill will be modern throughout, and will be equipped with a complete electric light plant.

Charles McCombie, a lumber and pulp expert from Sweden, was in Montreal and Toronto a few days ago. While in the Maritime Provinces he visited the timber districts held by the Muskoka Lumber Company, in Restigouche County, N.B., with a view to buying the limits and placing a pulp mill at St. John, N.B.

**REDDAWAY'S ORIGINAL**

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**STRONGEST BELT MADE. NO STRETCHING.**

NOT AFFECTED BY DAMPNESS,  
HEAT OR STEAM.

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Fire Hose, Steam Hose, General Mill Supplies.



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Manufacturers of

**OAK-TANNED LEATHER BELTING**

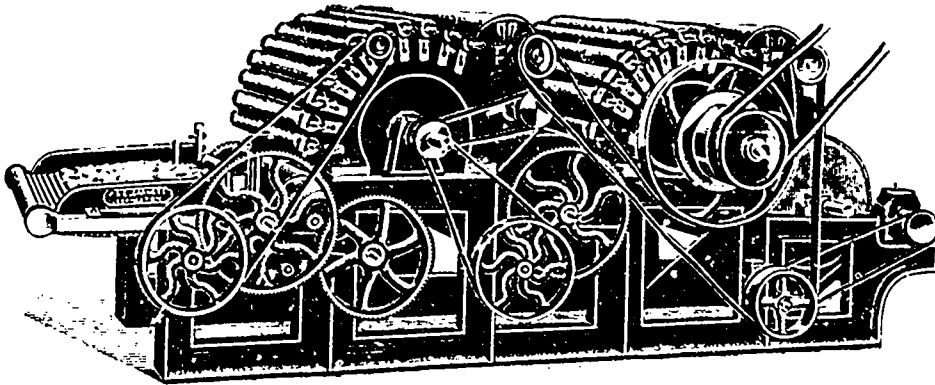
**MONTREAL AND TORONTO.**

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

# P. & C. GARNETT, Limited

CLECKHEATON, YORKS, ENG.

TELEGRAMS, - GARNETT, CLECKHEATON.



THESE Machines have a world-wide reputation. They are made in various widths up to 60 inches on the wire, and with one, two, or three swifts. They can be clothed as fine as 24 rows per inch so as effectually to open the finest threads.

Waste Opener or Garnett Machine, for Opening Hard Twisted Woolen and Worsted Waste.

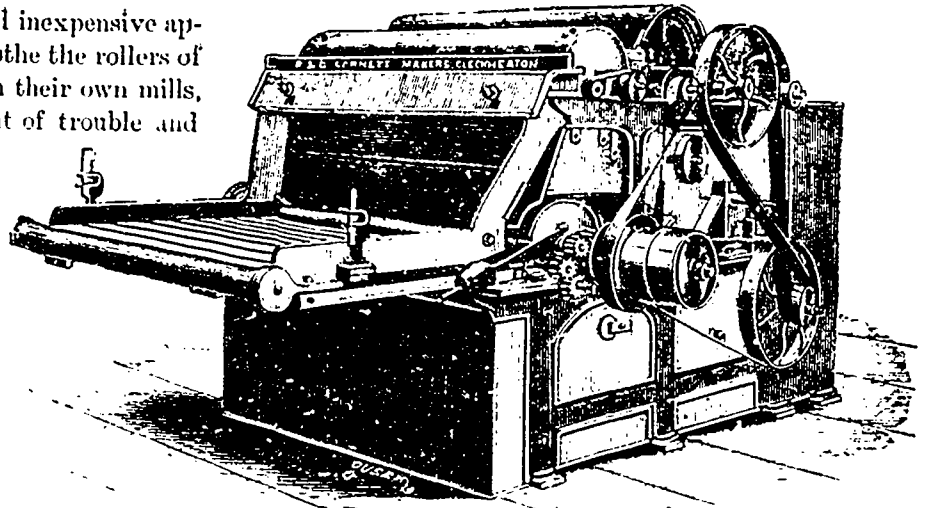


Garnett Wire.

Garnett Wire, or Metallic Card, made with any form of tooth, in Swedish Charcoal Iron or Cast Steel, with points hardened by electricity. This Wire is used for covering iron rollers, breasts of woolen cards, liches-in of cotton cards, comber doufers, etc.

## Patent Garnett Clothing Apparatus

BY means of this simple and inexpensive apparatus parties can re-clothe the rollers of their waste-opening machines in their own mills, and so save an immense amount of trouble and expense in sending their rollers away to be done.



Improved Wool Cleaning or Burring Machine.

Capable of cleaning 1,500 pounds of wool per day. The very best and most economical machine made for the purpose.

## WROUGHT IRON PULLEYS

Light, True and Unbreakable.



Cast Iron Pulleys.

*Iron and Steel Shafting, Couplings, Flummer Blocks, W. I. Collars, Hangers, Wall Boxes, etc.*

A Canadian correspondent of The Paper Mill writes that the active demand for news now engages the attention of all the Canadian mills manufacturing for the home market. Never before in the history of the country were the times so good. One very marked feature of the prosperity is the greater outspreading of the newspapers. Five years ago the subscription price of a daily paper negated the circulation of it among people of the smallest means. But cheap printing paper, following the type-casting machine, has ushered in an era of low subscription prices, and these have caused an expansion of the circulation. What has caused a still greater expansion has been the direct betterment of the wage earner's and the farmer's lot, resulting from the industrial revival. Of course, a bigger circulation means a bigger trade for the paper mills. In still another way the good times have stimulated the demand for "news." They have given new life to the advertising business, which had become quite dead during the depression. Relatively speaking, the people have now plenty of money, so that there is something to advertise for. The space taken up by the manufacturers, merchants, insurance companies, etc., in advertising their wares or business, calls for bigger papers than we used to have.

Also, several new weeklies and dailies have come into existence, especially in British Columbia and the growing West, since the times began to brighten up. Altogether, the general revival has given a marked impulse to the trade in news.

Mr. John R. Barber, of Messrs. Wm. Barber & Bros., Georgetown, Ont., which concern has been engaged in the manufacture of paper at that place for about fifty years, was in Toronto a few days ago looking for a possible site for new paper mills. As a very large portion of his product is consumed in Toronto, the desire of Mr. Barber is to have his works located here.

At Kelowna, B.C., tobacco of a quality good enough for cigars is being grown, and it is expected 60,000 pounds will be raised this season. The quality of a cigar is, of course, a matter on which tastes will vary, but the product of the Kelowna fields is winning good opinions, and it is possible that there is here the beginning of a profitable Canadian industry.

Messrs. Wm. & J. G. Greey, Toronto, have sent us a very neat and convenient circular, got up in letter envelope size, which contains much valuable information concerning re-grinding and re-corrugating rolls for flour mill machinery. It mentions the facilities

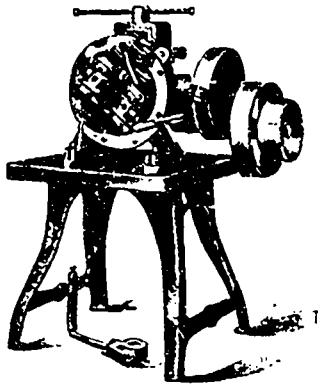
the concern have for doing work where accuracy, promptness and dispatch are required, suggestions about the proper packing and boxing of rolls, how to secure the lowest freight rates, how to avoid unnecessary delays and expense by giving proper instructions, etc. The little book should be kept for reference, as, by observing its suggestions, money, time and trouble can be saved when sending rolls for repairs.

The Peterborough Canoe Co., successors to the Ontario Canoe Co., Peterborough, Ont., of which Capt. J. Z. Rogers is managing director, have sent in their 1899 catalogue having reference to the craft built by them which includes open and decked canoes, fishing and hunting, paddling and sailing canoes, rowing and sailing skiffs, steam launches, etc. The catalogue is illustrated throughout with representations of the different boats, etc., made by this concern, also price lists which inform wouldbe purchasers just what they are getting and the cost thereof.

The St. Eustache Canning Co., St. Eustache, Que., has been incorporated with a capital stock of \$12,000.

Mr. William Staddon, late of Harrow, Ont., will erect a flour mill at McGregor, Ont.

# THE BEST PIPE THREADING and CUTTING-OFF MACHINES



No. 00 Machine, Power Attachment.

ARE MADE BY THE **ARMSTRONG MFG. CO.**  
BRIDGEPORT, CONN.

Also Manufacturers of a FULL LINE of **ADJUSTABLE STOCKS and DIES**  
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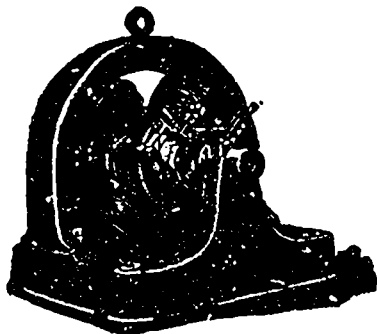
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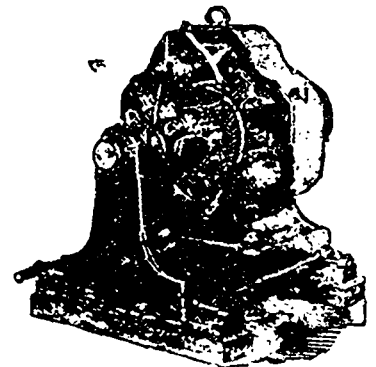
**Engine Packing,**  
**Magnesia Pipe Covering**  
**Lubricating Oils**  
**and Grease.**

The

**William C. Wilson Co.**  
Limited

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TORONTO, ONT.

## Electrical Construction Co. of London, Limited.



**MULTIPOLAR MOTORS & DYNAMOS**  
And Direct Connected Plants  
for Isolated Lighting.  
Repair Work a Specialty.

HEAD OFFICE AND FACTORY:  
No. 90 YORK STREET, London, Canada.  
760 Main St., Winnipeg.  
42 York St., Toronto. 131 Granville St., Halifax.



