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THE PRICE IS RIGHT
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VOL. 40.

TORONTO, APRIL 20, 1900.

No. 8.

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ANTI-FRICTION
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THE J. C. McLAREN BELTING CO.

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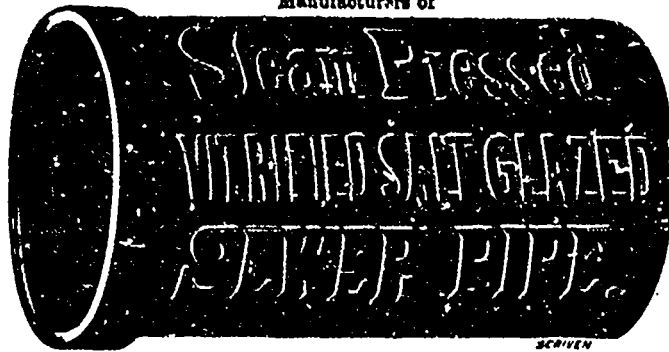
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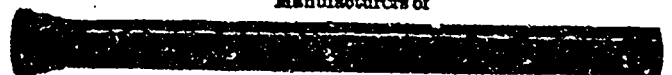
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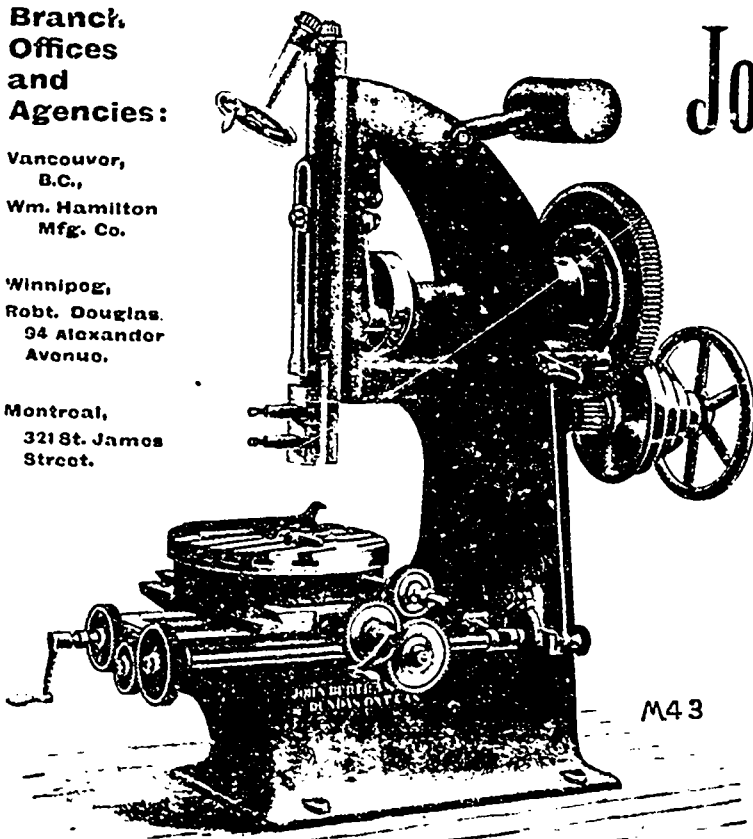
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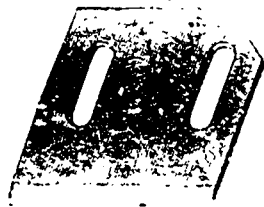


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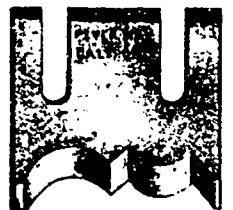
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THE BEST EQUIPPED BOILER AND ENGINE WORKS IN CANADA.

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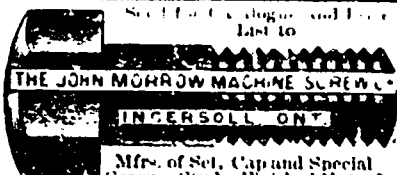
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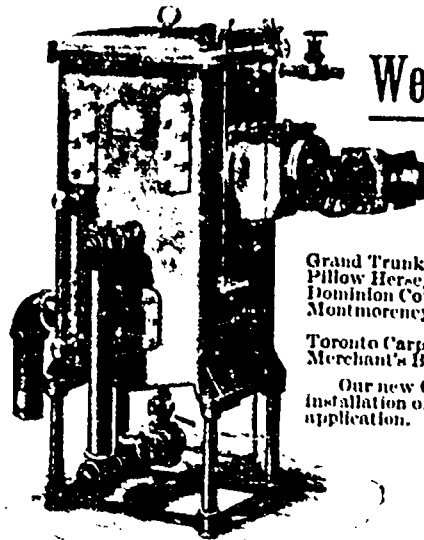
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Dominion Cotton Mill Co., Montreal	(5)	200 "
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Toronto Carpet Co., Toronto, Ont.	(1)	100 "
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Our new Catalogue explains the saving to be effected by the
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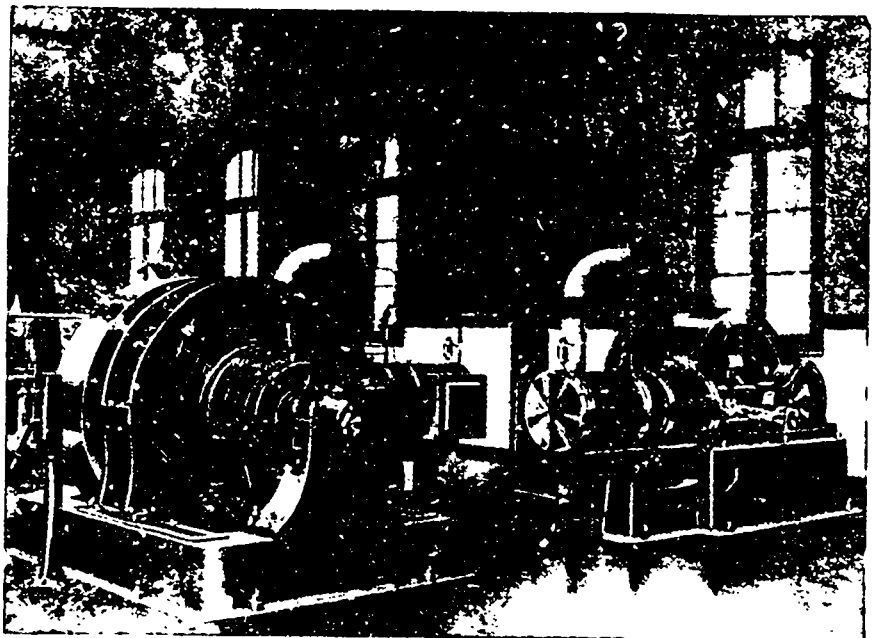
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These engines are installed in the power house of the electric
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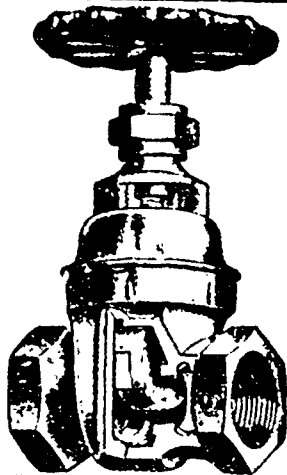


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The WEBBER Patent
STRAITWAY VALVE

For
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EVERY VALVE TESTED.

The Kepp Engine Co., Limited
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Oakey's Flexible Twilled Emery Cloth.
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Prize Medal and Highest Award Philadelphia, 1876, for Superiority
of Quality, Skilful Manufacture, Sharpness, Durability,
and Uniformity of Grain.

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From Less than 5 c.p. to Full Capacity. Guaranteed for Three Years.

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We invite enquiries from engineers in need of any description of Pumping Machinery. We manufacture over five hundred varieties and sizes of Steam and Power Pumps for stationary and marine purposes. We will be pleased to furnish plans and specifications for any special types. Our Catalogue, giving a good idea of our standard patterns, sent free to all enquirers.

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To anyone requiring a compact, thoroughly reliable engine, especially suited for users of intermittent power, we recommend our Gas and Gasoline Engine. We shall be glad to furnish estimates for Gas or Gasoline operated pumps, electric light plants, etc., etc. Explanatory Booklet free on request.

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MANUFACTURERS
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OF ILLUMINATING
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We Stock a Large Variety of SHADES
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FOR FACTORY AND OFFICE.

Imperial Lamps and Helios Upton Enclosed Arcs Give **BEST LIGHT** with **LEAST CURRENT**

ELBRIDGE Sparking Dynamos, SAMSON Batteries and IMPERIAL Salts, for Gas or Oil Engines.

Write us about Lighting
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PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

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J. J. CASSIDY, Editor and Manager**FRANK B. WHITE COMPANY.**

The Fisher Building, CHICAGO. 150 NASSAU ST., NEW YORK.
 Represent the Advertising Department of THE CANADIAN
 MANUFACTURER in the United States.

VALUABLE INFORMATION.

THE CANADIAN MANUFACTURER is prepared to give to its advertising friends all particulars regarding the imports of merchandise, both dutiable and free, into the United States; and also regarding the exports of domestic merchandise from that country to all other countries of the world during the year ending June 30, 1899. This includes quantities where possible, and values of all articles entered and exported during the year, the ports in the United States into which the goods were received or from which they were exported, and the countries from or to which exported. There has been considerable demand for such information which we are now prepared to supply to our patrons.

THE ONTARIO PULP WOOD CONCESSIONS.

The most important problem with which the Government of Ontario has to deal is the opening up and settlement of New Ontario and the exploitation of those vast natural resources in which that region abounds. A most valuable element of the progress and prosperity of Northern Ontario, and indeed of the entire province, is the spruce and other pulp timber which, in consequence of the growing scarcity of pulp wood in the United States, bids fair steadily to increase in value, and to form the basis of one of the most thriving and remunerative Canadian industries. The principle adopted by the administration of Mr. Ross that legislation should be framed so as to prevent the exportation of raw material and to secure for our own citizens, as far as possible, all the advantages accruing from the manufacturing processes by which it is converted into the finished product, has met with general acceptance. It is satisfactory to note that in the carrying out of practical measures for the development of our unsettled domain, this policy has been steadily kept in view with the object of encouraging the development of manufacturing industry and giving employment in other lines than that of agriculture to the population. It is obvious that such a course is a benefit, not merely to the people of the particular neighborhood directly interested, but to the whole community, as a number of thriving, prosperous and well popu-

lated settlements afford a continuously increasing market for producers elsewhere.

Much controversy has arisen over the action of the Government in granting an extensive concession to the Spanish River Pulp Company of the right to cut spruce and other pulp wood on a reserve of fifty miles square and within a five mile limit along the banks of the Spanish, Vermillion and Onaping rivers. The agreement is binding for a term of twenty-one years, and is subject to government regulations as to dues, which are at present forty cents per cord, but may be raised at any time, should it be considered advisable to do so on account of the increase in value of pulp timber. It is also expressly stipulated that the lands covered by the concessions are not to be locked up from settlement. As soon as any lands are disposed of to settlers the company's claim in regard to them ceases, and the settler becomes the owner of the timber. It will be seen, therefore, that the rights of the public have been amply protected and the sole advantage secured by the Spanish River Company is the certainty of being able to obtain an adequate supply of raw material on paying the regular government rates therefor. In return for this guarantee they will erect a factory at a cost of half a million dollars, manufacture 20,000 tons of pulp yearly, and give employment to an average of 250 men. In place of the timber being left to decay or meet the more probable fate of destruction by fire, as settlement advances it will be used so as to furnish employment, to build up a new industry and to provide a market for the produce of the neighborhood. The town thus built up will encourage those looking for homes to settle in the vicinity, and as the timber goes with the land, the settlers will have not only the opportunity of finding employment in some of the subsidiary industries created, but a market for pulp timber otherwise unsaleable.

The wonderful expansion of industry at Sault Ste. Marie owing to the granting of a similar concession to Mr. Clergue's company, leading to the expenditure of millions of capital and a general development of manufacturing activity, encourages a reasonable expectation that similar results may be hoped for as the outcome of the Spanish River concession. Although the Opposition in the Legislature had supported the Clergue agreement and others of similar tenor, they were sufficiently ill-advised to oppose the Spanish River concession, notwithstanding the fact that it was more favorable to the public in safeguarding the rights of settlers and leaving it in the power of the Government to raise the dues. The ground taken by Mr. Whitney and his followers was that the right to cut spruce timber should be disposed of by public auction to the highest bidder in the same way as the pine is sold. The discussion in the Legislature and in the press have abundantly exposed the unwisdom of this proposal. In the case of pine timber the manufacture into lumber requires comparatively little capital, and there are consequently numerous competitors when a limit is offered. The manufacture of pulp wood and paper, on the other hand, is a costly and elaborate process which cannot be undertaken remuneratively excepting on a large scale and by the erection of expensive buildings and machinery. It requires an outlay of about half a million dollars, which no company would undertake except on the fullest assurance that they could obtain a continuous supply of their raw material. Again, while pine grows in extended tracts out of which limits can easily be set apart and the

value closely estimated, spruce in the district in question is not found in masses covering a large area but greatly scattered over a wide stretch of territory. It would be difficult, therefore, to dispose of it in limits of similar size to timber berths, except in isolated cases. The only way in which this could be done and anyone induced to purchase would be to abandon the manufacturing conditions and permit the buyers to export the timber. But for the agreements entered into by the Government with large companies conveying the right to cut over extended areas for a long term of years on the express condition that the beneficiaries shall produce a certain quantity of pulp per year in the province, the industry could never have been developed and the timber would be unsaleable except as raw material to be shipped abroad for manufacture. The provision for manufacture in Canada is the key note of the development policy of the Ross administration and a demand that spruce wood shall only be disposed of under the conditions which obtain with regard to pine requires the abandonment of that policy and a reversion to the vicious and suicidal principle of allowing our resources to be freely exported to build up American industries.

In adhering to the course laid down and justified by the large measure of success already reaped and the activity and prosperity infused into the industry of our northern regions by wise and progressive legislation, the Ross administration has shown itself worthy of public confidence and support. It is just such practical and comprehensive measures, calculated to meet the special exigencies of the case without regard to precedents and theories based upon other conditions, that the country has been looking for at their hands. Judging from all indications, the result will give such an impetus to the settlement and production of our long-neglected heritage as completely to silence criticism and vindicate the wisdom and foresight of the policy now pursued.

PARCELS POST SERVICE.

The National Association of Manufacturers of the United States is giving much intelligent attention to the advocacy of a parcels post service in that country in connection with the Post Office service. The energy seems to be well directed, and if the point is gained and the service established, it will prove of inestimable value to the masses of the people, who will thereby be enabled to do their buying in the large centres of trade, where merchandise is sold at minimum prices, at the cost of low postal rates, and it will be of great service not only to those who distribute the goods, but also to those who produce them.

Some of the arguments advanced by the Association, through Mr. E. B. Lent, its New York manager, who has the matter in charge, are well worthy of consideration in Canada, as, with obvious modification, they would apply in this country equally as well as in the United States. We quote from Mr. Lent's letter, addressed to Mr. Acker, chairman of the committee on Postal Matters:—

I am familiar with your view of the parcels post question, that, before asking for any further postal facilities, you believe it incumbent upon your committee to point out how the post office authorities could effect savings in their department. We, on the other hand, have gone as the matter differently. We hold that, inasmuch as the records of the Post Office Department show that it costs eight cents to

transmit a pound of mail matter, that therefore there is no good reason why manufacturers and merchants who desire to send merchandise through the mails should be charged 16 cents a pound, or 100 per cent. in excess of the actual cost of transmission.

The opponents then raise the objection that there is a deficit of \$9,000,000 in the Post Office Department, and that we cannot afford to reduce rates. We then say to them that it is not a fair argument to cite the fact of an existing deficit against our proposition to reduce the rate on merchandise, because that deficit, as is well known, is largely due to the fact that 400,000,000 pounds of second-class matter bring the government a revenue of only \$3,000,000, and that in carrying this matter the government is conducting a sort of educational department, which should stand in the public mind as a separate account.

If our legislators believe that the transmission of this printed matter brings large returns to the government in the way of increased intelligence among our people, the government should be willing to pay for it out of its other revenues, and should not expect the profits arising from other branches of the postal service to be used to offset this expense, which amounts to nearly \$30,000,000 annually. We say that it is the business of the government to conduct each branch of the service on a cost basis, but that, if our legislators in their wisdom believe that we should maintain an educational department with the facilities of the Post Office Department, the maintenance of that educational department should not be a charge upon those who use the other branches of the service.

