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DEVOTED TO THE MANUFACTURING INTEREST OF THE DOMINION.

VOL. 39.

TORONTO, JULY 7, 1899.

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SANDERSON'S STEEL
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Self-Hardening Steel
A SPECIALTY.....
Large Assortment in Stock.
A. C. LESLIE & CO.,
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OAK EXTRA TANNED
1856
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CARD CLOTHING
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ELECTRIC HYDRAULIC STEAM HAND-POWER

All made of the best material and finest workmanship.

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RUBBER GOODS OF ALL KINDS.

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61 and 63 FRONT ST. WEST, TORONTO.

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Walkerville Malleable Iron Co., (Limited)
Manufacturers of.
REFINED AIR FURNACE Malleable Castings
ALSO LIGHT GREY IRON CASTINGS.
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Manufactured by... **The HAMILTON AND TORONTO SEWER PIPE CO.**
HAMILTON, ONTARIO.

Samson Brand Portland Cement

Manufactured by the

Owen Sound Portland Cement Co.

OWEN SOUND, ONT. LIMITED

Is Equal to any Cement made in the **WORLD.**

Write to us for Tests, Prices and other
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Sulphuric, Nitric, and Muriatic Acids—Commercial and
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Yarn Manufacturers, DYERS AND BLEACHERS.

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

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Manufacturers of the well-known

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Suitable for Car Wheels, Cylinders and Fine Castings,
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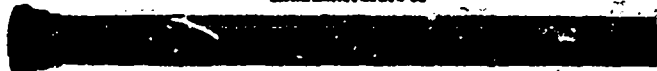
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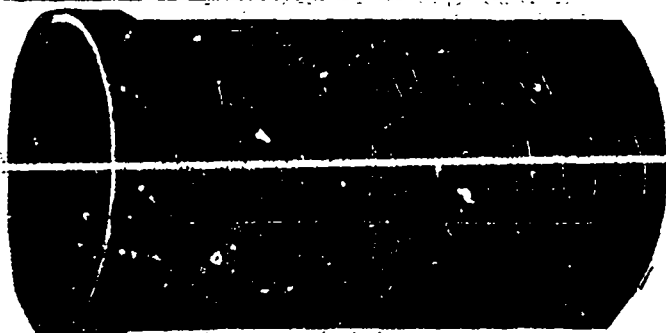
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Manufacturers of Salt Glazed Vitrified Sewer Pipes, Double
Strength Railway Culvert Pipes, Inverts, Vents, and
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The Standard Drain Pipe Co. of St. Johns, P.Q., Ltd. **W. C. TROTTER**
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For Electric Lighting Mills, Factories,
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Wheelock Engines,
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Wood Rim Split Pulleys,
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Highest Awards at the World's Fair, Chicago, upon

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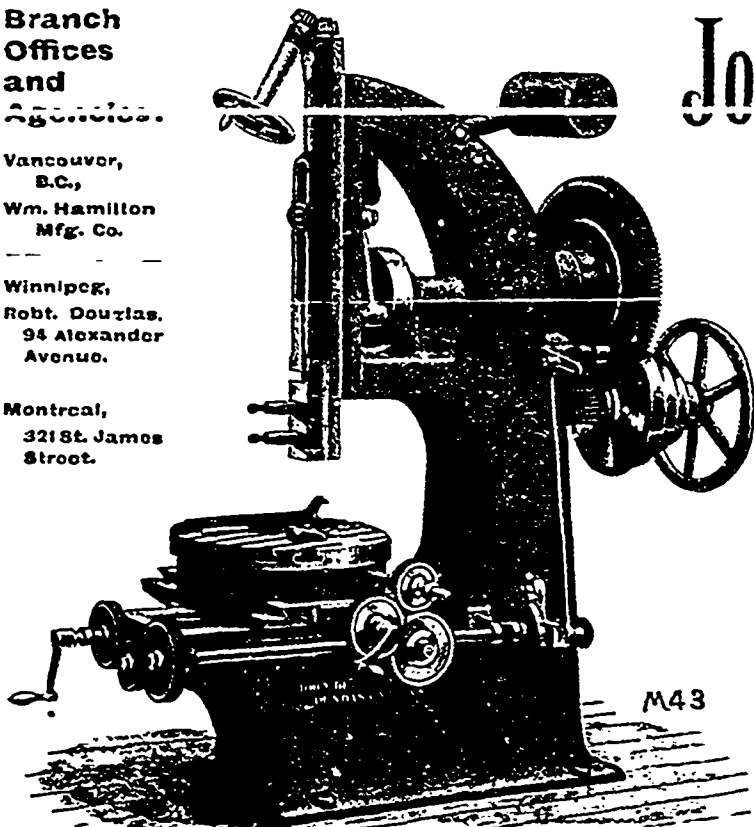
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RAILWAY AND ELECTRIC RAILWAY CAR AXLES

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

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

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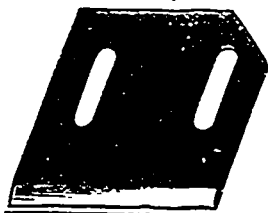
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Quality Guaranteed.

Special Knives Made to Order.

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MONTREAL AND LACHINE LOCKS, P.Q.

Steel Bridges for Railways and Highways,
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Steel Roofs, Girders, Beams, Columns for Buildings.

A large Stock of **ROLLED STEEL BEAMS, JOISTS, GIRDERS, CHANNELS, ANGLES, TEES, Z BARS and FLATES**

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

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Pure Alkali,
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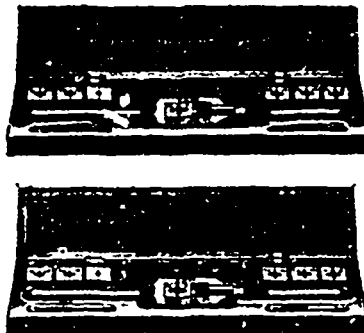
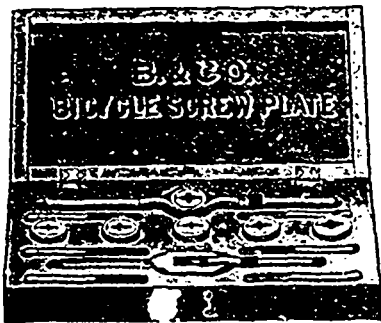
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THE BEST EQUIPPED BOILER AND ENGINE WORKS IN CANADA.

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

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Manufacturers of the
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"HAMMER BRAND"

**Calcined
PLASTER**

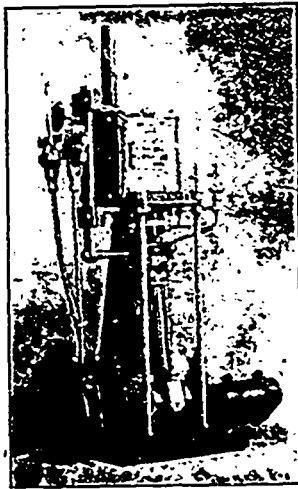
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Patent Rock Wall Plaster

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CANADA.

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DUNNVILLE, ONT.** Makers of

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Safety Water Tube BOILERS
PROPELLER WHEELS
Stationary Engines and Boilers



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TORONTO.

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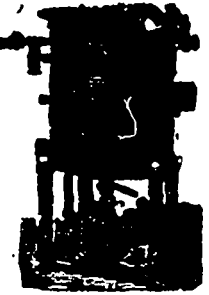
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F. W. Hore's Sons, HAMILTON, ONT.
Manufacturers of
Wheels, Wheel Materials, Shafts, etc.

**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
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←—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, materials, 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.**

A. KLIPSTEIN & CO.,

**Anilines,
Dyestuffs**

—and—

Chemicals

122 Pearl Street, New York.

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The Cost of Steam.

To decide which type of boiler will produce steam at the lowest cost it is necessary to consider the cost of the boiler, the evaporation of water per pound of fuel, and the expense of keeping the boiler in working order.

Compare our boiler, the "Mumford Improved" with a water tube boiler, and it will be found that ours has the advantage in all these points.

COST.—Our boiler costs less on account of its simpler construction.

EVAPORATION.—Our boiler is internally fired and, therefore, more heat is absorbed by the water. The water circulation, an important factor in evaporation, is similar to and probably more rapid than that of a water tube boiler. Tests made by disinterested parties, with the same coal, resulted in favor of our boiler.

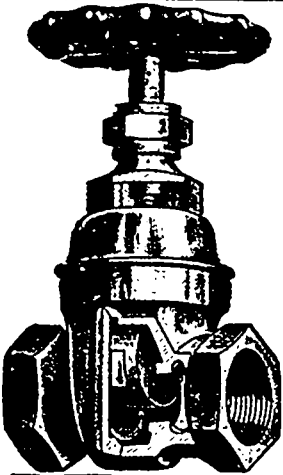
EXPENSE.—The furnace of a water tube boiler requires re-lining with fire-brick frequently, a large item of expense which is not required with our boiler.

ROBB ENGINEERING CO., Limited, Amherst, N.S.

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

Oakoy's Flexible Twilled Emery Cloth.
 Oakoy's Flint Paper and Glass Paper.
 Oakoy'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, 650 CRAIG ST., MONTREAL.



The WEBBER Patent
STRAITWAY VALVE

For
 ...Steam, Water or Gas...
 EVERY VALVE TESTED.

The Kerr Engine Co., Limited
 WALKERVILLE, ONT.
 Sole 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 ..

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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

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

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Pumps

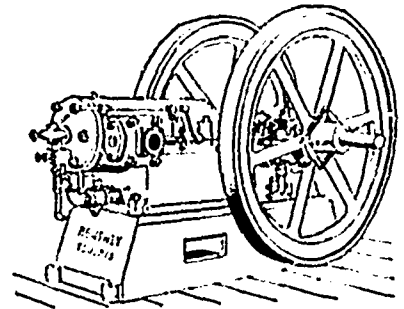
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NORTHEY GASOLINE ENGINE

Most Satisfactory Power in the Market.

We have equipped some of the largest manufactories in Canada with our Feed, General Service and Staff Pumps. In no case have they failed to give entire satisfaction, nor in proving that the Northey Pumps for all duties are unsurpassed for design, up-to-date features and reliability.

Our Catalogue is yours for the asking.



Northey Mfg. Co. Limited, Toronto
1000 KING ST. SUBWAY,

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.

SUBSCRIPTIONS:

CANADA AND UNITED STATES, - - - \$1.00 PER YEAR.
ALL OTHER COUNTRIES IN POSTAL UNION, EIGHT SHILLINGS
STERLING PER YEAR, INCLUDING POSTAGE.

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McKinnon Building, Cor. Melinda and Jordan Sts., Toronto.

J. J. CASSIDY, Editor and Manager.

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

CANADIAN CHANNELS OF TRADE.—No. 2

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

	Great Britain.	United States
Brushes	\$19,176	\$47,904
Buttons	25,426	32,845
Portland Cement	105,748	49,586
Clocks	7,144	129,266
Corsets, corset clasps, wires, busks, etc.	4,511	44,450
Dressing, for harness, leather and shoe	4,966	48,740
Glue, powdered or sheet	13,224	53,640
Glycerine	17,695	20,135
“ for explosives	21,486	29,280
Proprietary medicines, liquid	3,158	56,352
“ “ other	41,650	158,559
Soda, bicarb	39,671	26,241
Drugs, dyes and chemicals, not otherwise specified	124,141	192,743
Elastic, round or flat	51,720	13,917
Electric apparatus	6,834	266,235
“ motors, etc.	71	129,237
Braids, braccotets, cords, fringes, tassels	173,438	95,535
Artificial flowers	117,794	66,373
Laces, cotton, linen, silk, etc.	544,113	13,923
Toys, all kinds	9,494	52,509
Furniture, house, office, cabinet or store	22,916	242,953
Glass, Carboys or demijohns, filled or empty, flasks, phials, etc.	12,597	76,306
“ jars and balls, crystal table ware	12,056	134,863
“ lamp chimneys, glass shades, brown glass tableware	2,640	84,692
Electro-plated ware, and gilt ware of all kinds	19,571	134,521
Gold and silver ware	22,851	67,059
India rubber clothing	109,288	35,230
Jewellery, not otherwise specified	34,477	279,314
Gas, oil, etc., fixtures	2,308	77,115
Lamps, lanterns, slides and headlights	4,913	159,284
Typo, printing	17,062	47,274
Pianofortes and parts	1,736	169,172
Oilcloth, carpets, linoleum, etc.	144,786	19,866
Optical, philosophical, mathematical and photographic instruments	16,161	98,502
Colors and paints mixed in oil, etc.	26,221	44,976
Dry white and red lead, orange mineral and zinc white	119,744	145,279
Paper, albumized for photo work	2,076	59,751
Wall paper	6,570	103,023
Envelopes, papeteries, pads, etc	88,966	263,255

Printing paper	\$25,057	\$75,284
Paper, not otherwise specified	95,775	213,240
Pencils, lead in wood, etc.	4,303	40,012
Pens and holders	15,354	27,457
Pocket books, purses, etc.	8,573	32,113
Toilet soap	17,033	54,499
Pearline and other soap powders	316	61,277
Umbrellas, parasols, etc.	107,084	3,904
Varnish, japans, etc.	23,550	50,495
Watches, cases, actions and movements, glasses and keys	6,036	392,321
Webbing, elastic and non-elastic	44,383	73,531
Veneers of wood, not over 3/8 in. thick	265	60,904

MERCHANDISE, FREE OF DUTY.

Binder twine		\$56,600
Cotton waste	9,040	199,687
“ yarns, No. 40 and finer	139,391	15,231
Aniline dyes	18,454	118,962
Borax, ground or unground in bulk not less than 25 lbs.	57,287	1,751
Brimstone, crude, and sulphur crude	167,807	35,713
Chloride of lime	47,050	6,257
Cream of tartar in crystals (principally imported from France)	26,720	11,412
Extract, logwood, fastic, oak, oak bark and gubrachs	80,085	89,078
Gums, arabic, etc., for manufacturing purposes	11,947	180,248
Indigo	1,892	59,987
Saltpetre	10,105	20,599
Soda, nitrate, soda ash, soda caustic, bichromate, sal. soda	190,733	145,358
Sulphate of copper	14,176	43,321
Duck for belting and hose	4,553	85,134
Fish lines and nets for deep sea fishing	263,323	199,541
Rubber, recovered, and hard rubber in sheets	547	136,862

ORGANIZED EFFORT.

On June 1, before the Buffalo Merchants' Exchange, Mr. Theodore C. Search, President of the National Association of Manufacturers of the United States, delivered an address in which he claimed that that country will, at a very early day, lead the whole world in industry and commerce. After alluding to the vast strides of the American export trade in the last few years, he declared that it was due chiefly to the organized effort put forth by American manufacturers as evolved through the operations of the Association of which he is the presiding officer. Mr. Search said:—

As in the production of their goods American manufacturers have astonished the world, so in the sale of their products will they set the pace for their foreign competitors. Nothing has been more significant of the determination of American manufacturers to broaden the markets for their products than the creation of a great agency to do their bidding in the shape of the National Association of Manufacturers. As I have been honored with the presidency of this Association for four successive years, it is natural for me to tell you something of this great work which the manufacturers have been carrying on in their own behalf.

In 1895 a large number of manufacturers assembled in Cincinnati and organized this Association for the purpose of promoting their interests both at home and abroad. The desire for a larger volume of the foreign trade then beginning to manifest itself among the manufacturers naturally diverted the attention of the Association more particularly in the direction of the extension of the export trade of the country, and for four years past a vast amount of practical work has been done with this end in view.

The Association in reality represents the united efforts of over a thousand of the largest manufacturers in the country, working along strictly practical lines to encourage such legislation as is desired for the improvement of conditions in the home market and to aid in the development of foreign markets

by bringing the members of the Association closely in touch with the principal merchants of the outside world.

The Association is thoroughly national in its character, representing all the principal industries and every important industrial section of the country.

Its aims are so broad and so essentially of a public character that it has attracted the most progressive and public-spirited element among the manufacturers of the United States. I feel wholly safe in claiming that this is probably the largest and most thoroughly representative organization of manufacturing interests ever formed in the United States, or in any other country.

The Association meets annually to review the work of the year past, to discuss topics of current interest to manufacturers and to outline a policy for the year ensuing, and these meetings are of the deepest interest because of their representative character and their serious consideration of important business problems. It is well worth the time and expense necessary for any manufacturer to attend these annual sessions, to participate in the interchange of ideas and to come in contact with men of large affairs and progressive views.

In its relation to public legislative matters the Association stands committed to the support of such measures as are needed for the creation of a Federal Department of Commerce and Industries, the encouragement of American Merchant Shipping, the improvement of Patent and Trade-mark Systems, the establishment of a Uniform Classification of Freight, the construction of the Nicaragua Canal, the extension of the Parcels Post System to the principal countries of the world, the reorganization of the Consular Service upon a strictly business basis, and other measures of similar public character.

It must be evident that an organization so broadly representative of the manufacturing interests of the country should be able to wield a greater influence in encouraging such legislation than could be wielded by any body of men representing only individual views or single industries.

In its efforts to extend the foreign trade of the country the same conditions make the work of the Association effective and valuable. I believe that there is neither exaggeration nor presumption in the claim that the remarkable increase in exports of manufactured products has been due in very large measure to the work of the Association. When our first annual convention was held in Chicago in January, 1896, our industries were in the depth of depression. The suggestion that relief could be found in foreign markets was the keynote of that convention, and the amazing energy with which the manufacturers of the United States have since undertaken the extension of their export trade is traceable to that meeting and the subsequent work of the Association more than to any other causes or influences.

