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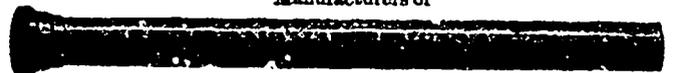
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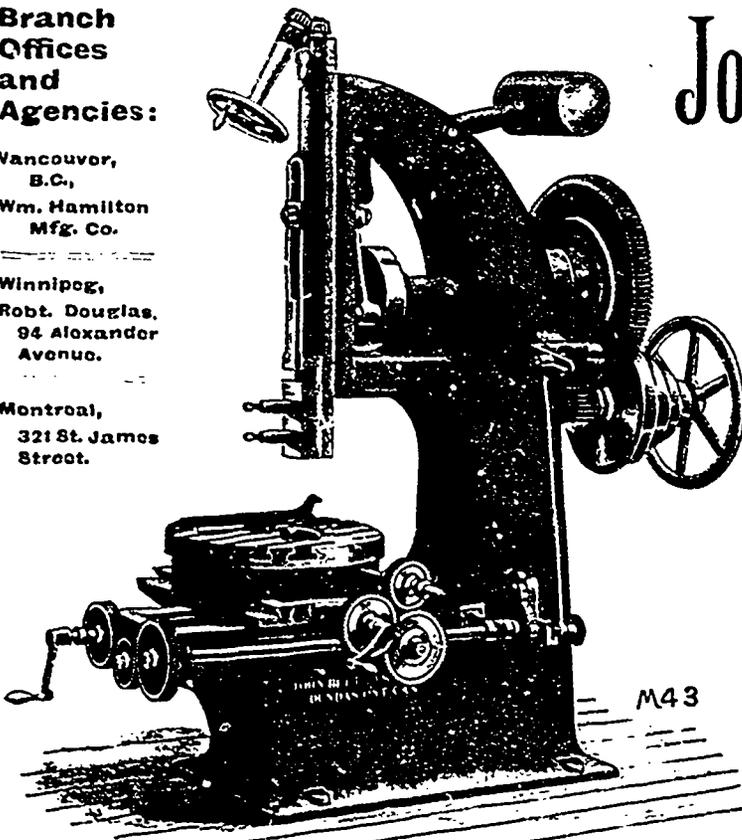
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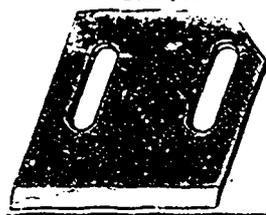
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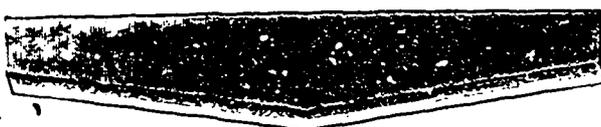
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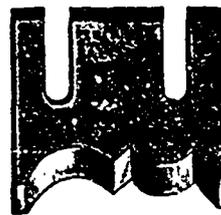
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Manufacturers of  
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We are the only manufacturers in Canada of this celebrated ware.

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BEFORE PURCHASING ELSEWHERE GET A BID FROM US.

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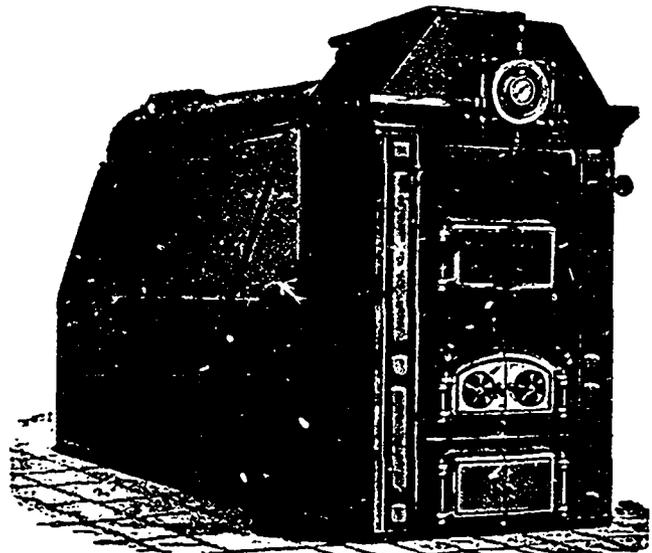
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DELIVERY MADE AT NEW YORK, MONTREAL OR HAMILTON.

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Has internal fire-box. Water circulation similar to a Water Tube Boiler. Large heating surface, and special arrangements for preventing and removing scale. Tests show high economy. Built with sheet steel case, or for brick casing, as desired.

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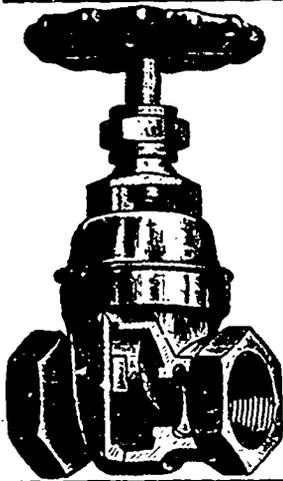
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**GENUINE EMERY**

Oakey's Flexible Twilled Emery Cloth.  
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Prize Medal and Highest Award Philadelphia, 1876. for Superiority  
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From Less than 5 c.p. to Full Capacity. Guaranteed for Three Years.

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FOR SALE IN CANADA EXCLUSIVELY BY

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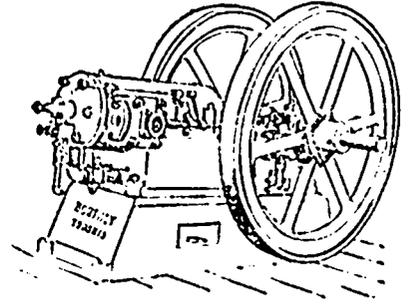


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"FOR ALL DUTIES"

## NORTHEY GASOLINE ENGINE

Most Satisfactory Power in the Market.



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

Our Catalogue is yours for the asking.

**Northey Mfg. Co. Limited, Toronto**  
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# THE BEST IS NONE TOO GOOD

The largest machinery builders in Canada and United States use our Babbitt Metal. Is this not sufficient proof of its superiority over other anti-friction metals? If the largest users are satisfied with our Babbitt Metals, why should it not suit you? We can furnish you with numbers of testimonials.

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# Electrical Contractors

Should send at once for our NEW PRICE SHEET, which is the most up-to date Sheet of its kind.

**EVERYTHING IN THE ELECTRICAL SUPPLY LINE....**

Full Wholesale Prices.

Write for one.

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Official Organ of the Canadian Manufacturers' Association.

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J. J. CASSIDY, Editor and Manager

THE INTERNATIONAL EXPORT EXPOSITION  
AND COMMERCIAL CONGRESS.

The opening of the National Export Exposition, at Philadelphia, on September 14th, was an event of much interest not only to the manufacturers and people of the United States but to Canadians and the commercial interests of many other countries. At the time set for the opening exercises it is estimated that about ten thousand people were present. Mr. W. W. Foulkrod, the first vice-president of the Association, opened the Exposition in an address explaining its scope and referring to the expected importance of its results, and Director-General W. P. Wilson gave an account of the enterprise, calling attention to the wide scope of the commercial congress to be held in connection with the Exposition. He outlined the object of the entire enterprise as follows:—

“This Exposition means, first, the supplying of new markets with American-made wares in every country of the world. It emphasizes the necessity for the thorough equipment of men in higher commercial education, who shall study the wants of these markets and the adaptation of our skill to the fulfilling of these needs. The time is coming when this nation will lead the world in manufacturing interests as it does to-day in agricultural exports.

“It means, also, the fuller employment of our labor and the renewed activity of all our factories full-handed. Then will follow the prosperity of the laborer and the citizen of the United States in every walk of life.

“And more important than all this, it means a closer and more friendly relation between all commercial countries. This, in reality, will be the supreme event of this Exposition.”

The opening address was delivered by Hon. W. P. Hepburn, Chairman of the Committee on Interstate Commerce of the House of Representatives. Mr. Hepburn showed the importance of foreign markets for American products and outlined some of the methods to be employed in building up an export trade. He spoke in part as follows:—

“Among the limitations upon manufactures and commerce to enlarge the labor field is the want of markets. Give to

them unlimited markets, and they will solve all the questions of labor and wages with which we can be confronted.

Years ago we began the struggle of securing to ourselves our own home market. We then thought if that could be accomplished the completeness of our labor field would be established. But, under wise policy, we have accomplished this, and still find that that is not enough; that supplying it does not exhaust the energies of those who have won it. We are selling many millions' worth of manufactures abroad more than we buy; but to keep our people employed we must do more. And again I say that the necessity to keep them so employed is the great question before us, and that it can only be solved by securing our full share of trade in the markets of the world.

“And in efforts to secure it we must meet and overcome the fiercest rivalry of the great nations. These nations are now engaged in a struggle as bitter and as remorseless as any that have ever engaged the martial spirit of men. The time has come when we must enter this contest for the commerce of the world. And we must do it now. Ten years from now, if during that time we are not alert, we will be shut out from the greater portion of the trade of the east. We must not only enter the contest now, but must enter upon it fully equipped.

“We must educate our merchants and our manufacturers so that they can do their full part. They must have an intimate knowledge of the people and of the countries with which they propose to trade. They must know their wants. They must know their resources. They must study the tastes, the preferences, the weaknesses of these people. They must adapt their products to meet the whims and tastes and fancies and more substantial wants. If they have not the needed article on hand, they must make it. They must not be content with trying to sell an unadapted surplus.”

Mr. Hepburn referred to the Exposition as a “University of Commerce,” and spoke at length of its manifold benefits to trade and commerce.

The International Commercial Congress, held in connection with the Exposition, began its sessions on October 12th, after the opening exercises of which addresses were made by delegates from different countries, the lead being taken by Gen. J. W. Laurie, well known in Canada, and representing the London Chamber of Commerce. Hon. R. H. Dobell, representing the Canadian Government, made a very effective address. Some forty foreign governments sent envoys to the Congress, and more than two hundred chambers of commerce, boards of trade and similar commercial and industrial bodies, including the Canadian Manufacturers' Association, were represented there by accredited delegates. Besides these, individual representatives of prominent business concerns in all parts of the world were present, participating in the proceedings and contributing to the fund of information which cannot but be most valuable in the consideration of the subjects under discussion.

The programme of the Congress was a large one, and filled up every day of the time which intervened between the opening ceremonies and November 1 when the farewell session was to be held. The appointment of a different presiding officer for each day, selected indiscriminately from among foreign and American delegates, accentuated the truly international character of the Congress. This feature was further emphasized by the setting apart of special national days, on which presumably the delegates from different countries held the floor, or topics peculiar to trade interests in their respective divisions of the commercial world engaged the attention of the assemblage. It is to be hoped that a peaceful body like the Commercial Con-

gress confined itself to subjects appertaining to commerce, and did not darken counsel by words without knowledge concerning questions of so-called world politics.

### THE SOULANGES CANAL.

The formal opening of the Soulanges Canal occurred on October 9th, and celebrated the completion of the last link in the heretofore unfinished route by which navigation by vessels drawing fourteen feet of water is possible from Port Arthur, in Canada, and Duluth, in the United States, both at the western extremity of Lake Superior, and in the very heart of the American continent, to Montreal, the Gulf of St. Lawrence, and the Atlantic Ocean. The opening of this great waterway will undoubtedly revolutionize the water bourn traffic of the great lakes, diverting a large portion of it from New York now carried via the Erie Canal, to Canada's great shipping port, Montreal.

A historic allusion to this great work is timely:—

The Soulanges is the connecting link between Lake St. Francis and Lake St. Louis, between which sheets of water the St. Lawrence tumbles 82½ feet. In a distance of about sixteen miles there are the Coteau, Cedars, Split Rock and Cascades rapids. At extremely low water, there is a depth of not more than six feet in the river channel at some places, and it is to surmount these rapids that the Soulanges Canal has been constructed.

The canal is fourteen miles long, and leaves the foot of St. Francis at McDonnell's Point, just below the village of Coteau Landing. For 1½ miles it runs straight, touching the margin of the river about a mile from the upper entrance, and from the end of this tangent the line sweeps around to the north-east, behind the village of Coteau du Lac. It is then continued by a second tangent of some 8½ miles long, passing about one mile inland from Cedars Village. Thence, the line bends slightly to the north and joins the Ottawa River, about two miles from its confluence with the St. Lawrence, at Cascades Point. For all practical purposes of navigation the canal is a straight line throughout, and is two miles shorter than the route by the river.

The fall of 82½ feet is overcome by four locks; 70½ feet of this being at the Cascades end, where the bluff forming the right bank of the Vaudreuil branch of the Ottawa gives an opportunity of locating three of the locks in the first mile, each having a rise 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 entrance. Here the lift is variable; it is about 12½ feet at mean water of Lake St. Francis, but at extreme high periods it would, if this water were allowed to enter the canal, be about fifteen feet. About 1,000 feet above lock No. 4, there is a pair of guard gates, placed for safety to the lower locks in case of an accident. At the upper, or 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, but, at ordinary stages of the lake, its surface level will be that of the canal. The distribution of lockage is supplemented by a series of weirs for the passage of the necessary supply.