The United Electric Co., Toronto, successors to the W. A. Johnson Electric Co., manufacturers of complete electric equipments for electric power transmission for railroads, mines, mills, etc., and of alternating or direct current incandescent and art lighting installations, have recently supplied the following parties with motors and other electric machines as follows:—In Toronto, Bereton & Manning, one 2 h.p. motor; Brown & Hussey, one 10 h.p. motor; H. P. Pattearche, one 2 h.p. motor; James Sparrow & Co., one 6 h.p. motor; M. Langmuir Mfg. Co., one 2 h.p. motor; Elias Rogers & Co., one 12 h.p. motor; A. R. Williams Machinery Co., one 2 h.p., and one 12 h.p. motors; Toronto University, one 1½ k.w. dynamo; Rice Lewis & Son, one 20 h.p. motor; Metallic Roofing Co., one 20 h.p. motor, (second order); Northway & Sons, one 8 h.p. motor; Toronto Lithographic Co., one 8 h.p. motor; Elliot Paper Box Co., one 8 h.p. motor; Imperial Cap Co., one 2 h.p. motor; in London, Ont., Brock Engraving Co., one 2

h. p., and one ½ h.p. motors; at Ottawa, Jos. T. Rowan, one 3½ h.p. motor; Federal Printing Co., one 8 h.p. motor; The Journal Printing Co., one 60 light dynamo; at Oshawa, Ont., Scofield Woolen Co., one 25 h.p. motor; at St. John, N. B., E. S. Stevenson, one 1 h.p. motor; Lindsay, Ont., Light, Heat and Power Co., one 3 h.p. motor; at Montreal, R. E. T. Pringle, one 8 h.p., one 6 h.p., one 2 h.p. motors; Darling Bros., two 8 h.p. motors; at Beaverton, Ont., R. B. Dobson, one 4 h.p., and one 2 h.p. motors, and one 6 h.p. generator; at Rat Portage, Ont., Citizens Telephone & Electric Co., one 5 h.p. generator, and one 5 h.p. motor; Rat Portage Lumber Co., one 25 h.p. motor; at Hamilton, Ont., Roger Coal Co., one 10 h.p. motor; at Waterloo, Ont., The Telegraph Printing Co., one 3½ h.p. motor; at Brantford, Ont., W. J. Babcock, one 10 h.p. motor; at Lachine, Que., Dominion Bridge Co., one 80 h.p. generator; at Dundas, Ont., John Bertram & Son, one 25 h.p. generator; at Mitchell, Ont., J. W.

Skinner, one 3 h.p. motor; at Smith's Falls, Ont., The Clark Creamery Co., one 8 h.p. motor.

The recent organization of a vinegar trust in Ontario, that resulted in the establishment of a large vinegar factory in Toronto, and the closing up of some of the smaller factories, will have the further effect of the starting up of a large factory in Hamilton. Regards which the Spectator says that: Several of the largest grocery houses in Toronto, Hamilton and London are interested in the scheme, and it is proposed to go largely into the manufacture of pickles as well as vinegar. The proposition is that the company will be formed of the heads of these wholesale houses and that the travelers of the firms will place the output of the factory throughout the Dominion. The firms interested keep between 70 and 80 travelers on the road all the year round, and cover not only the province of Ontario, but Manitoba and British Columbia as well. With such an army of men to place the output of one factory the production must necessarily be on an immense scale. The centralization of the vinegar industry in Toronto has closed two of Hamilton's vinegar industries, but with the proposed company established here the city will be able to make up the loss many times over. Hamilton has advantages that should bring the industry here. The finest and best farm lands in Canada for the production of the vegetables necessary are within a mile or two of the city, and the farmers will spend their money here, the retailers receiving the benefit of a big home market.

At the Chaudiere, Ottawa, the Bronson & Weston lumber mill is being converted into a carbide factory. A large flume, seventy feet long by thirty-two feet wide, is being built to convey power to the works. At the Larmouth calcium carbide works improvements are being made daily. During last month three furnaces were placed capable of turning out daily 1,000 pounds of carbide each. New crushers and mixers have also been put in. The building is to be fully equipped by July.

A company is being organized to build a new flour mill at Headingly, Man. The mill will have a capacity of 100 barrels daily and a grain elevator in connection will have a capacity of 25,000 bushels.

It has been proposed by farmers in the vicinity of Churchbridge, Assa., N.W.T., to organize a company to build a flour mill at that place.

## ..CHICAGO.. TIME RECORDER

A RELIABLE TIME RECORDER MUST POSSESS THESE THREE QUALIFICATIONS:

1.—It must be an accurate Timepiece.

We use the famous SETH THOMAS CLOCK.

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Our Sight-opening feature, whereby each man can inspect his record when made, eliminates all chance for dispute.

3.—IT MUST BE SIMPLE, POSITIVE, AND QUICK OF OPERATION.

The "CHICAGO" has less complicated mechanism than any other Recorder made, and by the simple manner of operating employes can register two-fold more rapidly than on any other.

If you have none you pay for it in lost time every year.

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SOLE AGENTS FOR CANADA.

**W. C. BULLOCK & CO.,**

42 York Street, TORONTO, ONT.

PHONE 293.



Numerical (or Key) Recorder

## The Economical Development of Water Power



Horizontal Setting, with Quarter Turn Elbow.

CHICOUTIMI PULP COMPANY.

Requires, where the supply of water is limited, that every available foot pound of energy contained in it be properly set to work. On the other hand, if the source of power is abundant your interests suggest that the plant be made as compact and powerful as possible, to reduce the space occupied and the first cost.

### The Crocker Patent Turbine....

Is peculiarly adapted for service under any of these conditions, as it possesses great efficiency under varying degrees of gate opening, and the ratio of power developed to diameter of wheel is remarkably large. Those interested we will supply catalogues and particulars of leading plants, together with a copy of latest official Holyoke test, 1892. Water powers reported upon, and estimates prepared. Correspondence invited.

## The JENCKES MACHINE CO.,

42 Lansdowne St., Sherbrooke, Que.

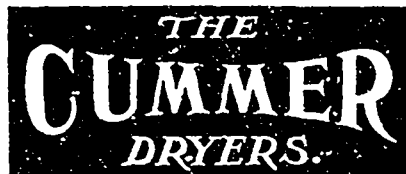
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**CANADIAN SKILLED LABOR ABROAD.**

There is one phase of the oil industry which the inhabitants of Petrolea are accustomed to dwell upon with pardonable pride, and which every Canadian should regard with equal satisfaction. It is the fact that this town supplies the world with drilling outfits, and that the oil fields of the district furnish expert drillers to operate the machinery. Wherever throughout the world drilling for oil or water is going on, excepting, of course, the United States, which has a system of drilling of its own, there are to be found Petrolea drills and Petrolea drillers. In the heart of Africa, in the jungles of India, in Australia and New Zealand, in Borneo and the other islands of the Malay archipelago, in Burmah, on the steppes of Russia, in the dreary stretches of Austria and Galicia, and in Germany, Spain and Italy, sturdy Canadians from this district are boring into the bowels of the earth with tools manufactured in Petrolea. The Americans are competitors with Canadians in the manufacture of drilling outfits and tools, but

the former meet with scant success. The American method of drilling is known as the cable system, but while it is admirably adapted for use in the oil fields of the United States it is not suited to the geological formations in other countries. On the other hand, the pole tool system of Canada appears to be the very thing for getting at the hidden springs of oil and water, and hence it is in great demand. The Oil Supply Company of Petrolea is the name of the firm which manufactures the drilling outfits and tools. Most of the raw materials have to be imported, but every particle of the machinery is manufactured and put together in Petrolea, even to the wooden derrick which surmounts the drill. Whenever a drilling outfit is sent abroad a gang of men goes with it, and so, during the last 25 or 30 years, there has been a constant ebb and flow of population between Petrolea and many foreign countries. The position of driller in a foreign field is eagerly sought for by the young men of Petrolea not only for the good pay but for the opportunities which it affords of seeing the world.

The wages paid is \$5 a day and expenses, which is almost munificent in comparison with the rate of pay at home. Not only so, but in a foreign field there are many chances of making a good strike or seizing a good opening which may ultimately lead to wealth and independence. It is no wonder, therefore, that many young men of good position and first-rate education are to be found toiling in the mud and slime of the oil fields and acquiring that expert knowledge which will secure them a position on some gang going to an antipodean, an Asiatic or a European country. The drillers who go out from this district might properly be regarded as among the best educated and most expert mechanics of their class in the world. It would not be surprising to find many of the youth of Petrolea attracted to the occupation of the occupation of drilling, even were it entirely local in its character, as they are habituated to it almost from infancy, and take to it as naturally as a duck takes to water. In every lad, however, the love of adventure obtains to a greater or lesser



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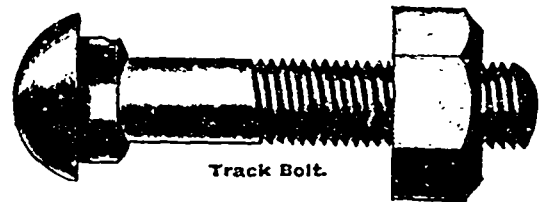
HUNDREDS IN OPERATION.

CLEVELAND, OHIO.

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*Track Bolts and Nuts,  
Bridge and Roof Rods,  
Wrot and Cast Washers,  
Railroad and Contractors' Supplies,  
Carriage, Machine, Plow and Special Bolts,  
Bridge and Boiler Rivets,  
Drop Forgings of all Kinds.*



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SEND FOR ILLUSTRATED CATALOGUE.



Coach Screw.

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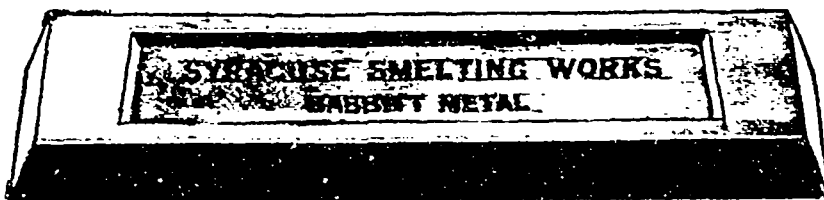
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IT IS THE BEST AND CHEAPEST FOR

Paper and Pulp Mills. Saw and Wood Working Machinery. Cotton and Silk Dynamos, Marine Engines and all kinds of Machinery Bearings.

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Canada  
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SYRACUSE,  
N.Y., U.S.



Pig Tin, Lead Ingot, Copper, Brass, Aluminum, Zinc, Spelter, Antimony, etc., furnished promptly.

**SYRACUSE SMELTING WORKS.**

AGENTS IN CANADA :—A. R. WILLIAMS MACHINERY CO., Toronto; MECHANICS SUPPLY CO., Quebec; JOHN J. BARRY, St. John, N.B.; H. H. FULLER & CO., Halifax, N.S.

degree, and when the imagination of the Petrolet boy has been inflamed by the stories which returned drillers have told of their experiences abroad it is easy to see that sooner or later they will embrace the opportunity of going abroad as soon as it presents itself. The number of Petrolets who have gone to foreign fields during the last 25 years would reach a total of several hundreds. Of these many have returned to their native land possessed of enough to spend the remainder of their days in comfort. With others the fascination of life abroad has proved stronger than the love of home. Interesting stories are told of Petrolets who have travelled abroad and in unexpected and out-

of the way places stumbled on some former fellow townsmen. Last Christmas, according to a letter received in Petrolet from a member of the party, twenty Petrolets gathered together in Sumatra to celebrate the occasion, and in that tropical clime as they drank success to each other doubtless memory flew back to the slopes of their native land, at that time buried under winter snows and in fancy they heard the musical jingle of the sleigh bells. It will be a great cause of regret if, from any reason or other, operations in the oil fields should cease, and this great training school for the world be closed. The manufacture of drilling outfits would doubtless still be continued, but the

difficulty would be to provide drillers when the means of educating them no longer existed.