Time will not permit me to point out in detail the many and varied branches of the work which are being carried on with this end in view. By the study of foreign markets; by ascertaining what goods are wanted and by whom; by pointing out to its members opportunities for actual business; by handling their foreign shipments of freight in an economical and careful manner, and by many other forms of direct personal service the Association has been the means of creating much new business for its members.

Four years is an exceedingly short time in which to create so great an organization and to reduce to a practical working basis numerous lines of active effort which extend into the remotest parts of the earth. But a vast amount of actual work has been accomplished and the foundation has been laid for far greater results in the future. If nothing else has been accomplished the Association could be considered as having served a most valuable end in making known to the whole world that the manufacturers of the United States are working together unitedly and with a most serious determination to extend their trade into every market where a foothold can possibly be obtained.

The astonishing extension of the foreign trade of the United States has shown to our competitors in England and on the Continent that they now have a formidable rival to meet, and that they may expect to encounter vigorous competition wherever trade is to be found in the markets of the world.

This is an era of combinations and consolidations; a time in which such a great co-operative movement as is represented by the National Association of Manufacturers is most significant and most appropriate. This Association seeks to accomplish by united effort and influence what cannot be done by the individual.

What is now being done by a thousand manufacturers can be increased many fold by a larger membership. Where one manufacturer is now giving his aid to this work and deriving benefit therefrom there should be ten similarly participating. The united efforts of ten thousand manufacturers, with a fund of half a million dollars to spend annually in necessary and legitimate work, would produce results of vast importance and advantage to the manufacturing interests of the United States.

I hope to see the day—and am confident that it will not be far distant—when the National Association of Manufacturers shall have enrolled such an army of conquest, before which nothing can stand to prevent the accomplishment of what is right and proper for the advancement of the interests of American manufacturers both at home and abroad.

Canadian manufacturers who are desirous to serve their own interests to the best possible advantage should learn the lesson inculcated in Mr. Search's remarks. If they look closely and read between the lines, they will realize that what American manufacturers can do Canadian manufacturers can also do; and, further, if systematic organization can effect so much in the United States, and if it is so essential to success, similar organization is equally necessary in Canada. The nucleus of the best organizations of that character that was ever brought into existence in this country already exists in the Canadian Manufacturers' Association.

THE ST. LAWRENCE ROUTE.

At a meeting of the Montreal Corn Exchange, held June 16, the following important resolutions were unanimously adopted:—

That inasmuch as the prosperity of the Dominion largely depends upon making the St. Lawrence route what nature intended it should be, the cheapest and best route for the export of the natural products, not only of our own North-West, but also of the Western States.

Resolved, that in the opinion of this meeting, it is important that the Government should supplement the work of deepening the canals by providing equal facilities at Port Colborne with those Buffalo enjoys for the rapid transference of the cargoes of the largest modern lake vessels into vessels of the fullest capacity that our canals will accommodate, thus reducing the cost of inland freight by the St. Lawrence route to a minimum. The approaches to Port Colborne should be deepened, and a safe and commodious harbour provided there, supplied with such elevators and warehouses as the requirements of the trade may demand.

This meeting would also urge upon the Government the importance of operating and lighting the Welland and St. Lawrence canals by electricity, which would greatly facilitate the passage of vessels and tend to still further reduce the cost of transportation.

Resolved, further, that as part of a comprehensive scheme for the development of the St. Lawrence route, and as supplementary to the deepening of the canals to fourteen feet, which will be complete next spring, the Government should equip

the ports of Montreal and Quebec with such elevators, warehouses, and other modern facilities as may be necessary for the rapid and least costly trans-shipment of freight from the inland to the ocean vessels.

Further, that, as the capacity of ocean vessels visiting the port is of the utmost importance, that the channel, from Montreal to the sea, should be further deepened, straightened, and widened, and that the most modern system of lights and buoys should be introduced in order that it may be available for navigation by the largest ocean vessels at a minimum risk, either by night or day.

At a special meeting of the Montreal Board of Trade, held June 19, the question of improving terminal facilities and waterways was discussed, and the following resolution was adopted:—

That the Council of the Montreal Board of Trade hereby urges the Government, first, to provide elevators and warehouse facilities at Port Colborne for the rapid transference of cargoes; second, to light the Welland and St. Lawrence canals by electricity; third, to equip the port of Montreal with elevators, warehouses, and such other modern facilities as may be necessary for the rapid and least costly handling of freight from inland to ocean vessels. The council presses those improvements upon the Government at the present time, because it is of the opinion that they are necessary to enable the St. Lawrence route to compete successfully with existing American waterways.

EDITORIAL NOTES.

One of the best known of the founders of those manufacturing industries which have built up Toronto's commercial prosperity, passed away June 21st in the person of Mr. Charles Boeckh, who died at his residence in this city after a few days' illness. He was a native of Germany and was born eighty-two years ago. While a young man he came to America, residing in New York, ultimately coming to Toronto, where forty-five years ago he established the great brush industry which is identified with his name. For many years the firm was known as Charles Boeckh & Sons. A few years ago the deceased retired from the firm, and handed the reins to his sons, who now carry on the business under the name of Boeckh Bros. & Co.

Throw a stone into the water and the disturbance will not cease until the concentric circles which roll on from the point of the stone's immersion be stopped by the farthest shore. Advertising stirs the tide of business as resistlessly as the stone moves the surface of the water. Even if it misses the particular object of its aim, like a poorly directed missile thrown into a stream, the advertiser's thought will run out through the great current of publicity with results as certain as the motion caused by a pebble tossed into a brook.

We learn that propositions in favor of establishing the beet sugar industry in the Province of Ontario have been received from British and German capitalists who are prepared to erect one or more large beet sugar factories, on condition that the Dominion Government aid the industry for a few years by a moderate bonus on the production of beet sugar in Canada. We strongly urge upon the Government the advisableness of granting such aid as will induce the investment of foreign capital in this much-to-be desired enterprise.

The annual convention of the Canadian Association of Manufacturers, which recently met at Toronto, developed the fact, which has been well known and understood all along, that the organization is firmly set against any kind of a reciprocity treaty with the United States likely to do good to the producers of this country in giving us a larger market. The president of the association, in his annual address, did not try to conceal his pleasure at the course things have taken with respect to the negotiations. He would not only refuse to admit American manufactured goods to Canada on more liberal terms, but he would put a good export duty on Canadian pine and spruce logs. This, he thinks, would keep the logs at home, where they could be worked up into furniture, pulp and paper. In other words, he would deny us any more privileges, and, what is worse, would take away some that we already possess. This course is regarded as the more justifiable in view of the organization of "enormous industrial trusts in the United States in almost every branch of manufacture," which, it is said, will make "the competition with that country even more severe and unfair than heretofore." Canada, like this country, may select the fiscal policy which she prefers. If reciprocity is not desired by her, then we are not likely to get it,—that is all. It takes two to make that kind of a bargain. The most interesting thing about the whole affair, however, is to note how much some men are mutually afraid of each other. There is a group of manufacturers in this country, rather a small one, we believe, who say, we cannot compete with Canada, and they therefore are opposing reciprocity on this side of the line on that account. Here from Toronto comes the statement by the Canadian manufacturers that our competition with them, by reason of recent industrial developments in the United States, will henceforth be "even more severe and unfair than heretofore." Somebody must be wrong about this, and we doubt whether it is the Canadians. —The Manufacturer, Philadelphia.

There will be held in the city of Philadelphia, Pa., from September 14th to November 30th next, a national exposition of the manufactures of the United States. The exposition will be held by authority of the Congress of the United States, and will be under the auspices of the Philadelphia Commercial Museum. The exposition is supported by liberal appropriations of money made by the United States Congress, the State of Pennsylvania, and the municipality of Philadelphia. The principal Chambers of Commerce, Boards of Trade, and other commercial organizations throughout the United States have endorsed the exposition and are giving it their support. It will be of a purely commercial character. It will be distinctive in that respect and unique in being the first exposition of manufactured products of the United States especially suited for export. Its special object is the extension of the foreign trade of the United States. Canadian manufacturers who are interested in export trade might find both pleasure and profit in visiting this exposition and learning by observation what their competitors are doing.

Membership in the National Association of Manufacturers costs \$50. The privileges of membership include the receipt by the member of hundreds of bona fide inquiries from foreign merchants each year, a protection from bad foreign accounts,

the placing of his name in the hands of 10,000 foreign buyers, the possession of a list of houses in Europe, Asia, Africa and South America handling special lines of goods. This means an annual saving and an annual assistance of very much more than the membership investment. It moreover means a strengthening of the powerful work in improving business conditions by legislative measures already being done by the National Association of Manufacturers, a union of the leading manufacturers of the United States to do for the united interests what no one of them individually can do for himself so cheaply and so effectively.

What are Canadian manufacturers doing for themselves in this direction?

LITERARY NOTES.

Outing for July is as wholesome and refreshing as are the out-door pleasures to which it so pleasantly points the way. The reading matter has been carefully selected and the illustrations are numerous and beautiful. The contents include: "On a Pennsylvania Trout Stream," by Ed. W. Sandys; "Hunting Alaskan White Sheep," by Dall. De Weese; "Catboating on Jersey Inland Waters," by Hy. T. Brown; "The Golf Clubs of Chicago," by A. J. Colman; "Remote Norway," by Elizabeth Taylor; "How to Recognize Deadly Snakes," by G. R. O'Reilly; "A Glorious Fourth Awheel," by A. H. Godfrey; "A Surrender at Discretion," by Kent Warfield; "Canoeing down the Penobscot," by W. O. Brooks; "Fishing for Snapping Mackerel," by Charles H. Chapman; "Five Weeks Awheel in France," by Sydney Cross; "Bass Fishing at Stony Island," by Isabel Nelson; "The Launch of Columbia," by Capt. A. J. Kenealy, and the usual editorials, poems and records.

The jubilee volume of *The Methodist Magazine* begins its fiftieth volume with a specially patriotic number. It has two well-illustrated articles on two of Canada's great industries—the Agricultural College, Guelph, and scientific farming; and the lumbering industry. Florence E. Withrow has an illustrated article on the pathetic story of Queen Louise of Prussia, and there is an illustrated poem by J. W. Bengough. Horseless carriages, a sketch and portrait of Rosa Bonheur, "The Browning Love Letters," the World's Progress with engravings of "The House in the Wood," where the Peace Conference is being held, and other illustrations are given. There are in all eight illustrated articles. Toronto: William Briggs, \$2.00 a year.

Scribner's Magazine for July has as a frontispiece a fine wood engraving by Gustav Kruell, from a very rare daguerrotype of Daniel Webster, and accompanies Senator Hoar's paper on Webster, for which he has been collecting material for many years. James F. J. Archibald, the war correspondent, has been most of the winter in Havana, and describes the reconstruction in the government of that city by American officers. Illustrations show the work of regeneration in Havana streets. Another very practical article describes how the foreign mails are handled at New York. The magnitude of this work, involving millions of separate pieces, is presented with great clearness, and the whole vast machine is for the first time described for a general audience. Mr. Stevenson's letters describe his invalid life at Bournemouth, where he occupied the famous cottage "Skerryvore" and where he was visited by many eminent literary men. The fiction includes a pathetic story of a girl who is threatened with blindness, entitled "The White Blackbird," by Bliss Perry; another of "Aunt Minerva Ann's" amusing chronicles by Joel Chandler Harris; and a fascinating instalment of "Q's" serial, "The Ship of Stars," in which Taffy is apprenticed to a blacksmith.

With its infinite variety of excellencies, the *July Ladies' Home Journal* appeals to every taste and touches upon every interest. It opens with "The Most Famous Little Town in America," which pictures many interesting spots in historic and literary Concord. There is a delightful view of social life in the Colonial days in "When Washington was Married," which brings to light many new, interesting facts. A series of almost incredible narratives in "The Moonlight King" tells of the follies and eccentricities of Ludwig II. of Bavaria.

Two pages are devoted to "Floral Porches and Vine-Clad Cottages," an attractive feature filled with suggestions for every homekeeper. The Curtis Publishing Company, Philadelphia, one dollar per year.

The American Directory for 1899 of the Knitting Industries of the United States, Canada and Mexico, published by the Textile Record Company, 425 Walnut Street, Philadelphia, Penn., has reached our desk. In this little book will be found the name and particulars of every knitting mill, large or small in the three countries named. During the year many changes have occurred in the industry. The number of new mills is very large—so large that any directory six months old is almost valueless. The whole movement of the business is noted in this 1899 Directory, which has been brought down to May 1st, of the present year. In no other volume now extant can be found the facts presented in this book. Its new feature is a list of knitters in Mexico, where business is growing fast. Printed with large type, upon white paper and bound handsomely in flexible covers, the Directory is pretty to look at, easy to refer to, readily carried in the pocket, and invaluable to dealers who sell to knitting mills. The price is \$2.00. The book will be mailed to any address upon receipt of the price by the publishers, The Textile Record Company.

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 enquirers 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 enquiries.

49. A London firm enquires for the names of shippers of fresh Canadian salmon (frozen) as they are in a position to take considerable quantities. They also ask for the name of a reliable shipper of fruit pulps.

50. An enquiry has been received through the medium of the Consul General for Spain for the names of the principal fruit brokers in the larger Canadian cities.

51. Agents in the large centres are required for the sale of real Irish frieze ulster coats by a firm in Ireland.

52. A firm of biscuit manufacturers who are desirous of opening up a trade with the Dominion, wish to get into communication with some reliable agents and importers.

53. A Scotch house, desirous of extending their trade in jute yarns in Canada, asks for names of Canadian rope and twine makers and carpeting and mat manufacturers.

54. An enquiry has been received for a good manufacturer of dining tables made from birch, spruce and basswood, in quantities and shipped in the white.

55. Enquiry is made for shippers of hickory suitable for golf sticks in lengths of 44 inches by $\frac{1}{2}$ inches square. The goods are required immediately for wholesale trade.

The Canadian Manufacturers' Association has employed Mr. E. M. Trowern to visit manufacturers who are not now members of the Association and invite them to connect themselves with it. The Association is actively engaged in a work in which every manufacturer in Canada is interested, and in which every manufacturer should participate.

Messrs. Wallach Bros., 57 Gracechurch Street, London, E.C., are prepared to enter into negotiations with suitable Canadian firms who would take up the sale of their safety appliances. They manufacture such appliances for engines, boilers, shafting, etc., also guage-glass reflectors, wired glass guage glass protectors, automatic belt-shifting apparatus, etc.

CANADIAN MANUFACTURERS' ASSOCIATION.

<p>President: J. F. ELLIS.</p> <p>First Vice-President: P. W. ELLIS.</p> <p>Second Vice-President: R. E. MENZIE.</p> <p>Treasurer: GEORGE BOOTH.</p> <p>Chairman Executive Committee: R. W. ELLIOT.</p> <p>Chairman Tariff Committee: W. K. McNAUGHT.</p> <p><i>The Executive Committee meet on the Second Tuesday of each month.</i></p>	<p>OFFICES</p> <p>McKinnon Building,</p> <p>TORONTO.</p> <p>Tel. 1274.</p> <hr/> <p>J. J. CASSIDEY, - SECRETARY.</p> <hr/> <p>THE OBJECTS OF THIS ASSOCIATION ARE:</p> <p>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.</p> <p>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.</p> <p>To maintain Canada for Canadians.</p> <p>Any person directly interested in any Canadian manufacturing industry is eligible for membership.</p>	<p>CANADIAN INDUSTRIAL LEAGUE. President, JAR. KENDRICK, M.P.</p> <p>WOOLEN MANUFACTURERS' ASSOCIATION, President, BENNETT ROSAMOND, M.P.</p> <p>KNIT GOODS MANUFACTURERS' ASSOCIATION, President, JOHN PENMAN.</p> <p>CARPET MANUFACTURERS' ASSOCIATION, President, J. P. MURRAY.</p> <p>GLOVE MANUFACTURERS' ASSOCIATION, President, A. H. CLARK.</p> <p>REPRESENTATIVES TO TORONTO INDUSTRIAL EXHIBITION ASSOCIATION.</p> <p>R. W. ELLIOT. GEORGE BOOTH. W. K. McNAUGHT. A. E. KEMP. J. J. CASSIDEY.</p>
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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. Larke, 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. Rennie, 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. W. Murray, 10 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.

AIMS AND OBJECTS.

The Canadian Manufacturers' Association have just issued a brochure which recounts some of the aims and objects it has in view set forth very succinctly and briefly, intended to be read by busy men. It was printed in the style of the Bulletin of the Association, and it directs attention to the fact that the Association is actively engaged in a work in which every manufacturer in Canada is interested, and in which every manufacturer should participate. It recites as follows:

1.—The Canadian Manufacturers' Association was organized by business men for business purposes and to advance the interests of Canadian industries, both at home and abroad.

2.—Its membership includes representatives in every important branch of manufacturing industry from Nova Scotia to British Columbia, and its operations are directed by Executive and Tariff Committees, representing all parts of the Dominion.

3.—The influence of the Association lies in the strength of its membership, consequently, the larger the membership the greater its influence.

4.—In the event of the necessity of approaching the Government upon any matter, it would be of undoubted advantage to present a consensus of opinion, obtained through this Association, from all the different interests throughout Canada represented in it.