Work on the canal began in 1893, but slow progress was made. When the Hon. A. G. Blair accepted the position of Minister of Railways, after the last general election, his first public announcement was that he would have, during the season of 1898, or within less than two years, a fourteen-foot waterway from the Great Lakes to the Atlantic. The failure of some of the contractors to carry out their work and the Government having to re-let the same, caused unavoidable delays or the Minister's promise would have been fulfilled last autumn. As it is, he has done very much better than many anticipated when he made his announcement.

One of the great objects which the canal is supposed to accomplish is the diversion of traffic to the Canadian route which now finds an outlet by Buffalo. The Soulanges Canal alone was estimated to cost \$5,250,000, but it will exceed that figure. While the Government on the one hand is being congratulated for carrying to completion the deepening of all the canals to fourteen feet, it is at the same time being badly scored for the heavy expenditure.

To describe one lock is to give a description of them all. The lock is filled and emptied through culverts in the side walls, from which castiron pipes thirty-inch in diameter, ten on each side, lead into the bottom of the chamber. The lock will be filled in about five or six minutes. At the head of each culvert there is placed an eight by four-foot shaft operated from a coping, a six by six-foot sluice of the pattern used on the Manchester ship canal. 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 damage itself instead of carrying away the gates. The gates are solidly built. One leaf of the lower gates of the high lift locks at the Cascades end of the canal weighs over ninety tons. The timber used is principally Douglas fir, which was hauled across the continent for the purpose. The lockages are expected to be made easily in from twelve to fifteen minutes. The capacity of the canal, at four lockages an hour, on the basis of one third westbound freight, would be about 20,000,000 tons in an ordinary season. The chief engineer of the canal is Mr. Thomas Moore, who has had a large experience in connection with canal building in the Dominion.

### VALUELESS TESTS.

Regarding the recent yacht races in which the Shamrock failed to wrest the America cup from its holders, after the expenditure of hundreds of thousands of dollars, the only observable result shows that a sailing machine built in the United States succeeded on three separate occasions in going over a given course in a few minutes less time than a similar machine built in Great Britain. It is observable that neither the Columbia nor the Shamrock are of any value whatever from a utilitarian standpoint. Neither of them can ever be used for any useful purpose, not even for yachting, and the fact that one of them can, under certain circumstances, make a little better time than the other, cannot be utilized in any practical manner.

This mania for making records which have no value is criticized by a writer in *The American Machinist* who, writing just previous to the recent yacht races, said:—

The international yacht races for the cup the America won a generation and a half ago are just about to come off, and I would have reason to be ashamed of myself if I was not considerably interested, not so much as to who wins as in the means by which the cup is to be held or regained. The designing and the construction of the racing machines and the manipulation of them are, in every detail, in the line of the mechanic's and the engineer's daily and constant occupation. They embody completely the problem of the application of certain available forces to the accomplishment of a certain purpose. The thing about the whole affair that can be regarded only with dissatisfaction is that the races when finished will have demonstrated or accomplished nothing of any discoverable practical value. The yachts are worthless for pleasure, for the oyster business, or for anything else, and the success of the one or the other will help us not in the least toward the building of better boats for any service. We do not know everything yet about either the building or the sailing of boats in the lines of service where all such available knowledge is most desirable, but these yacht races apparently add nothing to our available knowledge.

Speed tests of all kinds, the writer says, offer great temptations to ignore practical conditions. Not content with learning the ordinary possibilities of the bicycle, we must suck a cyclist along behind a locomotive at a mile a minute; instead of inquiring how fast a steamboat may go while retaining its usefulness, we throw away all use and try to build boats that are all engine and nothing else. He thus sets the seal of his condemnation on the modern torpedo-boat, which he regards as a case in point:

I can not but think that our Government, following the lead of other admiralities, is throwing away a lot of good money upon torpedo-boats and torpedo-boat destroyers. The other day I had the pleasure of seeing the completed engines for one of these boats, and also of looking over the hull, not yet launched. No one can realize how far the process of cutting down the weights upon these things has been carried except by a personal inspection. The engines are the perfection of workmanship in every detail, but they suggest also throughout weakness and unsafety, and when these engines break down on trial, as they usually do, and it is lucky if some of the men are not killed, neither the workmanship nor the material is the place to look for the fault. The hull was such as a sight of the engines would suggest. To call it an eggshell is inadequate. Here was a boat about 180 feet long, I think, to carry engines of 4,000 horse-power, and the plating of the hull a trifle over 1-8 inch thick and not a double shell anywhere. The decks also were single, and a little over 1-16 inch thick, and buckled under my feet as I walked, and everything in proportion. If anything touches this hull it must be crushed, and it can not take long to rust it through—and then where are we?

We may strain for fine points far beyond the line of profit. There are many things that it is easy enough to get excited about, and in which we try to beat all creation, but after we have done it we often find that it costs more than it comes to.

#### POSSIBILITIES OF THE CANADIAN IRON INDUSTRY.

Pittsburg, the leading iron centre of the United States, gets nearly all its iron ore from the mines south of Lake Superior, and the ore has to be carried first by rail, then by water, and again by rail for about a thousand miles, involving three handlings, before it reaches the blast furnaces, while the ore to be used by the Dominion Iron and Steel Company in the blast furnaces at Sydney, N. S., will come from the Great Bell Island mine in Conception Bay, Newfoundland, about 400 miles distant from Sydney, and will only have to be handled once, being loaded at the mine upon large ships that will lay it down at the pier of the company right beside the blast furnaces.

Mr. R. E. Chambers, M. E., the manager of this remarkable mine, in a recent interview, states some facts and makes some suggestions that bear strongly upon the possibilities of the cheap manufacture of iron in Canada. He says that the ore of Great Bell Island can be mined and loaded on ships for from twenty-five to thirty cents per ton. This is not a matter of conjecture, but of actual experience extending over several years in which 600,000 tons of ore have been mined and shipped. No royalty has to be paid. Some idea of the freight rate from Great Bell Island to Sydney, a distance of about 400 miles, can be obtained from the freight rates on the ores shipped from Lake Superior ports to Ohio ports, a much longer distance. The average rate during 1898 on iron ore shipped from Escanaba to Ohio ports, was 59.8c; from

Marquette to Ohio ports, 59.8c; head of Lake Superior to Ohio ports, 61c. The average rate during the past ten years has been: From Escanaba, 67c; from Marquette, 83c; from the head of Lake Superior, 94c. During recent years the rates have been lowered owing to the increased size of the boats navigating the Upper Lakes. Most of the ore from Lake Superior was brought down to Lake Erie ports last year in the large 6,000-ton ships which were put in commission in 1897. It was found that the smaller boats could not compete with them.

The distance from Great Bell Island to Sydney being much shorter and through much deeper waters without any canals to go through, or any tortuous, narrow channels to navigate, larger cargoes could be carried and better time could be made, so that the freight rate on ore should be lower. It may, therefore, be assumed that the cost of laying down ore at the Sydney blast furnaces, including mining, loading, shipping and unloading will not exceed one dollar per ton, and it may be considerably less. Compare this with the cost of ore in other places. At Cleveland, according to The Mineral Industry, the prices fixed last year were as follows: Hematite ores, Bessemer quality, \$2.55 to \$3.25; hematite ores, non-Bessemer quality, \$2.10 to \$2.25. The annual statistical report of the American Iron and Steel Association gives the prices at which sales were made early in 1899 for season delivery at Cleveland as follows: No. 1 Bessemer hematites, \$2.80 to \$3.25; soft hematites, No. 1, non-Bessemer, \$2 to \$2.15. From Cleveland to Pittsburg the iron ore has to be carried by rail and the freight rate on ore must be added.

The Statesman's Year Book, says that in the year 1897 the United Kingdom imported 5,968,680 tons of iron ore, the value of which was £1,436,004, that is, 14s. 10d. per ton, equal to about \$3.60 per ton in Canadian money. From 1893 to 1897 inclusive, 24,336,814 tons were imported, and the value was £16,963,370, that is, 14s. per ton, equal to about \$3.40 per ton in Canadian money. At the present time Spanish hematite ores laid down in Glasgow are selling at from 15s. to 17s. per ton, that is, from \$3.65 to \$4.15 per ton. "The Iron and Coal Trades Review," published in London, Eng., in its issue of September 1, 1899, states that the price of hematite ore at the mines on the west coast of England on August 31 was 16s., equal to \$3.90.

The Nova Scotia Steel Company has been selling Great Bell Island ore in Rotterdam at a price which amounted to \$1.15 per ton at the mine, after deducting the cost of transportation, giving them a profit of 55 or 90 cents per ton, and it is said that the Dominion Iron and Steel Company have assurances that they can sell ore in Rotterdam for delivery next year at from 15 to 16 marks per ton which would give them from \$1.65 to \$1.90 at the mine after paying the cost of mining and transportation, making the profit on every ton of ore mined for export from \$1.35 to \$1.60.

The iron ore supplies of Great Britain, Germany and other iron manufacturing countries of Europe are rapidly becoming exhausted. Great Britain has for years been drawing supplies from Spain and other outside countries. The making of iron is not a new thing. In the 4th chapter of Genesis Tubal-cain is described as an instructor of every artificer in brass and iron," and nearly all the ancient writers refer to the use of iron. In all the ages that have passed since Tubal-cain

first began to work in metals iron has been used in various industries, and when we consider how many millions of men have lived and died since then it is not at all surprising that the supplies of iron ore in the old world are running out. Great Britain has been making enormous quantities of iron for generations, and great as are the natural resources of those little islands, the supplies of the raw materials cannot hold out much longer at the present rate of consumption. Long before the mines of Europe are completely exhausted the scarcity of ore is likely to enhance the price.

According to Mr. R. P. Rothwell, a well-known American authority on iron, the production of pig-iron in the iron-making countries of the world in 1898 required the mining and handling of approximately 70,000,000 tons of ore. The United States alone consumed 21,772,750 tons of iron ore in 1898, of which 14,029,683 tons were mined in the Lake Superior district, 4,980,000 tons in the Southern States and 1,678,500 tons in other states. Besides this home production of iron ores 187,219 tons were imported into the United States from abroad as compared with 489,970 tons imported during the preceding year the decrease in imports being largely due to the war with Spain. The great iron manufacturers of the United States are growing alarmed lest their supplies of ore should run short and have been buying up iron mines. In Great Britain it is estimated that 14,000,000 tons of ore were mined and 5,468,395 imported last year, in Germany 15,893,246 metric tons of ore were mined.

It has been thought that the Lake Superior mines were inexhaustible, but before the boom of this year it was considered a most significant fact that some of the most experienced American companies were quietly buying ore mines which two or three years previously were closed down because their ores were unsaleable in competition with the best ores of Lake Superior.

Taking into consideration the increasing demand for iron ore and the fact that the supplies are becoming exhausted in many sections where they were formerly plentiful it is evident that the Dominion Iron and Steel Company might make a great deal of money by simply exporting iron ore from their wonderful Newfoundland mine, but there is more money to be made in converting the ore into pig iron and steel, and it will be far better for Canada, as thousands of men will be employed in the coal mines, coke ovens, blast furnaces and steel mills of Sydney and the industries that will grow up around them.

#### EDITORIAL NOTES.

There is more prosperity, there is more trade, there is more industry, there is more activity in Canada to-day than there has been in any other epoch in its history. So spoke Sir Wilfrid Laurier at Drummondville, Que., a few days ago.

It is by means of this comparatively recent device of association and interchange of ideas that the full benefits of a great industrial and commercial movement, like that which has culminated in the Export Exposition, may be most quickly and surely realized. Commerce—and especially commerce between alien people—often walks blindfold along the avenues of trade, unable to see new and promising openings on every hand. In the International Commercial Congress the traders and traffickers, merchants and producers, inventors

and designers of all civilized nations unite in an intelligent effort to broaden the range of international commercial enterprise, lighten its tasks and increase its rewards. Only by such concerted and harmonious action, in this era of close competition and exacting requirement, can the high hopes of industrial and commercial progress be realized.—Philadelphia Record.

United States Consul Bell, at Sydney, N.S.W., in a report to the State Department upon the federation movement in Australia, predicts an early recourse by the federated colonies to a system of protective tariff duties that will have a considerable effect upon American manufacturers, inasmuch as it may be accompanied by preferential treatment for English products.

"Shall we stop our advertising for a while now?"

This is a question that some business men are apt to ask themselves.

Suppose your engineer asked you:

"Shall I stop putting coal on my fires, sir?"

What would you reply?

"Why no—unless you want the engines to stop."

The advertiser who thinks of discontinuing may argue, "We have been advertising so long and so steadily that our name and specialties are well known, and we intend to advertise again when business is better in our line than it appears to be now; in the meantime our business won't stop."

No; neither will the engine stop the minute the men suspend shovelling in the coal. The point is, however, that when the engine is to be started again, ten times as much will have been lost in power as had been saved in fuel or feed.

Using up reserve forces never pays.

It is a loss, however it may be looked at. The buying public is prone to forget. It is, moreover, much more difficult and much more expensive to regain a lost customer than to prevent him straying away.