In asking for the establishment of a parcels post we believe it best to ask for this reduction on fourth class matter first, in order that we may note the extent to which the facilities are used.

While asking for a reduction on the rate to eight cents a pound, we shall also ask for an increase of the maximum weight from four to eleven pounds, and this we believe to be reasonable because we are now entering into parcels post conventions with foreign countries to transmit their goods throughout the United States in packages having a maximum weight of eleven pounds.

We believe that in asking the government to permit us to send merchandise through the mails at cost we stand on a sure footing, and no fair argument can be raised against us. To prove that the cost is eight cents a pound we quote the Postmaster-General and the records of the post office, and when the opposition sets up that we already have a deficit, and cannot reduce rates or increase the maximum weight, we reply that the commercial interests of the country should not be taxed to pay the expenses arising from special rates granted under the second class regulations. We ask for justice and call upon the legislators to find a way to give it to us.

Then, following this proposition, we cite the arguments in favor of the establishment of a parcels post system, viz: That it would open up vast distributing facilities afforded by 75,000 post offices situated throughout the United States to manufacturers through their dealers. Then with a well established domestic parcels post we should be in a position to enter more largely into parcels post conventions with foreign countries, inasmuch as we would have a system here to exchange for their systems.

England today has parcels post relations with over two hundred countries, islands and places. Every commercial man who comes to the United States from abroad to do business with us urges upon us the necessity of entering into parcels post relations with his country. Only yesterday I was talking with a native Indian from Bombay, and he said it was one of the greatest commercial necessities, and a few days ago the same was said by a merchant from Sydney.

We desire to avoid taking up arms against either the publishers or the railroads, because we are merely asking the government to carry our merchandise in the mails at cost, and we take as that cost the figure given by the post office officials.

EDITORIAL NOTES.

We are in receipt of the initial number of "Industries," a South African journal of engineering, mining, quarrying, shipping, planting, wool-growing and other colonial industries, published monthly, under the patronage of the Natal South African Government, by Robert Dives, who is also editor. The lines of merchandise looked after by "Industries" are machinery of all sorts, engines and boilers, mining plants, etc., also shipping, the mining interests, export and import trade, etc.

The manufacturers of the United States are the most active among the importers at the present time. In the month of February manufacturers' materials amounted to almost one-half of the total importations.—American Artisan.

At a recent meeting of the Railway and Transportation Committee of the Canadian Manufacturers' Association it was decided to put up a big fight for the abolition of the privilege granting railways the power to charge extra freight rates when goods are not shipped at owner's risk. Circulars have been issued to the manufacturers inviting them to present their views on the subject and any complaints that they may have to make.

Do Canadian tanners desire to participate in this trade:— There were imported into Japan during 1899, 1,528,419 cattiees, 2,002,229 pounds of sole leather. The amount imported at Yokohama was 976,030 cattiees, 1,278,599 pounds; at Kobe and Osaka, 543,691 cattiees, 712,235 pounds; and at Nagasaki 2,955 cattiees, 3,871 pounds.

The Toronto Board of Trade and the Toronto Retail Merchants' Association have joined forces in asking the Ontario Government to appoint a commission to report on Municipal taxation, but as the Canadian Manufacturers' Association are not participating in this important matter, it is to be presumed that it has escaped the attention of the managers. They should never let their chances, like the sunbeams, pass them by.

Last year when Mr. Crawford introduced an obnoxious bill into the Ontario Legislature, the Canadian Manufacturers' Association were quick to send delegations to protest against the enactment of it into a law. That was well. We notice that at this time Mr. Latchford is endeavoring to work a bill through the Legislature compelling arbitration in labor disputes, which certainly contains many objectionable features, very much against the interest of manufacturers, but we do not observe that the Association are doing anything to defeat it. We notice, too, that the Trades and Labor Council are taking active measures to prevent the introduction of manual training in the public schools, but we do not notice that the Association are endeavoring in any way to counteract that influence, although it is in the interests of manufacturers to have the youths in the schools taught the rudimentary principles of applied mechanics.

Mr. J. O. Thorn, a representative of the Canadian Manufacturers' Association at the Toronto Industrial Exhibition Association, states that he had recently applied to Mr. H. J.

Hill, the secretary and manager, for a copy of the by-laws of the Industrial Association which was promised him. Later, when Mr. Hill was requested to produce the copy, he stated that it had been prepared, but in the interval the directors had held a meeting, at which he had been instructed not to give Mr. Thorn the copy. Later still, Mr. Hill said that he had mentioned the matter to Dr. Smith, the president of the Association, who replied that in view of the action of the directors, no copy of the by-laws should be given to Mr. Thorn. We do not notice that the Canadian Manufacturers' Association or any of its officers have protested against the indignity shown Mr. Thorn, one of its representatives, by the directors of the Industrial Exhibition Association, although Messrs. R. W. Elliot, George Booth and W. K. McNaught are members of the Board.

Gen. Breckinridge, editor of The Lexington, Ky., Morning Herald, who attended the Anglo-Saxon Union banquet in Toronto the other day, thus writes of Canada: "Canada is as loyal as Yorkshire; she holds herself to be as much an integral part of that world-wide empire as London. Victoria is her Queen, she is sister to Australia and every British colony. There was some years ago a strong party in Canada in favor of some form of organic union with the United States; that party has disappeared. There is a wider, deeper, sincerer friendship for the United States, but it is no longer mixed with any desire to form part of the United States. They believe their form of government, their institutions, are freer and stronger than ours; that law is more impartial and better administered, and the spirit of party and its passion not so dangerous. They respect us; they are our friends; they desire amity and good relations with us. They express these feelings with sincerity and warmth; but they also are anxious, we should understand, that it is wholly free from any desire of union; friends, allies, well-wishers, but not partners or fellow-citizens."

Every humane man will wish that no American woman should have to labor for more than sixty hours a week. But we should suppose there is some doubt if the law in this free country may properly forbid a woman to work for sixty-two hours a week if she chooses to do so. A court in Pennsylvania has decided that the law has this right of prohibition, and the court has inflicted penalties upon an employer who permitted a woman-worker to toil beyond the sixty-hour limit. Where a child is concerned, the right of the government to meddle with the matter is indisputable, for a child is unable to protect itself from unkind parents or indifferent employers. But an adult is a responsible being, having, it may be supposed, not only power to take care of herself, but an incontestible right to use her time, her labor and her intelligence in any manner not involving trespass upon the rights of others. From what source does a law-maker obtain authority to limit and restrict the privilege of an adult to work as long as he pleases? It would be hard to discover a satisfactory answer to that question. But, if a penalty for working overtime must be inflicted upon somebody, why not put it upon the adult person who is guilty, rather than upon the employer who simply permits or connives at the act which is alleged to be wrong? No employer in this country has any woman wage-earner by the throat so firmly that he

can compel her to do an illegal act. Any able-bodied woman can obtain domestic employment at good wages at any time, so that there can be no question of obeying the employer or going hungry. And this suggests the further reflection that, if it be wrong, morally or any other way, for a woman to work for sixty-two hours a week in a factory, it must be equally wrong and equally against the public interest that she should do so in a domestic kitchen. There are, however, we imagine, but few women employed in that kind of service whose labors are not extended beyond the hours named.—Textile Record.

A deputation representing the Retail Merchant's Association of Ontario waited upon Hon. Mr. Ross, the Premier, a few days ago, and presented a petition asking for legislation against departmental stores. The method they proposed was a license fee on each department or branch of business conducted by such stores. One of the spokesmen for the petition was Mr. W. B. Rogers, president of the Toronto Association, who is also a member of the Canadian Manufacturers' Association, who urged that trades which required years of study and experience should be protected against what he termed the unfair competition of departmental stores. The Premier, in reply, said he sympathized with the retail trade under present circumstances. He also alluded to the fall of real estate values. The petition, he said, ought to receive consideration. He did not state, however, that he harbored any sympathy whatever for the manufacturers whose products are so largely disposed of to the departmental stores, and whose market would be taken away from them should Mr. Rogers' petition prevail; nor did he congratulate working people upon the fact that there was a fall in real estate values, that while labor is in greater demand now than it has been for years, rents are lower. We do not notice that in the interests of the manufacturers, who will be so seriously injured should Mr. Rogers' wishes be carried out, the Canadian Manufacturers' Association are taking any action looking to the prevention of the destruction of departmental stores.

It is reported that Mr. J. F. Ellis, president of the Canadian Manufacturers' Association, will visit the meeting of National Association of American Manufacturers, to be held in Boston next week. We are exceedingly glad to learn that he is going, and trust that he will inform our American friends who are working so hard to uphold and perpetuate McKinleyism in that country, that the Canadian tariff is not now a political question with us. We also trust that on his return to Toronto he will bring with him a report of the proceedings, which we would have much pleasure in reproducing, showing how unnecessarily anxious American manufacturers are about any changes that might be made in their tariff.

The wonderful development of the mercantile business of this country within the last twenty-five years is illustrated by the following data relating to an enterprise carried on by a simple partnership and which in no sense can be termed a corporation or trust: The combined floor space of the two stores of this firm is equal to twenty-eight acres which, added to the fourteen acres of outside warerooms that are occupied, makes the entire surface covered equal to that of a fair-sized farm. Nearly nine thousand persons are employed in the

work of the fifty-five departments in each store and 492 horses and 177 wagons are necessary for transportation of goods to or from the stores. The executive ability requisite for the successful management of a business conducted on a scale of such magnitude is not less than is demanded of the head of a department of the National Government. To this must be added a knowledge of detail, which is the result of a familiar acquaintance with the workings of the various lines of the particular business in hand. Only as brains and training are thus combined can a merchant hope to compete with the broad-minded men who tower above their fellows in the successful conduct of large concerns.—Accountics.

All these goods are products of manufacturing establishments, and still there are some manufacturers who lend themselves to the schemes of others to beat down and obliterate departmental stores even here in Toronto.

A scarcity of coal, which is declared by some to approach the proportions of a famine, exists in Europe just at present. In England old mines are being reworked and land is being bored in all directions for new fields. An unprecedented consumption has been brought about by the great activity in the iron and steel trades. Miners are scarce, and it is difficult to find workmen sufficient to man the mines. The great amount of shipping employed for the conveyance of troops and supplies to South Africa has disorganized the sea-carrying trade to such an extent that coal has gone up very much in price on the European continent. In Italy a number of large manufacturers have been obliged to stop work to avoid running at a loss. In France many industries have been injuriously affected in consequence of the scarcity. The Belgian mines are working to their utmost capacity. The Bohemian and Moravian miners have struck for advances in wages. The Prussian railways are feeling the pressure of the new conditions, which have occasioned an increase on new contracts. In southern France the local authorities are petitioning for a remission of the import duties on coal, and in Russia a suspension of the duties on English coal has been granted. The situation has turned in a marked way to the advantage of American coal men, who are finding a remunerative market for their product in Europe, and should conditions not change circumstances will be still more in their favor.—Bradstreet's.

Extract from the address of Mr. J. F. Ellis, president of the Canadian Manufacturers' Association, before the annual meeting of the Association, held February 6, 1900:

This Association has now been in existence twenty-five years. The object of its formation was to educate the country on the advantages of protection to native industries, and greatly through its efforts was the present tariff enacted; and while it is still necessary to carefully watch that this great principle be not interfered with, it is now felt that it is not a political issue, both parties admitting that protection is here to stay. This object being, therefore, an accomplished fact, the Association should further extend its usefulness by giving its attention to other matters.

This means that after twenty-five years of hard and persistent labor, and at much expense, the Association finds itself out of a job as far as the tariff is concerned, that the tariff is no longer a political issue. It means that the removal of one-third of the duties levied upon British goods is entirely acceptable to Canadian manufacturers. We do not see it in that light.

THE CANADIAN MANUFACTURER

ESTABLISHED IN 1880.

Devoted to the Development of Canadian Trade,
Foreign and Domestic.

THE INTERNATIONAL BUREAU OF COMMERCE OF CANADA

In connection with The Canadian Manufacturer, works to attain this end.

Any inquiry addressed to THE CANADIAN MANUFACTURER will result in placing the writer, if he so desires, in communication with Manufacturers, Buyers or Sellers of any sort of merchandise in Canada or any other country.

Merchants, Importers, Exporters, Boards of Trade, Chambers of Commerce and Commercial Organizations in any part of the world are invited to make full use of the facilities afforded by THE CANADIAN MANUFACTURER whenever they may desire information about any article produced in Canada. Tariff Law, Customs Regulations, Routes of Transportation, etc.

We especially request Canadian manufacturers to send us lists of the different lines of goods produced by them so that we may address to them special letters of inquiry as soon as information is received by us.

WE DESIRE NAMES AND ADDRESSES:

Manufacturers of ash boat oars, in quantities.
Manufacturers of shop and other window blinds.
Manufacturers of refrigerators for family and store use.

Desire names and addresses of any one who wishes hides from Paraguay, dry salted for tanning.

Who make machinery for the manufacture of waterproof or celluloid goods.

Who produce machinery for cutting box boards out of slabs, and also machinery for making small hardwood handles, dowels, skewers, etc.

We have information, principally from buyers, that is valuable to manufacturers who desire to increase their trade in the British and foreign markets, that will be furnished on application. If you find any item in this list (which is changed every issue), that you are interested in, write to us. If you see an item that does not interest you but would be of value to some friend, kindly inform him or us.

Carriage Builders' Materials.

AUSTRALIA.

Harness Trade Lizes.

CHINA.

Lumber.
Flour Mill Machinery.
Dredging Machinery.
Pig and Bar Iron.

COLOMBIA.

Iron Stair Cases, straight and spiral.

DENMARK.

Leather (shoe).
Embossed Leather Chair Seats.

GERMANY.

Cartridges.
Agricultural Implements.
Blacksmith and Machinists' Tools.
Carriage and Wagon Material.
Photographic Materials.
Gray Cotton Drills.
Evaporated and Dried Fruits.
Household Hardware.
Toilet Articles.
Cutlery.
House Furnishing.
Ropes and Twine (2).
Axles and Springs (3).
Carriages.
Horse Clothing.
Corrugated Iron.
Hardwood Furniture.
Rattan Furniture.
Metal Bedsteads.
Musical Instruments.
Paper.
Liquors.

(Above 13 lines for export to East India.

Bicycles (2).
Typewriters.
Steam Road Roller.
Jewelry.
Silverware.
Seed Leaf Tobacco.
Shoe Pegs.
Novelties in Leather.
Shoes.
Coffee, Sugar and Rice Machinery.
Children's Carriages.
Clothing.
Printing and Wrapping Papers.
Bicycles.
Toys and Games.
Hammer Handles.
Special Bicycle Machinery.
Riveting Machine, Hydraulic.
Steam and Pneumatic.
Cheap Twist Drills.
Dried Fruits.
Lumber.
Cereals.
Meats.
Preserves.

Oils.
Drugs.
Fats and Grease.
Raw and Electrolytic Copper.
Builders' Hardware.
Wagon Parts.
Carriage Hardware.
Metal Bedsteads.

Print Paper.
Lumber.
Cheap Wood Toys.
Clover and Timothy Hay.
Dried Fruits.
Preserves.
Walnut Lumber

An agency for any Canadian goods suitable for Brazil.

GREAT BRITAIN.

Hickory Shapes.
Woodenware.
Trunks.
Canned Goods.
Bottled Goods.
Household Hardware.
Wrapping and Writing Paper.
Envelopes.
Toys and Games.
Drug Extracts.

Baled Clover and Hay.
Linsed Cake.
Basswood Broom Handles.
Clothes Pins.
Whisk Brooms.
Linsed Oil.
Any wood products.
Anything adapted to Printing and Lithographic trades.

HOLLAND.

Clothes Wringers.
Carpet Sweepers.
Agricultural Hand Tools.

Lawn Mowers.
Bicycles.
Swivel Snaps.

ITALY.

Cotton Goods.
Cereals.
Oils, Lubricating.
Hides.
Chemical Products.

Bicycles.
Building Materials.
Rubber Clothing.
Watches and Clocks.
All sorts of Leather.

JAVA.

Bicycle Fittings.
Bicycle Sundries.

Cheap Nickel Ladies' Watches.

MEXICO.