5.—It is national in its objects. Whatever injures one manufacturer in one part of the country injures others in other parts, and, consequently, all manufacturers should be united in an Association that will take action on behalf of

any particular member or of the whole body, when it may be necessary to do so.

6.—We desire that the raw products of the country should be manufactured in the country, and the home market supplied as far as possible by whatever goods can be made here.

7.—We advocate the free admission of raw materials not produced in the country and the levying of duties upon manufactured goods sufficient to afford proper protection to home industries.

8.—We watch all tariff legislation, and protest when any changes are proposed calculated to give the Canadian market to those who pay no Canadian taxes. We are ever watchful of the interests of our members and the industries they represent, as stability of our fiscal policy is necessary to the encouragement and safety of investments in manufacturing enterprises.

9.—If your business would be benefitted by any change in the tariff, notify the Association.

10.—The head office in Toronto is always open for the free use of members in obtaining information regarding trade opportunities, names of foreign buyers who wish to purchase Canadian products, and other useful information.

11.—As an Association we use our influence to secure contracts for structures, supplies, etc., for Canadian manufacturers, and notify members, when possible, of all contracts to be awarded.

12.—The addresses of manufacturers of all classes of machines, machinery, supplies, etc., made in Canada and other countries, and importers of goods in foreign countries, given to members free.

13.—Members are notified of all communications from foreign dealers who are desirous of opening up trade with Canada.

14.—The Association will give statistical information respecting the import and export trade of the country in manufactured articles, showing what line of goods are imported that might, to good advantage, be produced at home, and showing the possibilities of selling Canadian manufactures in foreign markets.

15.—Calling the attention of members to unwise legislation and acting in unison for its abolition.

16.—Resisting freight discrimination and securing equitable transportation facilities.

17.—Advocating technical education, which is absolutely necessary to the progress of manufacturing industries.

18.—Keeping on record the customs duties of every country and the changes that are made in them from time to time, and the facilities for obtaining quick information regarding transportation rates, the most available routes for shipment and travel, cost of insurance, etc.

19.—The Association believes that the natural and artificial waterways of Canada should be improved and extended as the needs of commerce require in connecting the great lakes with the seaboard.

20.—Placing catalogues and price lists of manufacturers who are members in the leading purchasing centres of the world. This alone is worth many times the cost of membership.

21.—Members of this association who may desire to exhibit any of their products at any Canadian or foreign exhibition, and wish information regarding it, can obtain the same upon application to the Secretary.

22.—Canadian Commercial Agents are maintained in a number of different countries, who, with the High Commissioner for Canada at London, with his corps of able assistants, and other official representatives of Canada in Great Britain, are always active in obtaining information regarding openings for Canadian trade abroad, which information is forwarded from time to time to the office of this Association, where it is kept on file for the use of members.

23.—A synopsis is also kept of the official reports of the consuls and commercial agents of different countries such as Great Britain, United States, France, Germany, Russia, etc., in all important mercantile centres of the world, all of which valuable information is for the use of members.

24.—The Association is entirely non-political, but a purely business institution, possessing social features of a very profitable nature. It reaches out all over the Dominion, and is the bonding influence combining and consolidating all interests that have in view the building up of Canada as a manufacturing country. It does what no individual manufacturer or guild could possibly do.

25.—THE CANADIAN MANUFACTURER is the official organ of the Canadian Manufacturers' Association, and it goes free to every member of the Association. It is published twice a month, and contains accounts of the proceedings of all the public meetings of the Association and of the Executive and Tariff Committees. It also contains a vast amount of information regarding both the home and foreign trade of Canada, and of the possibilities of foreign markets for Canadian manufacturers, compiled from the reports of the Department of Trade and Commerce, of the Consular and Commercial Agents of Canada, Great Britain, United States and other countries in all parts of the world, and from other sources.

Messrs. Stern Bros., 57 Gracechurch Street, London, E.C., wish to appoint Canadian agents for the sale of their solidified lubricants, Sterneline bricks, etc.

UNDERVALUATION

On June 12th the Executive Committee of the Canadian Manufacturers' Association passed a resolution calling upon the Dominion Government to enforce the law and to inflict exemplary punishment upon those who may be convicted of fraud upon the revenue by way of undervaluation of merchandise liable to customs duty. A copy of the resolution was forwarded to Hon. Wm. Paterson, Minister of Customs, who has replied as follows:

OTTAWA, June 14, 1899.

J. J. CASSIDY, Esq., Secretary Canadian Manufacturers' Association, Toronto, Ontario.

SIR—I beg to acknowledge receipt of your letter of the 13th instant, enclosing a resolution on the subject of undervaluation for duty purposes adopted at a meeting of the Executive Committee of your Association, held on the 12th instant.

I have carefully perused and considered the terms of the resolution. I desire to assure your Association that the Department over which I have the honor to preside has endeavored to carry out thoroughly the provisions of the law in respect to frauds upon the Customs.

I hold it as a sound principle that fraud, by way of undervaluation, should be severely punished and I have endeavored to follow this principle in determining seizure cases. It is not always an easy matter, however, to determine when fraud enters into a transaction. Each case has to be dealt with on its merits and in the light of all evidence, pro and con. Without full knowledge of the evidence an absolutely correct conclusion cannot be arrived at.

While I hold that frauds, by way of undervaluation, sufficiently established, should be severely punished, I have recognized that probably the best way to put a stop to frauds is to prevent their commission, as far as possible, and my best efforts have been directed to that end. Many preventative measures have been adopted of late which are operating successfully. As you are no doubt aware, a change was made in the form of certification of invoices by exporters, under which exporters are now required to show the home consumption price on the invoices when such prices vary from the invoice price. I would also point to the fact that the oath required to be made by a foreign owner of goods shipped to Canada on consignment, has been made more binding, with the object of preventing frauds, such as complained of. Further, better methods have been adopted for the collection of reliable information as to values and for the systematic distribution of such information among Officers of Customs. The aim of the Department is to post its officers as thoroughly as possible as to foreign values.

Yours truly,
(Signed) Wm. PATERSON.

THE CANADIAN PIANO AND ORGAN MANUFACTURERS' ASSOCIATION.

On June 13th, in Toronto, a number of piano and organ manufacturers doing business in Ontario formed a guild which they called the Canadian Piano and Organ Manufacturers' Association. It was explained by Mr. E. P. Hawkins, of the Bell Piano and Organ Co., of Guelph, Ontario, that the meeting had been called with a view of engendering good feeling and concerted action among the manufacturers in dealing with some questions of paramount importance to all. One of the strongest incentives in promoting this organization was understood to be the desire to have some better arrangements effected whereby the manufacturers who exhibit their instruments at the Toronto Fair would be freed from the annoyances that arise from the assembling of the instruments in one building. It is to be sincerely desired that the representations that have been made by these manufacturers, and by the Canadian Manufacturers' Association to Mr. Hill, the Manager of the Fair, and to the Exhibition Board of Directors, and to the Toronto City authorities also, will result in affording the relief desired.

In the organization of the Canadian Piano and Organ Manufacturers' Association the following concerns were represented: The Bell Organ and Piano Co., Guelph, Ont., by E. P. Hawkins and J. C. Fraser; A. A. Barthelmes & Co., Toronto, by A. A. Barthelmes; William Doherty, Clinton, Ont.; Heintzman & Co., Toronto, by Herman Heintzman; Gerhard Heintzman, Toronto; D. W. Karn & Co., Woodstock, Ont., by M. Thornton; Mason & Risch Piano Co., Toronto, H. Mason; Morris-Field-Rogers Co., Listowel, Ont., R. B. Andrews; Mendelssohn Piano Co., Toronto, J. Wesley; Octavius Newcombe & Co., Toronto, by O. Newcombe and W. T. Giles; the Nordheimer Piano & Music Co., Toronto, by A. R. Blackburn; Aug. Newell & Co., Toronto, by F. H. Wright; The Standard Piano Co., Toronto, by E. Whaley and The Stanley Piano Co., by Charles Stanley.

The officers elected were: E. P. Hawkins, President; O. Newcombe, Vice-President; H. Mason, Treasurer; R. B. Andrews, Listowel, Ont., Secretary.

The Executive Committee of the Association consists of Messrs. Hawkins, of Guelph; Andrew, of Listowel; Karn, of Woodstock; Doherty, of Clinton; and Messrs. Gerhard Heintzman, George Heintzman, Wesley, Wright, Newcombe, Mason, Stanley, Blackburn and Whaley, of Toronto.

MINING RESOURCES OF CANADA.

Mr. H. J. Hill, Manager of Canada's Great Exposition to be held in Toronto, August 28 to September 9 next, is sending invitations to manufacturers of mining machinery, rock drills, ore crushers, etc., and to all interested in the development of Canadian Mines, to exhibit at the forthcoming fair. The invitation is as follows:—

In view of the great development of the Mining Resources of the Dominion of Canada which is now taking place, and the deep interest which is being manifested therein, it has been decided by the management of the TORONTO INDUSTRIAL EXPOSITION to be held from the 28th of August to the 9th September, 1899, to give special prominence to this important feature in connection therewith.

Mining Machinery.—A portion of the large Machinery Hall will be set apart for this purpose. Space and power will be furnished free of charge to exhibitors of Mining Machinery, Ore Crushers, etc.

Treatment of Ores.—It is proposed to crush, mill, pass over tables, and treat the concentrates of all samples of ore sent for the purpose, free of cost, and mine owners are invited to send samples for this purpose. There should not be less than three, or more than ten tons in a sample. A Government assayer will sample all ores sent for treatment in connection with the exhibit for comparison with the returns given by the mill run, without expense to the owners, on condition that the ore is delivered, sacked, at the Exhibition grounds, free of expense to the Exhibition Association.

Samples of Ore.—It is also proposed to arrange for the exhibit only of samples of ore from all mines and prospects that may be sent for the purpose, such samples to be properly cleaned and labelled with the name of property and section of the country from which it is taken.

Intending Exhibitors.—Those desiring to exhibit Machinery, or to send samples of ore, are requested to communicate with the Manager of the Exposition as early as possible, from whom any further information desired can be promptly obtained.

TO VISIT CANADA.

A number of British paper makers propose to visit Canada and the United States at an early date, regarding which The Paper Maker, of London, England, says:—

"During the past three years we have frequently been asked by paper makers to organize a party to visit some of the leading paper and pulp mills of the United States and Canada; and some of the largest pulp and paper manufacturers of both countries have kindly expressed to us their willingness to entertain such a party, and show them over their mills.

"Our Mr. S. Chas. Phillips, who, in consequence of his frequent visits to these countries, possesses a wide knowledge of the trade in the States and in Canada, has consented to make the necessary arrangements, and to take charge of a select party—providing a sufficient number are willing to avail themselves of the opportunity—which could leave on August 26th or September 2nd. September, it may be mentioned, is one of the best months in the year for traveling on the North American Continent. Special arrangements would be made with the steamship and railway companies as regards terms and accommodation, and the program suggested is as follows:

"The time will be one month (thirty-one days). It is proposed to leave on date, as arranged, by one of the "crack" Atlantic mail liners—magnificent vessels of from 10,000 to 12,000 tons. The voyage out would occupy from six and a half to seven days. Eighteen or nineteen days would be spent in visiting Philadelphia, Washington, Cincinnati, St. Louis, Chicago, Niagara Falls, Toronto, Montreal, Quebec, Holyoke, Worcester, Boston—the various mills being taken en route as per arrangements now in preparation by our American and Canadian paper and pulp friends who wish to entertain the party. For the States and Canada, Mr. Phillips proposes to engage a special train, comprising Pullman's palace drawing room, dining, smoking, and sleeping cars, fitted with baths, barber's shop, piano, etc., which could be run over any company's system on the line of route, and switched into a side track when and where required, giving the party the option of taking meals aboard, which would not only economize time, but expense also."

"Every opportunity would be given for sight seeing as well as visiting the mills, and the whole journey would be undertaken in the most comfortable and luxurious style. Further particulars and cost of tour on application.

"We can bespeak for the party a hearty welcome and hospitable reception by the members of the American and Canadian trade, who will be delighted to show our friends through the mills.

"Those intending to join the party will oblige by sending in their names to our Mr. S. Chas. Phillips, as soon as possible, so that the probable number may be communicated to our American and Canadian paper and pulp trade friends, to assist them in making the necessary arrangements for its reception at the various points."

Should the proposed party eventuate we can promise them a pleasant time while in Canada.

CANADA AND THE BICYCLE INDUSTRY.

According to the figures covering the trade and navigation of the Dominion of Canada for the year ending June 30, 1898, recently published, of the estimated total of 50,000 bicycles sold in Canada during the year, 27,262 came from the United States and 46 from Great Britain. United States Consul Shepard, at Hamilton, summarizes the figures for the year as follows:

"In addition to this large importation of complete machines, the value of bicycle parts imported was \$279,752 (of which the United States furnished \$271,175), which is held to represent 12,000 complete machines at \$27 each. In round numbers, the total of imported bicycles sold, complete or in parts, was 40,000, averaging in cost \$22.20, on which a duty of 30 per cent. was assessed and \$179,259 collected, while on bicycle parts the duty collected was \$83,534.

"In 1897 the importation of completed bicycles was 24,558, or 2,750 less than in 1898. The average cost in 1897 was \$32.40, against \$22.20 in 1898; and the duty, per machine, \$9.72, against \$6.66."

Concerning the Canadian bicycle industry, Mr. Shepard gives the following:

"During the year ended June 30, 1898, 18,617 bicycles were manufactured in Canada, of which only about 10,000 were sold at home. While the United States were encroaching on this market, Canadian manufacturers were reaching

out for the trade in foreign countries, and sold 8,617 bicycles for \$373,383; Australia taking 5,229, Germany 1,441, Great Britain 616, France 490, and the United States 307, as their largest customers.

"The prices seem to have been varied for each country, as follows: Great Britain and Australia, about \$46; France, about \$41; United States, about \$35; Germany, about \$30."

TRADE OF SYDNEY, N. S. W.

Commercially, Sydney may be considered as representing New South Wales; it is more, for it is the chief distributing point of the continent of Australia. In the value of its tonnage, Sydney is yet, I think, the tenth commercial port of the globe, and by reason of increasing acquaintance and mutual confidence, the commercial relations of the United States with Australia are becoming more firmly established and the reciprocal trade more extensive and profitable.

The total value in round numbers of the export and import trade of Sydney with all countries in the year named was as follows:

1891.	1895.	1896.	1897.
\$176,890,000	\$184,440,000	\$211,960,000	\$221,310,000
1898.			
\$183,370,000.			

United States Consul Bell at Sydney comments upon this trade as follows:

"Until recently, New South Wales had not produced sufficient grain for her own consumption; in 1836, there was imported from the United States some \$3,450,000 worth of wheat and flour, and in 1897, \$2,584,000 worth. But, owing to the passage of more liberal land laws and the greater encouragement given to agricultural pursuits, the wheat acreage has been so largely increased that it is not improbable that the colony may soon to some extent be in the export market.

"Several new lines have been successfully introduced into this colony during the last year, and the old prejudices are nearing the vanishing point. 'American goods' no longer mean 'Yankee notions' or handy devices or ornamental novelties alone, but they mean also nearly every modern machine or appliance from a sharp tool to the best structural steel for railway, bridge, or building purposes.

"Our manufacturers have been learning rapidly during the last few years, and the complaints of poor packing, failure to keep up to sample, and defective goods are becoming rare. However, I want to impress our people again with the wisdom of deviating, in many ways, from the methods which win success in our own country. They should remember that there is strong competition here; that it costs a great deal to return goods; and that it is often difficult for strangers to ascertain the business reliability of persons or firms willing to handle the goods.

"The experience of every passing month confirms my opinion that special lines should be handled by special agents on the ground, and that staples should be handled through well-known and firmly established commission houses. I know of American articles the agencies of which have been secured by firms, seemingly for the very purpose of keeping them from competing with goods of like character, and I also know of firms that have lost heavily by trying to 'deal direct,' with a view of saving the usual commission-house charge.

"Losses through business with the well-established commission houses are very rare, while losses from efforts to deal direct with strangers halfway around the world, while certainly not frequent, are not unusual, and when they do come, they wreck much of the good will and confidence that wiser methods have established."

TRADE IN GIBRAITAR.

Since the beginning of the year, the importations of United States produce to this market have been on a very liberal scale, especially flour, American descriptions having so far completely ruled the market. Produce from other countries

has not been able to compete, in consequence of the difference in cost. The supplies which arrived direct from New York during the last quarter amounted to 23,548 sacks. If the importation of cereal produce from abroad were not handicapped in Spain by heavy duties, there is no doubt that this market would become an important centre for the entrance of American supplies. At the present moment, the demand for flour is limited to local consumption, but some of it finds its way to the neighboring Spanish villages in the shape of bread, through the several thousands of laborers daily engaged in the extensive dock and harbor works going on at this port.

American lard has been in fair demand during the past months, the ruling prices being considerably under the price of Spanish supplies, which have, for some time past, been quite scarce, owing to the reduced number of hogs which were raised during the last year in the south of Spain. Imports from the United States come in wooden pails, and lately, 2,000 pails were received direct from New York by steamships.

The tobacco market has lately been very inactive for outward traffic, but the local consumption continues to gradually lessen the large stocks stored previous to the imposition of 1d. per pound duty last year. The direct arrivals from the United States during the present year have so far consisted of only 333 cases and seventeen hogheads of leaf tobacco, and 175 cases of Cavendish.