An intelligent traveler, who has been making a study of trade conditions in all quarters of the world, declares that the principal drawback to the advancement of American exports in various countries is the fact that our manufacturers are too independent and refuse to cater to the local desires and prejudices of their customers. This we know to be true. Our Consuls and Consular agents abroad are constant in their warnings that we are making a mistake in not considering the wishes of our customers, even though the wish be founded on ignorance and foolishness.

It pays to be independent at times, but when a false sense of it leads us to go against the wants of our customers, then the independence becomes silly and stupid. When we fail to take the trouble to cultivate a close knowledge of trade conditions in places where our goods should be in great demand the result is that the English and the German merchant, who is wiser in his day and generation, gets the orders. The Commercial Congress that is now in session is doing a good work in educating our manufacturers, but it will not have the desired effect if the manufacturers do not profit by their education. What is needed in our export trade is less independence and more horse sense.—Philadelphia Inquirer.

In an address delivered at a reception tendered to the delegates to the International Commercial Congress by the American Academy of Political and Social Science, Mr. Frederic Emory, the Chief of the Bureau of Foreign Commerce of the State Department, set forth in a happy way the position which commerce has attained in the public life of the world to-day. The promotion of commerce has, he said, become the chief business of diplomacy, a fact which in itself is most strikingly suggestive of the gradual amelioration of traditional jealousies and prejudices and the removal of causes of indifference due to ignorance or a mistaken self-interest. It now engages the best thought of statesmen, of scholars and of the popular press, and has aroused a spirit of inquiry throughout the commercial and industrial intelligences of the world which must be productive of large and permanent results. In truth, as he said, the academic and the utilitarian forces have joined hands in what concerns the promotion of commerce, and there can be no hazard in declaring that their combined efforts will be rich in fruitfulness as regards the peaceful development and distribution of the world's resources.—Bradstreet's.

It has been determined to hold a meeting in Massey Hall, Toronto, on the evening of November 9th instant, for the purpose of hearing a discussion of the South African question in relation to the British Empire. The chief speaker will be Dr. Parkin, Principal of Upper Canada College, and it is expected that addresses will also be delivered by Hon. Charles Fitzpatrick, Solicitor-General in the Dominion Cabinet, Lieut.-Col. Denison, Rev. Father Ryan, Mayor Saw; Mr. A. E. Kemp, ex-President of the Canadian Manufacturers' Association, Mr. Sanford Evans and others. The decision to hold such a gathering was reached at a meeting of a committee of citizens which was presided over by Mr. Edward Gurney. It is felt that the present is an opportune time for enlightening the public in regard to the matters in dispute in South Africa, and that the speakers mentioned are well qualified to undertake the duty. Dr. Parkin in particular has given a great deal of study to colonial questions, and, moreover, is an intimate personal friend of Sir Alfred Milner, the present High Commissioner at the Cape, having been associated with him at Oxford University.

The customs revenue of the Dominion for the month ending October 31st, shows a big increase over the same period last year. There is nearly half a million dollars of an increase. The figures are \$2,460,010 for October, 1899, as against \$1,993,271 for October, 1898, or an increase of \$466,738. This makes nearly one million dollars of an increase for the four months elapsed of the present fiscal year.

There was an extraordinary military parade at Aldershot, near London, Eng., a few days ago when fifteen traction engines and forty trucks were inspected previous to their departure for South Africa. A stretch of sandy, rocky road was selected for the tests, and gave an excellent chance to observe the points of the engines. A steep ditch and banks, two and three feet high, were safely traversed. Though at times the wheels sank axle deep other engines pulled out the hapless ones. The Duke of Connaught and Prince Louis and Victor Napoleon attended the trials, and were much pleased

with the result. Twenty-four of these engines will be despatched to South Africa. There are no more efficient traction steam engines to be found than those made in Canadian works, and our manufacturers should certainly make a strong effort to have some of them included in South African orders.

When the clockmakers of the Black Forest region in Germany found that the trade upon which they had so long been dependent for a livelihood was dwindling away in the face of competition with the machine made clocks of Switzerland, a school for clockmakers was established. Some years ago, when the Saxon tanners discovered that they were being left behind in the industrial race, tanning schools were started in the leather working districts in order to study methods, improve processes and raise the standards of artisanship. The exports of German toys showed a slight decrease last year, from about \$9,500,000 to \$9,150,000. At once the proposition is made to found a toy-making school in the Nuremberg district, where the trade centres. Greater technical skill is thus to be diffused among the workers at the toy-making trades and a rational and earnest effort is to be put forth to counteract a tendency which may soon undermine a valuable branch of national production. So it has been throughout the history of German manufacturing industry. The chief weapon in the commercial warfare of the German people has been education. Although there has been a reasonable amount of tariff legislation, this has not been carried to fanatical lengths. The people have not been made to believe that an import duty would correct every disorder in trade and take the place of the wise employer and the industrious, skilled and educated artisan. They have been content to develop more slowly and more surely. A tariff might produce temporary results in a shorter time, but the technical school lays foundations which are at the basis of real and lasting progress that knows no backslipping. When the people of this country learn the German lesson and go to the root of this matter, educating each individual producer of every rank in every specialty, our industrial civilization will be approaching that point when it will be a source of pride to the nation and of permanent profit and gratification to each inhabitant.

A deputation representing the Indo-Egyptian Press Company, with headquarters in New York, were in Ottawa a few days ago asking the Government to allow their company to import into Canada duty free, a baling machine with which they wish to compress Canadian hay for export. The machine is claimed to be very effective for baling cotton, and the company wish to test it in baling hay. It occurs to us that the test might have been made in the United States, for hay is produced there, but if the experimenters desire to test it in Canada, let them pay duty on their machine or have one built by Canadian workmen.

A couple of years ago some pig iron was shipped from Southern furnaces to Japan. Owing to the failure of the consigner, this iron is now coming back to San Francisco. It will pay its own way around the world and still show a profit. It cost at the furnace \$6.50 per ton. The freight out was \$7.50 per ton more. This, with loading charges of 15 cents and storage charges of 60 cents, raised its cost to \$14.75.

Now, coming from Japan to San Francisco, in ballast, at \$2 per ton, it costs at its home port \$16.75, or at least \$6 or \$7 a ton less than it could now be bought for in Alabama and transported to San Francisco. When it is remembered that the intervening years have been of unprecedented production of iron, this incident enables one to appreciate the improving conditions that have since come about.—New York Financial News.

Sir Charles Tupper is a more potent influence in Canada than any one of the Ministers. He examined the first attempt of Mr. Fielding to make a tariff and pronounced it ruinous. Mr. Fielding thereupon withdrew his tariff and substituted another, which, although imperfect, was better, and for this reason was permitted to pass muster. Sir Charles declared that the so-called British preference would not work until the German and Belgian treaties were removed, and advised the ministers to appeal again and get these treaties out of the way. He was right, and the treaties had to be dispensed with. Sir Charles insisted that the British preference instead of being left open to all nations, should be made exclusive to Britain. The Ministers had to fall into line. Sir Charles demanded action on the Pacific cable. The Ministers did as they were advised. Sir Charles instructed the Ministers to equip a Canadian contingent. They offered objections and quarrelled over the matter; but they had to come down and permit Canadians to go.—The Mail and Empire.

According to this showing Sir Charles is a power behind the throne greater than the throne itself, with this advantage in his favor, that, not being in power, he is not accountable to the people as the Ministers are. Whatever Sir Charles says seems to go, according to The Mail and Empire. The Ministers really do not seem to have much to say in running the government, unless Sir Charles consents.

At the International Commercial Congress recently held in Philadelphia, Mr. James G. Allen, a delegate of the Toronto Board of Trade, read a paper on our canal system, at the conclusion of which he moved a resolution calling for reciprocity in the use of the canal systems and inland waters of the two countries. The resolution was passed unanimously. That, however, will not prevent New York State from keeping its canals practically closed to Canadian vessels. Mr. Allen also said that the navigation laws of the United States should be liberalized towards Canada.—Mail and Empire.

Mr. Allen should know that the Erie Canal, that traverses the State of New York, is the sole property of that State, and over which the United States Government has no control whatever. At the time when Canada was according the free use of Canadian canals to American shipping, the United States agreed to undertake to influence the State of New York to accord a corresponding privilege to Canadian shipping desiring to use the Erie Canal, but good faith was never kept in the matter.

The Toronto Globe's full-faced boom articles have reached Hamilton, and this great manufacturing center gets much the same space as Owen Sound and other back-woods villages. The full-faced artist makes a very good showing for Hamilton in the few concerns he deigns to mention; but he entirely ignores such new enterprises as the new steamship company, the new stock yards, the new steel plant to be added to the blast furnace. It may be that these were omitted because Toronto proposes to go into similar lines of business.—Hamilton Spectator.

The trouble, or we might say one of the troubles of The Spectator is jealousy. Jealous because The Globe has made a

big scoop in publishing Growing Time articles from dozens of Canadian industrial centres. Who ever heard of The Spectator publishing such items? The Spectator seems to think that The Globe publishes Growing Time articles because its political party is in power, but who ever heard of the representative papers of the other party publishing such items when their party was in power? It was either because there was no conspicuous growing time to write about, or that they did not think enough of it to give prominence to it.

#### LITERARY NOTES.

The November number of The Methodist Magazine and Review contains six illustrated articles. Among those of special interest is a graphic account of the Boers and their stormy history, by Rev. J. T. Pitcher; a beautiful tribute of personal recollections of "Queen Margherita of Italy," by Mrs. M. E. Lauder; "Methodism at Gibraltar," by R. W. Allan; an account of the successful "Indian Mission at Metlakatla," and a sketch of Albert Durer, the famous painter, by Dr. Lubke, the distinguished art critic. Several stories, the World's Progress, etc., complete an admirable number. Toronto: William Briggs. \$2.00 a year.

Brilliant as the autumn tints of the woods and fields it loves so well are the pages of Outing for November. The buck of the northern hills, the bear of the Rockies, the moose of Maine, the grouse of Michigan, duck on Lake Champlain, sport in Tennessee and the wild yak in far-away Thibet, all yield their tribute of enthusiasts writing for their kind. Football has its prophet in Walter Camp, lawn tennis its historian in James P. Paret, golf its chronicler in Charles Turner, and "Travel in China," "A Race 'Round the Horn," and "Yachting in White Bear Lake" are described by well-known pens. The illustrations are remarkable, even for Outing's high standard of sporting pictures, and the Editorial Review of the month's pastimes is by the foremost sportsmen in their respective lines.

Variety and excellence are qualities that have not been lost sight of in making up the November Ladies' Home Journal. There are contributions by Ian MacLaren, Sir Henry Irving, by the author of "In His Steps," Clifford Howard, Mrs. Burton Kingsland and others. There are innumerable pictorial features, and practical, useful and helpful articles. The Curtis Publishing Company, Philadelphia. One dollar per year.

Mr. Sylvester Baxter tells the story of "The Great November Storm of 1898," in the November Scribner's. One of the most destructive storms ever known on the New England coast, it was the occasion for many stirring incidents associated with the irresistible power of the wind and sea. Mr. Baxter gives a vivid impression of the development and climax of the storm, with many details, and of the gradual realization in the public mind of the great loss of life and property involved. The illustrations by H. W. Ditzler are from sketches made on the coast during the week following the storm, and convey a spirited and realistic idea of many of the scenes along the shore and at sea. President Hadley of Yale College, one of the best known authorities on the subject in the United States, writes an article of the most timely interest on "The Formation and Control of Trusts." He gives a very clear statement of the motives and conditions that lead to their organization, and points out with reassuring emphasis some of the causes that are already tending toward their limitation as mere speculative enterprises. He believes that the question of state ownership or control will become less and less acute as a political issue.

Mr. George Johnson, Dominion Statistician, has sent us The Statistical Year Book of Canada, for 1898. This, we are told, is the fourteenth year of issue of this most important publication, and it will be readily conceded that it is a source of the most valuable information to all who may be interested in the history and industrial growth of Canada. It consists of two parts, first the "Record" and second the "Abstract." The "Record" contains a short history of Canada, the country's physical features, constitution and government, treaties, lands and land regulations, events of the year, and bye-elections of 1898. The "Abstract" furnishes an abundance of statistics relating to agriculture, mines, fisheries, trade and commerce, currency and banking, railways and canals, marine, post-office, finance, insurance, telegraphs and telephones, militia and social and other matters. In addition to the foregoing, there is a list of senators, one of members of the House of Commons, one of members of the provincial legislatures, and a copious index.





man who attends to this work can set the box with the mark out, plain and undisturbed, and the clerk has no difficulty in identifying the invoice with the box, and if numbered, of identifying the individual box with the entry on the invoice. It can readily be seen that in a large consignment, in unnumbered boxes, and the contents of each box not identified by some letter or number on the invoice, what confusion and delay, if not mistakes, are liable to occur.

These rules hold equally good in all Spanish-American countries. It is undesirable to pack goods of different classes in the same box.

In Chili boxes of assorted merchandise, if not marked with the Spanish word "Surtido," are liable to a fine and even that word on a box puts the custom house officials in a bad humor.

It is preferable, when possible, to mark all weights in kilograms, net and gross. The kilogram is about 2 1-5 pounds.