Jewelers' Tools.
Watches and parts.
Clocks.
Optical Goods.
Revolvers and Pistols.

Carriages.
Harness.
Omnibuses.
Transportation Wagons.
Dental Supplies.

NORWAY.

Shoe Blacking and Polishes.

All sundries relating to the Boot and Shoe trade.

PARAGUAY.

Agricultural Implements.
Windmills.

Pumps.

RUSSIA.

Builder's Hardware.
Carpenters' Tools.
Machinists' Tools.
Axles and Springs.
Engines and Boilers.
Pig Iron.
Metal Working Machinery.
Wood Working Machinery.
Mining and Hoisting Machinery.
Flour Mill Machinery.
Belting.

Valves.
Portable Forges.
Electrical Machinery.
Electrical Supplies.
Refrigerators.
Photographic Goods.
Leather.
Furniture.
Office Furniture.
Cut Soles and Findings.
Shafting, Hangers and Pulleys.

SOUTH AFRICA.

Printing Office Furniture and Type.

Typewriters.

Preserve this Bulletin for Reference—it will not be Duplicated.

If You want Information, Ask for It.

Address, THE CANADIAN MANUFACTURER, Toronto, Canada.

OPPORTUNITIES FOR CANADIAN TRADE.

The following enquiries have been received at the offices of the High Commissioner of Canada in London, and of the Canadian Section of the Imperial Institute, London, England.

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

187 The names of the principal bacon packers in the Dominion are asked for by a firm who are shortly sending out a representative.

188. A firm of distillers wish to appoint agents in Canada, and enquire for the names of substantial houses in the wholesale spirit trade who might be open to represent them.

189. An English firm wishes to know the names of Canadian shippers of spruce boxes, of which 250,000 are wanted. Also of spruce bars, of which about fifty standards per week are required. Prompt reply asked for.

190. An English-Continental firm of good standing wishes to represent manufacturers of Canadian wood pulp, as their agents in the United Kingdom and on the Continent, especially France.

191. Enquiry is made respecting the demand for wooden penholders and the prices which these goods realize on the British market.

192. The names of the principal leather belt makers in England are required by a Canadian correspondent, who also wishes to hear of some tanners of belting leather.

193. A London house seeks supplies of Canadian wood flour and invites samples with c.i.f. quotations from shippers.

194. A Liverpool firm of merchants is open to arrange for large supplies of electric wire casings, and desires quotations from Canadian manufacturers, c.i.f. Liverpool, with samples of their stock designs.

195. A London importer would like to hear from Canadian producers of high class fruit syraps.

196. Several applications have been received from houses desiring quotations on large specifications of box boards. Reasonably prompt delivery is required, and Canadian manufacturers wishing to take the matter up should write at once.

197. Through the British Chamber of Commerce, Paris, an application has been received from a Bordeaux correspondent who wishes to represent Canadian producers of dried apples and other fruits.

198. A London firm, who also have a house in Cape Town, desire to be placed in communication with Canadian packers

of canned fish, fruits and other food products suitable for the South African market, who might desire representation.

199. Enquiry has been received for the names of good butter exporters in Montreal and Toronto, who desire to be represented in London.

200 The publishers of a "national" series of Christmas cards are desirous of opening up a connection with Canada, and ask for a few wholesale houses who would take up these goods.

201. A firm of glass tile manufacturers desire to be represented in Canada, and ask to be placed in communication with hardware merchants who would be likely to buy these goods.

202. A Canadian real estate agent who is interested particularly in the sale of mines and mineral lands desires to get into touch with persons looking out for such properties.

203. A firm of carriage builders who purpose sending a representative to Canada this year, make enquiry respecting the opening that exists for their goods in the Dominion.

204. An English firm in Boulogne, who are making arrangements for the sale in France of Canadian hams, bacon and cheese, ask to be placed in communication with exporters prepared to consign direct for sale, on commission or otherwise.

205 An Irish merchant wishes to be placed in communication with Canadian manufacturers of shop fittings, such as mahogany counter cases for displaying cigars, cigarettes and other goods.

206. The publishers of a trade circular which has for its object the endeavor to facilitate commercial relations with Holland, express their willingness to forward a copy of the work to any Canadian firm who may care to correspond with them

207. A Glasgow firm desire to be placed in communication with Canadian manufacturers of wooden rings for sieves.

208. A firm of paper makers' agents who are desirous of bringing Canadian papers more prominently before English consumers, ask to be placed in communication with mill-owners in the Dominion who may be in a position to offer any of their output for export.

209. A correspondent in Manitoba desires to be placed in communication with an agency through which to enlist capital for establishing a pulp and paper mill.

210. Enquiry has been received from a gentleman of experience in Toronto, who desires to take up the representation of a good English drygoods house.

211. An importing and manufacturing company would like to hear from Canadian shippers of cattle bones, hoofs, horns, hair, etc.; of whom they would buy regular consignments.

Transfer Ornaments,

AMERICAN MADE.

Guaranteed Quality.

TRADE MARKS, DECORATIONS, NAME PLATES, ETC.

For HARDWARE, BICYCLES, VEHICLES, POTTERY, FURNITURE, etc.

Sketches submitted free of charge. Being home makers can deliver promptly. Write us.

THE MEYERCORD CO., Inc., CHAMBER OF COMMERCE, - CHICAGO.

MAIN OFFICE—

Canadian Travelling Representative,
CHAS. H. JAGGAR, Buffalo, N.Y.

Largest Makers in the World Guaranteed Decalcomania Transfers.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

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 on 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, belting, 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 Canada Paper Co., Montreal, writing to the Canadian Rubber Co., that city, say: "We have been using your Para rubber belting for some years past, and have pleasure in informing you that it has proved in every way quite satisfactory."

Messrs. Brown, Durrell & Co., importers and manufacturers, writing to Cling-Surface Mfg. Co., Buffalo, N.Y., say: "Having tried Cling-Surface on my 12" dynamo belt (16" between centres), I have been able to carry a full load with 22" sag on belt with no perceptible slip. It surpasses my expectations and I can recommend it to do all that is claimed for it, if directions are followed."

The Jones & Moore Electric Co., Toronto, report a brisk business in electrical machinery. Among some of the recent sales are, The Queen City Carpet Co., The Elliott, Son & Co., R. A. Winton, J. A. Humphrey & Co., Turnbull & Russell, J. S. Bennett, The National Stereotype Co., J. Shales, C. D. Smith, W. Levey, Toronto Brass Co., Toronto World Newspaper Co., of Toronto.

Premier Ross a few days ago received a deputation, who asked that the Government make a grant of 6,400 acres a mile, or a total of 1,250,000 acres, in aid of the construction of the Algoma Central Railway. The projected line will be about two hundred miles in length, and will run from Sault Ste. Marie to Missinabie, on the C.P.R., with a branch to Michipicoten. The proposed railway is one of the numerous enterprises which the American capitalists for whom Mr. Clergue is acting, have in contemplation. They expect, it was stated, to

make expenditures or investments to a total amount of from \$16,000,000 to \$18,000,000. The estimated cost of the railway referred to is \$6,000,000, and they will build the line without issuing a dollar of stock or asking for a dollar of cash subsidy. The promoters undertake, if the land grant is made, to employ 5,000 men along the line of railway and to establish an agency in Toronto, and another in the Old Country, to facilitate the settlement of the land, which may be granted to them.

The Sault Ste Marie, Ont. Pulp and Paper Co. have issued a circular to their customers in which they say: "Early in January we called the attention of our customers to the excessive demand for paper-making materials, and advised them to secure their requirements for the first six months of the year at our then price of \$25 a ton. Our advice was based upon the exceptional opportunity we enjoy to learn the market tendency by reason of the world-wide distribution of our product. Almost daily we receive telegraphic orders or requests for quotations from European and Asiatic paper makers, as well as from all parts of the United States, and as the largest producers of ground wood in the world, our quotations naturally have some effect upon market prices. Those of our customers who followed our advice have benefited. Those who did not have paid us at the rate of \$30 per ton for February shipments. We have emptied our warehouses and have been unable to fill our orders, so great has been the demand. If the consumption of paper continues at the present

rate for the year 1900, there will be no pulp wood available for ground wood or sulphite pulp in the United States by the first day of November. Many mills, of course, are fully supplied, but many others will shut down for lack of necessary raw material. The total cut of wood for the year in Canada and the United States is now known, and it is not sufficient to supply the American mills at their present rate of consumption, for nine months. We are directly interested in the success and prosperity of the Wisconsin, Michigan, Ohio and Indiana mills, who have been our patrons for the last five years, and we again advise them to secure their pulp at present prices as far in advance as possible.

His Honor, the Lieutenant-Governor, has just signed the charter for a new manufacturing company with headquarters in Hamilton, the following gentlemen being the provisional directors: W. H. Gillard, George E. Bristol and Alexander Turner, of Hamilton; J. F. Eby and William Ince, of Toronto, and David Marshall and J. J. Nairn, of Aylmer, the capital to be \$250,000. The shareholders in the new company are principally wholesale grocers of Hamilton and Toronto. It has absorbed the entire interest of the Aylmer, Ont., Canning Company, and will go extensively into the manufacture of canned goods. The object of the company is to deal in and can, pack and preserve fruits, vegetables, meats, poultry, fish and other goods; and for that purpose to manufacture tins, bottles and other necessary packages. It is expected that this new company will go largely into the manufacture of pickles. The Aylmer company's factories here and at Aylmer have been purchased by the new company, and it is expected that these premises will have to be enlarged right away, for the company has the go in it that will soon make it one of the most important industries in Canada.—Hamilton Spectator.

When the United States and Australasian Line steamship "Melbourne" sailed from Brooklyn, N.Y., for Australian ports the other day, she carried a very large number of individual packages. In her cargo of 7,500 weighed or measured tons is about everything manufactured in the United States, from wooden butter dishes and clothes pins to street cars. There are organs, pianos, typewriters, cash registers in large numbers, and even 1,000 cases of shoes.

The Alvinston Basket Factory, Alvinston, Ont., was destroyed by fire April 1, loss about \$1,000.

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.

The Sunderland Electric Power Co., Sunderland, Ont., has been incorporated with a capital stock of \$10,000, to operate work for the production of electricity for the purposes of heat, light and power. The provisional directors are James McDermott, J. B. Valentine, Henry Baldwin, James Doble and T. H. Glendinning.

A large force of men are at work in the construction of the new power house for the Montreal Cotton Co., at Valleyfield, Que. The hydraulic-electric power to be developed will amount to about 3,000 horse power. There are about a thousand looms waiting on this power being developed. The company are very much pressed at present with orders, but expect to have the thousand extra looms making goods by July 1st. This will have the effect of making quite enough piece-dyed lining goods to suit the wants of the country. Indeed, it will have the same effect as if a new mill of a thousand looms had been started.

The Farmers' Co-operative Packing Co., Brantford, Ont., will, by supplementary letters patent, increase their capital stock from \$150,000 to \$200,000.

The Tecumseh Canning Factory, Tecumseh, Ont., has been incorporated with a capital stock of \$25,000. The provisional directors include S. Clapp, A. Jacques and D. Rocheleau, all of Sandwich East, Ont.

The Jones & Moore Electric Co., Toronto, have recently installed complete warehouse telephone systems for the Monetary Times Printing Co., C. R. Ronfrow & Co., and Wyld, Grasett & Darling, all of Toronto.

The Wheeler Mfg. Co., Toronto, has been incorporated with a capital stock of \$10,000, to manufacture bicycle saddles, etc. The provisional directors include W. C. Rands, F. S. Wheeler, both of Detroit, Mich., and H. P. Davies of Toronto.

The Canadian Commission of the Paris Exhibition will have an office at No. 10 Rue de Rome. Canadian visitors may have their letters addressed to them there, and will be welcome to every possible assistance through the commission.

The McLachlan Electric & Gasoline Motor Co., manufacturers of gas and gasoline engines, Toronto, have sent us an illustrated circular having reference to these machines, which, they say, are of the four-cycle type, regarding which they say: "They usually consume about one pint of gasoline per hour per horse power, or from fifteen to twenty feet of gas per hour. They are

easily started, and it takes but a minute or less to get them under way. When the fuel is at hand they are always ready. No mechanical skill is required of the operator. A few simple instructions are enough to enable one of average intelligence to run such an engine. Once started it takes care of itself, using fuel in proportion to its load. No other attention is necessary than starting, stopping and oiling. The consequent dust and dirt does not worry the gas engine user. Boiler insurance, danger of boiler explosions, and knowledge of the state of the water gauge and safety-valve, with many other necessary operations are put on the shelf, and a compact machine with an economy scarcely dreamed of, takes their place. Launches fitted with the McLachlan Electric & Gasoline Motor Co's engines are not subject to government inspection, and licensed engineers and pilots are not required."

Messrs. A. Klipstein & Co., chemicals, dyestuffs, etc., 122 Pearl street, New York, with Canadian branches at Hamilton and Montreal, have issued a circular letter to the trade as follows. "We have taken the sales agency of a new machine and process for coloring cotton yarn, which are protected by letters patent granted to Mr. John W. Fries, of Winston-Salem, North Carolina. This machine and process were elaborated by Mr. Fries in practical use on his own work, and have been in successful operation there for more than two years. We have ourselves seen them in operation, and were so well satisfied with their merit that we were pleased to take the agency for the sale, and heartily recommend them to the trade." We learn that the process employed in dyeing cotton yarn with Mr. Fries' machine does away entirely with the dye-house and saves many operations in the dyeing of colors in the long chain, the entire color being put on in one run.

The planing mills of Messrs. Brown & Rutherford, Winnipeg, Man., the largest establishment of the kind in the city, were destroyed by fire April 6, loss about \$15,000. The mills will be rebuilt at once.

The Bertram Engine Works Co., Toronto, have recently placed orders with The Jones & Moore Electric Co., Toronto, for one 20 and one 10 horse power 500 volt direct current motors for their ship yards.

The Grey & Bruce Portland Cement Co., Owen Sound, Ont., has been incorporated with a capital stock of \$199,000, to manu-

facture Portland cement, putty, lime, peat, etc. The provisional directors include Jas. McLachlan, Owen Sound; J. H. Sponce, Warton, Ont., and John George, Port Elgin, Ont.

A fire occurred in Toronto April 4, by which the buildings at 44, 46 and 48 Richmond Street West, were gutted and much property destroyed. They were occupied chiefly by printing establishments and manufacturing concerns. The loss on the building was about \$25,000, the Bryant Press, \$17,500, Automatic Check Book Mfg. Co., \$3,000; Clatworthy & Co., manufacturers of store display fixtures, \$1,500; Keene Mfg. Co., manufacturers of blouses and white wear, \$5,000; Imperial Mfg. Co., shirts and pants, \$3,000; Hill Printing Co., \$1,500; Eakins & Ferris, photographer's supplies, \$1,000; Crown Clothing Co., \$1,000.

An electric sign is being placed on the works of the Hiram Walker & Sons Co., Walkerville, Ont., which is to be one of the largest, most elaborate and expensive in the country. It will be ninety, or more, feet in length, sixty feet high, and will be supported from the ground on an independent steel frame. This sign will read "Distillery of Canadian Club, Walkerville," in three rows of letters, and will be fitted with 3,000 or more special sign lamps, mounted in metal illuminated letters, borders, columns and ornamental work, the idea being to have the lettering fitted with clear or frosted lamps and the borders and ornamental trimmings with natural colored lamps. The combination of clear and colored lamps is designed to set off in an artistic manner the lettering and produce in combination the handsomest effect of any sign in the world. The total cost will probably exceed \$6,000 - this not including the machinery required for operating this sign.

The by-law to guarantee the debentures of the George McLagan Furniture Co., of Stratford, Ont., to the extent of \$30,000 was submitted to the ratepayers April 10, and carried almost unanimously. Mr. McLagan will erect a factory 250x40 feet, of brick, four stories high, at a cost of upwards of \$40,000, and will employ on an average of 150 men the year round. His factory recently destroyed by fire gave employment to about ninety hands.

The Shawinigan Falls Hotel Co has been incorporated with a capital stock of \$25,000, to erect and operate a hotel at Shawinigan Falls, Que.

JOHN HANCOCK BLDG., BOSTON, November 6, 1899.

N. ENG. BRANCH CLING-SURFACE MFG. CO.

We have been using Cling-Surface for seven months and are now running our dynamo and other belts slack. We take pleasure in saying that Cling-Surface is giving the best satisfaction. JAMES STACKHOUSE, Supt.