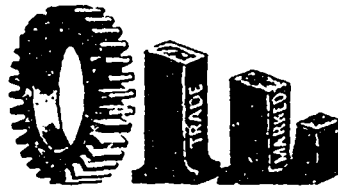
#### A NEW COTTON INDUSTRY.

The success which has attended the operations of the Canadian cotton companies has opened a new field which will afford an opportunity to devote special attention to the two important operations of dyeing and printing. Hitherto these operations have been separately carried on in different establishments. At present there is only one print works, of eight machines, in the Dominion of Canada, and only one concern doing plain dyed work, while the requirements of the country are largely in excess of these means of supply, the difference being seen in the imports of these classes of goods from Great Britain, Germany, and the United States. Such being the case a company—the Colonial Bleaching and Printing Company, Limited—is now in course of formation to engage in the business of bleaching, dyeing and printing cotton and other textile fabrics, the head office and principal place of manufacture being at or in the vicinity of Montreal. Notice of application for a charter has already been given, the total capital stock being placed at half a million dollars. The promoters of the new company have had many years' experience in the business in Canada, and are confident that a handsome return on the capital invested can be earned. It is confidently expected that the new works which will be fitted up with the latest and most approved machinery and appliances will be able to secure sufficient trade to keep them constantly employed, and to earn a reasonable dividend for its stockholders. The new plant will be on a strictly converting basis, and no similar establishment exists in this country at the present time. The raw material for converting purposes will be imported from British and foreign markets, while at the same time grey cottons manufactured here will be transformed into either dyed or printed goods. The new company is not starting with the object of competing with existing companies, but as already stated, with the intention of opening up an entirely new branch of trade. Thus, for instance, if merchants secure plain cloths they can have them dyed or printed according to their own designs and requirements. Similar concerns are common in the United States as well as in Europe and are attended with great success. There is, therefore, every expectation that similar results will attend such an undertaking in this country. Among those who have become subscribers for the company's stock are some of our most successful business men, and the prospects are, taking everything into consideration, that the company's undertaking will be a success in every way.—The Shareholder.

# "Capitol" Cylinder

"RENOVN"  
ENGINE

"ATLANTIC" RED



RELIABLE WELL-KNOWN BRANDS.

ALL ORDERS PROMPTLY FILLED.

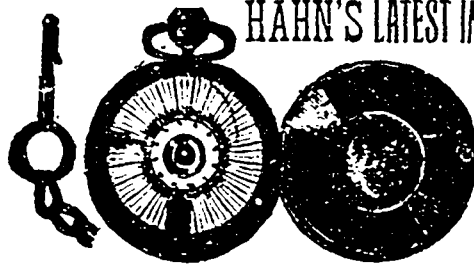
THE...

# QUEEN CITY OIL CO.

LIMITED,

SAMUEL ROGERS, President.

TORONTO, CANADA.



## HANN'S LATEST IMPROVED WATCHMAN'S TIME DETECTOR

This Clock is adapted for six or twelve stations, and the keys are all different, ranging from 1 to 6, and 1 to 12, instead of as in the old style Time Detectors, which mark either by holes or an impression on the dial, being the same for all stations.

For Circulars, prices, and further information address

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This Clock received the First Prize at World's Fair

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DYNAMOS,  
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# Shafting, - Hangers, - Pulleys.

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And carry a full line of the above requisites for Factory and Mill purposes. Send us your specifications! Our prices will surprise you! Afterwards our goods and prompt shipment will please you.

We issue a 270 Page Catalogue FREE for the asking.

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Works, Toronto Junction. Office, 74 York St., TORONTO.

Headquarters in Montreal—LAURIE ENGINE CO., 321 ST. JAMES STREET.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

**OSTRICH FARMING IN ONTARIO.**

Mr. William T. Lundy, Toronto, has for several years been studying the conditions of ostrich farming, and is now convinced that it can be carried on with good success in Canada, and has determined to engage in it. He has therefore purchased a flock of nine birds in California, and will place them on a farm which he is establishing in the immediate vicinity of Toronto.

The flock comprises five full-grown birds and four chickens. The big birds have quite a busy laying season, and they have already started.

A healthy, full grown ostrich can be plucked

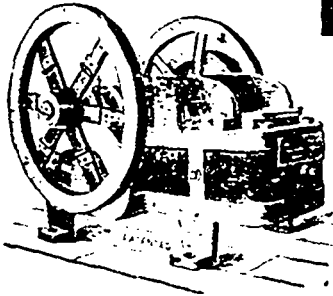
twice a year, and Mr. Lundy says the yield of leathers from each clipping nets from \$150 to \$200. The wing and tail plumage is the best, but the body leathers are good for small tips.

Mr. Lundy states that he has not yet decided on the exact location of his farm, but he is negotiating for a suitable site now, and he will have it in shape when his ostriches arrive. The enterprising promoter has had large experience in stock-raising in the west and knows a little about ostriches. In connection with the farm, an establishment will be started to cut and dye the leathers.

At present, the United States imports about \$2,000,000 worth of leathers annually. These come from the South of Africa, and the total output of that country is controlled by several large London syndicates. Although they cannot be called a leather pool, they work in harmony and fix the prices according to their own inclination. Take, for instance, the recent sales held in London, where manufacturers were forced to pay an enormous advance on all the raw stock, the only reason for the high prices being that leathers are in good demand in Europe.

There are at present in the United States

**ONLY FINE CRUSHER**



**FOR QUARTZ and ORES.**

DOES WORK OF CRUSHER AND ROLLS COMBINED.

**STURTEVANT MILL CO.,**

Send for Circular. BOSTON, MASS.

ROLL JAW CRUSHER.

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(LIMITED)  
WIRE MANUFACTURERS  
& METAL PERFORATORS  
**HAMILTON  
& MONTREAL**

Wire Screens for Every Class of Material.

Perforated Metal of Steel, Copper, Brass, Zinc for all purposes.

Special Attention given to Minors' Requirements.

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Bar Iron, Steel, Boiler Plate,  
Rivets, Tube Expanders,  
Hammers, Metallic Letters  
and  
Figures for Patterns.

**RICE LEWIS & SON**  
(LIMITED)

COR. KING AND VICTORIA STREETS, TORONTO.

DO YOU USE

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FOR WEAVING FROM COP?

WE MAKE THEM. Write for Prices and Samples.

**JOHN HOPE & CO.,** LACHUTE SHUTTLE and BOBBIN WORKS,  
LACHUTE, QUE.

**THE BEST JUDGES OF ENGINES**

THOSE WHO BUILD HIGH-GRADE ONES  
ALL USE



The **Detroit**  
**Sight-Feed**  
**Lubricators**

This is equally true of Canadian as of American engine builders. They know that the valve friction must be overcome if their engine are to work at their best. They know from experience that the Detroit Lubricator do this and where so much is at stake they want only the best. It should be the same with all engine owners. The saving our Lubricator effect will pay for themselves very soon.

*Send for Catalogue and Prices.*

**Detroit Lubricator Co.,**  
DETROIT, MICH.

ADVERTISE IN THE CANADIAN MANUFACTURER.  
SEND FOR RATES.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

six ostrich feather farms—four in Southern California, one in Arizona and one in Florida. The first birds, 22 in number, were imported from South Africa in 1882 by Dr. Portheroe and E. Atherton, and were sold to an English syndicate for \$21,000.

**CAPE BRETON V. ONTARIO**

There is, as stated in a previous issue, talk of starting a big blast furnace at or near Toronto. If Mr. Whitney proceeds with his proposed works in Cape Breton the question may be asked, "Where is the market to be found for the product of the furnaces of Nova Scotia and Ontario?" At present there is not a sufficient market in Canada, but Cape Breton may rely upon being able to send pig iron to the British market. If in Britain it pays to import iron ore, it may likewise be profitable to import pig iron. But where would the produce of the Toronto furnace go? Not very well to the United States as iron is produced there very cheaply. The chief hope presumably is that with an abundant supply of pig iron, works for the making of rails, and other classes of manufactured iron would be established and consumption increased. We cannot see how Toronto can compete with Cape Breton, even though the Ontario government gives a bonus, in addition to that of the federal government, of \$2.00 per ton, while the Nova Scotia government gives a bonus

of a few cents in a way of lessened royalty on coal. There is neither iron ore, nor are there fluxes near Toronto. Nor has Toronto access to the ocean. And coal must be much dearer there. Cape Breton has at least some iron ore, has abundance of lime, coal at the mouth of the furnace, and the ocean at its side. The only inducement to start furnaces in Ontario must be the \$2.00 bounty. This artificial advantage will not make up for the natural advantages of Cape Breton. —Halifax Mining Record.

Don't worry, neighbor! The production of pig iron in Canada is now away behind consumption demand, and the demand is increasing much faster than the production. Over 40,000 tons of pig iron were imported into Canada last year. What Canada needs is a steel industry to convert pig iron into railway bars, girders, etc.

**ELECTRIC PLANT RUN BY WIND.**

The movements of the atmosphere are in these days considered too erratic to prove of much service for the economic production of power, much less for the generation of electricity, where regularity is everything. It is, however, stated that electricity is now being successfully generated by a plant laid down by Mr. J. J. Feely, of Walpole, Mass. With wind as the fundamental factor he operates a private light plant, forces water all over his estate, drives farm machinery, and cuts wood.

**VALUABLE AIDS TO BUSINESS.**

**Kelly's Directory of the Merchants, Manufacturers and Shippers of the World.**

The Standard Export Medium—Endorsed by the British Government—Published Annually, price \$9.00.

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|  | Price. |
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**Colonial Directories.**

|                                   | Price.  |
|-----------------------------------|---------|
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| " " New Zealand                   | 13 00   |
| " " New South Wales               | 13 00   |
| " " Western Australia             | 8 00    |
| " " South Australia               | 8 00    |
| " " Tasmania                      | 8 00    |
| Directory of Belgium              | 7 00    |
| General Directory of South Africa | 7 00    |

All these Directories contain a classified Business list.