A very extensive business continues to be carried on in American salted pork, hams, bacon, cheese, and every kind and description of canned provisions, vegetables, and fruits. These articles of daily consumption generally come through English ports, principally Liverpool, and in such quantities as to fully meet the demands, not only of this British colony and the shipping arriving at its port, but also of the Spanish neighborhood—United States Consul Sprague, at Gibraltar.

WOOD FLOUR.

Attention is directed to the following letter addressed to the Minister of Trade and Commerce by Lord Strathcona, the High Commissioner for Canada in London, England.

SIR,—Adverting to my letter, No. 421, of the 21st May last, and to other correspondence with your department on the subject of wood flour, I beg to state that, in view of the inquiries that have reached me from a number of parties in the Dominion who are inclined to go into the trade I have caused further investigation to be made into the question of the supply and demand on this side.

It appears that wood flour, or "wood-meal" is used to some extent as an absorbent for nitro-glycerine in the manufacture of various explosives, and a finer grade is also required for the manufacture of a certain kind of linoleum, known as "inlaid."

The manager of one of the principal houses engaged in the explosive business, informs me that he estimates the consumption of wood-meal in this trade to amount to about 700 tons per annum, and has been good enough to furnish me with the following specification for the product, as required by one of the largest European factories:

"The wood-meal must be made from white wood, free from resin; chemicals or any other purifying agents for bleaching purposes must not be used in its manufacture. The wood-meal must be free from impurities, special care being taken that no nails or other scraps of metal are present in it. The moisture in the wood-meal must not exceed five per cent. The wood-meal must be ground to such a degree that it will pass through a sieve of fifty meshes to the lineal inch, but not more than one-third through one of 100 meshes. The wood meal must not be exposed to acid fumes nor be overheated in drying, so as to enable it to pass the British Government heat test for the detection of slight traces of vinegar or other acid or objectionable volatile matter.

"The price paid in Scotland is £4 3s. 10d. per ton delivered at factory. The price in Germany is 6.50 marks

per 100 kilos. The factories seem all to have invariably obtained their supplies locally."

Another important house in the trade, in addition to giving particulars similar to those given above, state that wood flour for explosive purposes is only made from soft woods, and that the price usually paid here is about £4 10s. per ton of 2,240 lbs. (London and Liverpool). Stout canvas bags containing about two cwts. each are used for packing. Great stress is laid upon the necessity for the wood flour for the explosives trade being quite free from grit and in a dry, finely divided condition. It should also be very low in resins, and at the same time free from acid.

With regard to the demand for this product in the linoleum trade, I am given to understand by one firm that it at present amounts to over 1,200 tons per annum in the United Kingdom, while another estimates it at from fifty to sixty tons per week. The demand is quite likely to be an increasing one. As stated previously, wood flour is only utilized for one particular kind of linoleum. It must be finely ground, white in color, and light in weight. As regards the price obtainable, this would presumably depend largely upon the quality, but while one well-known firm places it at £3 10s. per ton delivered, others say that orders have been placed at £3.

I am sending you samples of the product with which I have been favored by certain of my correspondents. The samples bear labels showing the names of the firms by which they were supplied.

LIPOLEUM MANUFACTURERS.

Messrs. The Staines Linoleum Co., Staines, Middlesex.
Messrs. The Addlestone Linoleum Co., 2 Paternoster Square, London, E.C.
Messrs. M. Nairn & Co., Ltd., Kirkaldy, Scotland.
Messrs. D. C. Baxter & Co., Ltd., 27 Oswald St., Glasgow.
Messrs. J. B. Ostler & Co., Ltd., Kirkaldy, Scotland.

EXPLOSIVES MANUFACTURERS.

Messrs. The National Explosives Co., Ltd., 11 Austin Friars, London, E.C.
Messrs. British Explosives Syndicate Co., Ltd., Pitsen, Essex.

I shall be glad if you will arrange to give proper publicity to this report, and to the fact that samples of the product may be inspected in your department as the matter having been noticed in the press seems to have attracted a good deal of attention.

TRADE IN ANGOLA, AFRICA.

Church missions in Angola are important factors by no means to be despised. The missions of the "P.P. du Saint Esprit" (headquarters, Rue Lhomond, Paris) have establishments at many places in the country. The American Missions from Boston, which receive nearly all their goods from London (Army and Navy Supply Association), own prosperous establishments in Bihe and Bailunduland, and also work with success on the other side of Africa in the Sofala country.

In trading with the natives great experience is required, but the profits realized are often considerable. It is, therefore, absolutely indispensable to have lived with them in order to know exactly just what meets their tastes. In general, smooth-bore guns, caps, powder and lead are in great request everywhere; the Portuguese Government does not prevent the sale of these articles in any way. In a country like this, where frequent disputes occur between the tribes, it is absolutely necessary that the caravans going inland should be well protected. The principal articles sought by the different tribes are as follows:—Koniama: Short broad-bladed knives, copper wire, Dongo glasswares, boots and shoes, common velvet suits, large brimmed felt hats, white drawers, beads, tobacco, woollen blankets, common wooden or tin tobacco pipes. Gambos: Copper wire, salt, tobacco, woollen blankets. Kihita: The stuff known as "Zuarte," various glass articles, Dongo necklaces, copper wire of different colors and thicknesses, brandy and pande shells. This is a kind of univalve

round shell which the natives wear on the breast or fixed to their hair. Imitation pandes have already been made in Europe, but the natives can easily tell the difference. Ganguellas: Brandy, large tin spoons, common plates of white enamelled iron, indigo drills, light cotton blankets, tobacco, pipes and salt.—Belgian Vice-Consul at Mossamedes.

CONDENSED MILK IN BRAZIL.

In a country like Brazil, where milk is often scarce and expensive (about 1 fr. per litre), condensed milk in tins would find a good market. For some years past the imports of this product at Rio have been developing considerably. A little condensed milk comes from France, but it arrives chiefly from England and the United States. It pays a duty of 500 reis per kilo, gross weight (art. 58, class 4, of the Tariff of 1897). It is sold here, wholesale, at the rate of about 1,000 to 1,500 reis per kilo., according to the size of the tins.—French Consul at Rio de Janeiro.

CORKS IN RUSSIA.

The introduction of the State monopoly has given rise to a marked increase in the manufacture of corks; three establishments, with a yearly output of $1\frac{1}{4}$ million roubles, now being fully employed. The cork itself is obtained from Portugal, Spain and, to a lesser extent, Africa. Odessa corks, mostly quite common or cheap lines, sell well in South Russia as far as the Volga, there only being one small cork factory (in Rostovon Don) throughout the whole of the Black Sea district. Better class corks are still imported, but in continually decreasing quantities.—Austro-Hungarian Consulate-General in Odessa.

NEW CATTLE FOOD.

In both Denmark and Sweden, for the past few years, experiments have been made with blood as an ingredient for animal feed. Similar experiments have been made in Germany, with apparent success. A patent (No. 84,299) has been issued for the manufacture of an animal-food mixture called "Kraftfutter" (strength food) or "Blutmelassefutter" (blood molasses food), of which the principal ingredients are fresh blood, collected at the city slaughterhouses, sugar refuse and "grain cheat," by which I mean screenings or blowings from wheat, barley, rye, oats, &c. Turf mull, or turf flour, has been tested as a substitute for "cheat," but not with success. This feed is prepared in three different mixtures—for horses, for cattle and swine, and for poultry. The retail price is six marks per 100 lbs. The preparation is not intended to be fed raw, but as a mixture with other regular feed—for instance, when the amount of oats given per day is 15 lbs., with the use of "Kraftfutter" the quantity of oats is reduced to one-half, or $7\frac{1}{2}$ lbs., to which is added 5 lbs. of "Kraftfutter." I have been informed that at present the Government is experimenting with this feed on artillery horses, it being claimed that the albumen in blood, coupled with sugar and the other ingredients, makes an exceptionally strengthening food, in addition to being inexpensive. Factories for the production of this mixture are now in operation at Berlin, Stettin, Kiel and Konigsberg.—United States Consul at Stettin.

TRADE WITH NEW SOUTH WALES.

The last number of the Year Book of New South Wales, received at the Department of Trade and Commerce, contains information to show the growth of Canadian dealings with the antipodes since the establishment of the direct line of steamships between Canada and the Australian colonies. In 1892, the year before the opening of the line, Canadian exports to New South Wales amounted to £10,655. In 1897, the last year for which returns are available, the imports from Canada had grown to £187,291. The increase has been on an even greater percentage than in the case of the United States dealings with this Australian colony. In exports to Canada, the same thing is visible. In 1892 the exports from

New South Wales to Canada are set down at £37, while in 1897 they had developed to £11,555. There is a possibility that the Canadian-Australian liners may in the future call at Brisbane, Queensland, instead of Wellington. The value of continuing New Zealand in the route is still under review. Certain offers have been made by the Government of Queensland, and what will weigh in their favor is that the route by Morton Bay would be considerably shorter than by New Zealand. If those offers be accepted New Zealand will be excluded from the course and the steamers will go right on to Queensland.

MACHINERY AND LEATHER IN JAPAN.

In textiles, machinery, implements, and all other articles, it is equally important that the standard of excellence, originally established when first soliciting orders be rigidly maintained, and also that the requirements of the Japanese dealers and consumers be carefully ascertained and fully complied with. These may at times seem to be somewhat whimsical, in that they differ so widely from established custom (for example, as to the width of a piece of cloth, the length of the bolt, the number of pieces in a bale, the dimensions of a package, or the size of a case of machinery), but it will always be found that there is good reason for these requirements, either in the meagreness of the demand or the inadequate transportation facilities. There is already a considerable importation of leather into the consular district of Nagasaki, both sole and upper, all of which is used for making boots and shoes.—United States Consul at Nagasaki.

PAPER IN GREECE.

There is at present not a single paper factory in Greece, and all the paper used in the country is imported from abroad, chiefly from Austria and Germany. In 1898 the total imports amounted to the value of \$587,200, as compared with only \$327,400 in 1897. There is every reason to suppose that American printing (news paper) and writing paper would find a ready sale in Greece, when properly brought to the knowledge of the interested merchants. If we can sell over \$2,000,000 worth of paper in Great Britain, as we did in 1898, there is certainly a chance for the sale of American paper in a country where no paper is made.

TRADE IN HONDURAS.

The British Consul at Tegucigalpa has just transmitted statistics to his Government regarding the export and import trade of that republic for the twelve months ending July, 1898. Of the exports from Honduras, amounting to a total value of \$1,237,406, the United States took \$990,207 worth. The United Kingdom, Germany and France united took only about \$55,000 worth. The principal articles of export, in the order of their importance, are bananas, silver bars, live cattle, coffee, cocoanuts and timber. The import trade of Honduras during the same period attained a value of about \$1,168,000.

BELTING IN SWITZERLAND.

In 1897 Swiss merchants imported belting to the value of \$49,700 from Germany, \$39,600 from England, \$14,200 from France and only \$3,460 from the United States.

AUSTRALIAN BUTTER TRADE.

Under date of Cape Town, February 25, 1899, Consul-General Stowe submits the following statistics relative to the butter trade of Australia and South Africa:—

"The largest consignment of butter in one vessel (700 tons) which ever left Australia recently sailed in the Austral for England. The India had also on board 438 tons, so that in one week Melbourne has earned the credit of sending out the largest shipment of fresh butter which ever left any port in the world. Including a small consignment for Cape Town, the shipment comprised 54,000 boxes of butter. As an experiment, 800 dozen eggs were included among the produce for this port. The value of the butter and some 20,000 rabbits on board for England was \$676,443.50. I call attention to this for the reason that my efforts to induce the producers of the United States to ship butter has met with but little success, although, as mentioned in a recent report, butter has arrived in South Africa from the United States under Australian marks. The total import of butter into South Africa (with the exception of Portuguese territory) for 1898 was 5,782,017 pounds, against 5,901,455 pounds for 1897, showing a decrease."

AXES IN PARAGUAY.

The extensive trade in timber and the fact that the only fuel used in this country consists of wood and charcoal, cause a considerable demand for axes. Official reports give the amount of the imports in 1897 as 12,640 kilograms, at the estimated value of \$1,170 gold. The duty levied on this article is ten per cent. ad valorem. The statistics for the year 1898 are not yet finished, but according to general opinion, the figures for this year will far exceed those of the preceding.

Regarding the quality, it is obvious that instruments intended to fell and cut trees as hard as quebracho, lapacho, curupay, and iviraro must be of the very best steel. The superiority of American makes is recognized; from England come axes of a lower grade. Germany, up to the present, has not succeeded in selling any, but is sending samples, said to be of best quality.

Double axes have as yet not been seen in use. Collins' axes retail from \$5 to \$88 in Paraguayan paper (equal to about \$1.12 to \$12.32 in United States currency) a dozen. The consumption of hatchets is very limited, as machetes are more used.

A credit of six months is the general custom in this country, which term is sometimes lengthened to six months from sight, and sometimes shortened to four months, in which case a special discount is expected.—United States Consul Ruffin at Asuncion.

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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 telephone, 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, alkalies, 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.

The Armstrong Manufacturing Company, of Bridgeport, Conn., has found that its business increases so rapidly that another addition to the facilities has been found necessary. This is the second increase since January 1st. Much new machinery is now being added to the works and the Company has built a large fire-proof warehouse to which the shipping department has been transferred. All orders for the Company's goods can now be filled promptly. An increase of thirty per cent. of the export business within the past few months is reported. No less than \$125,000 worth of pipe threading machines have been exported to Germany since January 1st. This amount is greater, it is claimed, than the entire production of Germany whose markets are practically controlled by the Armstrong Company.

The Canadian Pacific Railway Co. will proceed immediately with the erection of a fine stone and brick edifice at Winnipeg, Man., which will include an elegant hotel, also passenger station, offices, etc.

The management of the Intercolonial Railway are contemplating large additions to its rolling stock. Mr. G. R. Jourghins, the mechanical superintendent, has been for some weeks engaged in preparation of an estimate of the cost and the extent of the equipment, and so far it is stated his estimate is close to \$3,000,000. For the purpose of the road, Mr. Jourghins estimates that 120 more new

locomotives may be required. Since his occupancy of his present position Mr. Jourghins has added thirty new locomotives to the I.C.R. rolling stock. It is also stated that the road will add to its present equipment a large number of freight and passenger cars.

The G. B. Underwood Inspirator Co., Hamilton, Ont., has been incorporated with a capital stock of \$100,000.

D. J. Munn's salmon cannery at Terra Nova, Lulu Island, B.C., was destroyed by fire June 12th. Loss about \$70,000.

Negotiations are in progress looking to the establishment of a large blast furnace and steel plant in Toronto. A few days ago Messrs. Louis Schilling, of Salem, Ohio, and J. W. Seaver, of Cleveland, Ohio, were in this city looking over the ground with that object in view. If the negotiations are successfully carried through it is the intention of the promoters to organize a company and proceed with the erection of the works without delay. The company will have a capital of \$1,000,000.

The Traders' Oil & Gas Developing Co., London, Ont., has been incorporated with a capital stock of \$40,000.

There is every indication that Ottawa is to become a central point for the manufacture of calcium carbide. A big company, of which Mr. J. Sutherland, M.P., is one of the chief promoters, is already at work, and now it is announced that Mr.

J. R. Booth will start a carbide factory on a large scale. The site of the large saw mill which was burned some years ago has been chosen for the erection of a large manufacturing building, which, when completed, will be four storeys high and 150 feet long by 104 feet wide.

J. J. Goodwin's saw mill at Hopewell Cape, N.B., was recently destroyed by fire. Loss about \$2,000.

Alfred Dickie's saw mill at Lower Stewiacke, N.S., was destroyed by fire recently.

The Ensign Chemical Co., Winnipeg, Man., has been incorporated with a capital stock of \$20,000.

The Miami Farmers' Elevator Co., Miami, Man., has been incorporated with a capital stock of \$10,000.

The Waterous Engine Co., Brantford, Ont., has just placed a new boiler for the Paulin-Chambers biscuit factory at Winnipeg, Man., now in course of erection.

The Waterous Engine Works Co., Brantford, Ont., has supplied the machinery for T. A. Burrough's saw mill at Garland Siding, Man. The capacity of the mill will be 25,000 feet per day.

The Cranbrook Lumber Co., Cranbrook, B.C., have erected a new saw mill to replace the one which was recently burned. The new mill will have a capacity of 30,000 feet per day.

A new brick hotel is being erected at Yorkton, N.W.T., which will cost about \$10,000. Mr. Stephen Toye is the proprietor.

The Darlingford Elevator Co., Darlingford, Man., are applying for incorporation with a capital stock of \$5,000.

The flour mill belonging to John Shaw at Mount Vernon, Ont., was destroyed by fire June 25th.

The Laidlaw-Watson Shoe Co., London, Ont., are moving their business to Aylmer, Ont.

Messrs. Johnston & Stewart, Winnipeg, Man., have erected an implement warehouse at that place, 100x66 feet, three storeys high and basement.

The McCormick Harvester Co., Winnipeg, Man., will erect a warehouse 165x67 feet, four storeys high and basement.

INGERSOLL-SERGEANT Rock Drills

FOR MINES, TUNNELS AND QUARRIES

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

FOR ALL DUTIES.

... COMPLETE MINE EQUIPMENT ...