Cling-Surface Does These Four Things :

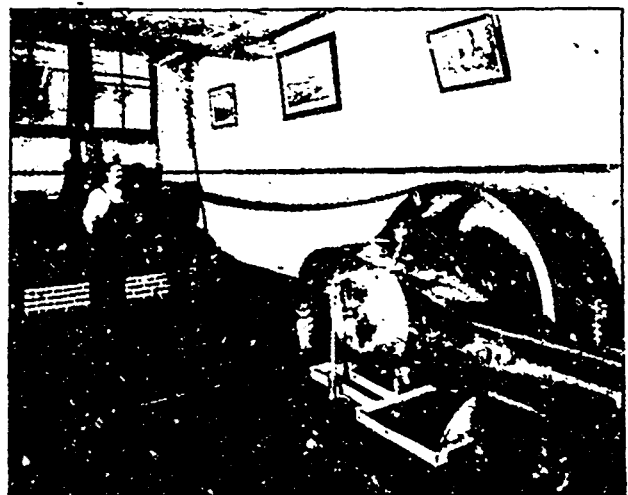
- 1.—STOPS SLIPPING.
- 2.—INCREASES POWER.
- 3.—RELIEVES INITIAL TENSION.
- 4.—PRESERVES THE BELT.

If it fails to do these you Pay Us Nothing.

CLING-SURFACE MFG. CO.

N. Eng. and E. Can. Branch: 120-126 Virginia Street,
170 Summer St., Boston **BUFFALO, N.Y.**

New York Branch: Chicago Branch:
253 Broadway. 225 Dearborn St.



When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

A little more more than a year ago the Gould, Shapley & Muir Co., agricultural implement makers, of Brantford, Ont., commenced to occupy new premises with more than double the capacity of their former buildings. Now they are negotiating with the city looking towards additions to their premises and increasing their plant at a cost of about \$100,000. A year ago they doubled the number of their hands. Now they propose to double their number again. They intend to add the manufacture of a line of goods not at present manufactured in Ontario.

The glucose factory of the Edwardsburg Starch Co's. works at Cardinal, Ont., was destroyed by fire April 8, loss about \$150,000. Messrs. W. T. Benson & Co., Montreal, constitute the Edwardsburg Starch Co., and were the owners of the destroyed factory, which, we understand, was the only glucose works in Canada. The plant will be reconstructed immediately.

A steam boiler in McQuillan's flour mill at Harriston, Ont., exploded April 7, doing considerable damage to the mill.

The Canadian Foundry Co., Toronto, with a capital of \$1,000,000, has taken over the business of the St. Lawrence Foundry Co., which occupies the entire block bounded by King, Parliament, Berkeley and Front streets. The directors who will conduct the business are: President, W. D. Matthews; vice president, Frederick Nicholls; managing directors, T. W. Horn; W. R. Brock, E. B. Osler, M.P., William Hendrie, Hamilton; Sir William Van Horne, Montreal; H. S. Holt, Montreal; W. H. Winslow, Chicago; secretary, A. Oakley, superintendent, L. E. Hinckley; chief of sales department, H. J. Hamilton. It is the intention of the company to enlarge the

present works and convert it into one of the most modern and best equipped plants in the Dominion. All kinds of architectural iron, waterworks supplies, railway supplies and ornamental iron will be manufactured. Upwards of 200 men will be employed, and the pay roll will be from \$75,000 to \$100,000 per annum.

The iron famine still continues, and the high price for the most important line of raw material is preventing the industrial expansion that would otherwise occur at the present time. The product of every important producing plant has been sold several months in advance, and there is as yet no prospect of easier prices.—The Globe.

The Economical Gas Construction Co., Toronto, have been awarded the contract for the reconstruction of the building and plant of the Listowel, Ont., Gas Co., recently demolished by an explosion of a gas retort.

F. Tremblay's saw and lumber mills at Montreal, were damaged by fire April 9. Loss about \$22,000.

The James Cooper Mfg. Co., Montreal, have received through their Engineer in Halifax office, an order from the Dominion Coal Co., Glace Bay, N.S., for one of their cross compound corliss air compressors with piston inlet air valves, sizes, steam cylinders 22" x 42" and 42" x 42", air cylinders 22½ x 42". The compressor will have a capacity of 30 coal cutting machines. Weight of compressor, 138,000 lbs. They have also with same order for 25 Ingersoll coal cutting machines of their improved pattern. They are also supplying the Gowrie and Blockhouse with their plant, boilers, engines, compressors and coal cutting machines.—Halifax Mining Record.

The William A. Marsh Co., has been incorporated with a capital stock of \$200,000, with headquarters at City of Quebec, to take over the business of Messrs. W. A. Marsh & Co. that city, as manufacturers of boots and shoes.

The Plessisville Electric Co., Plessisville, Que., has been incorporated with a capital stock of \$12,000, to supply the inhabitants of the counties of Megantic and Arthabasca with heat, light and electric motive power, etc. Mr. Francis Hurtubise is manager.

Messrs. Morris, Feild, Rogers Piano Co., Listowel, Ont., made a shipment of two car loads of pianos to Germany a few days ago.

The capital stock of the Challenger Leather Goods Co., of Toronto, has been increased from \$2,000 to \$20,000.

The Imperial Cotton Co., with head office at Hamilton, Ont., has been incorporated with a capital stock of \$750,000, to manufacture cotton duck, etc. The provisional directors are C. T. Grantham, Yarmouth, N.S., J. M. Young, W. D. Long and John Knox, Hamilton, Ont.; Christian Kloeffer, Guelph, Ont.; James Kendrey, M.P., Peterborough, Ont., and T. P. Coffee, Toronto.

The Creelman Bros. Typewriter Co., of Toronto, have bought the rights and good will of Clement & Clement, Montreal, to manufacture the Rotary Neostyle—the new copying machine, now recognized as one of the necessary pieces of furniture of every office that handles a large amount of correspondence.

Messrs. J. M. Shuttleworth, D. A. McPherson and E. J. Checkloy are the provisional directors of the Central Peat Co., just incorporated, with a capital stock of \$50,000, to manufacture peat fuel, etc., with head office in Toronto.

W. A. FLEMING & CO.

MILL SUPPLIES

CAMEL BRAND BELTING

HOSE of all kinds

DRIVING ROPE

BELTING of all kinds



57 St. Francois-Xavier St., Montreal.

The Stratford Mill Building Co.,

STRATFORD, - - - ONTARIO.

STEEL BOILERS—all Sizes,

THE BROWN AUTOMATIC ENGINE,

FLOUR MILL MACHINERY, CORN MILL MACHINERY,

GRAIN CHOPPERS OF ALL KINDS.

Manufacturers
of....

We keep a Full Stock of Chain, Leather and Cotton Belting, Sprockets,
Pulleys and Iron Work of all kinds.

We have one of the Most Complete Boiler Plant in Canada.

Write for
Prices.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

The works of the Asbeatic Co., of Danville, Que., were destroyed by fire a few days ago; loss about \$200,000. The works will be rebuilt without delay. About 200 hands were thrown out of employment.

The Robb Engineering Co., Amherst, N. S., recently received an order by cable from their English representatives, Messrs. Dick, Kerr & Co., for two 250 horse power engines for the Grimsby & Cleithorpes Electric Tramways.

The electric light works at Cardinal, Ont., were destroyed by fire April 8.

Walter Dean, boat and canoe builder, Toronto, has installed a 6 h.p. electric motor, together with all the woodworking machinery necessary for the manufacturing of boats and canoes.

The American Blower Co., Detroit, Mich., have sent us their illustrated sectional catalogue, having reference to the A B C disc ventilating fans manufactured by them. The illustrations show how these fans are constructed, the different styles in which they are made, the different ways in which they can be placed, how power may be

applied to them, etc., and there are tables showing the capacities of fans of the different sizes, for moving given volumes of air, the speed at which they should be driven to obtain the best results, the horse power necessary to drive them, etc. The company will take pleasure in sending the catalogue post free on application of any interested persons.

Walter Dean, builder of high grade canoes and boats, Toronto, informs us that in addition to the launch which he is building for Mr. Langmuir heretofore alluded to, he is also building a similar one for W. F. Thomson, Rose Point Hotel, Parry Sound, finished in quarter cut oak and cherry, twenty-eight feet long, six feet six inches beam at a cost of \$750.00. It is being fitted with two four h.p. vibrationless gasoline engines. Another launch now under construction is for Mr. McLachlan, 94 Adelaide street west, Toronto, 20x5 feet, fitted with four h.p. vibrationless gasoline engines. Another a 20x5 feet steam launch is for Albert Tansley, Toronto, and one sixteen feet long for Mr. Dollery, of Guelph, finished beautifully with mahogany through-

out. These sixteen feet launches are handy little boats being supplied with 7 h.p. gasoline engines and are very speedy. The demand for these is very great, and Mr. Dean is working night and day to keep up with orders. This is evidently to be a very busy boating year, the demand for launches, boats and canoes are greater than ever.

The Montreal Cotton Co., are extending their electrical power house, which addition will develop 3,000 h.p. Part of this power will be required to operate their new mill, now equipped with 1,000 looms and necessary preparatory machinery. The company expect to have the machinery going by July 1, and will then be in a position to fill all orders for the requirements of the Canadian market in colored goods, linings, etc., etc.

The Boston Wood Rim Co., Toronto, has been incorporated with a capital stock of \$50,000, to manufacture wood rims and felloes for bicycles and vehicles, etc., and to take over the business heretofore carried on in Toronto by the Boston Wood Rim Co., an American concern. The provisional directors are C. W. Hurndall, Walter Sheldon and George Edwards, all of Toronto.

**THE
CUMMER
DRYERS**

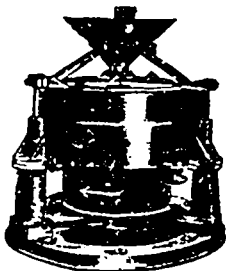
FOR
Mechanically Drying Everything

THE F. D. CUMMER & SON CO.,

HUNDREDS IN OPERATION.

CLEVELAND, OHIO.

ROCK



SEND FOR CIRCULAR.

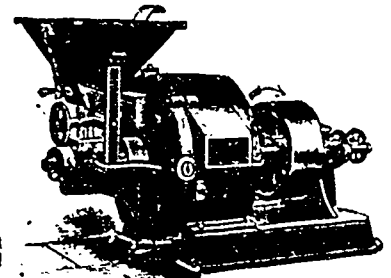
EMERY

MILLSTONES

CHEAP. DURABLE.

EMERY STONES are Made to Fit ANY MILL FRAME

MILLS



GRINDS EVERYTHING.

STURTEVANT MILL CO., 104 Clayton St., BOSTON, MASS.

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.

ROAD LOCOMOTIVE.

One result of the military operations in South Africa has been to direct attention in a very practical manner to the capabilities of the road locomotive in assisting the development of new countries. The British Government have decided to make large use of traction engines for the transport of stores and other war material in South Africa, and it is evident that if these locomotives are found successfully to stand the severe strains to which they will be put in carrying out military demands, a wide future is open for their employment in the conduct of ordinary peaceful commerce. As a substitute for animal labor, especially that of oxen, in taking traffic across rough country, the traction engine as now built has enormous advantages where power and speed are essential. It is well-known to be impossible to get more than about nine span of oxen to act together, and their powers are therefore extremely limited, however many there may be to each wagon. The traction engine is built for powers up to 120 horse power or so, and when the necessity arises, a ground anchor can be fixed and the engine set to work to haul itself up steep inclines or over the most broken ground. Under these circumstances it may be confidently predicted that the road locomotive will in the future be largely employed in taking traffic between outlying districts not connected by railway.

It is stated that no less than twenty-four traction engines, have recently been shipped to South Africa for the British Government. One of such delivered at Aldershot, Eng., is fitted with spring gear in both front and hind wheels, and has three road speeds

arranged by means of patent locking gears, so that only one speed could be put into gear at a time. It will carry water sufficient for a twelve mile run, and the load, including about eighteen tons in the engine, is sixty tons on ordinary roads. The engine is also fitted with an independent donkey pump for either filling tanks, water troughs for horses, or its own boiler. It is also fitted with a water lift by which its own tanks or independent ones can be filled. It is also used for driving centrifugal pumps and electric dynamos, and for travelling with a captive balloon.

At Aldershot the military authorities have proved that with an engine of this type, stores can be taken to Salisbury, a distance of about sixty miles, in a day. They have also proved its capacity to travel at the rate of eight miles, or even when necessary at the rate of twelve miles an hour. At the slowest speed the engine tested dragged a total of eighty tons on the level, and it travelled seventeen miles without additional water supply.

A special feature in connection with the British army road engines is that they are mounted upon flat railway springs. These have been found to act splendidly, and it is due to this arrangement that the gearing is saved from shocks which would otherwise cause breakage of teeth or in other ways disable the engine when travelling over rough ground or at high speed.

NIAGARA POWER FOR TORONTO.

An agreement has been reached whereby the Commissioners of the Niagara Falls Park have authorized the Ontario Power Co. to develop power from the Niagara

River, and it is intended in the near future to transmit a large amount of electric power to Toronto. In accordance with the conditions of the franchise the company have deposited the sum of \$30,000 with the Commissioners, that being the rental required for two years. The company will immediately proceed with the expenditure of \$200,000 on its works and plant.

The credit for their services, in the face of much opposition, in bringing the advantages of the Canadian side of the Niagara as a source of power to the attention of capitalists was given to Mr. Paine of Niagara Falls, Mr. Denniston of Philadelphia and Mr. German, M.P.P., who have labored for years on the project.

Among the directorate of the new company are Messrs. J. J. Albright, Buffalo, President; Gen. G. S. Field, Vice-President; Edmund Haas, Buffalo; F. D. Locke, Buffalo; W. M. German, M.P.P., Welland; H. C. Symmes, J. C. Cadham, and R. Paine, Niagara Falls, and Arthur C. Denniston, Philadelphia. Gen. Field will have the active control of the construction work. Mr. R. C. Broad of Buffalo is the Secretary-Treasurer.

An authoritative statement from one of the officers of the company is as follows —

“As early as possible after the monopoly possessed in the past by the Canadian Falls Power Company for developing power from the Niagara River was abrogated by the Legislature, the commissioners entered upon negotiations with other capitalists for the further development of the resources which lay at their disposal, with the result of the consummation of the agreement made to-day.

“The clauses in the agreement with the

John R. Barber, President.

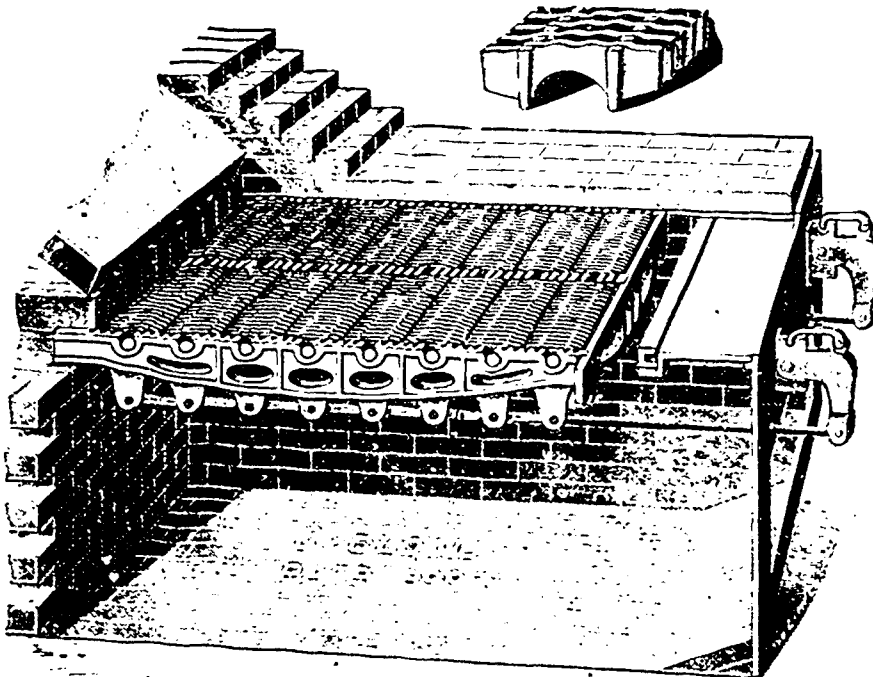
Geo. E. Challos, Sec.-Treas.