**National Directories.**

|                                      | Price.  |
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| Royal National Directory of Scotland | \$14 00 |
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**PARIS EXPOSITION, 1900.**

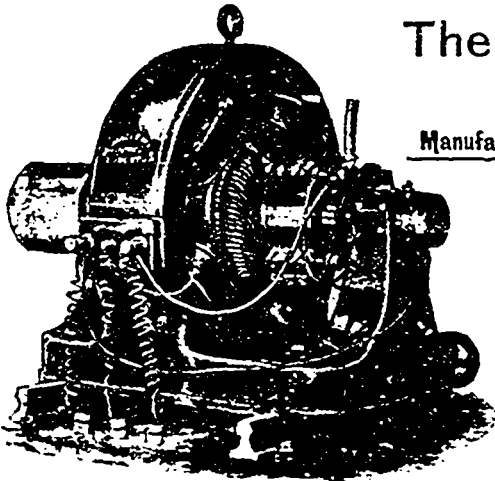
Kelly's Directories, Ltd. of London, Eng., desire to announce to their many patrons in the Dominion, and to Canadian Manufacturers generally, that they have made arrangements for prominent space in the Paris Exposition in 1900, in which to exhibit their

**COMMERCIAL DIRECTORIES**

prominent amongst which are the Merchants, Manufacturers and Shippers of the World. Employes conversant with the French, German, Italian, Spanish and other languages will be in daily attendance, and the names and addresses of British and Colonial Manufacturers will be furnished all enquirers interested therein.

Exhibitors or Non-Exhibitors who desire to distribute Circulars, Catalogues, Commercial Prospectuses, etc., at the Paris Exhibition, can make arrangements with us for that purpose at reasonable rates. Prospectus with advertising rates and full particulars on application to

**KELLY'S DIRECTORIES, LTD.,**  
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**The Jones & Moore Electric Co.,**

Manufacturers and Contractors

All Work Fully Guaranteed

**ELECTRIC LIGHT and POWER PLANTS a Specialty**

A Few Second-Hand A 1 Machines For Sale Cheap

20 and 22 ADELAIDE STREET WEST TORONTO

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(LIMITED)

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**BOBBIN AND SHUTTLE MANUFACTURERS.**

FORTY PRIZE MEDALS AWARDED.

HIGH-CLASS WORKMANSHIP. SEVENTY YEARS' REPUTATION.

LARGEST BOBBIN MAKERS IN THE WORLD—(Over 1,400 Workmen).

ADDRESSES—

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BRANCH ESTABLISHMENT:

**ATLAS BOBBIN WORKS, GARSTON, LIVERPOOL.**

OFFICE AND SHOWROOMS

14 MARKET PLACE, MANCHESTER

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

Early in his experiments Mr. Feely found that one of the first problems to be solved was to determine accurately the wind velocities and efficiencies during the various months of the year. This was determined by the use of an anemometer, made especially for that particular purpose and very similar to those in use by the United States Weather Bureau, with the exception that while the Government instruments record the mile rate of the wind, the one made for Mr. Feely recorded the wind at each fiftieth of a mile. The windmill proper is the ordinary kind common in all out-of-town and country places where there is no public water supply. The steel frame or supports extend fifty feet above the second storey of the stables.

and fan which are operated by the wind. As the wheel revolves under the influence of the slightest breeze it moves a series of cog wheels which work upon a long vertical shaft running from the head of the machine to the basement or cellar of the stables, where it communicates with a second shaft leading directly to the dynamo of the plant.

From this dynamo lead two sets of wires. One set carries the current to the various parts of the estate, where it is utilized for power purposes and for lighting, while the other set of wires receives the surplus current, and stores it in storage batteries for use when the wind is not sufficiently strong to give power enough to supply the necessary voltage. When there is a high wind

there is naturally a much stronger current than is necessary, and in order that it may not be wasted or play havoc with the lights the surplus energy is led into these storage batteries and there kept till needed. A feature of this dynamo is that the same one which generates the current when there is breeze also acts as a motor during a calm and can be used with the energy always on hand in the storage batteries. This double service by a dynamo has never before been accomplished.

Once the practicability of the machinery was assured Mr. Feely lost no time in putting electric lights throughout his house and stables, and about his private grounds, and utilizing the new agency for various household and farm purposes. The whole secret of the success of his work is in the dynamo, which, in a number of ways, is different from the usual electric dynamo. In an ordinary dynamo the voltage depends upon the speed with which its armature is driven, and it was found that owing to the various speeds at which the windmill was driven an ordinary dynamo would be entirely useless for such purposes as Mr. Feely intended, so that it was necessary to construct the special one. In devising such a dynamo it was essential that it should be self-regulating.

When the dynamo was tried it was found to work perfectly.

During his experiments in ascertaining the varying changes in the velocity of the wind Mr. Feely found that there is not as great a difference as is generally supposed between winter and summer winds. During the mid-summer months he found that the wind averaged eight miles an hour, while during the winter months the average was about nine miles an hour. One of the most important features of this new contrivance is what is called a speed equalizer of special construction, by which the surplus energy generated by high winds is mechanically stored and delivered to the batteries in a comparatively uniform manner.

As the dynamo must attain a sufficient velocity to give an electromotive force sufficient to overcome the back electromotive force of the battery it was necessary to devise some means of preventing the current from the storage battery passing back to the dynamo when not needed. This was accomplished by a device, which, when the electromotive force of the dynamo rose to a given point, would connect with the circuit, thereby sending it into the storage battery, and again open that circuit, when, owing to the decreasing speed of the dynamo, the electromotive force falls below that of the storage battery.

ESTABLISHED 1849.

CHARLES F. CLARK, President.

JARED CHITTENDEN, Treasurer.

# BRADSTREET'S

Capital and Surplus, \$1,500,000.

Executive Office: OFFICES THROUGHOUT THE CIVILIZED WORLD.

346 and 348 BROADWAY, New York City, U.S.A.

THE BRADSTREET COMPANY gathers information that reflects the financial condition and the controlling circumstances of every seeker of mercantile credit. Its business may be defined as of the merchants, by the merchants, for the merchants. In procuring, verifying, and promulgating information no effort is spared, and no reasonable expense considered too great that the results may justify its claim as an authority on all matters affecting commercial affairs and mercantile credit. Its offices and connections have been steadily extended, and it furnishes information concerning mercantile persons throughout the civilized world.

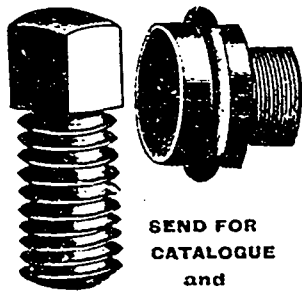
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CORRESPONDENCE INVITED

The Bradstreet Company, Toronto Office, -- Cor. Jordan & Melinda Sts.

THOS. C. IRVING,

Superintendent.



SEND FOR CATALOGUE and PRICE LIST.



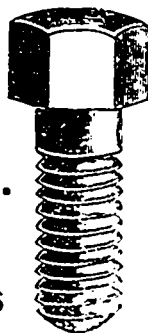
The Diamond Machine & Tool Co.

TORONTO, ONT.

Manufacturers of...

Machine Screws

OF EVERY DESCRIPTION.



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Leather Belting,  
Lancashire Hair,  
English  
Card Clothing,

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Head Office and Factory--  
MONTREAL

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Toronto Stock Depot,

84 BAY ST.

'Phone 374.



## BRADFORD MERCHANT

Is open to buy on commission, Yarns, Noils, Shoddy Pieces, etc. Apply J. C. COATES, 19 Bolton Road, Bradford, Eng.

## MR. C. B. THISTLETHWAYTE

OF SYDNEY, NEW SOUTH WALES,

Purposes being in Canada from about July 11th to Sept. 1st, and is open to accept manufacturers' agencies.

Post address care of THE CANADIAN MANUFACTURER, McKinnon Building, Toronto.

## THOMPSON & CO.,

Manufacturers of

BOBBINS and SPOOLS

FROM SELECTED STOCK.

Correspondence Solicited Orders Promptly Filled

SHERBROOKE, P.Q.

**CANADA'S GREAT INDUSTRIAL FAIR.**

Mr. H. J. Hill, the Manager and Secretary, has sent in a ninety page pamphlet having reference to the 1899 exposition of the Toronto Industrial Exhibition Association, that will be held from August 28th to September 9th inclusive. The book contains the general rules and regulations governing the Fair, reference being made to the Horse Department, Trotting and Running Races, Cattle, Sheep, Swine, Poultry, etc., Dairy products and utensils, grain, roots and vegetables, Horticultural department, honey and spray supplies, Minerals and natural history, groceries, provisions and wines, fine arts and photography, ladies' and children's work, etc.

The references to mechanical displays include agricultural and farming implements, engines, machines, pumps, safes, hardware, gates, fencing, gas fixtures, metal work and house furnishing, leather, boots and shoes and materials, harness and saddlery, hose, rubber goods, trunks, etc.; furniture and upholstery, ceramic goods, book-binding, books, stationery and paper hanging, knitting and sewing machines, musical instruments, textile fabrics, flax and hemp goods and furs, chemicals and chemical products, stoves and heating apparatus, carriages and bicycles, etc.

The Agricultural Implements Building is fitted throughout with shafting so that exhibitors can show their machinery in operation.

No charge is made for space or power. Articles will be received for exhibition only, upon which an entrance fee of 25 cents is charged for each article.

Machinery Hall. An entrance fee is charged for each article, but no charge is made for space or power. There are two lines of shafting in this Hall, each turned to 2 1/2 inch gauge—speed 150 and 300 revolutions. Exhibits to be shown in Machinery Hall include steam-engines and connections, wood working machinery, iron working machinery, road making and mining machinery, flour-mill machinery, saw-mill machinery, fire engines and appliances, pumps, machines for miscellaneous purposes, railway and street car appliances, telegraph and telephone instruments and supplies, electric machinery, appliances and supplies, fire escapes, boats and appliances, etc.

Miscellaneous manufactures include safes and scales, hardware, tools and cutlery, gates and fencing, gas and electric lighting fixtures and wire work; metal work, goldsmiths' and silversmiths' work, jewelry, etc.; refrigerators, house furnishings, tents, sporting goods, etc.; leather and manufactures thereof, including boots and shoes, harness and saddlery, tools, supplies, etc.; fire engine and other hose and rubber goods, trunkmakers' work, furniture and upholstery, glass and earthenware, bookbinding, printing and stationery, paper hanging, shades, blinds, etc.; knitting and sewing machines, musical instruments, etc.

In the Stove Department will be shown stoves and ranges, grates, furnaces, oil, gasoline and gas stoves, acetylene gas machines, iron castings of all kinds, etc.

In the Carriage Department will be shown carriages, wagons, bicycles, and supplies of all sorts.