JAMES COOPER MANUF'G CO., Limited, - 299 St. James St., Montreal.

Other Offices - - - ROSSLAND, B.O.

RAT PORTAGE, ONT.

HALIFAX, N.S.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

OUR BELTS ARE WINNERS

PROVED TO MEET EVERY REQUIREMENT

INDICATION OF ACTIVITY

75,000 Ft. of Leather Belting

One not very familiar with the manufacture of leather belting and its uses might be inclined to think that the trade in this line is not very extensive, especially so when it is known that belts made of good leather and properly put together last for so many years. Nevertheless, the output is exceedingly large. A representative of THE CANADIAN MANUFACTURER a few days ago incidentally called at the Toronto office of Sadler & Haworth, manufacturers of leather belting, and was shown orders, which have not yet been filled, for double and single leather belting of all widths to 40 inches wide, from saw mill owners, cotton, woolen and flour mill owners, foundries and other factories, for upwards of seventy-five thousand feet. This is certainly an indication of great prosperity among our manufacturers.—
THE CANADIAN MANUFACTURER, April 7, '99.

REMEMBER THE NAME

SADLER & HAWORTH,

MANUFACTURERS

MONTREAL

TORONTO

OUR BELTING HAS BEEN TRIED AND

ON THE LONG RUN

Fire in the works of the Toronto Glass Co., Toronto, on June 18th, did damage to the extent of about \$10,000.

The British America Pulp and Paper Co., Montreal, has been incorporated with a capital stock of \$3,000,000.

The Hardill Compound Engine Co., Mitchell, Ont., has applied for incorporation with a capital stock of \$40,000.

The Dowling Milling Co., Edmonton, N.W.T., will apply for incorporation with a capital stock of \$40,000.

The Nelson Saw Mill Co., Nelson, B.C., was recently destroyed by fire. Loss about \$4,000.

The saw mill of George Burnett at Melbourne, Ont., was recently destroyed by fire.

William Wadder is erecting an implement warehouse at Wadford, Man.

The Waggoner Ladder Co., London, Ont., has been incorporated with a capital stock of \$20,000.

The Canadian Sandpaper Co., Toronto, has been incorporated with a capital stock of \$10,000.

Guelph Iron and Steel Co., Guelph, Ont., has been incorporated with a capital stock of \$40,000.

The leach houses of the Lang Tanning Co., Berlin, Ont., were destroyed by fire June 11th. Loss about \$25,000.

The Coatcooke Woolen Co.'s mill at Coatcooke, Que., was destroyed by fire June 9th. Loss about \$10,000.

The Acetylene Gas Machine Mfg. Co., Toronto, has been incorporated with a capital stock of \$20,000, to manufacture acetylene gas machinery, etc.

The Newton Tanning Co., Richmond Hill, Ont., has been incorporated with a capital stock of \$50,000.

The spice mill of Dalton Bros., Toronto, was destroyed by fire June 17th. Loss about \$4,000.

The Montreal Quilting Co., Montreal, has applied for incorporation with a capital stock of \$50,000, to manufacture stair pads, carpet linings, etc.

The premises of the Royal Piano Co., Toronto, were partially destroyed by fire June 17th. Loss about \$2,500.

Messrs. Hughes & Long's planing mill at Brandon, Man., was recently destroyed by fire.

The tannery of Joseph Beck, Saltford, Ont., was recently destroyed by fire.

The Expanded Metal and Fire Proofing Co., Toronto, has been incorporated with a capital stock of \$100,000.

The Goldie & McCulloch Co., Galt, Ont., is supplying the machinery for a new flour mill which is being erected at Edmonton, N.W.T., by the Dowling Milling Co. The total cost of the plant will be \$20,000.

The boot and shoe factories of Messrs. W. H. Polley and Amos Campbell, Quebec, Que., were destroyed by fire June 6th. Loss about \$60,000.

The saw mill of A. McNair at Hastings, B.C., was recently destroyed by fire. Loss about \$20,000.

Messrs. Geo. St. Pierre & Co., Fraserville, Que., had two saw mills destroyed by fire recently, one at St. Honore with a loss of about \$8,000, and the other at Amqui with a loss of about \$9,000. They are rebuilding and expect to have the mills in operation in about two months.

The Northern Navigation Co., of Ontario, has increased its capital stock from \$350,000 to \$1,000,000.

The Crescent Mill and Timber Co., London, Ont., has been incorporated with a capital stock of \$20,000, to manufacture lumber, timber and other products of wood.

The Montreal Optical Co., Montreal, has applied for incorporation with a capital stock of \$50,000.

The Slater Shoe Co., Montreal, is applying for incorporation with a capital stock of \$200,000.

D. McCaffrey's planing factory at Huntsville, Ont., was recently destroyed by fire. Loss about \$2,000.

The Hamilton Steel & Iron Co., Hamilton, Ont., has applied for incorporation with a capital stock of \$2,000,000.

The Wingate Chemical Co., Montreal, will apply for incorporation with a capital stock of \$30,000.

A subject which will receive the attention of the Newfoundland Legislature is a lumber and pulp enterprise in Labrador. Three lumber merchants of Bridgetown, Annapolis, N.S., are directly interested. These are H. J. Crowe, M. Curry, and W. R. Calder. They secured, some time ago, a grant of 320 square miles of rich timber land bordering on the Hamilton River in North Labrador. The timber in question is spruce of the finest quality. It is an untraversed region save by occasional Hudson Bay parties. Though the

Bridgetown capitalists have acquired the limits, they want in addition the use of the water-power at Grand Falls, on Hamilton River. Here there is a fall of fifty feet. The big timber will be sawed into lumber and the smaller timber made into pulp.

The Trent River Paper Mill Company have purchased the Sills Bros.' water privileges, etc., on the Trent river, about one-quarter of a mile above Frankford, Ont. About sixty men are engaged in deepening the river, reconstructing the old buildings, and in erecting a dam. Eventually this will be perhaps the best water-power on the river. A new paper mill, which is three times as large as the original, will be one of the largest in Canada. The machine room will be 260x60 feet, and all modern improvements will be included.

The Merchants Bank of Canada are about erecting a handsome building at Winnipeg, Man., for the purposes of their business.

E. C. Eaton, of Kansas City, Mo., is about establishing a 5,000-acre horse ranch in Manitoba, probably in vicinity of Winnipeg.

The B. F. Sturtevant Co., Boston, Mass., have sent us a very handsome brochure which they offer as a list of 2,500 witnesses to the excellence of the ventilating machinery manufactured by them. It is comprised of a list of buildings and steamships wherein the Sturtevant apparatus has been installed for the purposes of ventilation and heating. They say that these names are the most emphatic, in fact the only witnesses that they desire to present as evidence of the successful operation of their system. It is shown that this system is in operation in 2,500 places in the United States, including school buildings, churches, insane asylums, hospitals, almshouses and charitable institutions, prisons and reformatories, residences, society buildings, hotels, restaurants, theatres, gymnasiums, etc.

The building containing the pumping machinery of the waterworks of the town of Iroquois, Ont., was destroyed by fire June 26th, loss about \$6,000.

This year is the 100th anniversary of the use of coal for fuel purposes in Picton County, N.S. The first mention made of the discovery of coal in the county was in 1798, and the year following witnessed the first recorded house fire having coal as fuel.—Mining Record.

REDDAWAY'S ORIGINAL

CAMEL BRAND HAIR BELTING

STRONGEST BELT MADE. NO STRETCHING.

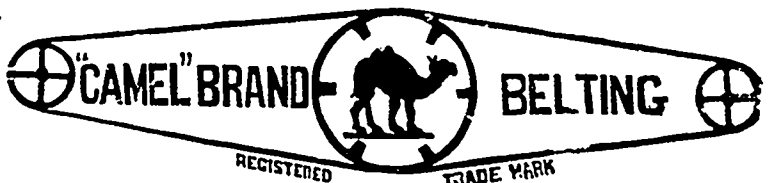
**NOT AFFECTED BY DAMPNESS,
HEAT OR STEAM.**

WRITE FOR PARTICULARS. LARGE STOCK ON HAND.

Fire Hose, Steam Hose, General Mill Supplies.

W. A. FLEMING & CO., SOLE AGENTS FOR CANADA, 57 St. Francois-Xavier St., Montreal.

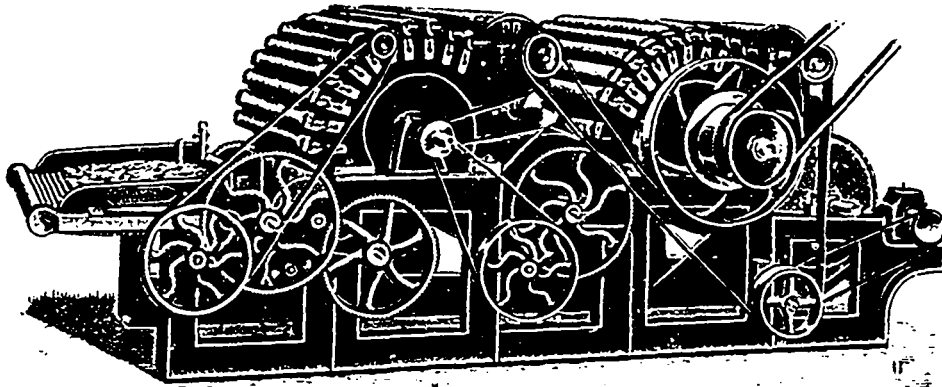
When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



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.

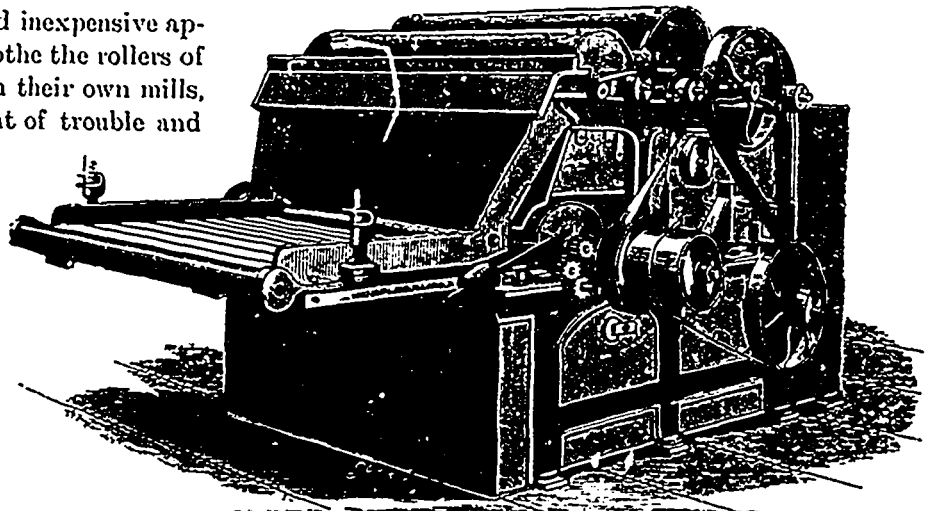


Garnett Wire.

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

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.

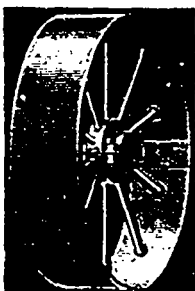


Improved Wool Cleaning or Burring Machine.

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.*

Messrs. Sadler & Haworth, over whose destinies George W. Sadler presides in Montreal and George F. Haworth—our own George—in Toronto, have sent us a very unique little reminder of their business. It is not pretentious, nor does it claim to be so, but the four sides of it—the front side and the back side, and the top side and the bottom side—contain much useful information about leather belting, particularly regarding that manufactured by them. Haworth has the matter of advertising and the preparation of his advertising matter down to an exceedingly fine point, and he knows just where and how to place it where it will do his concern the most good, and he is certainly one of the most accomplished experts in the business.

Messrs. McKenzie & Mann have just given an important contract to Messrs. Ryan & McDonnell, Soulages Canal contractors. The contract embraces the entire sixty miles of the Inverness Railway, from Point Tupper on the Strait of Canso, northward and includes grading,

track laying and ballasting, thirty miles to be completed this year and a heavy start on the remaining section. The 200 men now employed by the company are to be transferred to Ryan & McDonnell and increased to 1,000 at once. Hugh Doheny is to be the contractors' representative on the work, and it is understood that McKenzie & Mann strongly desire to extend the railway forty miles further to Cheticamp next year if subsidies are forthcoming.

The Trent River Paper Company, with head office at Frankford, Ont., has been incorporated with a capital stock of \$50,000 to manufacture pulp, paper, etc. James S. Lovell, Wm. Bain and Ernest W. McNeill, of Toronto, are the provisional directors.

The management of the Sturgeon Falls, Ont., Pulp Company have under consideration several improvements in their mill property, chief among which is the building of a stone dam and the replacing of the wooden flume with a steel one. This is to get over a difficulty which is

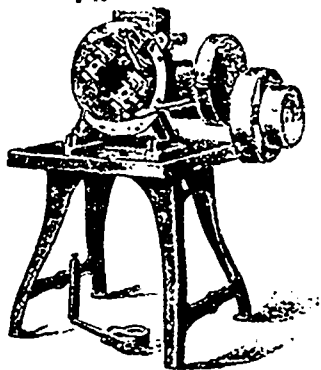
experienced every spring with high water, a difficulty that presented itself in a peculiarly troublesome manner last spring.

Mr. Robert Bell, jr., proprietor of the Hensall Engine and Machine Works, Hensall, Ont., informs us that he has just completed a large machine for making bricks composed of sand and cement. The manufacture of this particular style of machine is, Mr. Bell says, the filling of a long felt want in localities where brick clay does not abound; that bricks made of sand and cement are, in many respects, superior to those made of clay, possessing a handsomer appearance, and can be produced at about the same cost. The machine alluded to has been tested and proved satisfactory, and has been forwarded to destination at Vancouver, B.C.

The inaugural meeting of the Luxfer Prism Co., Limited, was held last week at the offices of Osler and Hammond, Toronto, the purpose of the new concern being to take over the business of the old Luxfer Prism Co. The following gentlemen were elected directors:—Mr. Thos.

THE BEST PIPE THREADING and CUTTING-OFF MACHINES

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



No. 00 Machine, Power Attachment.

Also Manufacturers of a FULL LINE of **ADJUSTABLE STOCKS and DIES**
And **WATER, GAS and STEAM FITTERS' TOOLS.**

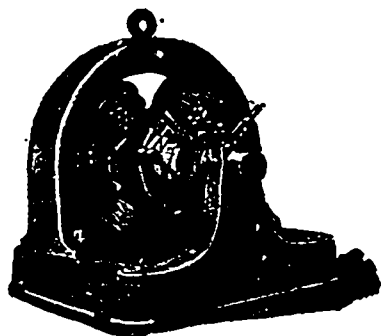
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Factory: BRIDGEPORT, CONN.

New York Office: 139 CENTRE STREET.

Toronto and Hamilton ELECTRIC CO.

(Late KAY ELECTRICAL MANUFACTURING CO.)



ELECTRICAL MACHINERY
HIGH-CLASS ONLY.

255-7 James St. N., HAMILTON.
Phone 958.

Engine Packing,
Magnesia Pipe Covering
Lubricating Oils
and Grease.

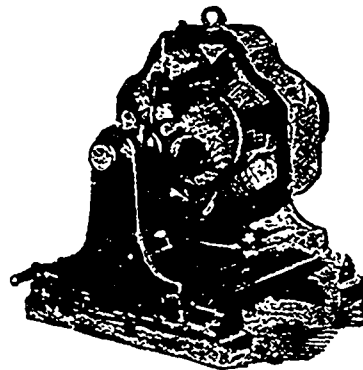


The

William C. Wilson Co.
Limited

24 FRONT STREET EAST
TORONTO, ONT.

Electrical Construction Co. of London, Limited.



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

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

W. Horn, the father of the enterprise; Mr. E. B. Osler, financial broker; Mr. W. R. Brock, wholesale dry goods merchant; Mr. W. D. Mathews, director of the Canadian Pacific Railway; Mr. Wm. MacKenzie, president Toronto Railway Co.; Mr. Frederick Nicholls, vice-president and general manager of the Canadian General Electric Co.; and Mr. O. F. Rice, manager imperial Bank. Subsequent to the inaugural meeting of the stockholders, the Board of Directors met and elected as President, Mr. Thos. W. Horn; Vice-President, Mr. E. B. Osler; and Secretary-Treasurer, Mr. F. W. Barrett. This is one of the most influential board, that has ever come together in Canada for a manufacturing purpose, and augurs well for the future of this essentially Canadian industry. In anticipation of the event, work is already well forward in the

erection of a new and extensive factory in the rear of Nos. 98 and 100 King street west, while Architect Curry's plans call for a complete renovation of the just named premises on King street, in order to afford offices and showrooms adequate to the varied needs of the enterprise. The new factory will be built and specially equipped for the luxfer prism and electro-glazing business, large electro-glazing tanks, of fully quadruple the capacity of the present ones, having been decided upon. It will be ready for occupation early in August. The rapid development of the Luxfer Prism business has outrun the original concern, and the stronger and larger company outlined above has been formed to properly meet the demands of the enterprise with ample capital and a thoroughly equipped plant.