In Peru it is one of the requirements that the invoices must give weights and measures in the metric system and numbers by the dozen and gross. We are deemed as out of date for adhering to the old system of weights and measures, and after an experience with both I am obliged to agree with them.

Invoices of goods for Mexico must be made out in quadruplicate. A notary's certificate of the correctness of the amount of the invoice must be appended to one copy. This can be sworn out by the shipping clerk or other employees known to the notary. At the port where the goods leave this country, whether a seaport or on the border, these copies are presented to the Mexican consul. He examines the certified copy and sees that the four copies are in agreement, affixing his seal to the three uncertified copies as a certificate that they are in accordance with the certified copy. The certified copy of the consul retains as a record. These three copies are distributed as follows:

One is mailed to the Department of Hacienda, and is used in the statistical department to check the reports from the custom houses; one copy is mailed to the collector of the port to which the goods are consigned; and one copy goes with the goods.

If the invoices and documents can be made out in good Spanish the expense of translation, etc., at the point of receipt can be saved, and the customs officials will be put in exceptional good humor and inclined to grant favors.

In San Domingo the translation and presentation of the documents in Spanish is a requirement under fine.

In all of Spanish America, it is advisable to make out the invoices at least in triplicate, and append a notary's certificate to one copy. In Peru the requirement is quadruplicate. The certified copy makes the consular formula, in case of consular invoices, much easier, and enables the consul to retain the documentary evidence of why he appends his consular report.

In Chili marks on boxes must be stenciled and not marked by hand. In fact, the stencil mark is preferable and much more legible as a rule.

#### CANADA'S TRADE IN WEST INDIES.

Mr. George W. Grant, a brother of Sir James Grant, of Ottawa, who is engaged largely in the business of exporting asphalt from Trinidad to Europe, was recently in Toronto, and in discussing the possibilities of trade between Canada and the West Indies, said:—

"The trade between Canada and the West Indies is practically at a standstill. The Americans are getting it all because they go about it in the right way. They have consular agents at every port and commercial travellers from the United States are to be seen everywhere. What is wanted is a fast line of freight vessels sailing from Canada and calling at every West Indian port. I am aware the Government has subsidized the present line to put on more vessels, and give a more frequent service, but that will not meet the requirements of the situation. The chief trouble with the present line is that their freight rates are exorbitant. They run to earn their subsidy, and call at as few ports as possible.

"Special inducements have been offered by some enterprising

Canadian exporters to merchants in the West Indies to stimulate trade and encourage the introduction of Canadian products among the islands, and repeated efforts have been made to increase the demand for certain Canadian products, but the result has been very unsatisfactory. The secret of their failure is the fact that the American exporters have studied the requirements of these islands more carefully, and have left no stone unturned to meet their wants, which has resulted in the building up of an enormous trade between the United States and those islands, and the entire trade will eventually be controlled by the United States if prompt measures are not adopted by those in Canada, who desire to extend their trade to those islands: by placing their goods here under equally favorable conditions as regards prices, packages and transportation rates.

"One curious and deplorable feature of trade is, Canadian farm products of all kinds are often imported through New York commission houses, which, of course, take the middleman's profits. I never could see any good reason why Canadians should not do this business and make the money themselves. Many American vessels go down there for bananas, and the trade is so profitable that they can afford to go down light and make all their money by a cargo one way. I merely mention this to show what there is in the trade when properly handled."

#### TRADE WITH AUSTRIA-HUNGARY.

An interesting export museum of manufactured products of Austria-Hungary has recently been opened in Montreal. This exhibition, we are told, owes its creation to the Austro-Hungarian Export Association of Vienna, under the auspices and protectorate of the Austro-Hungarian Ministry of Commerce. It embraces the nation's leading productions in staples and novelties, and is well worthy of an inspection by Canadian importers.

The export museum has been established in Montreal at the suggestion of Mr. Otto Thorning, secretary to the Austro-Hungarian Consul-General. There is a fine collection of laces, jewellery, cloths and all kinds of novelties, for the manufacture of which the Austrians and Hungarians are justly famous. The object of the museum is the bringing of Canada into closer commercial relations with Austria-Hungary. It is thought that a line of steamships might with profit be established between Montreal and Trieste and Fiume.

The Blue Books do not show the trade already done there, as on account of the lack of direct steamship communication the exports from Canada to Austria-Hungary are either credited to Germany when going via Hamburg, or to the United States when being shipped via New York. Austria-Hungary should prove a good market for our products of the fisheries, the mine, and even agricultural, dairy and other animal products, thus opening a new field to the enterprise of our exporters of the productions of our great national industries.

From official figures furnished, we learn that out of total imports of 870,768,758 florins during the year of 1898, Austria-Hungary imported of articles, which would interest our Canadian exporters, as follows:—

Breadstuffs, chiefly grain of all kinds, 77,167,755 florins.  
 Apples green and dried, 1,634,439 florins.  
 Clover and flax seeds, 3,932,647 florins.  
 Fish, 5,146,348 florins.  
 Eggs, butter and cheese, 16,994,169 florins.  
 Lard and provisions, 16,035,289 florins.  
 Hides, skins and leather, 36,624,487 florins.  
 Wool, 29,870,992 florins.  
 Minerals, 11,903,093 florins.  
 Wood pulp, 161,704 florins.  
 Timber and lumber, and manufactures of wood, 12,584,326 florins.  
 Agricultural instruments and bicycles, 1,983,592 florins.  
 The United States have already found a profitable market in Austria-Hungary, and have actually exported to that

country during the year 1898, in all, 318,638 tons of merchandise chiefly of the above specified articles, while Canada only furnished 704 tons.

It is therefore plain that this export museum, which will be the means of bringing Austria-Hungary before the Canadian public, might, on the other hand, succeed in developing the Canadian export trade in so far as through its semi-official character, it will be in a position to furnish to interested parties the names of responsible importing firms in Austria-Hungary.

The museum is in capable hands, and every attention is paid to the visiting public.

#### THE JAPANESE MARKET FOR WOOD PULP.

United States Consul Bordewich, at Christiania, Norway, sends to the State Department the following taken from the Morgenposten of Christiania:

In a report from Minister Gude regarding his mission to China and Japan, he states that in the last-mentioned country there might be found a considerable market for our exports of wood pulp for paper manufacture. The minister believes that our enterprising exporters of wood pulp might be able to accomplish something in this branch there, as it still is new and but little worked. But all now depends on getting ahead of the Americans. In the statistics for 1895, however, he has not found wood pulp specified as an article of import from the United States. On the other hand, he discovered several orders for wood pulp to Norwegian firms, so he reasons that the market could easily be secured and increased, if our exporters would make efforts in this direction.

In Japan, both common pulp and chemical pulp is needed; both kinds are used even now in large quantities by the largest paper mill there. The Japanese, with their great facility for imitation, have, it seems, also become desirous of manufacturing a different and finer paper than the soft and porous article which they have so far made from a pulp consisting of rice straw, papyrus, bark, etc., the same as is used in China. But for this, European wood pulp is needed, as the attempts to make wood pulp from native Japanese wood have not met with success.

As British Columbia abounds in timber suitable for the manufacture of wood pulp, and as not only Japan but other countries bordering on the Pacific Ocean offer such good markets for the article, capitalists should find a profitable investment in the wood pulp business in that province.

#### NAILS IN NEW ZEALAND.

In a country like this, where there are many wooden houses, the demand for iron nails is naturally very large. A great many are also employed for the cases used for packing butter, fruit, etc., and in the making of furniture. England, Belgium, the United States, and Germany are the chief sources of supply. Belgian and German tacks are cheaper than those of other countries; the larger nails come principally from England. The trade in horse-shoe nails is divided almost equally between England, Germany and the United States. An importer of horse shoe nails has declared:—"A few years ago I got all my nails from England. One day on opening a case I found a German circular quoting prices so much less than the English that I resolved to send the firm an order. Still, I am endeavoring to find an English brand at the same prices"—Belgian Consul at Melbourne.

#### LEATHER AND BOOTS AND SHOES IN SPAIN.

The war between Spain and the United States, which so seriously affected Spanish commerce in general, caused special injury to the trade of Minorca, of which the making of boots and shoes for exportation to the Island of Cuba is the only important industry. The manufacturers here now believe that if the United States maintain in Cuba the present tariffs, the manufacture of boots and shoes in Minorca will soon be

as important as it was formerly. With respect to the said industry, I cannot help calling the attention of British manufacturers to the fact that all the imported materials, especially leather and patent leather, used in it come from France, Germany, and the United States, and none from Great Britain. I have endeavored to find out the reason for this, and am informed that the leathers of England are not suited to the conditions required in the shoes that are exported to the Antilles. Would it not be worth the consideration of the British leather manufacturers to make classes similar to those used in the boot and shoe factories here, and which now come from France, Germany and the United States? I believe that the trade is of sufficient importance to be worth serious consideration.—British Vice-Consul at Mahon.

#### LAMPS IN ADEN.

I have often thought that this was a promising market for these goods, if some energetic firm would manufacture a good lamp of the kind in use. The lamp must be strong and punkah proof, and sell for from fifty cents to \$7. All grades, from the ordinary hand lantern to the hugh wall lamp, are in demand. The plain ones are used.—United States Consul at Aden.

#### TRADE IN NEW ZEALAND

At a recent meeting of the Wellington, New Zealand, Chamber of Commerce, the president said that in the twelve months ended 30th September, 1891, exports of New Zealand reached for the first time the gross total value of over ten millions sterling. From that date for some years the volume of the Colony's exports diminished in value, but it is gratifying to note that for the last two years the standard attained in 1890-91 has again been reached and even exceeded, and the year ending with 30th June, 1899, shows a total in excess of any previous record in that Colony. Not only is this the case, but this result has been arrived at in spite of a shrinkage of nearly £500,000 in the value of New Zealand's chief staple—wool. Had the value of exports in this staple equalled the figures for the previous year, the shipments of New Zealand produce alone would have reached a total of £11,000,000 sterling. In view of the fact that the circumstances which resulted in a shortage of the wool clip last season was only temporary, and that the conditions of the present season are as favorable as those of the previous season were adverse, there is reason to expect that when the time comes to reckon up the results of the year 1899-1900, the total value of New Zealand's exports will be far in excess of the record year lately ended. And the shrinkage of the declaration value of the wool exports is not caused wholly by the shortage in quantity. According to the official returns of the Colony, indeed, the fall in price is responsible for nearly two-thirds of the total shrinkage.

#### THE RHODESIAN MARKET.

J. E. Mason, in a letter to the Scientific American, writes from Inyang, Rhodesia, as follows:—"Cheap calico, in lengths of about two yards, for native loin cloths, sells better than almost anything else. Small colored glass beads and fine brass wire for the native trade are also in demand. American flour is on the market here, but, owing to lack of competition, I think, more than to cost of transportation or custom dues, is very dear; in fact, almost everything edible or drinkable is at famine price. The wines and liquors are of a very inferior grade and very expensive. Scotch whisky and Dop Cape brandy have the largest sale. There are only two or three places in Rhodesia where rye whisky can be purchased. I think there is an excellent market here for California wines and rye whisky if properly introduced and sold at moderate prices.

"Pith helmets, which sell at \$4.20 apiece, would be in great demand if less expensive. Good hunting knives, rifles and shotguns can hardly be purchased except at second hand

and at many times their value. Of rifles, the Martini-Henry and Lee-Netford, 303, are almost exclusively used; ammunition for the former costs £1 per 100; for the latter, thirty shillings. A box magazine rifle to take the Martini-Henry cartridge would have an enormous sale. Magazine rifles fetch about \$50 and express \$75 to \$100 second hand; twelve gauge shotgun cartridges, black powder, cost over \$5 per 100.

"Good sized mules and horses fetch exorbitant prices; almost any kind of a beast will fetch \$200 to \$300. Horses die off in large numbers every rainy season of a 'lung sickness,' and it is this that keeps the price up. Southwestern animals, broken to saddle and accustomed to scanty fare, should do well, and, as the horses here seem to lack stamina, once introduced there would probably be a steady demand for them.

"Last, but not least, any publishing house selling cheap editions of good works of fiction would reap a golden harvest. There are not many amusements in a new country like this, and wherever one goes, the first question is: 'Have you anything to read?' The country is growing, and a trade properly managed should constantly increase.

"The nearest seaport to Rhodesia is Beiro, whence a railroad runs to Unitali and Salisbury, the capital."

#### PAPER IN MEXICO.

A British official report recently issued shows that Mexico is an excellent market for the paper exporter to cultivate. The value of the imports in 1898 was £306,234 (for paper and its manufactures), or nearly £40,000 over the amount of the previous year. An increase took place in the demand for cigarette paper, unsized paper for printing, packing paper, cardboard, and manufactures of paper and cardboard. Unsized paper for printing purposes was received in much larger quantities in 1898 than in 1897, which shows that home production is not capable of meeting the supply required for cheap newspapers. The demand for wood pulp also shows a large increase, notwithstanding the attempts on the part of local mills to use the various fibres grown in the country.