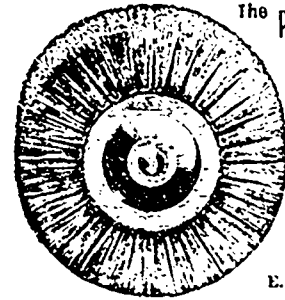
It being the desire of a very large majority of the manufacturers of the country, no prizes are offered in the general line of manufactures. It will, however, be at the option of the Jury on awards to recognize by the awarding of medals or diplomas any

exhibit where the extent or merit of the same would seem to call for special recognition, subject to approval of the Board of Directors.

**WESTERN ONTARIO LUMBERING INDUSTRY.**

The lumbering industry in the Rainy River District of Western Ontario is in a flourishing condition. A correspondent writing from Rat Portage says:—

"The present season promises to be one of the most prosperous that the lumbering business has ever seen in the Rainy River district. Mr. Margach, Crown timber agent, states that there has been 30,000,000 feet of timber cut in Canada during the past winter, which will be sawn in the mills here, while about the same amount of American timber will come to Rat Portage to be manufac-



The **PRESTON BRUSH FACTORY**

Manufacturers of ALL KINDS OF BRUSHES.

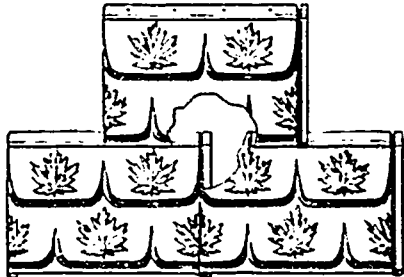
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Mail Orders Promptly Filled.

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**IF PEOPLE ONLY KNEW**

the advantages of using metal roofing constructed on our patent "SAFE-LOCK" principles they would not accept a substitute.



**OUR "SAFE-LOCK" SHINGLES**

interlock each other on all four sides—leaving no openings for snow or rain to get in. They are easily put on by anyone—are practically fire and lightning proof and give a building a neat finished appearance. We can tell you more. Ask for free catalogue and samples.

**THE METAL SHINGLE & SIDING CO. (LIMITED)**

**PRESTON, - ONTARIO.**

**..TO LEASE..**

....OR....

**FOR SALE**

**LARGE THREE-STORY BRICK FACTORY**

Formerly occupied by Cobban Manufacturing Company, corner Terauley and Hayter Streets, Toronto. Over 40,000 square feet flooring, Boilers, Engine, etc., also yard accommodation.

**W. & E. A. BADENACH,**

15 and 17 LEADER LANE, TORONTO.

**Dryden, Murney & Co.**

MANUFACTURERS OF

**Hydraulic, Steam,**

**Electric**

**and Hand-Power**

**.ELEVATORS.**

**78 ESPLANADE ST. W. TORONTO.**

**FRICTION PULLEY BOARD** If you are not yet using it, send for sample.

**The Dominion Leather Board Co., MONTREAL, QUE.**

Please mention CANADIAN MANUFACTURER

**Dominion Oil Cloth Co.**

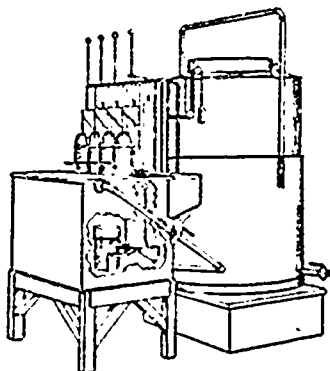
Manufacturers of ...

**OIL-CLOTHS** of Every Description

*Floor Oil-Cloth, Table Oil-Cloth, Carriage Oil-Cloth, Enamelled Oil-Cloth, Stair Oil-Cloth, etc.*

Office and Works

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Sizes—2 1/2 light to 2,000 lights.

**ACETYLENE GAS**

**Ideal Generator** the only machine that submerges the carbide.

**No Opening** of generator.

**No Heat** in generator.

**No Overgeneration.**

**No Bad Odour** through house.

**No Danger.**

Recognized by all EXPERTS as the PROPER PRINCIPLE

Town Lighting and Large Plants a Specialty

**J. WALLACE & SON, 160 King St. East, Hamilton, Ont.**

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tured. There has also been cut 500,000 railway ties, 10,000 telegraph poles, and 20,000 cords of fire wood, so that it can be seen that the forests have been the scene of great activity. This year's cut is almost double that of the previous season. It is estimated that over a thousand men were employed in the woods during the winter.

"All of the timber cut here is sold in Manitoba and the Northwest Territories, where a ready market is found. The increased activity in business there has given prices a better tone, while the immense number of new settlers brought into the country by the vigorous immigration policy of the Dominion Government has created a demand for lumber for building purposes that lumber companies will find hard to satisfy. The activity in mining has also created a good local demand. Additions are being put to some of the saw mills, and when the logs begin to come in the hum of the saws will be heard day and night. The Kewatin Lumber Company operates a large saw mill at Kee-

watin, while the Rat Portage Lumber Company, which was formed some time ago by the amalgamation of four lumber companies, operates two mills at Rat Portage and another across the bay, at the village of Norman. Hughes & Long operate a mill on the Rainy River, twelve miles from its mouth, and they will cut from 5,000,000 to 7,000,000 feet of American timber.

"The Rainy River district is the only place in Canada where American timber is sawn. The Americans have not a mill of any importance on the lake, and all of the timber cut on the other side of the line comes to Canada to be manufactured. There has been talk of retaliation on the part of the American Government against the law passed by the Ontario Government, prohibiting the exportation of Canadian logs, and the lumber men here would hail with delight any action that might be taken by the authorities across the border. American lumber is their only competitor in the Northwest, and if it was removed from the market the Canadian

product from Lake of the Woods would have a free hand.

"Although there are miles and miles of excellent pulpwood lands lying to the north of the banks of the Rainy River, not a stick was cut this season. Next year, however, it is hoped that this will be changed. John Mather, the well-known lumberman of Ottawa, is organizing a company, in which Montreal capital is largely interested, to manufacture pulp in this district. The formation of the company is not yet completed, but it is only a matter of time before work is started. A pulp mill will be erected at the Keewatin power dam, where the works can be operated at a minimum cost. It is not known whether the company will go into the manufacture of paper, or confine its energies to the production of pulp. The supply of pulpwood along the Rainy River is almost inexhaustible, while other large areas of country in the district are covered with forests of spruce, tamarac, poplar and birch, all suitable for the production of pulp."



**ROOFS FOR THE HOUSES**

**32 Years Ago**

We started the manufacture of sheet metal building materials, and this long experience enables us to offer intending builders all that is desirable in Steel Roofing, Steel Sidings, Steel Ceilings, etc.

**We Prefer**

That you purchase through the trade, still if your dealer cannot give the information you desire, or offers a substitute "just 's good," write us.

"The Pedlar Patent Shingles" are the best, and the best cost no more than the poorest.

**Pedlar Metal Roofing Co.**  
**OSHAWA, CANADA.**

**THE SMART-EBY MACHINE CO.,**

Steam and Gas Engines,  
Pumping Machinery,  
General Machinery.



LIMITED  
193 BARTON STREET EAST  
HAMILTON, ONT.

WRITE US BEFORE PLACING YOUR ORDER.

**C**HEMICAL  
COMPOUND  
COMPANY

**C**ORRECTLY  
COMPILED  
CHEMICAL  
COMPOUNDS

**C**IVILITY  
CAREFULNESS  
COMPLETENESS  
CONTINUITY

**DO YOU KNOW**

That you are paying for Boiler Compound all the time whether you use it or not?

**IF YOU DO NOT BUY**

You will pay your coal dealer more than its cost in the extra Coal you burn.

**Zinkolene Saves Money**

**THE CHEMICAL COMPOUND CO., 66 River Street, - TORONTO.**

**ONTARIO GOLD MINING DISTRICT :**

- Sultana Mine.
- Foley Mine.
- Mikado Mine.
- Olive Gold Mine.
- Cameron Island Mine.
- Hammond Reef Mine.

**A Few Mines**

WHO USE



**BRITISH COLUMBIA :**

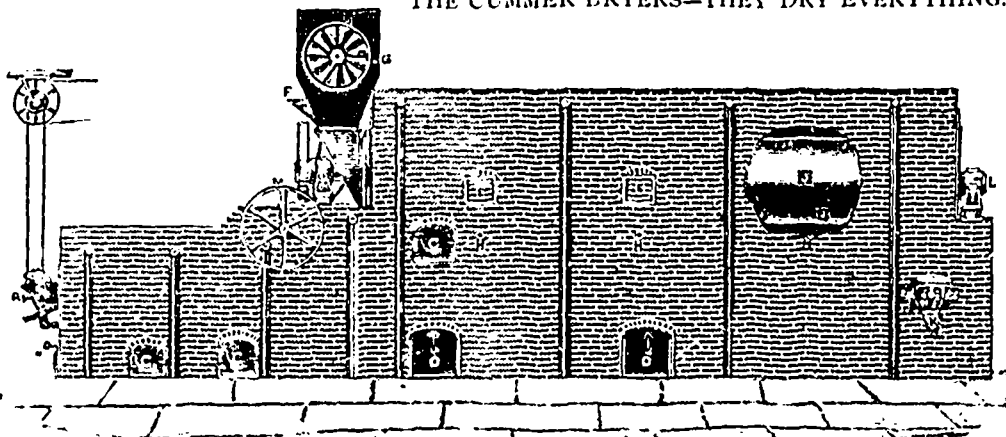
- Le Roi Mine.
- War Eagle Mine.
- Old Ironsides Mine.
- Centre Star Mine.
- Crown Point Mine.
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**CANADIAN RAND DRILL COMPANY, Montreal**

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The F. D. Cumber & Son Co., Cleveland, Ohio, have for many years made the subject of mechanically drying different materials a close study, and their drying apparatus has been successfully introduced and established in many parts of the world, drying all kinds of materials. They manufacture two styles



THE CUMMER DRYERS—THEY DRY EVERYTHING.

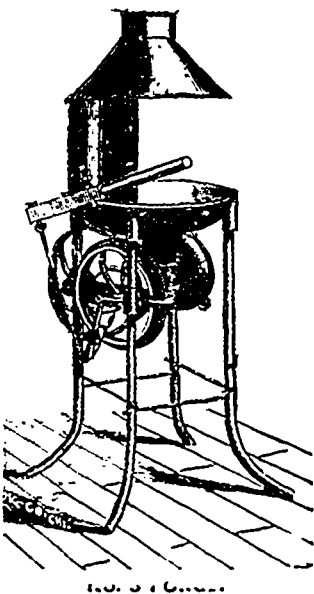
of rotary dryers, each style being made in eight different sizes, thus assuring machines that will meet all requirements, and each machine sold is accompanied with a full guarantee that it is fully up to the service to be required of it. The accompanying illustration shows a side elevation of style F, Cum-

# PORTABLE FORGES

## “THE SCIENTIFIC FORGES”

Have all the good points to be found in this class of goods, and besides have:

- POSITIVE GRIP DRIVING MECHANISM,**
- ADJUSTABLE LEGS,**
- DETACHABLE LEVER, HEAVY STEEL HOODS.**



**No. 1**  
Hearth—28 x 40 Inches. Weight—270 lbs. Will bring 3 inch round iron to welding heat in five minutes. Price, \$25.00.