Manager Hill of the Industrial Exhibition has issued a circular to manufacturers of mining machinery, rock drills, ore crushers, etc., and to mine owners, inviting them to send exhibits to the forthcoming fair. The circular sets forth that owing to the development of the mining interests, a portion of the Machinery Hall would be devoted to an exhibition of mining machinery, ore crushers, etc. It is proposed to crush, mill, pass over tables, and treat the concentrates of all samples of ore sent in for the purpose, free of cost, and mine owners will be invited to send lots of not less than three or more than ten tons. A Government assayer will sample all ores sent for treatment, in connection with the exhibit, without expense to the owners, on condition that the ore is delivered sacked at the Exhibition Grounds, free of expense to the Exhibition Association. Samples of ore will be welcome from all mines and prospects in the country. Owners and prospectors are requested to notify Manager Hill, 82 East King Street, Toronto, of their intention to send exhibits, or ores for treatment.

..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.

2.—IT MUST PRODUCE A CLEAR RECORD, AND ONE THAT CANNOT BE DISPUTED.

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.

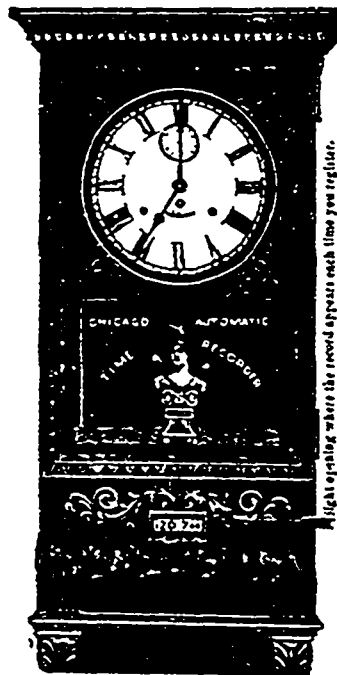
CHICAGO TIME REGISTER CO., CHICAGO, ILL.

SOLE AGENTS FOR CANADA:

W. C. BULLOCK,

348 Markham Street

TORONTO, ONT.



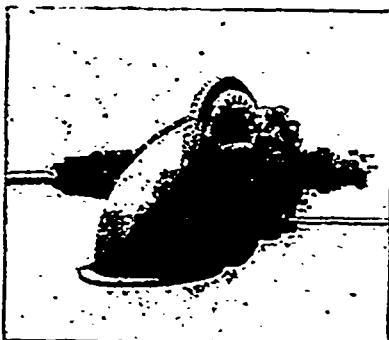
Numerical (or Key) Recorder

THE NORTHEY GASOLINE ENGINE.

The Northey Manufacturing Co., Toronto, have sent us a very beautiful booklet just issued by them which is really what they say it is—"A Gas and Gasoline Engine Investigation," and consists largely in questions and answers regarding the gasoline engine manufactured by them.

The question is asked:—"I want to know something about the Northey Gasoline Engine. I have heard them talked of a good deal, but my information is not very complete." to which the answer is:—"This engine has three qualities: It is easy to operate, simple, not liable to get out of order, easily repaired, safe from fire, has no boiler to explode, is economical, uses little water, requires no engineer, is always ready for work when needed, is independent of wind and weather, is perfectly governed and automatic in all

The Economical Development of Water Power



Horizontal Setting, with Quarter Turn Elbow.

CHICOUTIMI PUMP 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. To those interested we will supply catalogues and particulars of leading plants, together with a copy of latest official Holyoke test, 1899. Water powers reported upon, and estimates prepared. Correspondence invited.

The JENCKES MACHINE CO.,

42 Lansdowne St., Sherbrooke, Que.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

its parts, can be run by a child, gives the full power claimed for it, is guaranteed, can be bought at a reasonable price, on reasonable terms, is first-class mechanically, durable and strongly built of best materials, expenditure only in proportion to the work done, expense ceases instantly when engine is stopped, is portable, has no smoke-stack, makes no smoke, heat, ashes, cinders, or dirt, and is particularly compact and handy all round.

They are made of all powers, from one to one hundred horse power. One and two horse power engines are built of the vertical type, all the others are horizontal. They are described as having every feature that insures durability, are built for hard work and constant service, and as parts are interchangeable, repairs if necessary can be promptly made and cost but little.

It is emphatically a general purpose

all-round engine, not only where other powers could be applied, but in many situations it is the only power available—as in the Province of Manitoba, for instance, where fuel and water are scarce. The cost of running this engine is only about one and one-half cents per horse power for each hour run, using gasoline at fifteen cents per gallon, or coal gas at seventy-five cents per thousand feet. When using natural gas the cost is much less. The engine only uses fuel in proportion to the work done.

Regarding the properties of gasoline, it may be said that it belongs to the coal oil family, and is a liquid which evaporates on exposure to the air, and must be kept tightly corked on that account. It must, like coal oil, be handled with ordinary care; that is, fire must be kept from it; and it must be kept in a good, air-tight can or tank.

The experience of all those who use gasoline engines is that while they are something entirely new, they are entirely safe. They are coming into general favor, especially in the United States, where they are in almost universal use where an easily controlled light power is required. There is no necessity whatever to have any fire about them, the nearest approach to fire being a spark generated by an electric battery, enclosed within the cylinder of the engine.

In using gasoline in this engine a pump, operated by the engine, sucks the gasoline up from the tank and delivers it, as required, to the engine. The outside air drawn into the cylinder by the action of the piston carries with it a few drops of this gasoline, which is immediately vaporized and mixed with the air. This mixture of air and gasoline vapor is ignited by the electric spark above referred to,

THE CUMMER DRYERS.

FOR Mechanically Drying Everything

THE F. D. CUMMER & SON CO.,

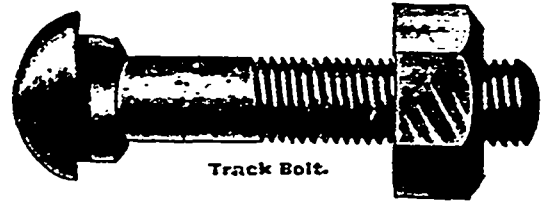
HUNDREDS IN OPERATION.

CLEVELAND, OHIO.

WE

MANUFACTURE

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



Track Bolt.

SEND FOR ILLUSTRATED CATALOGUE.



Coach Screw.

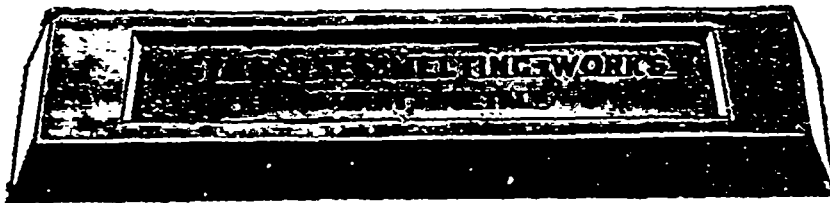
The SWANSEA FORGING CO., Limited,

SWANSEA (NEAR TORONTO).

Use Syracuse Babbitt Metal

IT IS THE BEST AND CHEAPEST FOR

WORKS :
332 WILLIAM STREET,
MONTREAL,
Canada
AND
SYRACUSE,
N.Y. U.S.



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

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.

and by expansion produces the power. The apparatus used to produce the electric spark gives no trouble whatever. An ordinary battery, such as is used by the telegraph and telephone companies, is employed, and it is found that those used with these engines give long service and cost very little for renewal of the elements. An occasional charge of sal-ammoniac, or a new zinc, makes them as good as new, at expense of a few cents.

The cost of these gasoline engines is said to be less than that of a good steam plant, and when their economy, handiness and other good points are considered they are claimed to be the cheapest all-round power on the market. Compared with windmills, for instance, these only work when the wind blows, but the gasoline engine works whenever it is wanted, and the time saved in a year is worth much more than the slightly higher first cost of

the engine, to say nothing of the annoyance, disappointment, loss of time. Then, again, the windmill is a fixture, while the engine is portable and can be used to do work at any desired point, which is frequently a money-saving quality. It must not be forgotten, also, that in buying a gasoline engine one gets a solid, substantial and durable machine that will give a definite power at all times, and at half a minute's notice.

Contained in the book here alluded to are a number of testimonials from well known and reliable parties in Ontario who speak of the service to which their gasoline engines is put, and efficient manner of their operation. Included in these operations is running cream separators, churns, seed cleaning machines, grain, chopping and grinding, grain elevators, printing presses, meat cutters, etc.

For further information apply to The Northey Manufacturing Co., Toronto.

THE B. F. STURTEVANT CO.

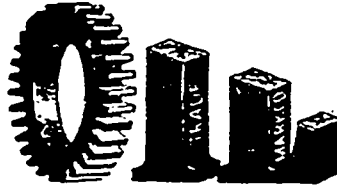
In the development of a large business it is often interesting to study the gradual process of evolution by which it has been led to the manufacture of certain types of machines. The B. F. Sturtevant Co. presents a case in point. Beginning back in the early sixties to manufacture fan blowers, the necessity of building attached engines became more and more apparent as the demand for large, independently driven fans increased. During the seventies the "steam fan" thus became an important product, and from the building of vertical engines it was but a step to the design of the horizontal type for driving large fans. The work was continuous and exacting, demanding the utmost care in design and construction.

With the advent of electricity as a motive power, the Sturtevant Co. immediately began the design and manufacture of its own motors for direct attachment to its fans, so that the electric fan now stands as the rival of the steam fan. Having thus become manufacturers both of high speed engines and of electric motors, it was but another step, and a natural one, to the union of these two elements, the latter in the form of a dynamo, and the production of a high grade generating set. With an exceptionally complete line of small and

"Capitol" Cylinder

"RENOVN" ENGINE

"ATLANTIC" RED



RELIABLE WELL-KNOWN BRANDS.

ALL ORDERS PROMPTLY FILLED.

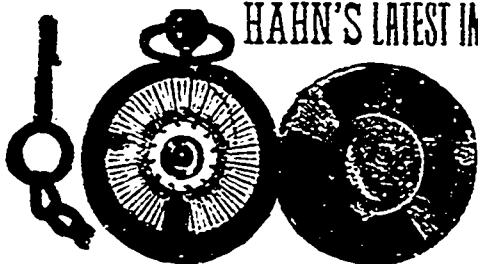
THE...

QUEEN CITY OIL CO.

LIMITED,

SAMUEL ROGERS, President

TORONTO, CANADA.



HAHN'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

A. NANZ & CO., 115 Chambers St., NEW YORK

This Clock received the First Prize at World's Fair

NAME PLATES FOR

WRITE FOR PRICES.

BECKER NAME PLATE CO.,

34 OLIVER STREET, - BOSTON, MASS.

DYNAMOS, MOTORS, ANY TYPE OF ELECTRICAL APPARATUS AND ALL KINDS OF MACHINERY

Shafting, Hangers, Pulleys

FRICITION CLUTCH PULLEYS AND COUPLINGS

Rope Transmission of Power.

HANDSOME ILLUSTRATED CATALOGUE ON APPLICATION.

DODGE MANUFACTURING CO. OF TORONTO, Limited, - - TORONTO.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

medium sized engines, in various types and an equally extensive equipment of dynamo patterns, it is thus possible to make almost any desired combination. Thus has this company become not only manufacturers of fans, but also of en-

gines, motors and dynamos and their combined resultants, electric generating sets. The past decade has witnessed a great advance in the art of catalogue making, particularly in the machinery trades. The

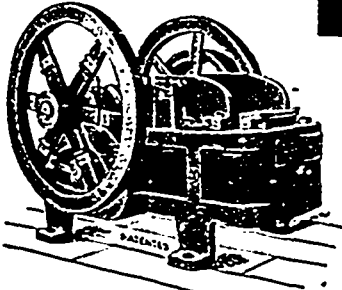
modern catalogue must not only be attractive—and this seems to have been the sole idea of some recent publications—but it must above all serve in the best manner possible the primary purpose of furnishing information. Illustrations must be clear,

ONLY

FINE CRUSHER

FOR QUARTZ and ORES.

DOES WORK OF CRUSHER AND ROLLS COMBINED.

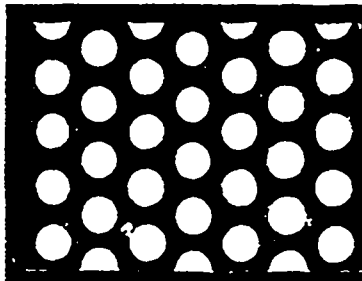


ROLL JAW CRUSHER.

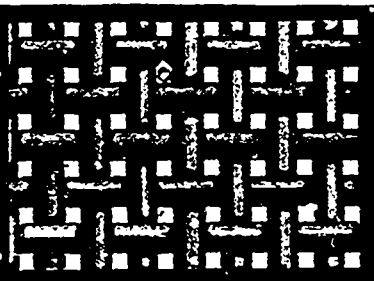
STURTEVANT MILL CO.,

Send for Circular.

BOSTON, MASS.



B. GREENING WIRE CO.
(LIMITED)
WIRE MANUFACTURERS
& METAL PERFORATORS
**HAMILTON
& MONTREAL.**

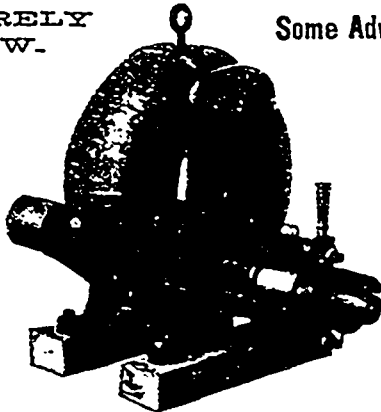


Wire Screens for Every Class of Material.
Perforated Metal of Steel, Copper, Brass, Zinc for all purposes.
Special Attention given to Miners' Requirements.

...AT LAST
YOU CAN GET A
HIGH GRADE MOTOR
AT A LOW GRADE PRICE

ENTIRELY NEW.

IT IS CHEAPER EVEN THAN YOU EXPECT.



Patent Applied for.

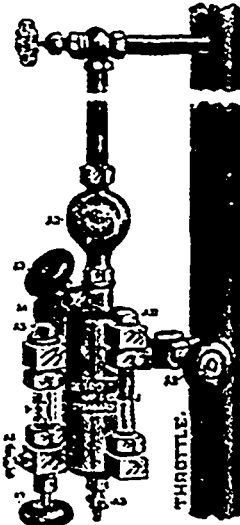
Some Advantages...

- Lowest Priced Machine of its Grade on the Market.
- Absence of Sparking.
- Economy of Current.
- Rigidity of Frame.
- Easiest kept in Order.

WRITE NOW FOR PRICES TO

COMMANDER MOTOR CO.,

SHEPPARD STREET, - TORONTO.



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 engines are to work at their best. They know from experience that the Detroit Lubricators 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 Lubricators effect will pay for themselves very soon.

Send for Catalogue and Prices.

Detroit Lubricator Co.,
DETROIT, MICH.

DO YOU USE
CORRUGATED SHUTTLES
FOR WEAVING FROM COP?

WE MAKE THEM.

Write for Prices and Samples.

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

ADVERTISE IN THE CANADIAN MANUFACTURER.
SEND FOR RATES.

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explanations explicit, and all information concisely given. The substantial character of most machinery demands similar character in the make-up of the catalogue describing it. Bold, clear type, black ink, good cuts, simplicity in composition, and first-class paper of good weight, all have a subtle influence in impressing the reader with the idea of the high quality of the article described.

An excellent example of good catalogue making, in which this is the controlling idea, is presented by the B. F. Sturtevant Co. Their publications are of two classes. First, those which are purely educational in their character, comprising treatises on various subjects, leaflets regarding the attendant advantages, etc. Second, the regular trade catalogues of the standard dimensions, 6 1/2 inches by 9 inches, each devoted to some specific line of manufactured goods. Separate catalogues in the same class bear the same cover designs, but are printed and bound in different colors with proper titles, so that they may be readily distinguished. All catalogues are designated by individual numbers, the latest being No. 110.

The most recent products are immediately presented by bulletins (designated by letters), preliminary to the issuance of complete catalogues regarding the given machines. Loss of time is thereby avoided and the new designs can be sooner placed before the public.

SHINGLE IMPROVEMENTS.

The Metal Shingle and Siding Co., Preston, Ont., have sent us their catalogue, in which they give full illustrative descriptions of the several varieties of metal shingles manufactured by them. Their imitation brick steel siding is spoken of as being made in several styles and varieties, also sheet metal ridge rolls, valleys, corner caps, etc., and full directions for laying their patent safe-lock shingles.

In what the Company denominate "Shingle Talk" they allude to the great improvement that has been made both in the shingle itself and also in the method of applying it, having special reference to the safe-lock metal shingles, the patent for which they control. They say that

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.

Trade Directories of Great Britain.

Cabinet Furniture and Upholstery Trades...	\$5 00
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All these Directories contain a classified Business list.

National Directories.

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

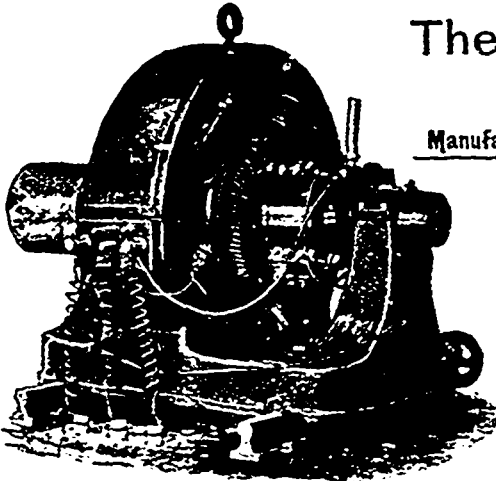
COMMERCIAL DIRECTORIES

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.