#### POSTAL SHIPMENTS TO RUSSIA.

United States Consul Monaghan, at Chemnitz, Germany, transmits the following instructions relative to postal shipments to Russia: When a letter is found in a package sent by post, note of same will be made and signed by the customs official in charge. This note will contain the name of the place whence the letter comes, whither it is to go, when sent, and for whom and from whom. The letter is to be taken out and sent with the above mentioned note to the postal authorities at the place whence the package came.

A package containing a letter is to be sent forward to the addressee, under general regulations. The letter will also be delivered upon the party with whom it is addressed, paying a fine. In case such payment is refused, the letter is to be forwarded to the general postoffice. In cases where packages from foreign parts contain letters or notes or circulars in open envelopes, even though they have the character of correspondence, such inclosures will not be removed. The package, with its inclosures, will be delivered to the parties to whom it is addressed.

#### BRITISH COMMERCIAL ATTACHES.

Mr. Brodrick (Under-Secretary for Foreign Affairs) replying to Sir S. Northcote in the House of Commons on August 3rd, said:—Her Majesty's Government, with a view to furthering British trading interests, have decided to appoint commercial agents in certain countries. Appointments will shortly be made in Russia, Switzerland, China, and America. These agents will not have diplomatic rank, but will visit various commercial centres, and will be available for special consultation by British firms in respect of various industries by payment of a moderate fee, such fees going to the Exchequer, and not to the commercial agent, who will be paid by salary. The appointments will be made experimentally for two or three years.

#### TRADE OPENINGS IN QUEENSLAND.

There is likely, it is stated, to be a brisk demand shortly for dredgers and harbor improvement plant for Queensland, as the Government there have decided that the export trade might be greatly fostered by suitable harbor accommodation. The colony has recently been laying itself out, in the way of railway and refrigeration facilities, to develop the wool and the frozen meat trade, and now proposes to have the harbors bettered. A special scheme has been prepared embracing not only Brisbane and Maryborough, with the waterways of which they form a part, but also the Burnett River, Rockhampton, and Broadmount, the Mackay, Gladstone, Bowen, Townsville and Cairns Harbors. For Brisbane alone it is recommended to purchase two hydraulic dredges aggregating 7750 indicated horse power, a powerful rock-excavating single-bucket dredger, and to convert the present ladder dredger into a shore-discharging apparatus, while two barges are to be converted into self-loading dredgers. For the other ports dredgers and grab machines are also recommended.—British Trade Journal.

#### UNITED STATES TRADE WITH AFRICA.

The increased public interest in affairs in Africa, and especially South Africa, resulting from recent developments, lends interest to some statements just prepared by the Treasury Bureau of Statistics relative to the commerce of the United States with that continent and the growing demand in all of its divisions for our manufactures and products. Exports from the United States to Africa were in the fiscal year 1899 more than five times as great as they were in 1889. The total exports from the United States to all of Africa in the fiscal year 1889 were but \$3,496,505, and in 1899 they were \$18,594,424. From Cape to Cairo and from Liberia to Abyssinia American manufactures and American foodstuffs are making their way. Railroad bridges in the Nile valley, mining machinery in the gold and diamond districts, clothing and foodstuffs in the Soudan, all find an increasing demand. Exports from the United States to Africa have grown more rapidly since 1893 than those to any other of the grand divisions of the world, while Asia and Oceanica come next, Europe next, North America next and South America last in the list showing the relative growth in our exports. To Africa the increase from 1893 to 1899 is 218 per cent.; to Asia and Oceanica, 165 per cent.; to Europe, 42 per cent.; to North America, 32 per cent., and to South America, 10 per cent., while the increase in the grand total during that period has been in round terms 45 per cent. Manufactured articles form the bulk of our exportations to Africa, and even in those articles ordinarily grouped under the title of breadstuffs and provisions they are classes which have been so far advanced to a condition for immediate use that practically all of the labor required in their preparation as well as production is included in the prices received for them when they are put into the market. Flour, meats, lard, tobacco, mineral oils, clothing, machinery, furniture, materials for railways, materials for mining industries and agricultural implements form the large proportion of our exports to Africa, and in all of these the quantity and value of our exports are constantly increasing. Not only, it is to be added, are our exports to Africa rapidly growing, but they are evidently taking the place, to a greater or less extent, of those articles formerly supplied by other countries.—Bradstreet's.

#### TRANSVAAL TRADE CHANCES.

The dwelling houses of Johannesburg, in the Transvaal, are almost all of iron; galvanized and corrugated iron sides and roofs, the newer and better ones lined inside with brick, and they have brick partitions. The older iron houses are lined with sun-dried brick or "dagga" on the inside. The rooms immediately below the roof are rather hot in summer and cold in winter. As a rule all ordinary stores, warehouses and mine buildings have all wooden frame work and iron sides

and roofs. The dwelling rooms for white employes and workmen, if brick, have the walls hard finished. There are no native woods in that part of South Africa available for building purposes, and therefore every piece is imported. Small pieces of the hard and crooked native woods are only used for mine poles and fence poles. Every telegraph and telephone pole in South Africa is of iron and imported.

The United States has a very large lumber trade with South Africa. We send them redwood from California, chiefly for stores for cyanide tanks. Most of the building lumber, and that used principally in the mines, is Oregon pine. Port Blackley, in the State of Washington, is our chief port for export. This cost in Johannesburg prior to the present war, from 93 cents to \$1 and over, per cubic foot, Pitch pine from the South Atlantic States, costs at present per cubic foot, \$1.06. All doors and windows are of American manufacture, and are packed for export in pieces; all the window casing being put together after they reach South Africa.—Philadelphia Inquirer.

#### AMERICAN TRADE WITH NEW SOUTH WALES.

From the Statistical Register of New South Wales for the calendar year 1898 the value of the imports into that colony of certain leading lines of articles from all countries and from the United States is shown as follows:

	Total Imports From All Countries in 1898.	From United States in 1898.
Agricultural implements . . . . .	£104,950	£27,098
Bicycles . . . . .	126,138	18,450
Boots and shoes . . . . .	316,650	71,154
Carriage material . . . . .	47,947	24,273
Raw coffee . . . . .	23,772	12,547
Drugs, (not specified) . . . . .	176,250	17,661
Fish, preserved and dried . . . . .	132,458	48,447
Furniture . . . . .	82,436	12,506
Hardware and iron mongery . . . . .	248,917	35,260
Hops . . . . .	54,672	19,483
Galvanized wire . . . . .	20,371	18,323
Pig iron . . . . .	37,977	13,771
Leather . . . . .	98,348	39,175
Agricultural machinery . . . . .	130,145	27,619
Electrical machinery . . . . .	50,714	40,714
Machinery (no. specified) . . . . .	390,709	93,585
Kerosene . . . . .	112,738	102,678
Printing paper . . . . .	153,996	77,660
Preserves . . . . .	17,577	10,097
Steel rails . . . . .	53,377	20,574
Railway plant . . . . .	69,567	13,108
Resin . . . . .	21,617	21,312
Sewing machines . . . . .	29,892	18,435
Fancy soap . . . . .	28,723	14,440
Rough timber . . . . .	302,488	99,341
Doors . . . . .	19,556	18,186
Tobacco, unmanufactured . . . . .	41,021	31,058
Tobacco, manufactured . . . . .	105,045	76,961
Cigarettes . . . . .	49,234	34,073
Tools (not specified) . . . . .	84,237	36,624
Turpentine . . . . .	14,814	11,975
Watches and clocks . . . . .	60,700	14,699

#### FLOUR MILLS AND MILLSTONES IN EGYPT.

Flour mills are mostly of English construction. About one hundred mills are sold here every year, of which 70 per cent. come from England, and 30 per cent. are of native manufacture. As regards millstones 90 per cent. are of French origin, of which 75 per cent. arrive from France already mounted, whilst 15 per cent. are sent from France to England for mounting and dispatch to Egypt, where they are entered at the Customs as of English origin. The remaining 10 per cent. are native millstones which are only used in Upper Egypt. French millstones imported here are all supplied by the Société Générale Meaulière and by M. Bayot of La Ferté-sous-Jouarre. Recently, mills with porcelain rollers or other material, and also mills in which the stone has been replaced by steel, have been much extolled.—French Official Report from Alexandria.

#### TRADE WITH DEMERARA.

Mr. J. H. de Jonge, who was a representative of the Island of Demerara, in the recent trade negotiations with the United States and Canada, on his return home, speaking of the lack of good and sufficient packing of goods shipped to that Island said:—

"I pointed out to the Canadians that they had not yet had the experience of the United States—that they had not yet learned how to put up goods for the tropics as well as the Republic, that it was hardly fair to expect the individual merchant to pay for such experience, and that, therefore, it was fairly within the sphere of the Government to pay certain amounts of money by way of premiums in order that experiments in packing, etc., might be made. Unless that were done the development of Canadian trade with the West Indies would be a very tedious affair. Merchants here find that the flour, cheese, butter, and similar articles imported from Canada are not packed in the same perfect manner as the Americans manage to put things up to stand against the influence of the climate."

A meeting of the Dominion Plow Manufacturers' Association was held in Toronto, Sept. 22nd, the object being to consider the present situation in the business caused by the rise in prices of iron and steel. For some months manufacturers have been working at a loss, as the increase in cost of material amounts to an average of about a dollar and a half per plough. Contracts for implements are made yearly at the beginning of November, and in consequence, although the makers have been suffering, there was no remedy, as the contracts made last year had not expired. The meeting was a very representative one, about 90 per cent. of all the manufacturers in the country being present. In view of the approaching expiration of the contracts it was decided to raise the price a sufficient amount to cover the increased cost of material.

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## CAPTAINS OF INDUSTRY.

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

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

The starting of any such concern means a demand for some sort of machines, machinery, or supplies, such as steam engines and boilers, shafting, pulleys, 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, alkalis, etc. It is well worth the while of every reader of the Canadian Manufacturer to closely inspect all items under the head of Captains of Industry.

The mill of the Ottawa Paper Co., in that city, is about completed and ready to be put in operation. It will give employment to about fifty hands, and will turn out about sixty tons per week of wrapping, tissue and other papers.

Mr. W. H. Pratt, president of the Conger Lumber Company, Parry Sound, has closed a deal with H. Loveling & Co., a wealthy American firm, to cut 10,000,000 feet of lumber during the season of 1900. As the company have a cut equal to this for themselves the entire output for the Conger next summer will total 20,000,000. This means cutting night and day for the full season. Some alterations will be made in the mill this fall and as soon as logs can be floated next spring cutting will be commenced.—Parry Sound Star.

The Ogilvie Milling Co. are filling an order from the British Government at their Winnipeg mills for 10,000 bags of their best Hungarian flour for use in South Africa.

Mr. Joseph N. Shenstone, secretary of the Massey-Harris Company, Toronto, has been appointed general manager of the Canada Cycle and Motor Company. Mr. Shenstone was largely instrumental in building up the business of A. Harris, Son & Co., of Brantford, and when that company was amalgamated with the Massey Company he became a director and secretary of the Massey-Harris Company. The appointment of Mr. Shenstone as general manager means a strong policy for the Canada Cycle and Motor Company, Mr. Shenstone having already made a fine record in that line through his direction of the Massey-Harris

Company bicycle department. Mr. W. H. Shapley, of the old Gould Bicycle Company, has been appointed general superintendent of the factories, a position for which his former experience well fits him. The Canada Cycle Company, it is understood, intends pushing its export, as well as domestic, business vigorously, and it is interesting to note that the company are recently in receipt of a cable order from Australia for 665 bicycles, while wheels are now being manufactured for which the company has orders from Japan, India, and other countries. It is estimated that it will take 40,000 bicycles to meet the demand of next season's trade, and work is being pushed at all the factories.

The Magnolia Metal Co., New York, inform us that they have recently completed arrangements whereby the Q. & C. Company of Chicago and New York, become the exclusive agents for the railroad trade for Magnolia Metal for the United States, Mexico and Canada; and the Metal Sales Company, Cleveland, Ohio, have been appointed sole agents for Ohio, Indiana and Michigan.

The Scotch steel manufacturers are doing a good deal to keep up the credit and the efficiency of British steel-manufacturing plant. It is nearly four years since Colville & Sons started, at Motherwell, a new plate mill, capable of producing 500 to 550 tons a shift, 6,000 tons a week, or about 300,000 tons a year, and worked by five men and a boy. This mill is capable of rolling the heaviest slabs and plates down to billets 4 inches by 4 inches. The men who work the

mill are in little boxes like signal boxes alongside the mill, and direct the movements of the mill by a series of levers. It is a striking tribute to the efficiency with which modern machinery for rolling mills is now designed and constructed that this mill was started as if it had been working for years, and gave no trouble from the first.—Iron and Coal Trades Review.

The Goldie & McCulloch Co., Limited, of Galt, Ont., have just made a large shipment to Mexico of fifteen Bagasse filters for sugar plantations.

For years Mr. Ellis, who was superintendent of the old Welland Canal, has had an idea that the peat of the swamps in the vicinity of Thorold and Merriton, Ont., could be utilized in the manufacture of a quality of pulp suitable for the making of heavy wrapping or other paper where color was not a feature. This idea has led to experiments by a man from Ohio, who has been in the vicinity of Thorold lately making investigations, says The Paper Mill, who has expressed himself as confident of success. The peat is obtained in large quantities in the swamps in that vicinity, and the process he would use it is understood, includes cooking and washing it, and then passing it through a wet machine, the result being a pulp for making the kind of paper mentioned.