Henry Truesdell, Bus. Man.

THE CYCLONE GRATE BAR

Economy of Fuel and Increased Boiler Efficiency Guaranteed.

Cut shows construction of the Grate. No alteration of Plant necessary.



Simplicity, Durability, Economy.

Burns the Cheapest Fuel with the Best Results

A BOY CAN OPERATE IT.

Send for Descriptive Circulars and Testimonials.

COPY OF TESTIMONIALS

TORONTO, JAN. 19, 1900.

THE CYCLONE GRATE BAR CO., (Limited), Toronto.

DEAR SIRS:—We deem it only fair to you to express the appreciation and satisfaction which we have in using your Grate Bar.

As a fuel saver we think it is the only Grate with any merits in this respect, and for operating it is perfect.

Wishing your Company every success,

We are, yours truly,

“SEAMAN, KENT & Co.”

Manufactured by...

Cyclone Grate Bar Co. Limited,

Office: 10 KING STREET WEST, TORONTO, CAN.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

Ontario Power Company allow the company to take water from the Welland River near its junction with the Niagara. The water is to be carried by an open canal to the bluff and the park, a short distance north of the Macklem House. The first developing point is to be situated there, where the company expects to manufacture 30,000 horse power. After the development the water will flow into the Niagara River. It is provided, however, that when a greater development is needed the company is to have the right to construct an open canal through the park, so that, instead of turning the water already used into the river, it can be carried through the park to a point opposite the Falls; that is, the same water which will have already developed 20,000 horse power will re-develop 100,000 horse power, this being the calculated capacity of the second developing station. The canal through the park will be constructed, of course, after plans approved of by the Commissioners. It will be an ornament to the park. The works at the first development point will also be in accordance with specifications which will be passed upon by the Commissioners, so that

the appearance of the park will not be marred. All the earth removed in the excavations in the fore-bay and canals is to be placed in the crib-work along the river bank and is to form a driveway along the river. We believe that in this way a greater amount of land will be made than will be lost by the construction of the canal.

"The terms of agreement are that they shall pay as a fixed rental the sum of \$15,000 per annum, which is also the rental for the right to manufacture 10,000 horse power. When the company manufactures and sells another 10,000 horse power it will pay \$1 extra per horse power, and the rate for an additional 10,000 horse power will be 75 cents. This means that the company will pay to the Government a rental of \$32,500 per year for the power created under the first development. For whatever else is manufactured under the second development the company pays \$50,000 per year. Assuming then that the first and second developments are used to their estimated capacity, the revenue to the Government will be \$82,500. The contract is exactly on a line, so far as terms are concerned, 'with

that made with the Canadian Niagara Falls Company."

"We intend to construct works at a cost of \$2,000,000," said Mr. Paine, "and to produce as soon as possible from 30,000 to 60,000 horse power. Our prospects for the sale of the power could not be better, and we are already negotiating with several large electrical concerns, a large steel plant and other industries, the owners of which are desirous of securing cheap power. In regard to the question of transmission we are perfectly certain of being able to send our power a distance of one hundred miles. The practicability of this has already been proven, and we already regard Toronto as one of our chief consumers of power, for we have already prospective customers in this city. We will be able by using what is known as the Burlington Bay 'cut-off' to bring Toronto within 70 or 75 miles of our power-house, and we are also investigating the feasibility of using a cable through Lake Ontario, and if this can be done the distance will be reduced to about 40 miles. The transmission of power by means of a cable has already been successfully accomplished

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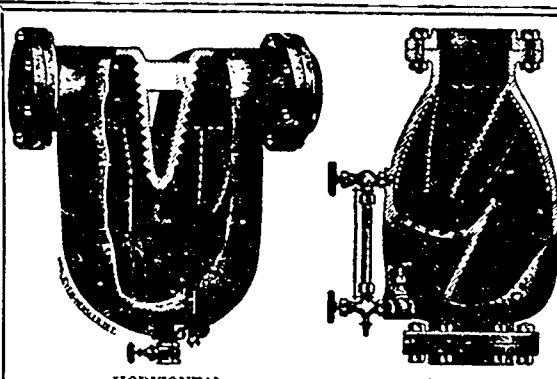
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with short distances. There is no question regarding the success of overhead transmission between the falls and this city, or for a greater distance, and the data which we are now obtaining leads us to believe that the cable idea is quite feasible. With electric power at the same price as Buffalo obtains it, there is no reason that I know of why Toronto should not increase greatly its industrial enterprises, and this cheap power is, in my opinion, necessary for Toronto to compete with even Canadian cities."

In answer to a question regarding the probable price of the power, Mr. Paine said that it must necessarily depend largely on the circumstances attending the delivery, but that the power would be certainly as cheap as it was sold in Buffalo. He believed, he said, that the cheaper power would also stimulate industries involving electro-chemical and metallurgical processes for the production of aluminum, carborundum, carbide of calcium, etc.

DEFINITIONS OF STEEL.

The definition of steel by the late James Park, Jr., which was embodied in the metal schedule of the tariff act of 1883 and has since been continued in all subsequent

tariff acts, is as follows: "All metal produced from iron or its ores, which is cast and malleable, of whatever description or form, without regard to the percentage of carbon contained therein, whether produced by cementation, or converted cast, or made from iron or its ores, by the crucible, Bessemer, Clapp-Grilliths, pneumatic, Thomas-Gilchrist, basic, Siemens-Martin, or open-hearth process, or by the equivalent of either or by a combination of two or more of the processes, or their equivalents, or by any fusion or other process which produces from iron or its ores a metal either granular or fibrous in structure, which is cast and malleable, excepting what is known as malleable-iron castings, shall be classed and denominated as steel."

James Bowron, vice-president and treasurer of the Tennessee Coal, Iron & Railroad Co., briefly defines steel as follows in a recently published account of the various processes of making steel: "Steel is an artificial compound of pure iron and carbon. The iron gives the strength and the amount of carbon regulates the hardness, toughness, and ductility of the compound; so that the carbon is kept low if a soft and ductile metal is desired for use in boiler plates, hoops, sheets or wire. It is carried some-

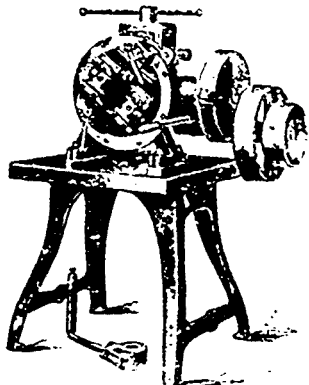
what higher for rails and decidedly higher for tool steel, cutlery, and drills." We have in our office the original manuscript of Mr. Park's definition.—Mr. James M. Swank, editor of Bulletin of American Iron and Steel Association.

A WONDERFUL DEPOSIT OF IRON ORE.

The newly discovered bed of iron ore at Michipicoten, owned by F. H. Clergue, is one of nature's wonders in her geological and mineral kingdoms. The iron is a mountain of solid ore some 200 feet in height, and at its base a lake of unknown depth, completely surrounds the citadel of metal. The outer margin of the lake is formed by a chain of mountains which encircle the body of water without an outlet for its escape. The water can be lowered only by blasting a channel through the mountain-range and permitting it to flow into the next level which is some one hundred feet lower, and this level can be carried to a yet lower basin by tunnelling the rocks.

The next location adjoining the Helen Mine is owned by the Minnesota Company,

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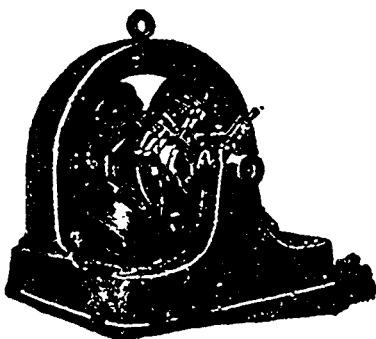
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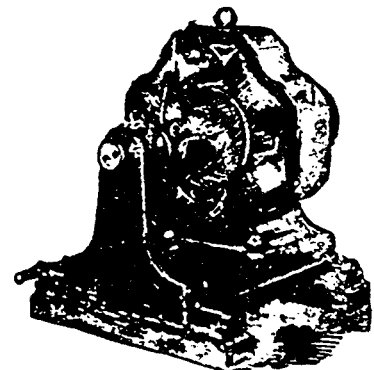
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and these all represent almost an unlimited amount of capital. These two firms propose to gather this really wonderful body of iron ore by the colossal work of tunnelling under these huge mountains of granite. That work accomplished, the gate is opened by which the companies can quarry countless millions of tons of rich iron ore and tram it to crushers with pockets ready to deliver the ore to the huge ships by which it is proposed to transport the metal to the smelters at Sault Ste. Marie.

A well informed mining man of life-long experience in the largest iron and copper mines in the world, recently returned from

a visit to the Michipicoton mines and stated to a representative of The Sault Ste. Marie Pioneer. "You cannot in reasonable language exaggerate either the quantity of iron opened to the world at the Helen Mine or the immense amount of wealth which it represents. Its magnitude far surpasses not only all the deposits of ore which I had hitherto seen, but my conception also as to the immensity of the store of wealth locked up within the rock bound and hidden recesses of this very wonderful belt of country. Many years of active work cannot possibly exhaust the body of ore in sight; and there is reason to believe that the

opening up of these mountains will reveal much larger deposits in the hidden recesses of the earth."

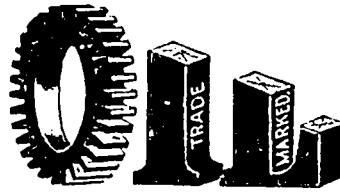
PROJECTED DOMINION EXPENDITURES.

The chief items of the projected expenditures by the Dominion Government for Ontario, as reported by Hon. W. S. Fielding, Minister of Finance, in his recent budget speech, is as follows:—Brockville Drill Hall, \$10,000; Ingersoll Postoffice (to complete), \$55,000; Kingston Drill Hall, \$31,500; London Drill Hall, \$20,000; Sarnia public buildings, \$10,000; Woodstock Postoffice, \$21,000. The New Westminster public building, burned in 1893, will be restored at a cost of \$40,000, of which \$25,000 is asked this year, the remainder having been voted last year. For harbors and rivers the following sums are asked:—Ontario:—Bowmanville harbor, \$3,000; Bruce Mines wharf, \$5,000; repairs to piers at Burlington Canal, \$20,000; Collingwood harbor, \$40,000; Godorich breakwater, \$18,000; Owen Sound harbor, piling, etc., \$11,000; Port Elgin breakwater, \$1,000; Port Stanley, repairs to piers, \$7,000; Providence Bay wharf, \$2,000; Rondeau harbor, complete repairs to piers, \$8,000; Saugeen River breakwater, \$3,400; Shequindah, \$1,000.

The expenditure on canals will be \$2,311,500, as against \$2,944,453. The main items are:—Soulanges Canal, \$350,000; Lachine Canal, lock, \$500,000; north channel, St. Lawrence River, \$200,000; Galops channel, \$100,000. For the improvements at Port Colborne harbor \$100,000 will be asked, in addition to the \$350,000 voted last year.

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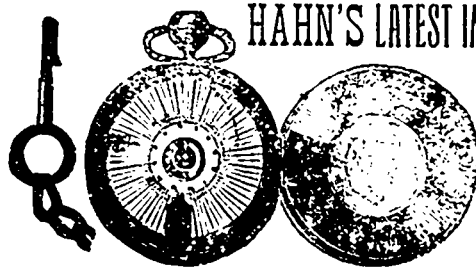
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This Clock received the First Prize at World's Fair.

IMPORTANCE OF GOOD ROADS.

At some season of the year any road may be fairly good, but most of the time most of the roads, under present road laws, are bad. When the roads are dry and hard then the road supervisor comes on with his men and teams and tools and tears them up again, ready for the first rains to come and passing



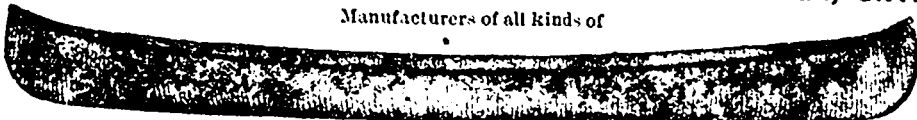
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vehicles to work the clay into the consistency of a brick-yard pit.

The whole scheme of road improvement in most states lacks system and method. Crude ideas, devoid of any engineering knowledge whatever, prevail in what work is done. The "road boss" gets his men out and sets his plows and scrapers going at haphazard usually, and too frequently he locates all the statutory labor on some favored spot, while nine other pieces of road in his district are practically impassable.

The road is plowed up and dragged into middle without any attempt at drainage, the surface left in humps and hollows, and only seldom is it rolled or compacted. The ditches are not continuous, and the water drained from the middle goes to the side to lay there and seep back under the middle, and soften what should be made a fair foundation.

What is first needed to remedy the roads is a dose of sensible legislation, doing away with the feudal system now obtaining and to a large extent responsible for the non-improvement of country roads. After that good men will be required and modern machinery will be necessary. With the exception of a good and cheap road roller, there is plenty of good road making machinery, but the means is at hand for supplying this with any traction engine almost. Broad-tired wheels designed for road roller use could be made for use on almost any traction engine at a merely nominal cost, and the engine could be hired by the township at a cost so low that it would not pay the interest on a regular road rolling engine at their abnormally high cost.

Every township now has one or several big traction engines capable of not only being fitted up as a road roller, but of crushing stone and hauling the road graders for throwing up the road and making the side ditches.

Other road-making machinery there is in abundance and variety. There is neither sense nor economy in making roads bad by hand now, when, by the application of good machinery and common sense engineering ideas, they can be made at least fairly good at no expense for material.—Thresherman's Review.

THE ST. LAWRENCE CANAL SYSTEM.

Canada has spent more than \$75,000,000 on her canal systems since Confederation in 1867. Those in which the people of the two cities are most interested at this time are the Welland and St. Lawrence River systems. The River St. Lawrence with the system of canals established on its course

above Montreal, Lake Ontario, the Welland Canal system, Lake Erie, St. Clair, Huron and Superior, with connecting canals, afford an uninterrupted course of water communication extending from the Straits of Belle Isle to Port Arthur at the head of Lake Superior, a distance of 2,260 miles, and Duluth, a distance of 2,384 miles.

The original plans of the Canadian Government for a waterway of a uniform depth of fourteen feet date back farther than 1872. The scheme was set in motion in the late Sir John A. Macdonald's time, and at one time contemplated a channel of fifteen feet depth from Port Arthur to tidewater. Subsequently it was decided to substitute a uniform depth of fourteen feet, which was then considered to be all-sufficient for the needs of the lake-carrying trade. This was before the days of the North West and North Land, and the great steel carriers built for the Rockefeller interests. These are practically ocean boats doing business on the Great Lakes and did not enter into the calculations of the most optimistic Canadian politicians. The canal was opened in 1883 for vessels drawing twelve feet and in 1887 for vessels drawing fourteen feet. The Welland Canal has two entrances from Lake Ontario at Port Dalhousie, one for the old canal and one for the new. From Port Dalhousie to Allanburg, nearly twelve miles, both canals are in operation. From the junction at Allanburg to Port Colborne there is only one channel. The plans of the Canadian Government include, also, harbor improvements and Government elevators at Port Colborne, with Government control of fees and charges.

The St. Lawrence River canal system was necessary to enable returning vessels to surmount the great fall of 207 feet from Lake Ontario to the level of the river at Montreal and avoid the dangerous rapids which sacri-

fice other interests to picturesqueness. Beginning a few miles below the town of Prescott, Ont., the Galops Canal enables vessels to overcome the rapids at Point Aux Iroquois, Point Cardinal and the Galops. The canal is 7½ miles long. The Rapide Plat Canal is four miles long and was built to enable vessels to avoid a stretch of ugly rapids. The Farran's Point Rapid is skirted by the Farran's Point Canal, three-quarters of a mile in length. The lift at this point is only four feet. These three canals are collectively known as the Williamsburg canals.

At Dickinson's Landing, five miles farther down the river, the Cornwall Canal begins. This is the second most important canal in the St. Lawrence system. It is 11½ miles in length, ending at the brisk town from which it derives its name. The Cornwall Canal extends past the Long Sault Rapids and overcomes a lift of forty-eight feet. The Beauharnois Canal, which now gives way to the fine new Soulanges Canal, had a rise of 82½ feet, the difference between the levels of Lake St. Francis and Lake St. Louis, to overcome.