**No. 3**  
Hearth—18 x 18 Inches. Weight—80 lbs. Will bring 1½ inch round iron to welding heat in five minutes. Price, \$13.00.

**No. 2**  
Hearth—21 x 27 Inches. Weight—150 lbs. Will bring 2½ inch round iron to welding heat in five minutes. Price, \$20.00.

**No. 6 FARMERS' AND MINERS' BENCH FORGE**  
With 14 x 14 inch Bowl. Weight 45 lbs., with direct gear for rotating fan.

The above Forges furnished with three different styles of Hoods at slight changes in price.

# THE FAIRBANKS COMPANY, 749 Craig St., MONTREAL

**Reduce Your Fuel Bills**  
**Increase Your Output...**

BY USING

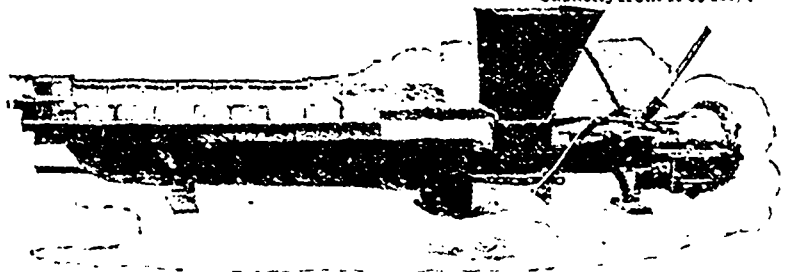
## The IMPROVED JONES UNDERFEED STOKER

Guaranteed Increased Economy, from 15 to 50% | Guaranteed Increased Boiler Capacity from 10 to 100%.

NO ASHES. NO SMOKE. NO TROUBLE. NO MONEY REQUIRED IF GUARANTEES ARE NOT FULFILLED.  
The First and Only Successful Underfeed Stoker.

No Underfeed Stoker is successful without infringing our Patents, and the public are warned against importing or using infringing devices.

N.B. Have you seen our Underfeed as applied to Houses, Schools, Churches, etc. (Send for Circular).



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**The General Engineering Co. Limited**

SOLE MANUFACTURERS FOR CANADA,

Head Office.... **80 CANADA LIFE BUILDING, - TORONTO.**

**Montreal—A. TREVETHICK, - Box 1123.**

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mer dryer. The machine is intended for use drying materials that will not support high temperatures, such as grain, tobacco stems, lignite, coal, phosphates, fertilizers, chemicals, paint stock, fish scrap, garbage, distillery slops, starch, feed, etc.

This machine consists of a revolving cylinder of special design, through which the material to be dried passes. It is so arranged that direct heat is employed, mingled with large volumes of pure air. Absolute control is had of the temperatures to which the material being dried is subjected during its different stages, no steam is used, and the drying is done mechanically. The dried material is delivered at a low temperature and absolutely without having been injured. With this dryer as much as twelve pounds of moisture can be evaporated per pound of fuel consumed.

Perfect combustion of fuel is obtained when using soft coal slack. The firing is done mechanically. The whitest of materials can be dried without any discoloration whatever, or any injury.

The style "Salamander" dryer, manufactured by the Cummer Co., resembles their style "F," but is designed for drying materials that are not easily injured by heat, such as clay, rock, phosphate, sand, marl, infusorial earth, and ores of all kinds.

The Cummer direct heat tunnel system is more efficacious for drying brick, terracotta, cement, briquettes and similar articles. Like the other dryers made by this company, it is a great economizer of space, fuel and labor. No steam pipes or boilers are required in connection with the system.

As stated, hundreds of these Cummer dryers are in operation in all parts of the world, many of them in Canada, employed in drying all kinds of materials, and the company will, upon application to their Cleveland office, take pleasure in directing any who may be interested to the nearest point where the machine can be seen in operation.

We are not aware that any similar drying apparatus is manufactured in Canada, and are therefore quite sure that the information here contained will be of much use to many of our readers.

The tenders for the construction of water works and a sewage system for Oshawa, Ont., have been opened. Eight tenders were received. The lowest for sew-

# Felts for Pulp Mills

20 years in the business—the first to make Felts in Canada; capacity 1,000 lbs. per day. All our Felts will last longer and make dryer Pulp. All up to date mills use our Felts. New mills, when in need, write for samples and prices.

Felts are woven endless, without a splice. Our Felts will last longer and make dryer Pulp. All up to date mills use our Felts. New mills, when in need, write for samples and prices.

HAMELIN & AYERS, Lachute Mills, P.Q.

## THE "SAFETY" Acetylene Gas Machine

Manufactured by

**THE SAFETY LIGHT AND HEAT CO.,**

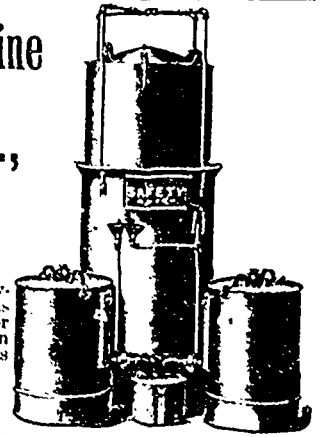
DUNDAS, ONT.

WHAT SOME OF OUR FRIENDS SAY OF US:

GENTLEMEN—Referring to your inquiry we have pleasure in saying that your Acetylene Gas Machine, after the season's run, has given us entire satisfaction. We prefer the light to either gas or electric light, and we are now satisfied that it is cheaper than either, while, with ordinary care, we consider it quite as safe as either.

THE B. GREENING WIRE CO., LIMITED.  
Per S. O. GREENING.

HAMILTON, ONT.



## The London Machine Tool Co., LONDON, ONT.

Toronto Office, 42 York Street. (PHONE 293) MANUFACTURERS OF GENERAL MACHINERY...

Having recently sold our patterns and plant to the A. R. Williams Co., of Toronto, retaining only such machines as are useful in our business, we beg to say that we are rapidly putting in New Machinery, from new and improved designs, and are now in a position to receive orders for all Standard Tools for Metal Working in all branches. It will be our aim, by personal supervision of the product of works, with expert men of large experience at the head of each department, to turn out nothing but first-class work, at moderate prices. And as we intend to deal directly with the manufacturers, they will be enabled to get their machinery at first cost.

As we shall not be able to personally visit each manufacturer, it is for this purpose that we publish this advertisement. This is our agent who is going about to solicit a share of your patronage. We are thankful for the patronage extended to us in the past, and hope that we may secure an extension of the favors for the future.

All correspondence relating to the following Tools will be promptly answered, viz

- LATHES—Engine, Gap, Break, Turrot, Fox, Spinning, Etc.
- PLANERS—Standard, Crank, Plate, Etc.
- DRILLS—Standard, Sensitive, Multiple, Radial, Etc.
- MILLING MACHINES—Lincoln, Plain, Universal, Etc.
- SHAPING MACHINES—Whitworth, G. & E. Rack-Driven, Etc.
- HAMMERS—Steam, Sandage Drop, Stiles Drop.
- BULL-DOZERS for all purposes.
- PUNCHES AND SHEARS for Plate, Angles, Channels, Gauges, Etc.

And we would call special attention to our PRESSES for Cutting, Stamping, Drawing, Wiring, Riveting, Etc. We shall also esteem it a pleasure to give quotations on Special and General Machinery in our line.

LONDON MACHINE TOOL CO.

ALEX. GARTSHORE, President. J. G. ALLAN, Sec.-Treas. JAS. THOMSON, Vice-Pres. and Gen. Mng'r.

## THE GARTSHORE-THOMSON PIPE & FOUNDRY CO.

Limited



3 in. to 60 in. diameter.

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

Special Castings and all kinds of FLEXIBLE AND FLANGE PIPE.  
**WATER WORKS SUPPLIES HAMILTON, ONT.**

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Without Batteries.

Write for descriptive circular to

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Room 71, 620 Atlantic Avenue,  
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**MONTREAL ELECTRIC CO.,**

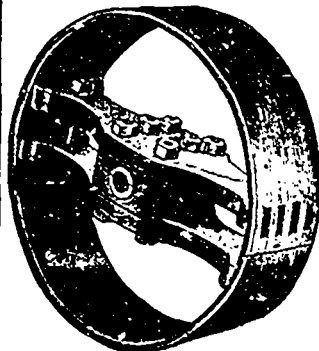
1898 Notre Dame Street,  
(Balmoral Hotel Block).

Agents for Province of Quebec.

**John Starr, Son & Co. (Limited),**

HALIFAX, N.S.,

Agents for the Maritime Provinces.



## BENT WOOD SPLIT PULLEYS, RIM...

(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. Manufacturing Co., of Toronto,

257 King St. West, Toronto.

age system was Ed. Hartnett, Toronto, \$27,000; and the lowest for water works system, J. P. McKnight & Co., Toronto, \$76,975. McQuillan & Co., Toronto, were the only ones who put in a tender for the complete work, at \$119,475. The lump tender of Clark & Connolly, of \$96,886, was not according to the specifications, as separate tenders were asked. The people voted upon a by-law to spend \$110,000 for these purposes.

The inquiries of the Laurentide Pulp Company for iron pyrites in Ontario, carrying a high percentage of sulphur, have elicited the fact that A. W. Carscallan, M.P., has a mine at Marmorra, Hastings County, that is nearly pure sulphur, and that H. Corby, M.P., has one at Malone, in the same county that will considerably exceed 40 per cent.

**YALE CHAIN BLOCKS.**

The accompanying illustrations are of a few of the many styles of chain blocks manufactured by the Yale & Towne Mfg. Co., Stamford, Conn.

Fig. 1. represents the Yale differential block, and it is described as the only differential block made under direct license from the inventor and patentee, Thos. A. Weston. It is durable, smooth, and easy working, because constructed with Yale chain, which is gauged by patented machinery, tested before using, and of special material. It is made in 6 sizes with capacity to lift from 500 pounds to 3 tons.