The name of Elliott & Brooke Company, Toronto, has been changed to the Elliott Manufacturing Company.

The Volta Electric Storage Co., Hamilton, Ont., has been incorporated with a capital stock of \$500,000, to manufacture electric storage batteries, electric motors, etc.

It is intimated that the new Canadian paper mill that will have the backing of the Lloyds of London, England, and be under the management of John C. Morgan, of this city, will be located near Ottawa, Ont. It is well known that there is considerable water power available near that place, and paper mill men generally will pronounce the location a good one for an enterprise of the extent projected by the Lloyds.—The Paper Mill.

The Dominion Coal Co., have given an order for six million bricks to be used in the erection of new buildings to the Maritime Clay Co., Pugwash, N.S.

The Dominion Iron & Steel Co., Sydney, C.B., have ordered three large travelling cranes from the Brown Hoisting & Consigning Machine Co., Cleveland, Ohio.

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The Guolph Axle Mfg. Co., Guolph, Ont., has been incorporated with a capital stock of \$28,000.

The Cyclone Grate Bar Co., Toronto, has been incorporated with a capital stock of \$20,000, the provisional directors being Henry Truesdell, G. E. Challes, G. W. Kilmer, Toronto, and John R. Barber, Georgetown, Ont.

The Chalcraft Screw Co., Brantford, Ont., has been incorporated with a capital stock of \$75,000.

Messrs. Barchard & Co., Toronto, have been incorporated with a capital stock of \$20,000, to manufacture boxes, etc.

The Goldie & McCulloch Co., Limited, Galt, Ont., are working on an order from the Dominion Government for a large iron show case for the Paris Exposition. It is to be used for the mineral display.

The Cyclone Woven Wire Fence Co., Toronto, has applied for incorporation with a capital stock of \$30,000. J. W. Wilcox, Henry Buckel, and J. E. McGarvin are to be the directors.

The Massey-Harris Co., Toronto, will erect a large brick warehouse at Galt, Ont.

The City Commissioner, Toronto, recommends the erection of a crematory at a cost of \$8,000.

Messrs. McLellan & Co., Vancouver, B.C., will erect a large warehouse at that place.

The Laing Biscuit Co., Montreal, will erect a four storey brick building in connection with their business.

With the growth of Canadian pulp and paper mills, and the consequent increase in production, manufacturers no doubt will be compelled to cultivate an export trade. Fortunately for some time past there has

been a good local demand for Canadian paper, and consequently mills have been kept fairly busy on home orders. At one time there was some talk of exporting Canadian paper to Great Britain in large quantities, and therefore the following official statistics, showing the receipts of paper from Canada during 1894-98, may be of interest: 1898, 31,951 cwts., £14,735; 1897, 18,833 cwts., £11,831; 1896, 3-481 cwts., £8,360; 1895, 2,440 cwts., £9,661; 1894, 1,325 cwts., £829. It will be seen that considerable headway was made in 1898 compared with previous years. In regard to the exports of British paper to Canada, the quantity shipped in 1898 amounted to 19,355 cwts., of the value of £37,227, a considerable decline compared with 1894—five years ago—when the quantity was 26,549 cwts. of the value of £49,684.—Paper Trade Review.

The Lac du Bonnet Co. are installing a complete brick making plant in their brick yards at Lac du Bonnet, Que., and expect to be in the market with brick next season.

The Carleton Creamery Co. will erect a large new factory building at Woodstock, N.B.

The alterations and improvements now being made on the Knapp roller boat at Prescott, Ontario, are simply the remodeling of the craft back to the original plans of the inventor. Mr. Knapp says that his boat up to the present date had not been arranged on his original plans of construction. Still he had proved that, even under these circumstances, his idea had a telling success. As the vessel will shortly appear, all his original plans will be carried out, as far as it is possible, in this model, and will show the application of power as originally intended. The alterations consist of placing one compound engine in the centre of the

tubular construction, instead of one at each end, as in the present model. This, it is shown, will prove of great value in concentrating the driving power. The funnels will be done away with and an open bulk head will be substituted in the centre of the craft, as also intended in original design. Then the flanges or paddles will extend the full length of the boat and project five inches. These flanges will be made of steel and arranged in such a way as to be capable of further projection if desired. As Mr. Knapp says, this altered model will in reality be what his original designs called for, and with it he can more comprehensively demonstrate the enormous carrying capacity of this new craft over the present type of freight carriers.

The Dowling Milling Co., Edmonton, N.W.T., has been incorporated with a capital stock of \$40,000.

The Goldie & McCulloch Co., Galt, Ont., are in receipt of a large order for machinery, etc., from the St. Charles Condensing Co., an American concern who are establishing a branch works at Ingersoll, Ont.

Smith's sawmill at Gardner's Creek, N.B., was recently destroyed by fire. Loss about \$1,000.

Geo. W. Murray's planing mill and sash factory at Winnipeg, Man., was destroyed by fire October 19. Loss about \$15,000.

Fire destroyed Joseph Bedard's steam saw mill near Richmond, Que., recently, and about 60,000 feet of lumber.

The capital stock of the St. Thomas Gas Co., St. Thomas, Ont., has been increased from \$60,000 to \$100,000.

The General Engineering Co., Toronto, will increase its capital stock from \$40,000 to \$750,000.

**REDDAWAY'S ORIGINAL**

**CAMEL BRAND HAIR BELTING**

**STRONGEST BELT MADE. NO STRETCHING.**

NOT AFFECTED BY DAMPNESS,  
HEAT OR STEAM.

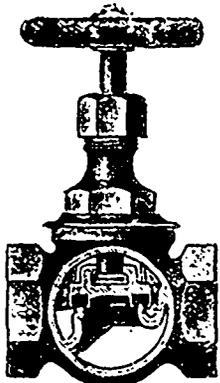
WRITE FOR PARTICULARS. LARGE STOCK ON HAND.

Fire Hose, Steam Hose, General Mill Supplies.



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

**FAIRBANKS VALVES**



A. D. GLOBE.

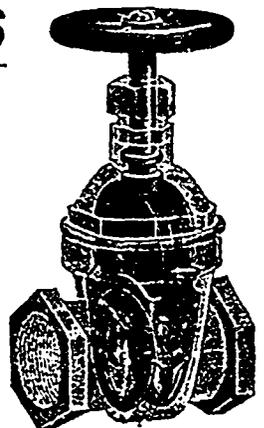
**The Globe Valve**

Has enough metal to stand the strain of expansion and contraction; has the best and simplest renewable disc made; stuffing boxes all packed with "VULCABESTON."

AMERICAN PATENT

**The Gate Valve**

Has two renewable seat rings VULCABESTON or BRONZE, as desired; Renewable Wedge; Double seated. Made in all sizes in Brass or Iron.



A. S. GATE.

**THE FAIRBANKS COMPANY, 749 Craig St., Montreal.**

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

The Meyercord Co., Chicago, Ill., manufacturers of decalcomania transfers for trade marks, decorations, name plates, etc., for hardware, bicycles, vehicles, pottery, furniture, etc., are increasing their Canadian trade very rapidly, and have made Mr. Chas. H. Jagger, of Buffalo, N. Y., their Canadian travelling representative.

The Maritime Provinces are experiencing the good times now as well as other parts judging from the orders placed recently with The Goldie & McCulloch Co., Galt, Ont., for wood working machinery. They are also very busy on home orders.

The Syracuse Smelting Works, Montreal, inform us that they are enjoying a very large Canadian trade, and that their works are being operated to their fullest capacity. They are now offering their customers a special discount upon any orders that may be placed for goods for early delivery and before taking inventory. This is an opportunity that should not be neglected in these days when so much delay has to be encountered in filling orders. The Company also inform us that they have in stock some large purchases of scrap iron and steel which they are offering at low prices. They are always in the market for buying and selling such goods.

The sawmill and cheese factory of John Kaufmann at Cassel, Ont., was destroyed by fire October 25th. Loss about \$6,000.

The Goldie & McCulloch Co., Galt, Ont., are very busy just now on engine work.

They are working over time. Recent orders received for engines are from Kennedy & Sons, Owen Sound, Ont., Intercolonial Railway, St. John, N. B.; Dominion Bridge Co., Lachine, Que., Corporation of Barrie, Ont.; Corporation of Prescott, Ont.; Vulcan Iron Co., Winnipeg, Man.; R. C. Ennis, Neepawa, Man.; and Berlin Rubber Co., Berlin, Ont.

The Robb Engineering Co., Amherst, N. S., are supplying the town of Neepawa, Man., with the steam plant for their new electric lighting system—a 100 h. p. compound engine and two 75 h. p. Mumford improved boilers.

An elevator and flour mill company has been formed at Morinville, N. W. T., under title of La Compagnie d'Elevateur et de Moulin a Farine de Morinville, with a capital stock of \$15,000.

The Cartwright Farmers' Elevator Co., Winnipeg, Man., has been incorporated with a capital stock of \$4,000.

The Fairbanks Co., Montreal, has this year made the following sales of railway track scales through its Montreal office:—To the C.P.R. 3, for Vancouver, Winnipeg & Sharbot Lake; G.T.R. 5, for various points on its line; Canadian Northern Railway 1, for Winnipeg; Algoma Central Railway 2; Dominion Coal Co., 2; Dominion Iron & Steel Co. Sydney, C.B., 1; Cumberland Railway & Coal Co. 1; Granby Consolidated Mining & Smelting Co., Grand Forks, B.C., 1; Dominion Cotton Mills

Co., Magog, Que., 1; Laurentide Pulp Co., Grand Mere, Que., 1; Nova Scotia Steel Co., New Glasgow, N.S. 1. The total length of these scales is 742 ft., and the total capacity over 3,000,000 lbs.

The Goldie & McCulloch Co., Limited, Galt, last winter sold a "Model" gasoline engine to Mr. D. P. Tobin of Lancaster, Ont., for cutting ice. So well did it work that Mr. Tobin has triplicated the order and the firm have shipped him two more to be used for the same purpose the coming winter.

Messrs. Rhodes, Curry & Co., Amherst, N. S., have received orders as follows:—The Dominion Atlantic for ten flat cars; The Moncton & Buctouche Railway, one passenger car; Ross, Barry and McCrae, contractors for the Great Northern of Canada, five flat cars; Dominion Iron and Steel Co., Sydney, C. B., eight freight cars; The Sydney & Louisburg Railway, a second-class combination passenger car; and The Intercolonial Railway for 20 wicks patent refrigerator cars, and 200 box cars, the latter to be 38 feet long and of 60,000 lbs. capacity.

The Gallagher-Hall Meat & Packing Co., Edmonton, N.W.T., is applying for incorporation with a capital stock of \$75,000.

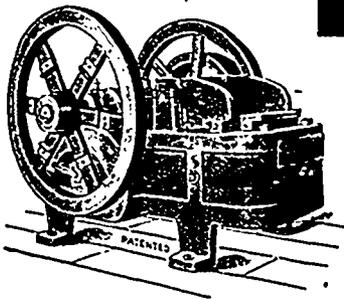
The Clement & Clement Co., Montreal, has been incorporated with a capital stock of \$160,000, to take over the business of Messrs. Clement & Clement, and manufacture addressographs, etc.

ONLY

# FINE CRUSHER

## FOR QUARTZ and ORES.

DOES WORK OF CRUSHER AND ROLLS COMBINED.



ROLL JAW CRUSHER.

STURTEVANT MILL CO.,

Send for Circular.

BOSTON, MASS.

# 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.

The Canadian Pacific Railway have given an order to the Canadian Engine and Locomotive Works, Kingston, Ont., for ten compound consolidation engines.

The United Electric Co., Toronto, are installing an incandescent light system in the knife works of Mr. Peter Hay, Galt, Ont.

An electric fog horn has been invented by a Canadian engineer. A naphtha engine supplies the motive power for a dynamo, which furnishes the electric current by means of which three pairs of electro-magnets operate half a dozen clappers, which strike against a large gong with the frequency of about 36,000 strokes to a minute, producing an almost continuous sound. Its effectiveness is enhanced by a mechanism on the principle of the megaphone, by means of which the sound is not only intensified, but thrown in the required direction. According to The Western Electrician the sound from a small model was heard a distance of two miles. A full sized fog horn is to be sent to the British Columbia coast, where it will be installed and put in operation at once.

The evaporating factory of Kennedy Bros., Leamington, Ont., was destroyed by fire October 28. Loss about \$2,000.

The capital stock of the Dominion Oilcloth Co., Montreal, has been increased to \$900,000.

Fulton Bro's. sawmill at Fingal, Ont., was destroyed by fire October 25th. Loss about \$5,000.

The Grand Trunk Railway will erect a station at Listowel, Ont.

The ratepayers of Woodstock, N.B., have voted in favor of a \$500 bonus for the erection of a pulp mill.

The ratepayers of Harriston, Ont., will vote on a by-law for a \$20,000 bonus to the Harriston Pork Packing Co.