The new canal is splendidly equipped to perform the task with dispatch. The Soulanges Canal is fourteen miles long and is built to enable vessels to avoid sixteen miles of rushing rapids in which are included the Coteau, Cedars, Split Rock and Cascades. The Soulanges Canal leaves Lake St. Francis at MacDonnell's Point, just below the village of Coteau Landing. For 1½ miles it follows a straight line, touching the margin of the river about a mile from the entrance and then sweeps around to the northeast behind the village of Coteau du Lac. It is then continued by a second tangent of some 8½ miles in length, passing about a mile inland from Cedars Village. From there the canal bends slightly to the north and joins the Ottawa River about two miles from

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its confluence with the St. Lawrence at Cascades Point. The lift of 82½ feet is overcome by four locks, 70½ feet being at the Cascades or eastern end, where the bluff forming the right bank of the Vaudrouil branch of the Ottawa River gives an opportunity to locate three of the locks in the first mile, each having a lift of 23½ feet. There is an interval of over two miles between the third and fourth locks, the latter being about three miles from the lower end. At the upper lock the lift is variable; about 12½ feet at mean water of Lake St. Francis and fifteen feet at extreme high water. About 1,000 feet above lock No. 4 a pair of guard gates is erected for safety to the lower locks in case of accident. At the Lake St. Francis entrance there is a guard lock by which the surface level of the summit can be regulated without interruption or danger to navigation. At periods of high water this will be used as a lift lock. Each lock in the Soulanges Canal is filled and emptied through culverts in the side walls, from which cast-iron pipes, each thirty inches in diameter, and ten on each side, lead into the bottom of the chamber. The lock will fill in five or six minutes, and lockages will be made in twelve to fifteen minutes. Each lift lock is provided with a heavy breast wall at its

upper end, so that if a vessel goes ahead too far it will strike against the breast wall and probably damage itself instead of carrying away the gates. The latter are very solidly built. One leaf of the lower gates of the high lift locks at the lower end of this canal weighs upwards of 180,000 pounds. The timber used is Douglas spruce, which was hauled from the Rocky Mountains for this purpose. The Soulanges Canal will accommodate any boats that can make the Welland Canal passage. Its capacity, at four lockings an hour, based on one third west-bound traffic, is estimated at 20,000,000 tons in an ordinary season. Work on the canal began in 1893. The estimated cost was \$5,250,000, but this figure has been exceeded. Thomas Monro was the chief engineer.

The last link in this chain of river, lake and canal communication between Lake Ontario and the Canadian metropolis is the Lachine Canal, 8½ miles long, extending from the town of Lachine to Montreal. It overcomes the St. Louis Rapids, the first of the series of rapids which bars the ascent of the St. Lawrence River. They are 986 miles from the Straits of Belle Isle. The capacity of the lock chambers in the Lachine Canal is uniform with that of the others in

the system, 270 feet by 45 feet, and the total rise or lockage is forty-five feet.

Shoals in Lake St. Louis, Lake St. Francis and the river were removed and when navigation opens in the spring of 1900, a Canadian dream of two decades ago will have been realized. Canada stands ready to make the light of her life for a share of the constantly increasing harvests of the North-western fields. The dominion was never in a position before to bid with a show of success for a share of the lake-carrying trade.

CANADIAN EXPORT.

A correspondent of The Paper Mill has been measuring up the extent of Canadian exports of pulp wood, pulp and paper as follows:

The value of the exports of pulp was \$1,274,276, as against \$741,959 in the fiscal year 1897-8, that is, they increased by \$532,317. Nearly the whole of this important gain is to be credited to the British market. Last year Britain's imports of pulp from Canada amounted to \$671,704, as against only \$164,138 the year before, bounding up \$517,566 in the single twelvemonth. To put the case otherwise, Britain's imports of Canadian pulp were last year more than four times as great as they were the year before

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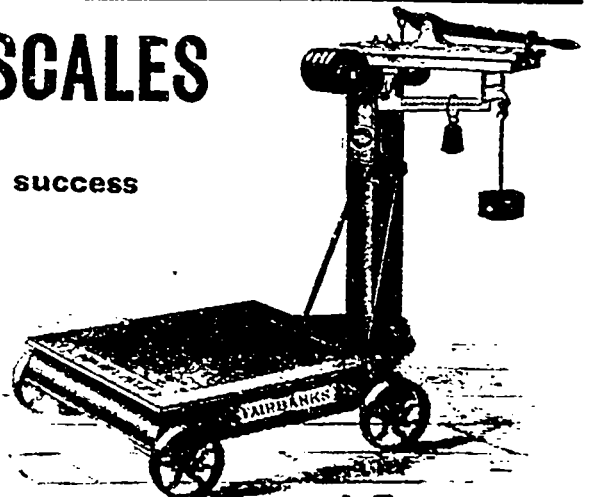
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Contrary to expectations, the increased purchases on the part of the United States were inconsiderable. Whereas in 1897-8 the United States took \$576,720 worth of Canadian pulp, it took last year but \$578,229 worth. It is probable that there were few deliveries made in the first half of last calendar year (which is the last half of the last fiscal year) upon the new contracts entered into with American buyers. Of other importers Japan and Mexico are all that is worth mentioning, Japan taking \$21,027 worth and Mexico \$3,296 worth.

Let us see how the different provinces contributed to this total exportation of a million and a quarter dollars' worth of pulp. New Brunswick furnished the lion's share, its exports aggregating \$420,520, as against \$145,405 the previous year. Quebec comes next with a total of \$319,183, as against \$270,136 the year before. Ontario's exports are valued at \$289,521, as against \$132,565 the previous year. Nova Scotia's exports amounted to \$232,646, as against \$193,853 in the previous year. British Columbia, which never exported a pound before, sent out pulp to the value of \$12,406 last year.

In pulp wood the exports show a material gain, aggregating \$842,086, as against \$711,152 in 1897-8. The United States, whose purchases in 1897-8 amounted to \$677,221, bought \$809,795 worth last year. Britain bought less, its purchases in 1897-8 amounting to \$33,291, and last year to only \$28,099. Japan took \$3,900 worth.

Quebec still stands at the head of the provinces exporting pulp wood, sending out last year pulp wood to the value of \$597,872, as against \$536,662 the year before. Ontario also increased its exports, which amounted to \$239,945 last year and to \$173,730 the year before. British Columbia, which never exported before, sent out a

quantity valued at \$3,900. Nova Scotia exported only \$252 worth, as against \$800 worth the year before. New Brunswick, which exported none the previous year, exported next to none last year, \$77 being all that is credited to it on this account.

The only trace of any exports of paper is \$24,134 worth of wall paper, nearly all of which went to the United States.

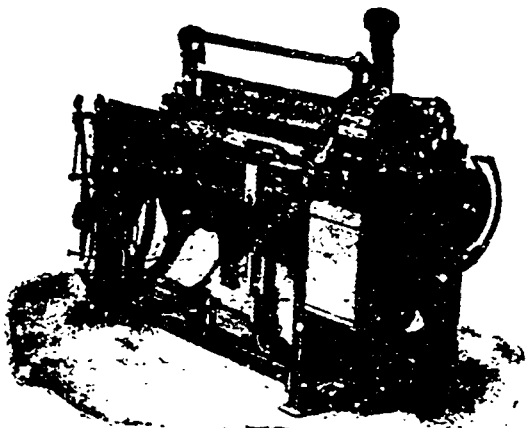
In the imports wood pulp figures to the amount of \$19,086, almost the whole of it coming from the United States.

The imports of paper are not presented under any single heading, but are to be collected from all parts of the report. Below they are arranged in two columns, the first giving the total value of each description, the second giving the value of what came from the United States:

	Total.	U.S.
Albumenized paper, etc.	\$78,557	\$75,330
Paper bags	8,396	7,747
Playing cards	26,338	23,323
Calendered paper	11,744	8,895
Cardboard	33,099	19,312
Envelopes	26,261	18,986
Felt or strawboard, tarred.	13,677	13,521
Felt or strawboard, not tarred.	1,727	1,228
Wall paper	80,024	70,173
Bordering	5,815	5,748
Leatherboard	9,513	9,482
Millboard	19,036	17,840
Union collar cloth (unfinished)	2,444	2,444
Union collar cloth (finished)	1,096	1,072
Papeteries, pads, etc.	400,219	277,233
Printing paper	133,983	104,433
Boxed papers	10,128	5,419
Strawboards in sheets or rolls	16,642	15,292
Window blinds	953	953
Wrapping paper	18,495	9,250
All other kinds	359,517	223,131

ALUMINUM.

Aluminum is now very frequently used as an electrical conductor. The price of copper has become so high that it is actually advantageous at the present time to make wire of this new metal, which a few years ago was so scarce that it was little more than a curiosity. So recently as in 1890 not more than a few pounds were consumed in the United States. It sold at \$8 a pound. It was made at only a few plants in Europe and not at all in the United States. There is still only one manufactory in this country, but its processes have been so simplified that the price has been reduced by successive cuts to near thirty cents a pound. The total output of this American plant in 1899 was 5,200,000 pounds, much of it made by Niagara power. It is said that plans are on foot to increase this output very greatly within the coming months. Electrical engineers seem not to be prepared to say that aluminum is as good as copper in electrical work, the price being the same, but they are interested observers of the experiments with the new metal. Its lighter weight as compared with copper gives it advantages notwithstanding its lower conductivity. Of course, relative powers of endurance will be a factor, and not until experience has been more extended will there be a body of data at hand which can be regarded as entirely reliable. A number of lines have been laid down with aluminum wire in the West. Perhaps one of the most interesting in the East is that carrying the power from a waterfall to Hartford, Conn., a distance of about twelve miles. Three aluminum cables are in use, in all over 60,000 pounds of metal. This line was designed for 20,000 volts, though some in other places are said to be carrying much higher voltages. In this instance according



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to the Electrical Review, which gives an interesting account of the enterprise, there was a "very considerable saving in using aluminum over the corresponding copper. It is not unlikely that the price of aluminum can in time be still further reduced. Probably it will be a competitor in the electrical industries which copper will have to reckon with permanently. - The Manufacturer.

THE STORY OF KHAKI.

The story of khaki is one of the industrial romances of the century. It is worthy to rank with that of the Jacquard loom, the mercerising of cotton or the invention of bleaching powder, says a writer in the London Daily Telegraph. It has never been told at length, and the time for doing so has not yet come. But the following brief account will serve to show that, as in other discoveries of far-reaching importance, energy and patience and skilled knowledge were brought into play before success was at length attained.

The use of an olive dye in connection with the clothing of our troops in India dates back for many years. The tint was devised, in the first instance, by native dyers, who used for the purpose pigments which they were unable to fix, and also unable to prepare, in a uniform state. A traveller for a Manchester firm was one day taking a railway journey in Northern India, and found himself in the company of an Anglo-Indian military officer. The conversation drifted to cotton drill and the regimental officer made the remark that the first Manchester man who succeeded in producing an absolutely fast khaki dye would make his fortune. The remark made a deep impression upon the

traveller, who, upon returning home, set to work to study the reason why the olive and brown dyes hitherto used always washed out after a few applications of soda. He put himself into a communication with a skilful dyer, and the two experts set themselves the task of discovering a method of fixing these dyes upon cotton yarns or fabrics.

The first deliveries of fast khaki were produced by means of mixtures of oxide of chromium and oxide of iron, which were carried into effect by mixing a solution of chrome alum and sulphate of iron, and after being dipped into this, the cloth was passed through an alkaline solution, such as carbonate of ammonia or potash. Darker shades were obtained by re-dipping, and the darkest shades of all by drying the fabrics before passing them through the alkali. This process is now open to any dyer to employ, but improvements in it are the subject of a patent which is still in existence, and within the last eighteen months a rival genius has patented an altogether different process, which is being used in the manufacture of goods already supplied to various governments.

The so-called Government shade is that which has been adopted by the War Office, and is now in general use at the seat of war, while, during the month of February, it has been adopted by the New Zealand Government as well. The shade used in certain branches of the Indian army and other Asiatic States is somewhat darker, and a ruddy tint which differs from both of them is supplied for use in Egypt. There are many difficulties in the production of a uniform tint, as firms who have gone into the trade without previous experience are learning to their cost. During the present pres-

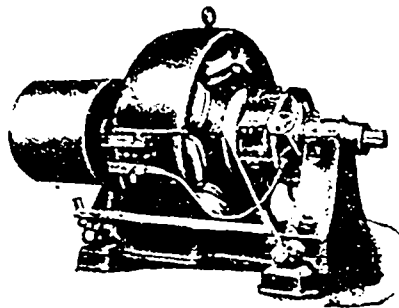
sure, the Government factory at Pimlico has had to deal with deliveries in which the shade of khaki varied from light to dark in case and the same piece of cloth.

When khaki cotton is said to be fast-dyed, the meaning is that no amount of washing, either in laundries at home or by native dhobies upon the banks of running stream in India, will affect the color. The rapid test for arriving at this result consists in boiling the fabric for a prolonged period in a solution of caustic soda or a similar alkaline reagent. By means of per-oxide of hydrogen it is also determined whether the color is fugitive under the prolonged action of sunshine and air. It is never pretended that the color is impervious to the attacks of acid, and indeed the now fashionable material is being introduced for ladies' dresses at home in a form in which striped and spotted designs are produced upon the cloth in a printing machine by the action of an acid, which turns the parts affected to a whitish hue. It is for this reason that when khaki uniforms are worn for a length of time the wristbands and collars show lines of white, where the dye has been driven out by the contact of the perspiration from the skin.

Up to the present less success has attended the attempt to impart a khaki shade to woollens. Not only is the dye less permanent, but the peculiarities of the woollen fibre make it difficult to produce any uniformity of tint. Half a dozen pieces of serge, dipped in the same vat, will give almost as many variations of color. For this reason troops when clothed in serge as the men now under arms in South Africa will presently be, as the southern winter comes on, cannot present the smart appearance of a regiment wearing cotton drill.

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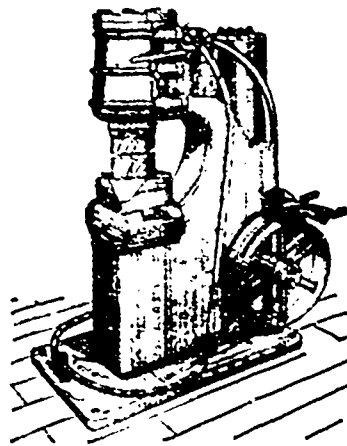
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OF INTEREST TO EXPORTERS

Canadian exporters are interested in the announcement of Messrs. Pitt & Scott, foreign freight brokers and express carriers to all parts of the world, 39 Broadway, New York. Many manufacturers are inclined to make shipments of their products to different parts of the world, and would no doubt do so if they knew just how to proceed. Messrs. Pitt & Scott tells them. They issue through bills of lading to any destination, quote freight rates, collect invoices against delivery, and give all information concerning shipments.

In a circular issued by them regarding freight shipments they announce as follows:

In applying for rates on consignments for abroad, the following particulars should always be given: (1) Number of packages; (2) How packed, that is, cases, bags or bales; (3) Total weight; (4) Total measurement; (5) In the case of shipments of machinery, or extra heavy goods, the separate weight of each piece.

We supply blank forms of shipping instructions on application, one of which should be filled up and handed to us with every shipment. The following are the particulars which we require: (1) To whom goods are consigned; (2) Number of packages; (3) How marked; (4) Contents; (5) Value; (6) Are we to insure; (7) Who pays freight, shipping and insurance charges, shipper or consignee; (8) If bills of lading are required, to whom same are to be mailed, shipper or consignee.

We will issue through bills of lading (negotiable on any bank) to any part abroad, and freight and all charges can either be prepaid or collected from the consignee as desired.

The amount of shipper's invoice can be collected from consignee against the delivery of goods if required, or we will obtain through our agents his acceptance of a bill drawn by the shipper, before effecting delivery—thus safeguarding shippers against any possible loss.

We will be pleased at any time to furnish shipper with information as to the financial standing of foreign business houses, and when we have not the information on file we

can always obtain it from our correspondents abroad.

Regarding exhibits at the Paris Exposition, now in progress, they say that they are prepared to offer special advantages to intending exhibitors and can quote lowest inclusive rates for the transportation of exhibits through from any point in Canada or the United States to space allotted in Exhibition Building and for return of same after exhibition is over if required. They are also prepared to undertake the entire care of exhibits while same are at the exposition, and will quote inclusive rates for this service, as well as representing exhibitors on the jury of awards and taking complete charge of his interests at the exhibition.