N.B.—Special typo-written lists furnished of all the Professions, Trades, Agricultural, Cattle and other industries of the whole of Australia, New Zealand, Tasmania and South Africa—for 30 cents per hundred; and rebate allowed on all envelopes returned to us post-marked "Can't find."

Prospectus with advertising rates and full particulars on application to

KELLY'S DIRECTORIES, LTD.,
28 VICTORIA ST., TORONTO, ONT.



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

ESTABLISHED 1823.

Telegrams:—"WILSONS, CORNHOLME"—A.B.C. Code Used.

WILSON BROS. BOBBIN CO.

(LIMITED)

CORNHOLME MILLS, TODMORDEN, ENGLAND.

BOBBIN AND SHUTTLE MANUFACTURERS.

FORTY PRIZE MEDALS AWARDED.

HIGH-CLASS WORKMANSHIP. SEVENTY YEARS' REPUTATION.

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

ADDRESS--

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ATLAS BOBBIN WORKS, GARSTON, LIVERPOOL.

OFFICE AND SHOWROOMS

14 MARKET PLACE, MANCHESTER

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the superiority of and advantages of this shingle are easily apparent to any who will make a comparison with other shingles.

Illustrations are given showing how one shingle laps over another and hooks under a fold made in bottom shingle near the top, while at the sides they interlock one another in such a way that a double gutter is formed which really carries off any water that may find its way into the lock. The shingles are nailed to the roof along top edge of each shingle; the nails being fully covered by the next shingle, which laps over and hooks into the bottom shingle in the way described. In other

shingles only a side-lock is provided, while the top and bottom ends simply lap one over another and are held down by small cleats which are rivetted to bottom sheet and bent up over the top one. Very frequently these cleats are bent open by ice or snow sliding on the roof, and they are also liable to give way where rivetted, and in either case a leaky roof is likely to be the result. Safe-lock shingle interlock one another their entire length on all four sides, leaving no possibility for ends or laps to open up and admit the weather, consequently, it will be readily understood that roofs covered with these shingles are positively wea-

ther-proof, it being impossible for any storm to in any way drift up under where they are fastened or locked together. Besides being storm and rain proof, they lay close to the roof, producing a very neat appearance, combining utility and attractiveness. Ample provision is made for expansion and contraction.

For further information apply to The Metal Shingle and Siding Company, Preston, Ont.

SAFETY APPLIANCES.

Messrs. Wallach Brothers, 57 Gracechurch Street London, E.C., England, have sent us an illustrated catalogue having reference to the safety appliances for preventing accidents where steam and power machinery is used.

Regarding their belt-shifting apparatus they say that many of the most serious accidents which occur in factories are caused by men endeavoring to replace slipped belts or bands on moving pulleys or drums. It is a well known fact that nothing can be more dangerous than to attempt to place a belt or band on a rotating pulley. When the man stands on a ladder placed against a wall or revolving shaft, the insecurity of such a position is in the highest degree conducive to accidents through slipping of the ladder,

ESTABLISHED 1849.

CHARLES F. CLARK, President.

JARED CHITTENDEN, Treasurer.

BRADSTREET'S

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

Executive Offices:

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.

Subscriptions are based on the service furnished, and are available only by reputable wholesale, jobbing and manufacturing concerns and by responsible and worthy financial, fiduciary and business corporations. Specific terms may be obtained by addressing the Company at any of its offices.

CORRESPONDENCE INVITED.

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

THOS. C. IRVING, - - - Superintendent.



The Diamond Machine & Tool Co.
TORONTO, ONT.
Manufacturers of....
Machine Screws
OF EVERY DESCRIPTION.

SEND FOR CATALOGUE and PRICE LIST.

To Manufacturers.

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

RICE LEWIS & SON, Limited,

Cor. King and Victoria Sts.

TORONTO.

MR. C. B. THISTLETHWAYTE
OF SYDNEY, NEW SOUTH WALES,

Purposes being in Canada from about July 14th 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.

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.....Orders Promptly Filled

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Card Clothing,
D. K. McLAREN
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WESTERN
TRADE:

Toronto
Stock
Depot,

84 BAY ST.

'Phone 374.

or of the man himself, when, should any portion of his clothing, his hand, or even his finger come in contact with the quickly moving pulley or shaft, a more or less serious and too often fatal, accident is almost certain to be the consequence.

As a means for replacing slipped belts on the moving pulleys from the only safe standpoint, viz., the floor, and so obviating the dangers referred to, this belt lifting apparatus, they say, will be found very suitable. Being simple in construction, it can be easily manipulated, and when placed against the face of the pulley, as described in the directions for use, a belt can be quickly replaced.

They have this to say regarding their "Evertrusty" gauge glass protectors, that the experience of the past few years has proved that this protector, made by a patented process from the best quality of clear white glass, toughened, and having strong wire netting embedded therein, will stand almost any pressure or shock to which they may be subjected through gauge glasses bursting behind them. Tests of the severest character have demonstrated that glass made in the manner described is unapproachably the most suitable shield which can be interposed between gauge glasses and the boiler attendants or other persons in the vicinity. To show that these protectors are most efficient and reliable, it is only necessary to mention that, whereas ordinary toughened glass has been known to fly at a pressure of 40 lbs., the protectors under notice have not been in the least injured by shocks developing a pressure of 440 lbs. (nearly 30 atmospheres). A further advantage is that, even if the glass of the protectors were to be injured, it would not fly, owing to the presence of the embedded wire. It will thus be seen that, by using these protectors, stokers and others are effectually protected

against any possible injury due to breakage of gauge glasses by explosion or otherwise. The glass is white, of the very best quality and as transparent as water. Therefore the view of the gauge glass and of water level is in no way obstructed.

Their patent gauge glass reflectors are perforated enamelled metal plates, which have the effect of very prominently showing up the water level, owing to the small circular perforations being magnified into long horizontal elliptical holes, when viewed through the water contained in the gauge glasses. These reflectors are supplied either plain or enamelled, with or without wire guard, or prepared with luminous paint. The latter kind are clearly perceptible, either by day or night, or in dark boiler rooms. They can be fitted to any gauge glass.

Further particulars may be had from the makers as above.

..TO LEASE..

....OR....

FOR SALE

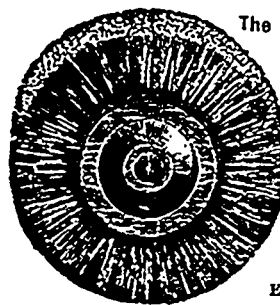
LARGE THREE-STORY BRICK FACTORY

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.

The preparation for the establishment of a peat fuel industry near Stratford, Ont., is going forward rapidly. A note from Mr. A. G. Ardagh, of the Toronto Peat Fuel Co., informs us that the Stratford company, whose works are to be a few miles away from that town, on the line of the Grand Trunk railway, now have a gang of laborers at work getting out peat, and that a railway switch is being run in to where the necessary buildings are about being erected. A company is being organized which will probably be called the Huron District Peat Company which will have sufficient capital to place the enterprise upon an assured footing.



The **PRESTON BRUSH FACTORY**

Manufacturers of ALL KINDS OF BRUSHES.

ORDERED MACHINE BRUSHES } specially

Mail Orders Promptly Filled.

E.H. Salyerds, Prop. PRESTON, ONT.

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.

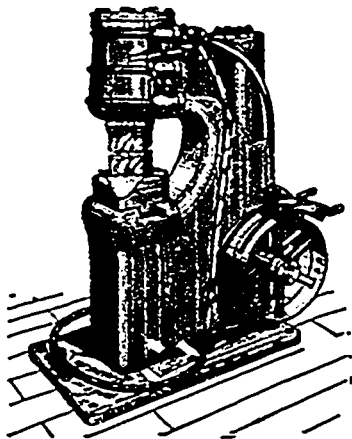
Manufacturers of....

OIL-CLOTHS of Every Description

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

Office and Works

Cor. St. Catharino and Parthenais Sts., MONTREAL, Que.



The Yeakley Vacuum Hammer.

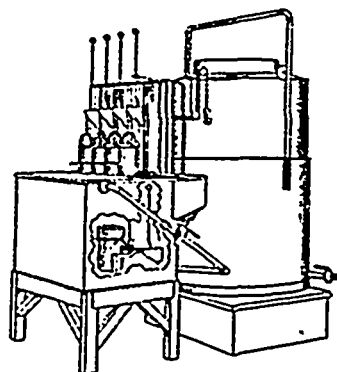
Canadian Patent November 9, 1897.

Is now Manufactured and for Sale by the undersigned Sole Proprietors of the Canadian Patent:

George Brush

EAGLE FOUNDRY,

MONTREAL.



Sizes—25 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, 156 King St. East, Hamilton, Ont.

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NEW ARTIFICIAL DYESTUFF.

Diamond Black 2. B. (patented) —To the already large family of Diamond Blacks the Farbenfabriken Co., of Elberfeld, have recently added the above Diamond Black 2. B.; well adapted for hosiery and knitting and especially for piece dyeing. Good results, either as a self color or in combination with the deep brand, Diamond Black F., for bright black shades in one bath (after treatment with Chrome), may be obtained. Write for shade card No. 746, 1899.

Pluto Brown N.B. and G.G.—These colors resemble Pluto Brown R. and are especially suitable for cotton dyeing. Also adapted for loose cotton dyeing, yarn or piece goods, and are extremely fast to acids. By after treatment with Benzo-Nitrol Developer, full brown shades are obtained fast to washing. Refer to shade card No. 745.

Samples and cards of the above colors obtainable from the Dominion Dyewood

& Chemical Co., Toronto, sole agents in Canada for the Farbenfabriken, vorm. Friedr Bayer & Co., Elberfeld, Germany.

SALES OF PATENTS.

Good prices paid inventors for simple devices in many fields.

The profits of invention, provided one works in a practical direction, are well set forth in the list of assignments of patents given below. If one has a patentable idea which is of real value he has not much trouble in getting a purchaser for it.

Albert J. Fisk, assignor to Bullis Ball-Gear Co., Rochester, N.Y. Invention, Gear Wheels. Consideration, \$60,000.

The National Fence Machine Co., assignor to Geo. W. Taylor, Geo. D. Davis,

H. M. Kemper and Wm. B. Packard. Invention, slat and wire fence machine. Consideration, \$10,000.

J. L. Blessing, assignor to H. A. Whitman, Chicago, Ill. Invention, Draw Bars for cars. Consideration, \$1,000.

A. L. Centor and F. M. Fisk, assignors to C. C. Adams, of Serrento, Fla. Invention, Liquid Measure. Consideration, \$1,500.

(Communication from Messrs Marion & Marion Solicitors of Patents and Experts, New York Life Building, Montreal.)

The Chambers Electric Co., Truro, N.S., are taking out two of their return tubular boilers, replacing them with a 150 horse power Mumford Improved boiler, manufactured by the Robb Engineering Co., Amherst, N.S.

THE SMART-EBY MACHINE CO.,

Steam and Gas Engines,
Pumping Machinery,
General Machinery.



LIMITED

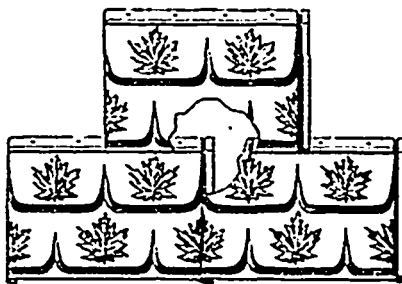
193 BARTON STREET EAST
HAMILTON, ONT.

CITY AGENTS WANTED.

WRITE US BEFORE PLACING YOUR ORDER.

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.

C THE
HEMICAL
COMPOUND
COMPANY

C CORRECTLY
COMPILED
HEMICAL
COMPOUNDS

C CIVILITY
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.
- Knob Hill Mine.

CANADIAN RAND DRILL COMPANY, Montreal

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

AN AWFUL WRENCH!

Most any Kind that isn't adapted to your work.

The "Westcott" Wrench

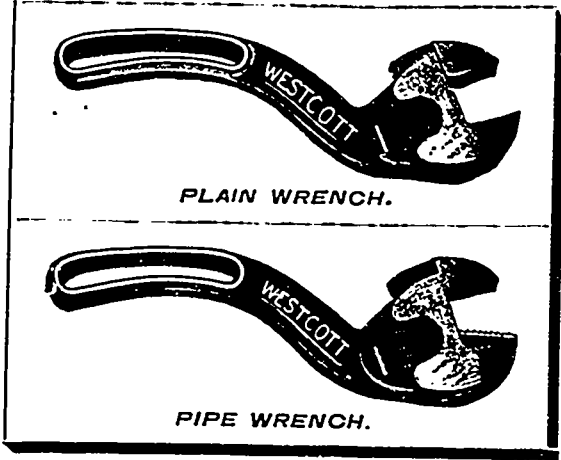
Is handy for many places, and is made both plain or with teeth for pipe.

FIVE SIZES, - - - 1/8" to 2 1/2" PIPE.

WE ALSO CARRY

Stilson, Vulcan and National Pipe Wrenches,

OSTER ADJUSTABLE AND SOLID PIPE DIES, PIPE CUTTERS, TONGS and TOOLS.



The FAIRBANKS COMPANY, 749 CRAIG ST., MONTREAL

The Sturtevant IMPROVED PORTABLE FORGES

TWENTY-FIVE SIZES AND STYLES

HAND POWER AND BELT POWER

Hand Blowers

FOR FORGE.



The Sturtevant STEAM : FANS

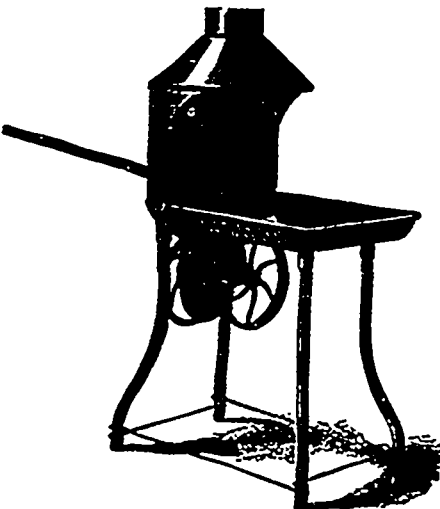
For BOILER FIRES

FORCED OR INDUCED DRAUGHT

MANUFACTURED BY

B. F. STURTEVANT CO.

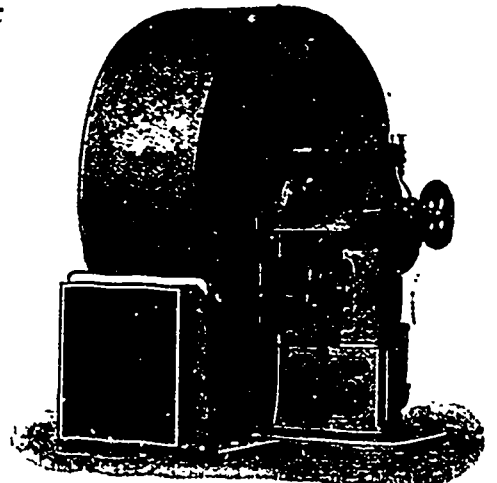
Boston, Mass., U.S.A.



The STURTEVANT Blowers and Exhausting FANS

Known as the Monogram Pattern. For Blowing Boilers and Fires, Exhausting Dust and Gases.

SEND FOR CATALOGUES



A. R. WILLIAMS MACHINERY CO., General Canadian Agents, Toronto, Brantford, Montreal.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

THE CAR WHEEL MAKERS' CONSOLIDATION.

The International Car Wheel Co., which has just been incorporated under the laws of the State of New Jersey with a capital stock of \$15,000,000, and which is a consolidation of interests of some of the car wheel manufacturers in the United States, also includes those of the Hamilton Wheel and Foundry Co., Messrs. John McDougall and Co., and Montreal Car Wheel Co., of Montreal, and St. Thomas Car Wheel Co., St. Thomas, Ont. Among the Canadian directors are Messrs. T. J. Drummond, Edgar McDougall and Robert Cowans, of Montreal, and A. E. Donville, St. Thomas.

The consolidation is said to be in no sense an attempt to control production through buying up all competing concerns, but is intended to bring under one operation all parts and branches of the business. No companies entering the consolidation will sustain any change in business operations, but each will be placed in a position to meet the increased demand of the customers to best advantage.

A circular issued by the Company says:—"In Canada the wheel companies have secured for a term of years the product of the new charcoal furnace of the Canada Iron Furnace Company now building at Midland, Ont., which will have a capacity of 100 tons per day. It is the intention to export charcoal pig iron as part of the new company's operation for the use of affiliated car wheel works now operated and under construction in Europe."

NEW ERA OF ART GLASS.

The leaded glass work so familiar in churches, and almost all private residences, has to contend, now, with a rival ware which, almost beyond doubt, is destined to completely take its place. The all-important question of price need not be considered, for electroglazing—as the new process is termed—has been experimented upon at great expense until the cost of production is but a trifle if any in excess of the old style.

The advantages are not far to seek.

ECO MAGNETO WATCHMAN'S ELECTRIC CLOCK.

Without Batteries.

Write for descriptive circular to

Eco Magneto Clock Co.,

Room 71, 620 Atlantic Avenue, BOSTON, MASS.

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.