Debentures for \$55,000 will be issued by the council of Hull, Que., to meet the additional cost of substituting hydraulic for steam pumping in connection with its water works.

The report prepared by Mr. Lumsden, of the workings of the office of the Provincial Secretary for 1898 gives evidence of steady industrial development in Ontario, while the figures, so far available for this year, show a still more striking increase. The number of joint stock companies incorporated is steadily

increasing. Last year the total revenue from this source was \$23,395. For the first nine months this year the fees for this purpose came to \$46,711, just about double those of the whole of last year. For the present month \$5,000 has already been collected, and it will undoubtedly be the best month on record in this respect. The department have had to employ additional clerical assistance to do the engrossing of these charters. It is noticeable that what might be called speculative companies, such as gold mining concerns, are proportionately fewer than formerly, the great majority of the now companies being to establish industrial enterprises or to operate existing factories.

**THE DURABLE ACETYLENE GAS BURNER.**

The Durable Acetylene Gas Burner Co., Dundas, Ont., is a newly organized concern who are manufacturing a patented acetylene gas burner regarding which they say.—

You may have heard it claimed for many Acetylene Gas Burners that they are non-carbonizing. A very short test proves the fallacy of such claims. To be absolutely non-carbonizing a burner should permit of the light being lowered and left that way for an indefinite time without the formation of carbon on the tips; try this with any burner, other than the "Durable" and carbon will form. In addition to this, many of these burners are brittle or fragile and are easily broken when being cleaned—as they require to be—to obtain a good and even flame.

Being all-metallic, the "Durable" is unbreakable, and from its construction it is impossible for carbon to form on the gas vent, whether the gas is lowered or not; the light can be left turned down for an indefinite period and carbon will never clog the vents.

The economy in gas and the avoidance of continually striking matches will be readily apparent to all practical persons.

From its construction, a thinner and flatter flame is obtained, so that a half foot burner gives as much light as a three quarter foot ordinary burner.

There is danger to be apprehended from burners which permit the formation of carbon; when red hot this carbon is liable to drop, and should it fall on anything inflammable the result might be serious.

The "Durable" has had the most severe tests applied to it for the past year and has

stood them all successfully; we have therefore every confidence in recommending it to the public.

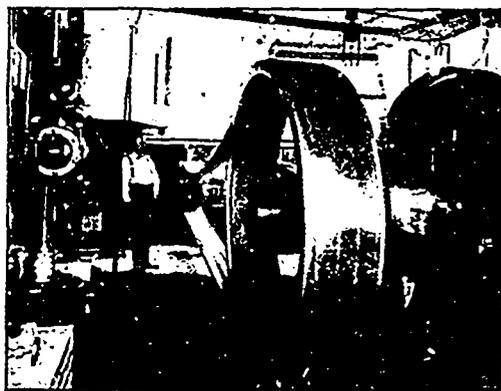
The burner is nickel plated and has a combined round and hexagon base, giving it a neat and attractive appearance.

It is also made on a smaller scale for cycle lamp tips, using one-eighth foot per hour and giving a beautiful flat flame. It is the only burner suitable for these lamps, as it cannot be broken and will stand all the rough usage some of the lamps are exposed to. Insist that your lamp has a "Durable" burner.

**THE HENSALL ENGINE AND MACHINE WORKS.**

Mr. Robert Bell, jr., proprietor of the Hensall Engine and Machine Works, at Hensall, Ont., is largely in the swim in this "growing time" in Canada. He writes THE CANADIAN MANUFACTURER that the demand for his automatic high speed engines, saw mill machinery, brick making machines, etc., has increased so greatly that he finds his Hensall works inadequate for the purposes of his business, and has therefore taken over the large three story brick factory in Seaforth, Ont., recently occupied by the T. T. Coleman estate, which are to be considerably enlarged, and which he is now occupying. These works have been thoroughly equipped with new and most modern and efficient machinery, which enables him to turn out work of the highest excellence and at minimum cost. Mr. Bell is now operating the works both at Hensall and Seaforth, but after November 10th inst., his head office will be at Seaforth. He will continue the production of the lines upon which he has built up his present business—the Bell automatic engine, saw mill machinery, steam boilers, portable and stationary steam engines of all sizes, and also the brick machine for making brick from sand and cement, a description of which was recently given in these pages. This machine is meeting with much favor and is in strong demand.

Mr. Bell has made recent sales of his automatic engine as follows:—A. Mistord, Brucefield, Ont., 70 h.p.; D. Godka & Co., Seaforth, Ont., 75 h.p.; J. Willings & Co., Zurich, Ont., 80 h.p.; Goderich Organ Co., Goderich, Ont., 15 h.p.; Cook Bros., Hensall, Ont., 30 h.p. for electric light purposes; James Thomson, Bayfield, Ont., 30 h.p.



**FOUR MONTHS AGO**

**THIS BELT WAS AS TIGHT AS A FIDDLE STRING UNDER ABOUT 1000 lbs. INITIAL TENSION, AND YET WAS SLIPPING. THERE IS NO SLIP NOW, FOR IT RUNS SLACK. CLING-SURFACE DID IT.**

BROWN, DURRELL & CO.

CLING-SURFACE MFG. Co., Buffalo, N.Y.  
DEAR SIR,—Having tried Cling-Surface on my 12' dynamo belt 16 feet between centres I have been able to carry full load with 27' 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.  
Yours respectfully, E. B. PRESCOTT, Engineer.

Boston Branch:

170 Summer Street.

CLING-SURFACE MFG. CO.

120-126 Virginia St., BUFFALO, N.Y.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



**A REMARKABLE CANADIAN IRON MINE.**

The Wabana iron mine, which was recently purchased by the Dominion Iron and Steel Company for a million dollars, is on Great Bell Island, in Conception Bay, Newfoundland, about 35 miles from St. John's. Experts pronounce it to be the most remarkable iron mine in the world, and even the ordinary tourist, who knows nothing about minerals, can appreciate its peculiar formation. The ore bed consists of small regular blocks of red hematite, most of them about four inches long, two inches wide and two inches thick, but some of them considerably larger. These blocks are piled one upon another and close together just as a child piles up wooden blocks, making a bed of ore of an average thickness of eight feet extending over 817½ acres which is estimated to contain over 28,000,000 tons of available ore besides the areas under the sea which will be referred to later on. The ore crops up at the surface and mining in the ordinary sense is not required. It is only necessary to shake the blocks of ore apart and they can be shovelled into cars without trouble. Indeed as each of the little blocks of ore appears to be separate from the others, although they are piled very close together, it would probably be possible to pick them from the bed by hand, but this would be a tedious and expensive process and in order to loosen large quantities at once dynamite is used.

Mr. R. E. Chambers, M. E. manager at the mine gives much of the following information concerning it:

There are in all five beds of ore exposed in the cliffs upon the northern side of Bell Is-

land, but three of these extend over so small an area and are so thin that they are of little commercial value. The other two are known as the upper and lower beds, the former, which is estimated to contain six million tons, being still owned by the Nova Scotia Steel Company, which sold the lower bed containing 28,000,000 tons to the Dominion Iron and Steel Co. Both beds have the same peculiar formation. The outcrop of the lower bed is seen in the cliffs on the north side of the island, its western extremity being at Ochro Cove and its eastern near Gull Island head. It extends for a distance of 3½ miles without any apparent dislocation of the strata and the ore is exposed over most of its extent, giving unusual facilities for open cut working. There is little doubt that 200 feet of this outcrop can be mined open cut over the greater part of this distance, giving about three million tons of ore, and when this is worked out many times that amount can be mined underground with natural drainage. When the 34,000,000 tons of ore available on the island are exhausted, which will not be for many years, the ore beds can be followed under the sea just as some of the coal mines in Cape Breton extend under the sea. Mr. Chambers thinks there is no doubt that enormous quantities of the ore could be obtained by following the ore bed under the sea.

The shipping facilities are excellent. Great Bell Island is eight miles long and two miles wide. The north side, where the ore is situated, is exposed to northern winds, but on the opposite side, where the shipping pier is located, there is a very good harbor, perfectly sheltered from the winds. The waters of the bay are deep and free from rocks and shoals; the bottom being mud

near the pier affords admirable anchorage. Near the island the Admiralty charts show from 48 to 84 feet of water. The bay is navigable from eight to nine months of the year. The mine is connected with the pier by a double track cable tramway. This tramway is 2-foot gauge and two miles in length, and is operated by an endless steel cable 15-16 inch in diameter and four miles in length. There are 377 cars. It is an interesting sight to see the long rows of cars loaded with the little blocks of red ore moving towards the pier. The pier is 45 by 65 feet, and 90 feet high, constructed of Southern pine, which is supported upon 190 bearing piles surrounded by a crib-work of heavy timber filled with stone. There are ten pockets of 200 tons capacity each at a height sufficient to discharge into a steamer by gravity. The chutes for this purpose descend at an angle of 40 degrees and are moved by a counterbalanced winch, easily operated by one man. The cars are dumped by an automatic tippie, upset by the weight of the loaded car and returned to an upright position by cast iron counterbalance weights hung upon a shaft beneath the floor. In loading a steamer 200 tons have been discharged from one pocket in ten minutes. Two thousand five hundred tons a day can be shipped with the present facilities, and improvements can be made by the Dominion Iron and Steel Company to increase the output when required.

The depth of water at the pier is 24 feet at low tide, increasing rapidly away from the shore. The access is easy, unobstructed by rocks or shoals. The cost of mining ore and loading it on vessels is only from twenty-five to thirty cents a ton. The first shipment of ore was made in December, 1895, and since

**THOMPSON & CO.**  
Manufacturers of **BOBBINS and SPOOLS**  
FROM SELECTED STOCK.

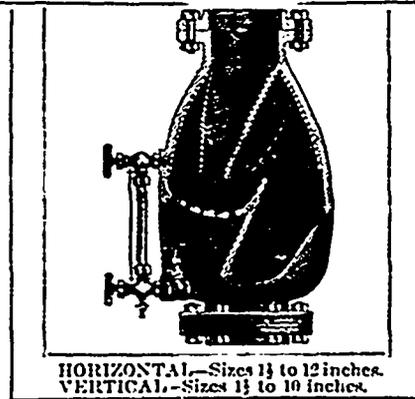
Correspondence Solicited. Orders Promptly Filled. **Sherbrooke, P.Q.**

**BELTING**

**E** Leather Belting,  
**L** Lancashire Hair,  
**E** English  
**T** Card Clothing,  
**I**  
**N** **D. K. McLAREN**  
Head Office and Factory—  
**MONTREAL**

**G O A K . E**

**WESTERN TRADE—TORONTO STOCK DEPOT,**  
'Phone 374 **88 BAY STREET.**



HORIZONTAL—Sizes 1½ to 12 inches.  
VERTICAL—Sizes 1½ to 10 inches.

**DRY STEAM—CLEAN EXHAUST.**

Every Steam Separator which will remove even a small portion of moisture from live steam is of some service as it reduces the percentage of trouble, but an Oil Separator which does indifferent service is practically no better than none.

Exhaust Steam is now used in all up-to-date power plants, and in order that it be used to best advantage it is necessary to get rid of the oil and other impurities which it contains.

In many cases, absolute purity of exhaust is indispensable to its practical use.

Dry Steam and Clean Exhaust are ideal conditions, and

**Austin Separators**

are ideal means to that end.

They have a Reputation.  
Our Catalogue will interest you.

**AUSTIN SEPARATOR CO.**  
38-40 WOODBRIDGE ST., DETROIT, MICH.

then about 600,000 tons have been shipped. This year 300,000 tons have been shipped. The terms of the Newfoundland mineral act are very favorable to the operators in regard to security of title, the only condition being the expenditure of \$6,000 for each square mile, no Government royalty being demanded. In this case the necessary expenditure has been largely exceeded in the equipment of the property by the Nova Scotia Steel Company.

The exact way in which the ore from this Newfoundland mine and coke made from Cape Breton coal will work together in the furnace is not a matter of conjecture. The Nova Scotia Steel Company has been using Cape Breton coke and Newfoundland ore together at Ferrona, with very great success for several years. The coal is carried from Cape Breton to Ferrona, where it is manufactured into coke. There are large coal mines in Pictou county, in the vicinity of Ferrona, and Pictou coke has been extensively used for smelting purposes, but large quantities of Cape Breton coke have also been used. The furnace at Ferrona is supposed to have a capacity of eighty tons a day, but it has been found that 110 tons a day can be made with Cape Breton coke and Newfoundland ore, as they work so easily

together in the furnace. As already stated, each of the four furnaces at Sydney will have a capacity of 250 tons of pig iron per day, but in view of the experience at Ferrona, it is thought that this may be considerably exceeded.

At present the ore is being sent to the furnace of the Nova Scotia Steel Company at Ferrona, to Rotterdam, Holland, to Baltimore and other points in the United States, but when the Dominion Iron and Steel Company's furnaces at Sydney go into blast the ore will be reserved for their use. The four furnaces will turn out between three and four hundred thousand tons of pig iron annually and it takes less than two tons of iron ore to make a ton of pig iron, so that the 28,000,000 tons of ore in this mine would be sufficient to supply these furnaces for more than a quarter of a century without going beneath the sea. However, the company will probably build other furnaces in a few years as the demand for their products increases.