Fig. 2. represents the Yale Duplex block, and is the last addition to the line of chain blocks made by the company. It is intermediate in efficiency and price between the differential and triplex types, and adapted to a wide range of purposes. The leverage

by which its hoisting capacity is obtained is that of a worm and worm wheel. The device by which the load is sustained, and which acts in conjunction with the worm, is capable of conversion at the will of the operator, so that a dispatch lowering action may be obtained when so desired. It is made in 8 sizes with capacity to lift from 1000 pounds to 10 tons.

Fig. 3. represents the Yale-Western triplex block, which, we are informed, has an actual efficiency of 80 per cent., and is claimed to be the most efficient block made. This means that only 20 per cent. of the operator's labor is wasted in overrunning friction, showing that this type of block has twice the efficiency of blocks of the screw-gear type, and triple that of those of the differential type. This machine is made in two styles—type A and type B, the difference consisting entirely in the mode of

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104 and 108 MURRAY ST.  
NEW YORK

220 Church St., Philadelphia.  
135 Pearl St., Boston.  
18 Pryor St., Atlanta, Ga.

**Aniline Colors,  
Dyewood Extracts,  
Sumac and  
Nutgall Extracts.**

**FAST COLORS** for Wool Dyeing,  
One Dip Cotton Colors, Novelties  
and Specialties for Calico  
Printing.

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**LIGHT YOUR  
FACTORY WITH**

**LUXFER PRISMS**

The latest device for

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offices

**By Daylight**

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write to

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**The  
Best  
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Everything**

is not a bit too good for us. It is the kind of material we use in the manufacture of Shafting, Pulleys, Hangers, Tube Cutters, Pipe Cutting Machines, Swing Saws, Wood Lathes, Dough Mixers, and Paper Box Machinery.

Prices furnished  
on application.

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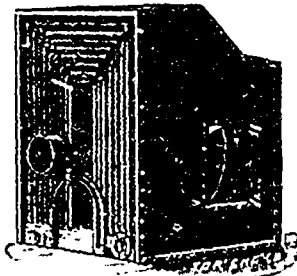
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The Fan System of Steam Heating for Heating  
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**DRYING . . .**

Appliances for Drying

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Heater and Housing.

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Boston, New York,  
Philadelphia, Chicago, and  
Gloveraville, N.Y.

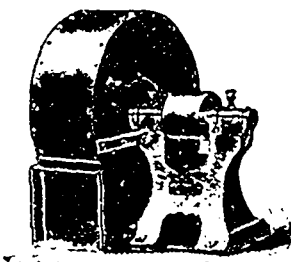
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Chemicals.**

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Ventilating Fans for removal of Dust, Foul Air, etc.

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**McEachren Heating and  
Ventilating Co., GALT, ONT.**



FAN.

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suspension. By varying the sheave combinations either form can be adapted to any capacity required. The simple form A, shown in Fig. 3, is made in 4 sizes with capacity to lift from 1000 pounds to 2 tons —type A in 6 sizes with capacity from 3 to 10 tons, and type B in 6 similar sizes and capacity.

These chain blocks are specially adapted

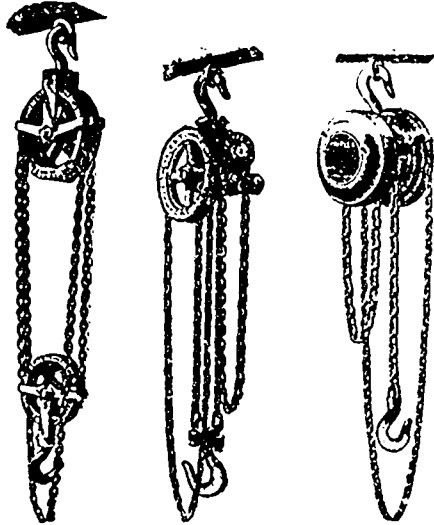


Fig. 1. Fig. 2. Fig. 3.

as follows,—Differential, for rough and occasional use; Duplex, for general use; Triple, for constant use and best economy.

The Fairbanks Company, 749 Craig St., Montreal, have made arrangements with the Yale & Towne Co. to carry a complete stock of these goods, and are in a position to sell to jobbers and the hardware trade.

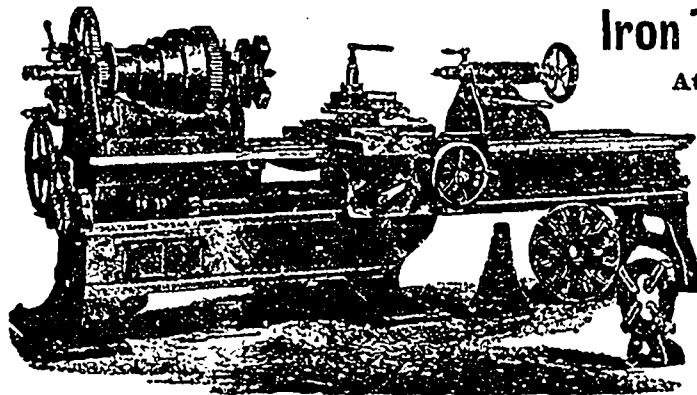
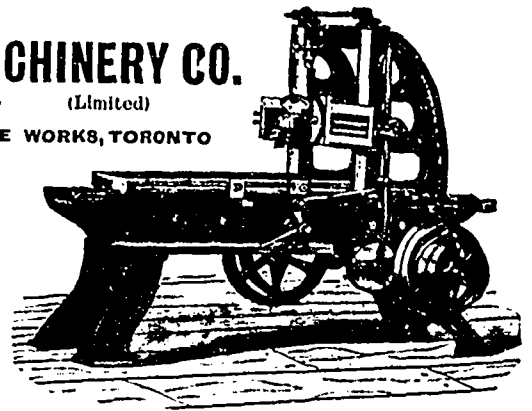
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**A. R. WILLIAMS MACHINERY CO.**

(Limited)

Head Office, - SOHO MACHINE WORKS, TORONTO

Manufacturers of and Dealers in

High-Class Iron Tools,  
Wood-working Machinery,  
Engines, Boilers,  
Motors, Water Wheels,  
General Machinery  
and Supplies.



**Iron Tool Works**

At London.

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193 Colborne St.,  
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Complete .  
Plans . .  
Furnished .  
With . .  
Each . .  
Apparatus.

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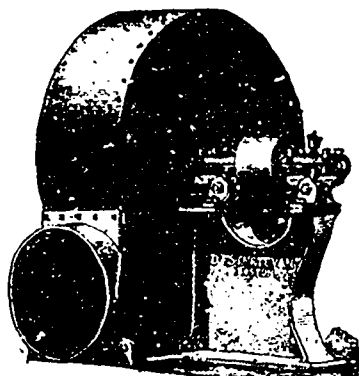


Absolutely  
Safe .

AS A

**FIRE  
RISK**

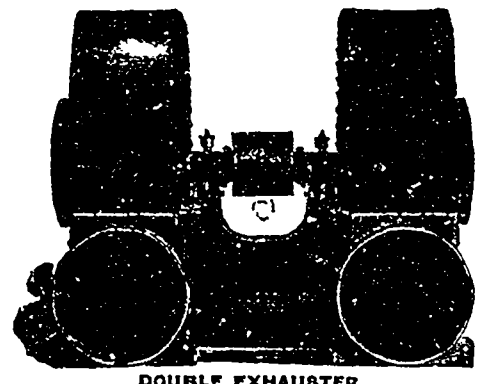
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Economical in  
use of steam.



**THE STURTEVANT  
Steel Plate Exhaust Fans**

For Removing Refuse  
from Wood-working Machinery  
SEND FOR CATALOGUES

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GENERAL CANADIAN AGENTS  
TORONTO, BRANTFORD, MONTREAL

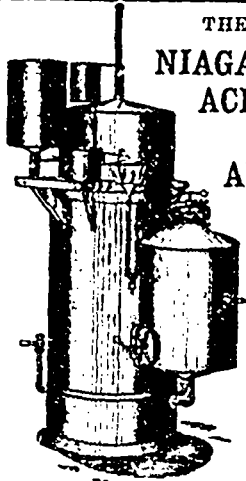


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**ADVERTISE**  
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 At Lowest Cost.  
 ESTIMATES FREE  
**SPECIALIZE.**  
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**C. A. G. Browne,**  
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 145, Fleet Street LONDON, ENGLAND.  
 Sole Agent for Advertisements  
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**NIAGARA FALLS**  
**ACETYLENE**  
**GAS**  
**APPARATUS**

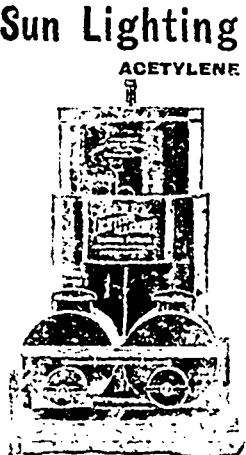


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 States and  
 Great Britain.

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 This is the  
 only machine  
 perfectly auto-  
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 little or no atten-  
 tion. Machines  
 made in 70 sizes  
 costing \$15 and  
 upwards.

**Acetylene Gas the Coming Light.**  
**CHEAPER THAN ELECTRIC LIGHT**  
**COAL GAS OR COAL OIL**  
 For Private Dwellings, Business Houses  
 Churches, Public Halls and Offices.  
 For particulars write to the  
**NIAGARA FALLS ACETYLENE GAS MACHINE CO.**  
 NIAGARA FALLS, ONT. LIMITED.

**Sun Lighting Machine.**  
**ACETYLENE GAS.**



*The  
 Acme  
 of  
 Perfection  
 in  
 Lighting.*

At the Mini-  
 mum of Cost.

Suitable for any place where Artificial Light  
 is required. Dwellings, Stores, Churches,  
 Factories, Hotels, Street Lighting, etc.  
 Write for Catalogue.  
 THE  
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One of the greatest difficulties in the purchase of fans for various purposes frequently lies in the inability of the purchaser to obtain at short notice a fan having the proper direction of discharge. This difficulty has been obviated in the design herewith presented, which is from Bulletin H. recently issued by the B. F. Sturtevant Co. of Boston, Mass.

The design includes not only this feature but that of a direct attached and enclosed motor. This motor consists primarily of a field ring of wrought iron, to the sides of which are bolted hemispherical ends that enclose the same. These ends are provided with lugs to which the fan is attached. These are so placed that the fan may be swung about the center to discharge in any given direction.

The outer end of the enclosing case is provided with a door as shown, which renders the interior readily accessible.

The motor within is of the bi-polar type, designed particularly for this class of work, and is provided with carbon brushes of the reaction and self adjusting type. This design is evidently suitable for all positions where dust or moisture is present, and is manifestly desirable when there is any possibility that future conditions may demand a change of direction of discharge.