The year 1899 has passed into the annals of the iron trade of the world as a remarkable one. The values of iron, steel, and all the products thereof enhanced by from fifty to eighty per cent. (50 per cent. to 80 per cent.) over the values of the previous year, great scarcity of iron and fuel everywhere in the producing countries, a rate of consumption unparalleled in the history of the trade, and a production of pig metal never before equalled in any one year.

The United States, the chief iron market of the world, produced 13,620,703 gross tons of pig iron as against 11,773,934 tons in 1898, an increase of 1,846,769 tons, or nearly 16 per cent.

In 1898 there was made 2,121,254 tons more than in 1897, and in 1895 2,788,920 tons more than in 1894. This will give some idea of the enormous strides that the United States iron producers have made in the development of their business during the past few years. The approximate consumption of iron in the United States for the year ending 31st December, 1899, was 13,774,727 tons, the consumption exceeding the production and lowering the available

THE IRON INDUSTRY IN 1899.

At the recent meeting of the Canadian Mining Institute, Mr. George E. Drummond, of the Canada Iron Furnace Co., Montreal, read the following most interesting paper relating to the world's production of iron in 1899:

CHARLES F. CLARK, President.

JARED CHITTENDEN, Treasurer.

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- War Eagle Mine.
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stocks in yard until they amounted to only some 64,429 tons at the close of 1899, as against 291,233 tons on December 31, 1898.

The number of furnaces in blast at the close of 1899, was 289, as 202 on December 31st of the previous year.

The demand for iron is as active as ever, and the consumption is going on at such a rate that with limited vessel freighting capacity from the Upper Lakes, it is doubtful whether more than sufficient ore for actual requirements can be brought down to the eastern furnaces during the coming year. It is therefore, safe to say, that prices will remain fairly high throughout 1900.

GREAT BRITAIN.

The actual figures of production and consumption for 1899 are not yet to hand, but the output will probably approximate somewhere about the figures of 1898, viz., about 8,600,000 tons. The stocks in public yards and in maker's hands have, however, been very largely drawn upon, so that the total consumption in England and Scotland will exceed that of 1898, and the stocks on hand at the close of last year will be reduced to a very small quantity. The falling off in the shipments of Scotch pig iron to Canada, which has been a marked feature of the trade during the past few years, was completely changed in 1899. In Scotch pig

iron alone the shipments to British North America exceeded 10,000 tons, against about 2,000 tons in 1898. This large increase is due to the fact that American furnaces were almost unable to supply the local demand, and the same can be said of Canadian furnaces. It is evident from the present condition of the market that a considerable quantity of Scotch iron will come to Canada during the first half of 1900 at least, as Scotch prices, although high, are still lower than American figures for delivery in the eastern part of Canada. It is, however, well to notice that while the climax in price has apparently been reached in the case of American iron and steel, such is not the case in Great Britain. The enormous development in the export trade in British coal has increased the cost of all iron products to such an extent, that there has been a marked advance in all classes of iron and steel since the beginning of 1900, and it is evident that this will continue during the present scarcity of coal. The war in South Africa is almost directly the cause of this advance in the price of coal, and the scarcity of shipping will also further increase the cost of material delivered on this side, owing to the expected advance in freights during the coming season of direct navigation. Scotch Warrants opened at the beginning of 1899 at 49 7, and closed at the end of the year at 66 11, showing a raise of 17.4 per cent. The highest price reached was in July, when they touched 75 7, and the subsequent break in the market has been due entirely to the position of the financial market, and the uneasiness in England on account of the South African war. Iron masters, however, do not hesitate to say that the Scotch trade is in a very firm position, and there is no likelihood of any material decrease in prices for a long time to come.

EUROPEAN PRODUCERS

Figures are not yet to hand from the various iron producing centres of Europe, but Germany and Luxemburg, who stood third on the list in 1898, producing 7,232,988 tons, have experienced great prosperity in the trade during 1899, and when the figures are brought down they will probably show a production in 1899 exceeding that of the previous year. Basing on 1898 figures

The Underwood Typewriter



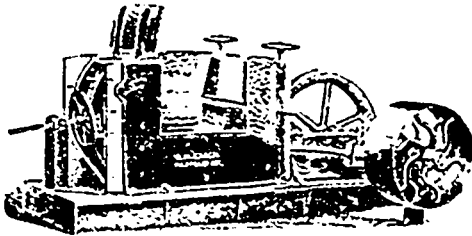
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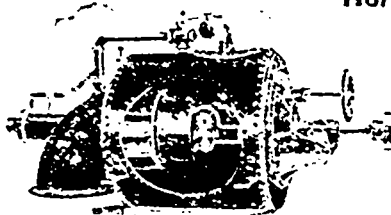
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the European iron making countries stand in the following order as producers :

	METRIC TONS (2,204 lbs.)
Germany and Luxonburg....	7,232,988
France.....	2,534,427
Russia and Finland.....	2,222,469
Austria and Hungary.....	1,308,423
Belgium.....	979,101
Sweden.....	531,766
Spain.....	261,799

CANADA.

Canada, which in 1898 occupied the tenth position among the iron producing countries, enters now in earnest upon her career as an iron producer. Advices received from Hamilton and Deseronto, Ont., New Glasgow, N.S., and Radnor Forges, Que., without including any allowance for the output of charcoal iron from the Drummondville furnace (the records of which are not yet to hand) show the largest output in the history of the country, viz., 101,931 net tons of pig iron, 23,000 tons of steel ingots, and 3,900 tons of steel forgings.

The year has witnessed the formation of the Dominion Iron & Steel Co., to smelt at Sydney, C.B., the ores of Newfoundland with the mineral fuel of Nova Scotia. These furnaces are planned upon a splendid scale. It is said that 1,000 tons of iron per day will be the rate of output. This, at the lowest rate of calculation, would add 300,000 tons of iron per annum to the present Canadian output. Details of the plant and of the actual output are not at the moment available, but it may be relied upon that the works will go into operation within the next year on a very large scale of operations.

The new furnace plant of the Canada Iron Furnace Co. at Midland, Ont., decided upon during the year 1899, is now rapidly nearing completion, and will go into blast about the 1st of May next. The Midland works will have an output of at least 30,000 tons of iron per annum, these two new enterprises helping to place Canada, as a producer of iron, upon a level with Sweden.

For several years past the Canadian Mining Institute has been devoting considerable

attention to the task of educating the Canadian public upon this most important question of iron production. At last these efforts are being rewarded. Legislators and capitalists alike are evidencing an interest in the industry that they have never shown in the past, and we believe that the experience of the next few years will serve to strengthen the faith of the Canadian people in their own country with regard to its possibilities as an iron producing centre.

A notable feature of the year's work is the good progress that has been made in the matter of developing the iron mines of the country. Considerable activity has been shown in this respect in the Ottawa district, and also at various points in Ontario and Quebec, but by far the best discoveries and greatest development work has been done in the Michipicoten, Lake Superior district. The members of this Institute have long held that a thorough investigation would prove that the Canadian side of Lake Superior is as rich in iron as the American side, and the work now in progress in the

district mentioned proves the correctness of this view.

The Helen Red Hematite mine, on Boyer Lake, in the Michipicoten district, was located by Mr. F. H. Clergue, of the Lake Superior Power Co., Sault Ste. Marie, less than a year ago, but already this gentleman, with indomitable pluck and energy has not only uncovered the deposits, but by means of diamond drills has demonstrated, at latest accounts, that he has over 4,000,000,000 tons of high class Bessemer ore in sight. He has planned and almost completed the first link of the Algoma Central Railway from Michipicoten Harbor to the Helen mine, and thence onward to a point of the C. P. Railway. This line, when completed, will make the first link of a railroad destined eventually to reach James Bay, and open up a country rich in natural resources. At Michipicoten Harbor Mr. Clergue and his company have now under construction a magnificent dock for the handling of iron ore outward to vessels. This dock will have a capacity of 500 tons per hour. The ore is

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SPEAKS VOLUMES.

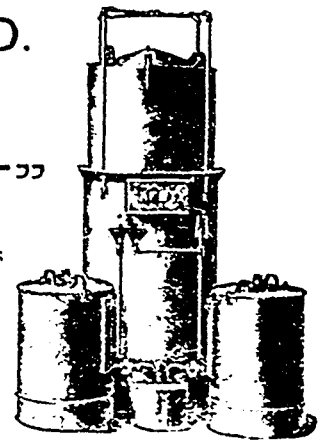
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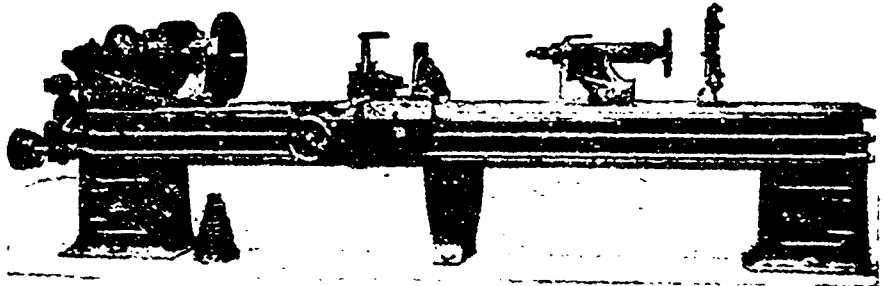
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of most excellent quality, comparing favorably with the very best grades from the American side of Lake Superior, and will find a ready market not only in Canada but also in the United States, reversing some what the condition of affairs that has existed for the past few years, when the Ontario furnaces had to rely to a very large extent upon the product of American labor and American mines, in the ore as well as in the fuel department.

The Nova Scotia Steel Co. report that in addition to the mining of ore for use in their own plants in Nova Scotia, they have largely increased the production of Wabana ore for shipment abroad, their output for 1899 aggregating over 300,000 tons; 190,000 tons of this going to Germany and Scotland, about 90,000 tons to the United States; the balance being used in the Ferrona furn

aces. They advise that the outlook for mining operations in 1900 at Wabana is equally as good as last year, and that they have already sold upwards of 200,000 tons for delivery in Philadelphia during the coming season.

It is to be hoped that field development work will be carried on vigorously throughout Canada from now forward. There will be ample market for the product of all the iron ore mines likely to come into operation during the next few years. It is reasonable to suppose that the furnaces at Sydney and North Sydney will be glad to have a supply of Canadian ore of the right quality for mixture with Newfoundland ores. This will be entirely in their interest, so that mine prospectors and owners have a wide open field for their energies and enterprise in developing Canadian iron mines.

While the work of development, so far as

the mines are concerned, is not at all likely to be over-done, the same may not be equally true in the smelting department. By the close of this year the output of iron from Canadian furnaces will considerably exceed the consuming power of the country in so far as actual foundry practice, upon which we have most largely depended in the past, is concerned. The furnace owners will now have to undertake operations in the manufacture of steel of all descriptions, so as to work up a large part of their outputs into higher products than the majority of them have touched in the past. If this is carried out successfully, and on a modern basis, a great part of the output of the new furnaces can be absorbed within the country, and so far as the new works at Sydney are concerned, it is firmly believed that a very considerable part of their output will find

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The latest device for

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By Daylight

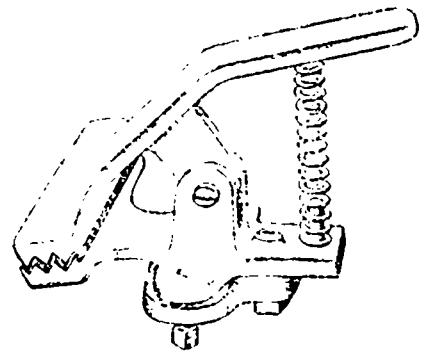
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**Hardware Manufacturers
and Capitalists**

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Clamp, for sale, or will place on Royalty.

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For full particulars address at once

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PLANING MILL STEEL PLATE EXHAUST FANS

For removal of a fuse from Wool-Working
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CYCLONE DUST SEPARATORS

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wool equal to Alizarine
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but at a much
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a market among the consumers of Great Britain and Continental Europe. With proper management the business can be made entirely successful, but it will have to be planned on a thoroughly modern basis in every department.

In considering the causes that have brought about the present most encouraging condition of the iron industry in Canada, naturally the principal credit should be given to those first adventurers in the enterprise of iron making, who have had to fight for a footing under the discouraging conditions that have existed during the past few years. Granting them first due praise for what they have done to establish the industry, we must also acknowledge cordially the good will shown by the Government and the Loyal Opposition in the Dominion House, in settling the question of the iron duties and bounties upon something like a permanent basis, thus encouraging capital to invest in the enterprise of iron making in Canada, an enterprise which we believe will do more for the building up of the country than almost any other industry, and which may yet become an important factor in Imperial considerations.

MICHIGAN LUMBER MILLS FOR CANADA.

Michigan lumber men who formerly operated extensively in that State will this year contribute largely to the extensive output of the Georgian Bay district in Ontario. The reasons for this are the waning of the pine timber interests of Michigan, the marked boom in lumber in American markets last year, and the Act of the Ontario Legislature, which requires that all lumber cut from Crown lands be manufactured in the province.

The result of the Ontario legislation has been the transfer of the Michigan mills to Canada. Last fall the W. & A. McArthur Co., of Cheboygan, purchased the McKinnon & Walsh mill at Little Current, Ont., and a large force of men are at work fitting up the plant, which has been idle for seven years. It will have a capacity of 120,000 feet daily, and the company has put in 20,000,000 feet of logs to be manufactured during the coming summer. The Moulthrop Lumber Co., of Bay City, has purchased the Moiles mill on John's Island, in Georgian Bay, will cut about 15,000,000 feet of logs during the summer.

The plant of the Minor Lumber Co., at Alpena, Mich., has been purchased by Edmund Hall, of Detroit, and the mill will be taken to Spanish River, Ont. It is estimated that this mill will cut 10,000,000 feet this year. Mr Hall's company will also erect a mill at Sarnia, Ont., which will have a capacity of 20,000,000 feet. Work on it will be commenced at once, and it is intended to have it ready for operation by the middle of July. Logs for it will be rafted from Georgian Bay, where the company has 400,000,000 feet of timber. The new mills are being built at Midland, Ont., and all the mills there will be operated day and night, and throughout the entire Canadian timber district the operations will be extensive.

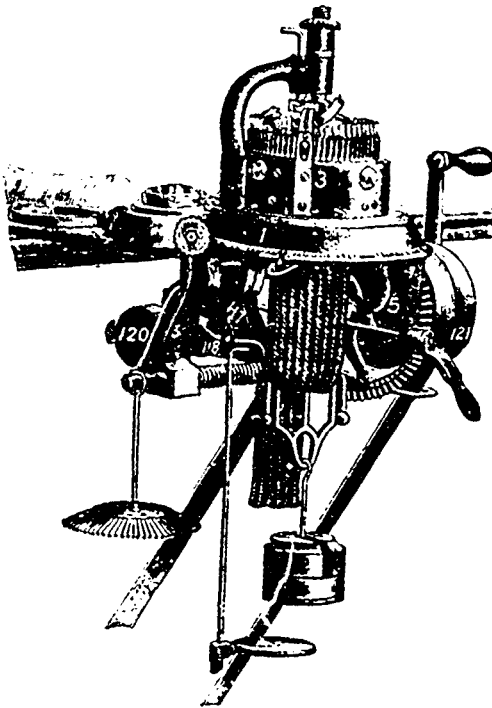
It is estimated that during the present year the quantity of logs brought from the Georgian Bay district to Michigan mills will be about the same as last year. Pelton & Reid, of Cheboygan, will raft about 15,000,000 feet to that place, these being cut from Indian reserve lands; Pitt & Co., of Bay City, will bring over 8,000,000 feet of purchased logs; the Saginaw Salt & Lumber Co., will bring over about 15,000,000 feet, and there will be a number of smaller lots.

The weather has been very favorable for logging throughout the Georgian Bay district, and the output of the season just closed has been the largest in the history of that section. The output for 1900 is estimated at 480,000,000 feet, and well-informed lumbermen say that this is a conservative estimate. It is expected that fully 100,000,000 feet of this output will be imported to the Saginaw river during the coming season. W. B. Marston & Co., of Saginaw, have bought 20,000,000 feet of logs from the Arthur Hill Co. These will be manufactured at Midland, Ont., and the lumber brought across the lake to Saginaw. Schuetto & Co. have bought 5,000,000 feet, and a number of other Saginaw dealers have made extensive purchases.