Electroglazing is as strong as the expensive copper and German silver bar work. It needs no saddle bars to strengthen it and the glazing lines are neater and more slender than in any other known process, so that the finished article has an essentially artistic appearance. The first success of the Luxfer Prism Company, Limited, Toronto, which controls the electroglazing patent for Canada, was in glass panels where extra strength was needed—in book cases, doors and window transoms, for instance—but the reasonable cost of the improved art glass has now won for it a place in the specifications of every architect to whose attention it has been brought. The steamer Toronto built

by the Bertram Engine Works Co., is furnished with quite a quantity of electroglazier decorative work, all being made from special designs of Moorish treatment by Messrs. Bond and Smith, architects.

The citizens of Meaford, Ont., held a meeting June 20th, to consider the agreement with the Botsford-Jenks Company, of Port Huron, for the erection of an elevator of 1,000,000 bushels capacity. The matter was favorably received, and the Town Council propose submitting a by-law for a bonus of \$25,000 for the elevator.

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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.

20 years in the business—the first to make Felts in Canada; capacity 1,000 lbs. per day. All our

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Manufactured by

THE SAFETY LIGHT AND HEAT CO.,

DUNDAS, ONT.

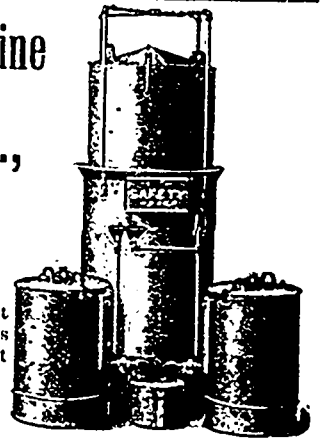
WHAT SOME OF OUR FRIENDS SAY OF US:

GENTLEMEN.—The Cliff Wardlaw Acetylene Gas Machine bought from you six months ago is giving every satisfaction. If instructions are followed it is a machine that does its work well and does not get out of order. I am very much pleased with it.

J. W. WATSON,

MINDEN, ONT.

General Merchant.



The London Machine Tool Co., LONDON, ONT.

Toronto Office. {PHONE 293} MANUFACTURERS OF GENERAL MACHINERY...

Having recently sold our patterns and plant to the A. H. 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

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- DRILLS—Standard, Sensitive, Multiple, Radial, Etc.
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And we would call special attention to our PRESSES for Cutting, Stamping, Drawing, Winding, Riveting, Etc. We shall also esteem it a pleasure to give quotations on Special and General Machinery in our line.

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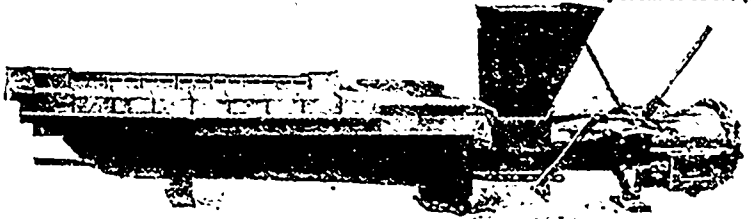
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The First and Only Successful Underfeed Stoker.



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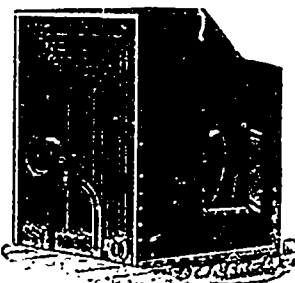
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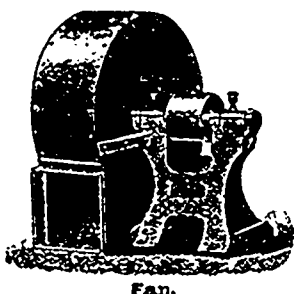
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Aniline Colors,
Dyestuffs and
Chemicals.**

THE IMPROVED JONES UNDER-FEED STOKERS

AT THE TORONTO RAILWAY CO.'S POWER HOUSE.

Our illustration shows the Improved Jones Underfeed Stokers as applied to the Scotch boilers of the Toronto Railway Co. The contract as drawn up by Mr. Keating, the General Manager, was most exacting in every particular. Two stokers had to be installed first and all the necessary tests as to economy and capacity made, and in every one the stokers amply fulfilled the guarantee. The services of an expert were engaged by the Toronto Railway Co. and the General Engineering Co. to make the tests. The expert's report, somewhat condensed, together with the results of the test, are shown below:

"The test was made on two boilers for the purpose of determining the saving in fuel effected by the Improved Jones Underfeed Stokers. The boilers tested were of the cylindrical, return tubular, internally fired type, 9'9" diameter by 14' long, each boiler having two corrugated flues 39" in diameter and 80 tubes 4" diameter by 14' long. Except in the matter of grates, the boilers were alike in every respect.

"The coal used was mixed soft slack and hard coal screenings, such as is used in ordinary running. At the commencement of the test new fires were started with fresh coal. Towards the end of the test the fires were allowed to burn low, and at the close were drawn and weighed

in with the clinker and ash withdrawn during the test.

"Throughout the test the firing of No. 2 boiler (hand fired) was performed with very great skill and care, and the results obtained from this boiler were the best possible under the conditions of the test. I may also say that the saving showed to be effected by the use of the mechanical

stoker is such as will be obtained, if not exceeded, in ordinary running."

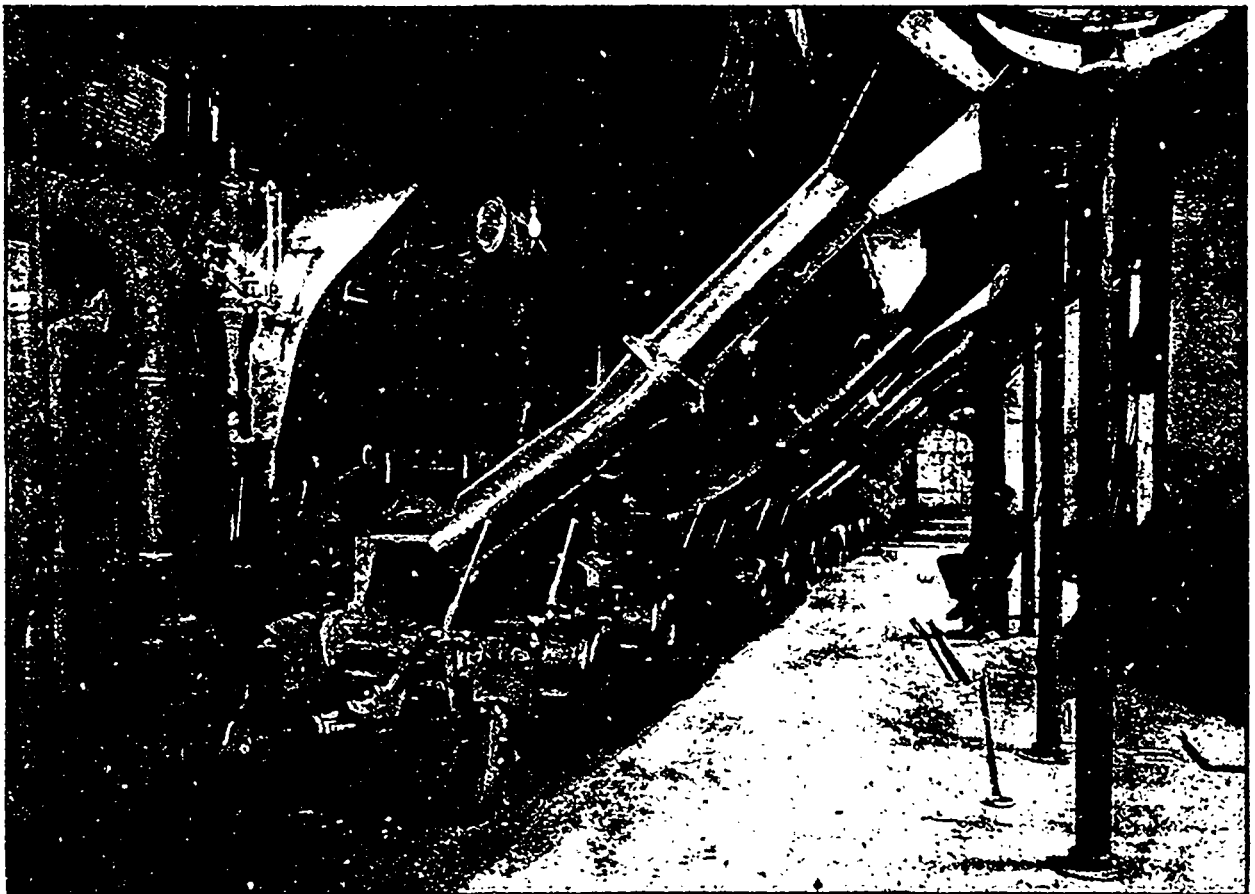
(Signed) JAMES LANG.

The stoker plant is complete in every way. The firemen do not handle the coal whatever. It descends from the large hoppers above into the stokers, which are operated automatically, and can, if desired

RESULTS OF TESTS (Date curtailed).

Points Observed.	Jones Under-feed Boiler No. 1.	Hand-fired Boiler No. 2.	All Boilers equipped with Jones Underfeed
Duration of test in hours.....	62	62	45.75
Average gauge pressure.....	122.3	122.3	123.3
Average feed temp. deg. Fah.....	109	109	183.5
Total coal consumed in lbs.....	43,315	45,150	227,784
Total ash.....	5,245	7,053	25,684
Moisture in coal per cent.....	dry	dry	3%
Percentage of ash.....	12.1	15.6	11.6
Coal burned per boiler per hour in lbs..	698.6	728.2	830
Total water fed into boilers at temp. of feed	370,401	327,382	2,110,290
Equiv. from and at 212 deg. F.....	426,471	376,940	2,267,593
Equiv. evap. from and at 212 per lb. dry coal.....	9.845	8.349	10.263
Equiv. evap. from and at 212 per lb. combustible.....	9.893	11.2	11.613
Water evap. per sq. ft. of heating surface.....	4.3	3.8	5.15
Heat transmitted to feed water per lb. of coal B.T.U.....	9,509	8,063	9,911
Average H.P. developed per boiler 34.5 lbs. from and at 212.....	199.1	176.2	239
Relative economies.....	117.93	100	122.9
Saving effected by Jones stokers.....	15.2		18.64

N.B.—The results as shown in last column are obtained from test made by representatives from Toronto Railway Co. and the General Engineering Company.



Improved Jones Underfeed Mechanical Stoker in use in Boiler House, Toronto Street Railway Co.

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Solo Agent for Advertisements in Great Britain for this Journal.

be operated by hand in the usual manner.

The air piping from the large steel plate fans is made of galvanized steel joints, rivetted and soldered. The blower plant consists of two 90" steel plate fans run by automatic engines, which are controlled entirely by the damper regulator. Each blower is capable, at a speed of about 675 revolutions per minute, of running the entire plant at the maximum load on these boilers, or about 4,000 Indicator horse-power.

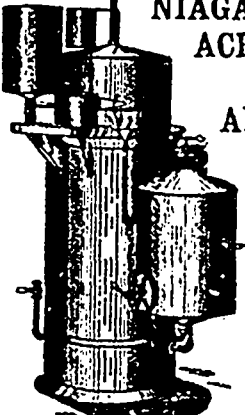
The Toronto Railway Co. are installing Babcock & Wilcox boilers, which are also to be fitted with the Jones stokers, which certainly indicates that they are giving good satisfaction.

The large chimney is 275 feet high, probably the largest in Canada, is practi-

cally smokeless, and to look at same would almost convey to one's mind that no work was being done, but this idea is certainly dispelled on entering the boiler room, where the fires are seen to be going for all they are worth. The furnaces are kept at white heat all the time, and tests made have shown that the temperature of the furnace where the Jones stokers are installed is nearly 3,500 degrees F., a temperature which is impossible to be attained by hand-firing, and it is questioned if this can be attained by any other style of stoker.

The principle of the stoker is that the coal is fed in below the line of fire and is allowed to coke before being pushed up into the burning mass. Air is admitted at a certain point over the green fuel and below the burning mass, and mixes with

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Patented in Canada, United States and Great Britain.

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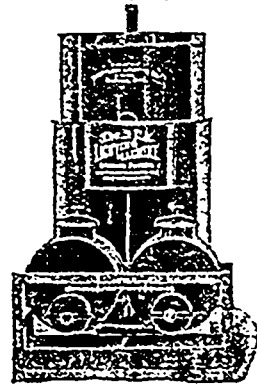
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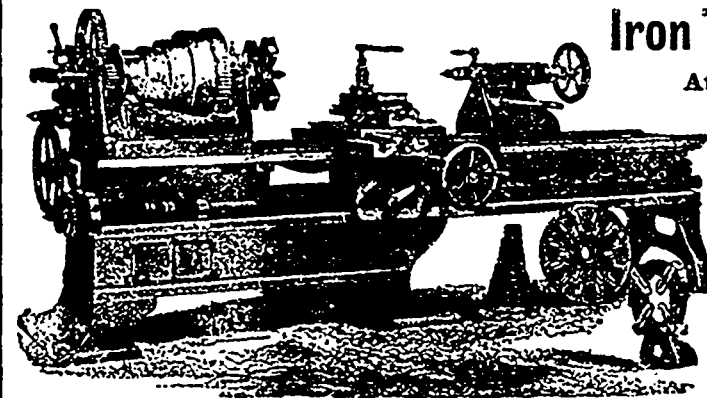
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J. M. T. VALVES—The Standard For Valve Excellence.

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the gases immediately over the fuel magazine, and the result is that a coke fire of the utmost intensity, at the top near the water heating surfaces of the boiler, is obtained. The heat is constant, as there is no opening of doors except for cleaning purposes.

The General Engineering Company, who are the owners of the Underfeed Stoker patents in Canada, were the contractors for the entire plant, and no expense has been spared to make same a model in every respect.

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The Hudson Bay Co., Winnipeg, Man., have ordered a 100 horse power boiler from the Robb Engineering Co., Amherst, N.S.

The Robb Engineering Co., Amherst, N.S., are building two 350 horse power engines for the Sao Paulo Railway Light and Power Co., Brazil.

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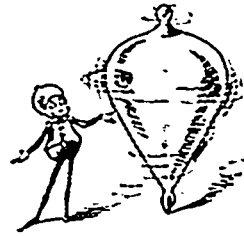
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THE BERTRAM ENGINE WORKS COMPANY.


There is a likelihood of a reorganization of the Bertram Engine Works Company, Toronto, under which new capital will be brought in and the present works will be considerably extended. The large amount of shipbuilding work that is now in view is the reason for this policy on the part of the company, there being contracts in prospect that will keep them busy for several years and necessitate the employment of a very much greater number of hands.


According to the policy mapped out by the Richelieu & Ontario Navigation Company, it is their intention to build three more passenger steamers, which no doubt will be constructed by the Bertram Engine Works Company. Plans and specifications are now being prepared by the builders of the steamer Toronto, who have demonstrated by the building of this steamer and the Corona, all from their own design and specifications, that they are capable of undertaking the construction of the highest type of passenger vessels for most exacting service. The Bertram Company have also under consideration the building of a fleet of steel freight vessels, full Welland Canal size, for the Canadian Inland Transportation Company. These vessels will be capable of carrying three thousand tons of cargo and will be engaged in carrying grain from the head of the great lakes to Montreal and Quebec. The inauguration and creation of this fleet by the Canadian Inland Transportation Company will, of course, depend upon the success of that company in securing sufficient capital for such a large undertaking, more especially as it is the intention of the company to build grain elevators and other terminal facilities as well. It is expected that two of these cargo vessels will be ready at the opening of navigation next spring.

If new passenger steamers are to be built for the Richelieu Company at the Bertram works, in addition to a fleet of grain-carrying steamers, it will be necessary to increase the plant and extend the yards of the Bertram Company, as it would involve an enormous amount of work and steady employment for some years to come for over a thousand men. To meet this large demand it is probable that at an early date the Bertram Company will be reorganized with largely increased capital and facilities for carrying on the shipbuilding industry on a scale hitherto not attempted in this country.

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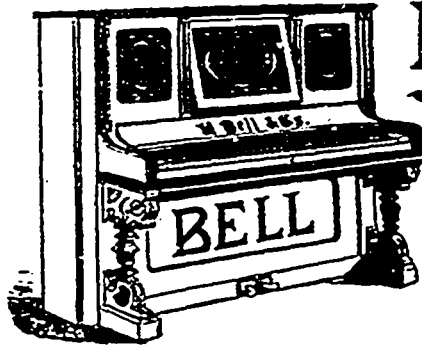
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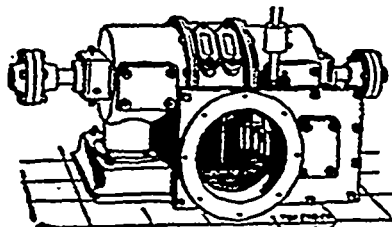
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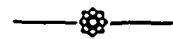
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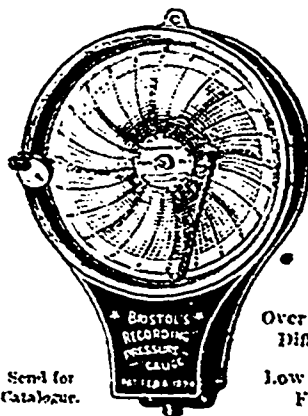
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