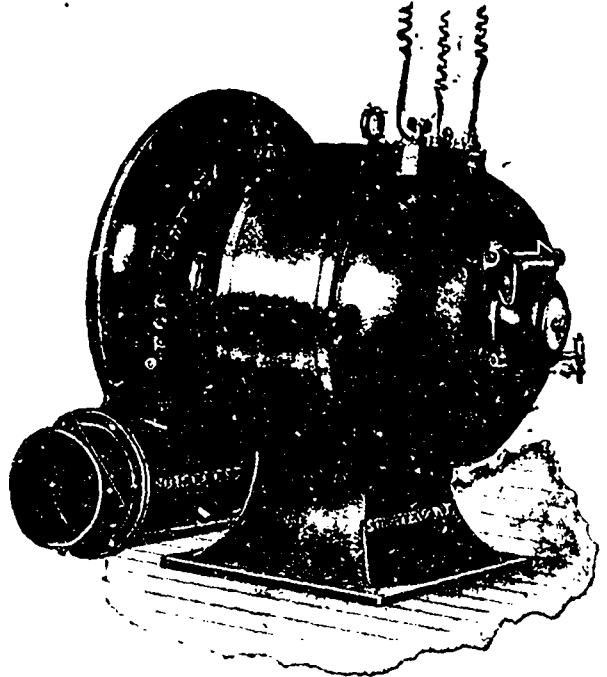
The peculiar advantages of mechanical draft are very clearly displayed in the following quotation from a paper presented by Mr. Alfred Blechyden before the British Institution of Mechanical Engineers and presented in the recently issued Treatise on Mechanical Draft published by the B. F. Sturtevant Co., of Boston, Mass. Mr. Blechyden states:—

"First, it seems fairly well established that, if the boilers are well constructed and are provided with ample room to insure circulation, their steaming power may without injury be increased to about 30 to 40 per cent over that obtained on natural draft for continuous working, and may be about doubled for short runs. Secondly, such augmentation is accompanied in normal cases, by an increased consumption per indicated horsepower. But, thirdly, the same or even greater power being indicated, it may, with moderate assistance of forced draft, be developed with a smaller expenditure of fuel, the grates, etc., being properly proportioned. Fourthly,

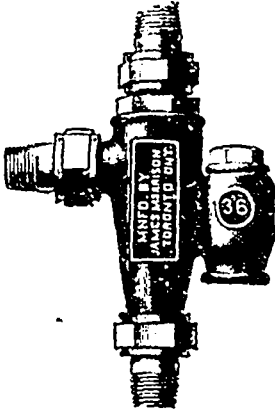
forced draft enables inferior fuel to be used; and, fifthly, under certain conditions of weather, when with normal proportions of boiler it would be impossible to maintain steam with natural draft, the normal power may with forced draft be insured. In particular cases any or all of these advantages may be a source of economy; and the first of them may render possible that which would otherwise be impracticable."

**THE CANADIAN CAVIARE INDUSTRY.**

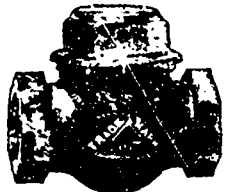
The caviare industry has been a flourishing one in Manitoba for many years. The trade and navigation returns do not give, under a separate heading, the export of caviare, but



according to reports in possession of the Department of Fisheries, several hundred kegs have been sent from Rat Portage during the past two or three years. Professor Prince, Commissioner of Fisheries, takes great interest in the sturgeon fishing industry, and he says that Canadian sturgeon, from the roe of which caviare is made, take first place in the market on account of their rich edible qualities. A few years ago it was the custom in the North-West, and especially in British Columbia, to look upon the sturgeon as of little value as a food fish, but a different opinion prevails now. As long ago as 1851 Professor Owen, an eminent



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authority, publicly drew attention to the value of the sturgeon which abound in Canadian rivers, and at the time of the Great Exhibition in London he brought the matter to the attention of the Commissioner from Canada.

The sturgeon are found all over the Dominion; in St. John river, N. B., in the St. Lawrence, in Hudson's Bay, and in all the great lakes of Ontario, Manitoba, and in certain waters of the North-West. The Pacific sturgeon, especially those of the Fraser River, are of an immense size, but those most valuable for caviare are the sturgeon of the Lake of the Woods and Western Ontario. The Canadian caviare is hardly inferior to the celebrated Russian product, and is greatly superior to much that is produced in the United States and other countries. The demand is so great, and the supply comparatively limited, hence, wherever sturgeon occur there has been a tendency, during the last eight or ten years, to carry on extensive fishing. The Columbia river abounded in sturgeon ten years ago. At that time a regular sturgeon fishery began, and nearly 1,000,000 lbs. of dressed fish and pickled sturgeon were shipped away, having a value of \$15,000. In 1892 nearly 3,000,000 lbs. were obtained, valued at \$41,000. After a few seasons the supply failed, as it has done in the Sacramento and other western rivers, and the United States firms engaged in the industry attempted to follow the same course in British Columbia, but the Canadian fishery laws prevented it. Last year the Fraser river sturgeon exceeded \$20,000 in value.

Caviare is one of the most valuable of fish products, being considered by epicures as a great delicacy. Canada supplies, and has done for many years, a greater quantity than any other country, and much of the valuable Russian caviare is really the product of the Dominion. For about twenty years United States buyers have sought the raw material, which is the nearly ripe eggs of the Sturgeon, but within the last eight or ten years, many Canadian fish firms have handled the raw material and converted it, by process of cleaning, salting, and pressing, into the dark, plastic substance, rather like bramble-berry jam in appearance, called caviare. The story of the Canadian sturgeon fisheries is the same in every province. At first indifference as to the value of the fish, and then an inordinate desire to capture everything in the shape of sturgeon, when its market value was realized, was followed by the decline, and in some cases total cessation, of the industry. Manitoba and Western Ontario (Lake of the Woods) has for many years been the great headquarters for the

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caviare and smoked sturgeon industry; but so far back as 1880 United States buyers began to urge the St. John river (N.B.) fishermen to obtain all the sturgeon they could. These New York buyers, it is said, had encouraged in the rivers of Florida the pursuit of the sturgeon fishery to such an extent that they were rapidly cleaned out. The St. John river sturgeon fishery did not last more than six years. At its height as many as 200 sturgeon were often taken in a single haul, and the leaping of large fish was a common sight as far up the river as Fredericton. Then for a period of eight or ten years the total prohibition of the fishery was carried out. The demand for sturgeon has continued to increase, and with the decay of great fisheries like the sturgeon fisheries of the Delaware river and bay, and the smaller fisheries on the Potomac, Hudson, Kennebec, etc., United States merchants have had to rely on supplies from Canada. Canadian fishermen rapidly learned the high value of a fish which hitherto they had treated with contempt. On all the great lakes, but especially in Lake Huron and the St. Clair waters, sturgeon fishing has been actively pursued; but the best caviare, and in some respects, the best sturgeon, have been shipped for many years from the waters of Manitoba and from the Lake of the Woods. On Lake of the Woods alone there were last year between 200 and 300 large pound nets set in the limited area which lies within United States territory. In the Canadian part the number ran from 30 to 60. Nearly 1,000,000 pounds weight of sturgeon was shipped from these nets in 1895, all of which passed through Rat Portage en route to the United States. Several firms at Rat Portage have employed experts to manufacture caviare, and this has for some years been done at Selkirk, Manitoba, the flesh of the sturgeon being frozen, pickled, smoked, and in some instances canned like salmon. Canned smoked sturgeon is superior to salmon. In one-pound cans it sells wholesale for \$2.50 per dozen, whereas Pacific salmon realize only \$1.25 to \$1.50 per dozen.

It is on the Pacific coast that the sturgeon exceed all others for size and number. Whereas sturgeon 40, 50, up to 100 pounds are considered large in inland and Atlantic waters, there are specimens taken in the

Fraser river at times weighing from 800 to 1,000 pounds. In the British Columbia Board of Trade report, 1896, the opinion of the Dominion Commissioner of Fisheries is recorded as follows:—"The sturgeon which is so plentiful in British Columbia affords a fishery which is capable of development on a large scale. Professor Prince stated that the sturgeon found here are finer than those in Russian waters, and he saw no reason why this province should not compete with Russia in the several products of such an industry."

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The Italian mineral was then experimented with, and some years later put on the market. In 1878 the first Canadian mine was opened, and the product steadily increased until 1890, when 9,860 tons, worth \$1,260,000, were mined. There has since been a decline in value, the amount for 1896 being 12,200 worth only \$439,000. Asbestos is flexible, non-combustible and a non-conductor of heat and electricity, and on these properties its increasing use depends. It is spun into yarn, from which cloth is woven for drop curtains in theaters, clothing for firemen, acid workers, etc. It is made into lamp wicks and gloves for stokers and ropes for fire escapes. It is felted into millboard, to be used as an insulator in dynamos and as a fire-proof lining for floors. It is used to insulate electric wires.

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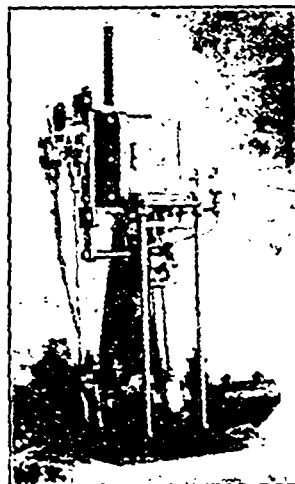
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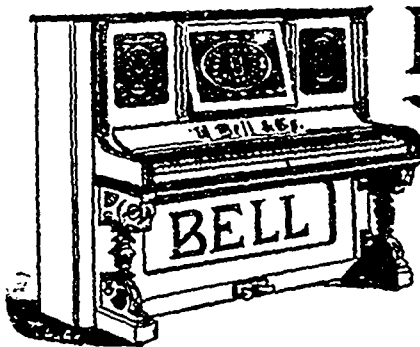
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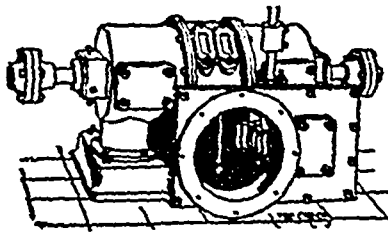
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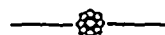
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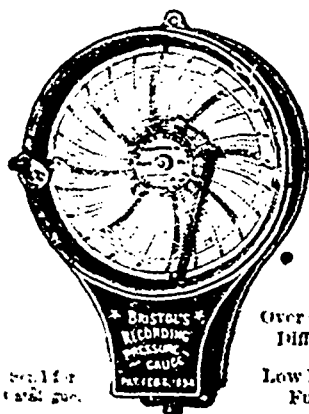
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