BRITISH COLUMBIA COAL MINES.

An article recently prepared by Mr. J. W. Harrison, of San Francisco, California, deals with the fuel supply of the west coast of the United States, and the sources from

which the fuel is drawn, and in a table he presents is shown the total quantities of coal received in California during the last three years, and the quantity supplied by British Columbia. Thus, in 1897 British Columbia supplied 558,372 tons of the 1,601,540 tons



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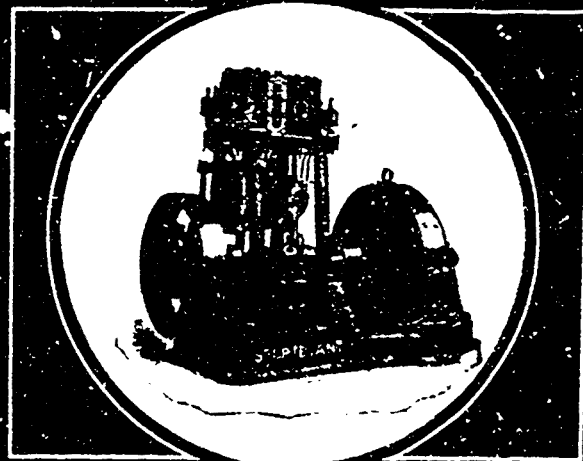
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received; in 1898, 651,208 tons of the 1,832,373 tons received, and in 1899, 623,133 tons of the 1,740,027 tons received; the other sources being Tacoma and Seattle, Wash.; Australia; Mount Diablo, and other places in California; England and Wales; Scotland; Japan; and coal hauled across the Rocky Mountains from eastern American points.

Coal has been mined in British Columbia since 1836, but for thirty years, up to 1866, the total output was less than 100,000 tons, and it was not until 1875 that the output for any single year passed that figure. In 1889 the year's output first exceeded half a million tons, and in 1898 the total figure was 1,135,865 tons. All this production came from the mines on Vancouver Island, with the exception of about 10,000 tons received from the Crow's Nest Pass Mines, when they first began to yield, in 1898. The Nanaimo colliery, on Vancouver Island, was originally owned by the Hudson's Bay Company, from whom it was purchased in 1862 by the old Vancouver Island Coal Company. To the original purchase other coal lands have been added till the new Vancouver Coal Mining & Land Co., owns about 30,000 acres of coal lands, from which about 40 per cent. of the island's output for 1898 was drawn, being taken out through three shafts. Messrs. R. Dunsmuir & Sons are the second largest producers on the island, having one shaft at Departure Bay and four at Wellington, in the Nanaimo District. The Union Colliery Company, the only other shipping company on the island, has in operation four shafts in the Comox District and two further south, and new coke ovens at Union Bay. These mines together in 1898 produced 1,117,915 tons of coal, of which amount 765,861 tons were sent outside of the Dominion, 752,000 being taken to United States ports. The remainder of the output was chiefly consumed at Vancouver, Victoria, and at the Naval Station at Esquimalt, near the latter place.

Until 1898 these were the only producing coal mines in British Columbia. In that year the West Vancouver Island Commercial Company began preliminary operations at

Quatsino, on the northwest coast of the island, although it did no shipping during the year. The most important new opening during the year was that at Crow's Nest Pass, near the eastern boundary of the Province. This region is reached by means of a branch of the Canadian Pacific Railway, which leaves the main line at Dunmore, some 200 miles further east, or by the Calgary-McLeod branch of about the same length. It is probable that little of this coal will reach the Coast unless it should be found to be very superior to the Vancouver Island coals for naval purposes, in which case the Esquimalt station may draw much of its supply from this source. It is, however, in the copper and silver smelting industries of the Kootenay district that it will find a market. This region which is the scene of very extensive smelting operations, has been seriously handicapped by having to draw its entire coal supply from the Coast. Heretofore coal delivered in Nelson has cost \$10.00 per ton, while the arrangement under which the Crow's Nest Pass Coal Company's charter was granted insures an ample supply at \$5.75 per ton, while the price of coke is reduced from \$11.00 to \$7.00. At present the Crow's Nest Pass coal is taken by rail to Kootenay Landing at the southern end of the lake of the same name, whence it is taken by boat to Nelson and other parts; but when the railway is finished between Kootenay Landing and Nelson, this coal may be taken with profit to points as far south as Spokane, and it will no longer be necessary to break the bulk between the mines and the consuming market.

There are in this region thirty-four distinct seams of coal, there being thus far only two openings. These are situated on either side of a narrow valley and between the two openings a 1000 foot trestle has been thrown across, the middle of this being sufficiently high above the railroad tracks at the bottom of the valley to permit the installation of shaking screens, so that the coal is sorted while falling from the mine level to the railway. The analysis of this coal give it a fuel content of from 93.0 to 97.50 per cent., compared with 93.90 for Pennsylvania bituminous and 97.75 for the best Yorkshire, (England) coal. There is also a quantity of camel coal in this region.

The Crow's Nest Pass Coal Company, as a part of their plant, have established a coke plant at Fernie, about six miles from the mines. This plant, when completed, will contain about 200 beehive ovens.

In many other parts of British Columbia deposits of bituminous coal are known to exist, but they are all too far from existing or prospective railroad lines to be a factor in the output of the region for years to come. On the Queen Charlotte Islands, a large group lying some distance to the north-west of Vancouver Islands, there is a deposit of anthracite as well as bituminous coal, but the extent of this bed seems to be a matter of some uncertainty.

Much of the coal mined in the North-West is not well adapted to coking, and yet a very good grade of coke is now being produced at Nanaimo and Fernie in British Columbia. The Nanaimo ovens, on Vancouver Island, produce about 35,000 tons of coke per year, and this amount will be increased when the Comox ovens are started which will probably be before many months. Only about one-tenth of this coke is exported, while the greater part has been sent to the Kootenay country. The Fernie ovens, however, began in 1898 to turn out a very superior grade of coke and when this plant is finished it will probably supply the Kootenay demand for some time to come. The California market absorbed about 41,600 tons of coke in 1899, but fully three-quarters of the supply came from England and Belgium.

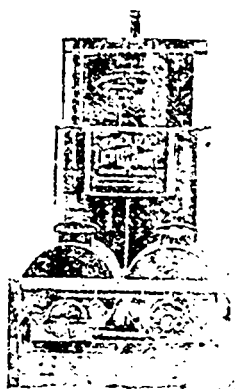
A NEW EXPLOSIVE.

The Liquid Oxygen and Ozone Company of British North America has recently been organized in Boston, Mass., for the purpose of putting into practical use some scientific discoveries which have been recently perfected by Professors Dawar and Lomox, Chief and Assistant Chief Chemists of the Royal Institution of Great Britain. The exalted standing of the Royal Institution and its Professors in the world of science, gives this Company a firm foundation for its claims.

That which is of special interest to the mining community of Canada is the fact that the liquefaction of oxygen in commercial quantities has been perfected. It is well understood that oxygen, combined with the

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proper nitrogenous material, makes the most powerful explosive for blasting purposes known to physics. It has the especially valuable property of expanding in all directions, thereby shattering large bodies. This feature is of great importance in coal mining, as it prevents the breaking of coal into small particles. It also absolutely eliminates the danger which is at present incurred by the handling of powder or dynamite, as it cannot explode until fired by an electric spark, or, if preferred, by an ordinary fulminating cap, which is applied only the instant before the cartridge is inserted in the hole. This, the parent Company, will control all processes and patents in British North America.

Another important feature for miners, which is controlled by this Company, is an air compressor, which will do equal work with any other compressor of American manufacture; and with one-half the expenditure of horse power.

The Company is preparing to establish a large factory in Canada, in which all their compressors and liquifiers will be manufactured. Their first machines are being built under positive guarantee as to capacity by Messrs. Lennox, Reynolds & Fyfe, Limited, London, England.

There are already under way negotiations which will probably lead to one of the first plants being set up in the immense coal districts of Cape Breton.

For some months, or until its Canadian works are producing machines, the Company will be only able to take care of two additional contracts, each of which must cover a group of mines, so situated that a central plant can supply each group with the necessary explosives. A most liberal and straightforward contract is issued, in which, at its own expense, the Company agrees to erect a plant, and furnish the explosives ready for use—and at a price ranging from 10 to 15 per cent. less than that which the mining companies are to-day paying. The explosives can be easily graded in force from the highest per cent. dynamite at present in use down to common black powder, and equal, if not superior, results positively guaranteed, as against the explosives now in use. The Oxygen Company takes the burden entirely upon itself, and the miners are not put to any expense whatever.

Until May 1st, the General Manager, Mr. W. E. Cook, will remain in Ottawa, and

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We are prepared to attend to all orders, **Promptly** and **Economically**.

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ONTARIO WIND ENGINE and PUMP CO.
LIMITED,
95 ATLANTIC AVE., TORONTO.

WANTED.

Electric Light Plant.

The Corporation of the Village of Lakefield, Ont., solicits correspondence from any party or company who will instal and run an Electric Light Plant in the village.

Other information on application to

ALEXANDER BELL, M.D.,
VILLAGE CLERK.

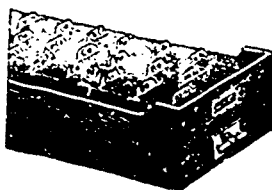
will be pleased to receive and answer any communications with regard to the above, and would also take pleasure in personally looking over any group of mines where the owners of same think they can come together on a proposition of this kind. After May 1st, the Company can be found at its offices, which are being prepared, in Boston. —Mining Review.

CANADA'S IRON BOOM.

A special telegram from New York says: On account of the prevailing high export prices, coupled with the difficulty of obtaining prompt delivery of iron pipe, bar iron, wire nails, cut nails, horseshoe nails, bolts, tacks and similar products of American manufacture, exporters are now turning their attention to Canada, where, on an average, they can buy their requirements fully 10 per cent. cheaper than here, and in addition can have the advantage of speedy delivery.

Bring customers to your customers, by advertising to the consumer. Plans and rates will be cheerfully prepared and submitted by the E. DESBARATS ADVERTISING AGENCY, Montreal.

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Their addresses, buyers' names, ratings and references, how they pay, what they deal in, etc. No man can afford to clutter up his mind with the details of his business which could easily be preserved in a permanent form, which you can obtain by using one of Archibald's special outfits.

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Shipped on approval. If not satisfactory, return it at our expense.

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New 1900 Catalogue for the Asking.

The Canadian Typewriter Exchange
45 Adelaide St. East, TORONTO.

That the large American manufacturers bitterly resent the idea of Canada becoming a serious competitor in an export trade of which hitherto they have had the practical monopoly is substantiated by the fact that the National Tube Company, which is commonly called the "pipe trust," is carrying the war into the enemy's camp and is shipping quantities of pipe to Canada with a view of breaking the market there. The same concern is said to be contemplating the opening of an agency in Montreal for the purpose of carrying the war to the knife, but it is thought here that while present prices exist Canadian manufacturers of pipe, etc., can retaliate by securing all the foreign business that they can attend to.

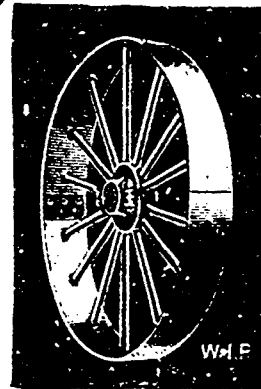
The operators of prominent Canadian rolling mills regard the outlook for export trade so favorably that an agency has been already established here by a leading Montreal concern, and one of the principal officials of the Montreal Rolling Mills Com-

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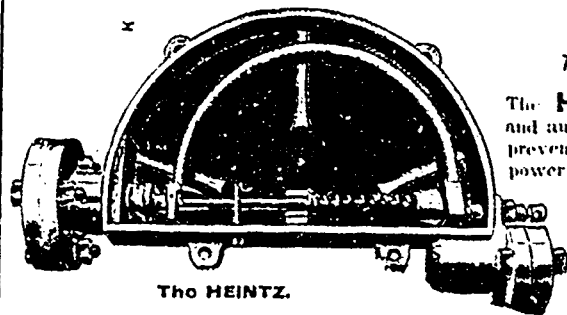
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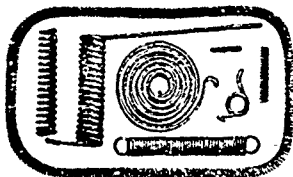
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pany has recently been in New York, and a local office for export sales of the company's products will be opened immediately. The Canadian concerns are booking a number of orders for iron pipe, cut and wire nails, etc. It is believed by those competent to form an expert opinion on the subject, that when the Montreal Rolling Mills are removed to Nova Scotia they will then become a most aggressive factor which American manufacturers will have to contend with in the securing of export trade, as the Canadian plant will then be right on the mmes. besides having better shipping facilities than they now enjoy, all of which will tend to considerably cheapen production.

NEW DYE STUFFS.

Acid Anthracene Brown W and T. These new qualities possess the same valuable properties as the older R brand, as they also dye easily level, penetrate well and are extremely fast to light, acids, alkalies, mulling and steaming. The W brand is similar but somewhat lighter than the R mark, whereas the T quality is of a deep brownish tone with a reddish blue over hand. Both new qualities are very well adapted for dyeing loose wool, yarns and pieces in one bath.

Diamond Green S S like the older B quality, dyes wool well with acetic acid, the shade being a dull green, but is remarkable for its greater fastness to light than the Fast Greens, etc. It also dyes wool well in neutral baths, and is suitable for the dyeing of half woolen goods. The shade is not changed by after-treating with Bichromate of Potash and is almost as fast as Diamond Green B to light and mulling and will therefore meet most requirements in this respect. It is most useful as a shading color in dyeing fast shades according to the one bath process, whether on wool, yarns, slubbing or piece goods.

Azo Fuchsine G B is brighter and bluer than the older B mark, and its fastness on the whole is the same as that of the other Fuchsines. Azo-Fuchsine G B dyes easily level in a boiling bath and is very fast to alkalies. On account of its clearness of shade it can be employed for bright Navy Blues and fashionable shades on ladies dress materials as well as for the printing of woolen fabrics. The color can be discharged with tin crystals or zinc powder.

A new pattern card has just been issued illustrating over three hundred paper tests dyed in the pulp. Only such colors have been used as are suitable for the dyeing of pulp most commonly employed. The colors have been combined in the most advantageous manner and show a long range of shades, and will no doubt prove of service to paper manufacturers.

Benz. Chrome Brown C R. This new dyestuff dyes cotton a violet black in an alkaline bath containing Glauber's Salt. When after treated with Bichromate of Potash and Sulphate of Copper the shade is changed to a full, clear maroon, which is very fast to light and washing. Dyed on cotton the color can be discharged fairly well with either zinc or tin. Benz. Chrome Brown C R is chiefly recommended for the dyeing of yarns and piece goods, where good fastness to washing and light is required, as well as for fancy woven cottons, canvas, etc.

Pattern cards, samples and latest information about new products promptly mailed to those interested. The Dominion Dye-wood and Chemical Co., sole agents in

Canada for the Farbenfabriken vorm., Friedr. Bayer & Co., Elberfeld, Germany.

The Government of Quebec has just closed a sale which will lead to the establishment of one of the largest pulp industries on this continent. The investors are a number of New York millionaires, who have formed a syndicate and purchased the option of a satisfactory water-power for their industry at any point on the Saguenay, from its source at the grand discharge Lake St. John to Wilson's power, twelve miles above Chicoutimi.

J. & F. Matthews have placed an order with The Jones & Moore Electric Co., Toronto, for a complete incandescent lighting plant, including marble switch board and engine, for their new steamer "Tilley."

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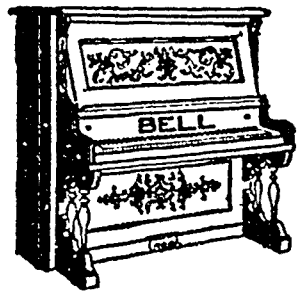
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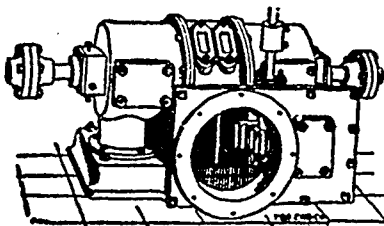
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