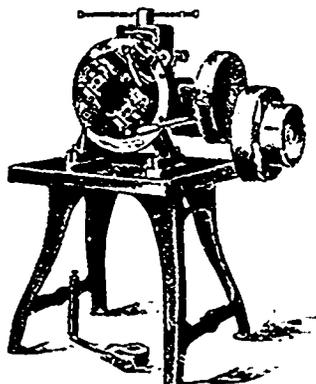
But the Dominion Iron and Steel Company will not be entirely dependent upon this mine for supplies. There are many other deposits of iron ore in Newfoundland, situated near to the sea, and, while it is not probable that any of them can be

mined so cheaply as the peculiar ore beds of Great Bell Island, they will no doubt compare favorably with mines in other places.

ONTARIO CORUNDUM.

Ontario's mineral exhibit at the Paris Exposition is being made as complete as possible, and will include samples of the corundum deposits of the province in all the stages of preparation, from the rock to the finished product. Some time ago the Bureau of Mines sent to the Prescott Emery Wheel Company, Prescott, Ontario, the Norton Emery Wheel Company, Worcester, Mass., and the Chicago Wheel and Manufacturing Company, who offered to make assortments of abrasive goods for the Paris Exposition, supplies of the raw material. The Chicago and Prescott companies have completed their goods, which will be added at once to the collection at Ottawa. The Worcester company's assortment will be ready for shipment in a few days. This company first tried one or two wheels to make sure that the material worked all right in their process. They turned out satisfactorily, and now the exhibition is in the kilns. The assortment consists of twelve wheels, made from No.

**THE BEST** PIPE THREADING and CUTTING-OFF **MACHINES**



No. 63 Machine, Power Attachment.

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

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

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**ELECTRIC CO.**



**Motors and Dynamos**  
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Second-hand, 200-light Dynamo, multipolar, as good as new.

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'Phone 958.

**Engine Packing,**  
**Magnesia Pipe Covering**  
**Lubricating Oils**  
**and Grease.**

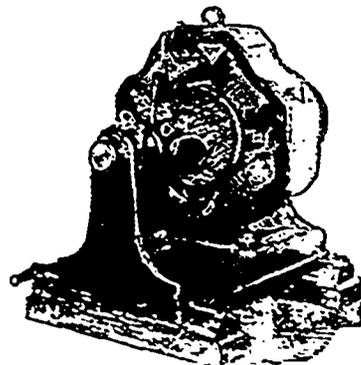


The

**William C. Wilson Co.**  
Limited

**24 FRONT STREET EAST**  
**TORONTO, ONT.**

**Electrical Construction**  
**Co. of London, Limited.**



**MULTIPOLAR MOTORS & DYNAMOS**

And Direct Connected Plants  
for Isolated Lighting.  
Repair Work a Specialty.

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

16 and No. 40 grain corundum, and ranging in size from one and a half to twelve inches in diameter, and from a half to one and a half inches in thickness. Besides the wheels there will be some specimens of No. 16 and No. 40 grain corundum in bricks and other forms, as well as quantities of the raw material in various stages of preparedness.

**NEW DYE STUFFS.**

Diamond Black F. R is a late addition to the already large family of Diamond Black Dye stuffs. It closely resembles the well known F. quality but is somewhat more Violet in tone and brighter. It is especially suitable for dyeing loose wool, slubbing, yarns, piece goods etc. It is unnecessary to again draw attention to the extreme fastness of Diamond Blacks to milling, carbonization, steaming, etc., as well as the excellent fastness to wear and light, as they are now so very well known. In price, this brand is slightly lower.

Alizarine Heliotrope R. and 2 B. Patented. These new Alizarine Heliotropes are

clear, bright colors; the latter being considerably bluer. Especially adapted for light shades and discharge printing.

Alizarine Sapphirole S. E. Patented. The Alizarine Sapphirole colors possess clear bright shades especially suitable for mode shades on ladies' dress material. Alizarine Sapphirole S. E. is the latest brand and is somewhat redder than the B. brand. Both are very fast to light, perspiration, etc., and combine well with other Alizarines to produce very fast fancy shades.

Pluto Black B. S., a valuable addition to the growing list of direct blacks, is a homogeneous dyestuff of high concentration and low cost. A deep black of bluish tone can be produced on cotton yarn as well as on loose cotton with about 3 per cent. in a standing bath or 4 to 5 per cent. in the first bath, which in fullness and depth of shade cannot be equalled by any substantive black on the market. Dyes both fibres intense and to the same shade in a boiling bath with glauher salts. In fastness to washing and light and easy solubility, it meets all ordinary requirements.

Acid Anthracene Brown R. Powder, a new important acid wool dyestuff, a substitute for Anthracene Brown, to which it is far superior in all its properties. Acid Anthracene Brown R. is especially adapted for the one bath process and dyes with addition of acetic acid and a small amount of sulphuric acid at the finish, or with sulphuric acid alone, and produces a clear brown of moderate fastness to light. By an after treatment with bichromate of potash, the shade is changed into a chestnut brown, which has a number of valuable properties. Fastness to light, not surpassed by any existing dyestuff on the market. Fastness to milling is excellent and stands even a severe test. Fastness to alkalis, carbonization, and acid is also very good. Fastness to rubbing about the same as Anthracene Brown. This color dyes slowly and falls on the fibre exceedingly level.

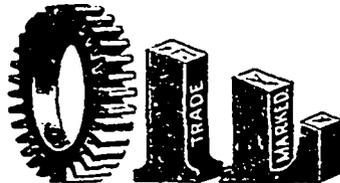
Azo Acid Blue 6 B. and Victoria Violet 4. B. S. These two excellent acid colors brought out a short time ago by the Farbenfabriken are described in a recent pattern card and some good shades are shown dyed, combinations of Fast Green Blush, Azo Crimson S., Orange 2 B., Fast Yellow extra, Azo Acid Blue 6 B. and Victoria Violet 4 B. S.

Wool Blue N. extra. This new and interesting product possesses some valuable properties, is of an extremely clear bright shade and has good level dyeing properties: excellent fastness to light and Alkalies. Wool Blue N. extra is especially suited for brilliant, pure blue shades as well as for fashion shades on ladies' dress material and in combination with the well known Acid Violet 4. B. extra or 3. B extra produces a very bright navy Blue which is unaltered by arti-

# "Capitol" Cylinder

"RENOVN"  
ENGINE

"ATLANTIC" RED



RELIABLE WELL-KNOWN BRANDS.

ALL ORDERS PROMPTLY FILLED

THE...

# QUEEN CITY OIL CO.

LIMITED,

SAMUEL ROGERS, President.

TORONTO, CANADA.



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Recognizing the importance to the manufacturing industries of Canada of all matters touching Export Trade we have decided to open a Bureau of Information embracing every point of interest connected with this subject, and which Bureau is available to all our many patrons.

The very great experience of this house in this and in all commercial affairs an experience extending over one hundred years, and our connection with the British consuls throughout the world, enables us to extend to our patrons information both valuable and reliable—for instance:

To give them the names and addresses of ACTUAL BUYERS in any line of trade, and in any country in the world.

To answer special inquiries of every character relating to trade interests.

To give PRIVATE information of a Commercial nature.

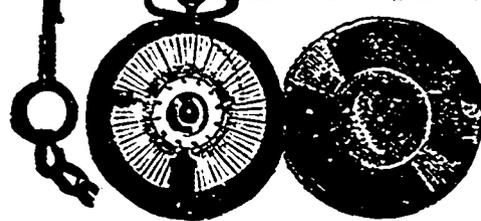
To quote Tariffs, Imports and Exports of any country, and leading industry of any City in the World.

To give Rates of Freight and Marine Insurance, and to advise as to the manner of shipping goods and collecting accounts, etc., and we cordially invite our Patrons to make use of this Bureau of Information free of charge, and also to make full use of our offices in Toronto and abroad, and all other reasonable information and services to promote the export of Canadian manufactures.

**KELLY'S DIRECTORIES, Limited**

28 Victoria St., Toronto, Ont.

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

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**A. NANZ & CO.,** Room No. 15, Graham Building, 127 Duane St. NEW YORK

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



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**The Diamond Machine & Screw Co.**

Manufacturers of TORONTO. Limited.

**M**ACHINE SCREWS and BICYCLE PARTS OF EVERY DESCRIPTION

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

ficial light. This color exhausts well dyes with glauber salt and sulphuric acid or in a neutral bath with glauber salts alone; gives excellent results and is recommended for the production of bright shades on dark shoddy.

Other noteworthy properties are its great affinity for the wool fibre and fastness to stoving, also productiveness and low price.

Chloramine Yellow 2. G. A Benzidine dyestuff, belonging to the Chloramine branch, which is already recognized by fastness to Alkalies, Acids and Chlorine. Dissolves easily and dyes level and is adapted for loose cotton yarns, hosiery, piece goods, etc. The former brand will now be known as Chloramine Yellow M to distinguish it from this new product

Brilliant Azurine R and 5 R. The above are two new substantive blue direct dyeing colors, which produce full heavy blue shades of considerable brightness. Other properties such as fastness to light, acids and alkalies are similar to those of Benzo Blue. When diazotized and developed with Developer "A", produce very fast shades resembling Diazo Blue 3. R. When after treated with Copper the fastness to light and washing is still more increased. Also adapted for half wool and half silk, the 2 R brand especially.

Shade cards, circulars, dyed skeins and color samples of the above dyestuffs will be mailed promptly to those interested on receipt of address by the Dominion Dyewood & Chemical Co., Toronto, sole agents in Canada for the Farbenfabriken, vorm. Friedr Bayer & Co., Elberfeld, Germany.

CANADIAN IRON AND STEEL.

The fascinating accounts of gold and silver production in the west are apt to overshadow the mining operations of the Atlantic coast, but it is not impossible that the greater sources of wealth may be found in the iron and coal deposits. Cape Breton's mineral wealth is now to be handled for the first time on a scale commensurate with its importance and magnitude, and, according to conservative estimates, the assured profits will be sufficient to win still greater favor for the Dominion as a field for the investment of capital. The proximity of coal to the great iron deposits makes a natural opportunity for the cheap production of iron and steel that is not surpassed on the continent, and there is no reason why in the process of competition Cape Breton should not take the lead in this important line of industry. The Nova Scotia Steel Company has been making pig iron at Ferrona out of ore from

Great Bell Island, using coal from Cape Breton to make coke. From this pig iron the company has been making steel at Trenton, near New Glasgow. The work has afforded a basis for estimating the cost of production on a larger scale by the Dominion Iron & Steel Company at Sydney. This company will not only work on a larger scale, but will have the advantage of coal, iron ore and limestone much nearer together than at Ferrona. It has been estimated that under existing conditions, and with works constructed on the scale proposed by the Dominion Iron & Steel Company, pig iron can be produced in the neighborhood of Sydney for \$5 50 per ton. The ore is mined from the open cut at Great Bell Island, but when underground mining becomes necessary the cost will not exceed \$5 83, including fixed charges. This company is working in harmony with the Dominion Coal Company, and has the assurance of an abundant supply of coal at a reasonable rate. It is safe to conclude, under the circumstances and having in view the exceptional natural advantages enjoyed, that the cost of producing pig iron will never, under normal conditions, exceed \$6 per ton. The Dominion Coal Company has been energetically forcing its products into the American coast cities as well as through eastern Canada, but these markets

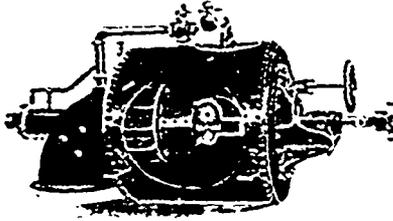
**THE CUMMER DRYERS.**

FOR **Mechanically Drying Everything**  
 THE F. D. CUMMER & SON CO.,  
 HUNDREDS IN OPERATION. CLEVELAND, OHIO.

**B. GREENING WIRE CO. (LIMITED)**  
 WIRE MANUFACTURERS & METAL PERFORATORS  
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Wire Screens for Every Class of Material.  
 Perforated Metal of Steel, Copper, Brass, Zinc for all purposes.  
 Special Attention given to Miners' Requirements.

**THE Crocker Patent Turbine**  
 In Horizontal Setting, with Quarter Turn Elbow.



Where the nature of the location will permit its use this type has many advantages. It is very suitable for direct connection to dynamos, and many are in operation in this class of service.

Notice how complete and compact this arrangement is, and how easily it may be installed. Can you use anything of this kind? Your inquiries will receive prompt attention.

**The JENCKES MACHINE CO.,**  
 42 Lansdowne St., Sherbrooke, Que.

WATER POWERS examined and Reports made. Estimates submitted for Complete Equipments.

are not available when navigation is obstructed on the St. Lawrence. The result has been heretofore a partial cessation of work during the winter season. But the development of this gigantic iron and steel industry will afford a market for the coal all the year round, and the advantage of that will make a lower price profitable. It is estimated that the blast furnaces of the Dominion Iron & Steel Company will require about a million tons of coal per year. This will be turned over to the coke furnaces of the company without transportation charges, and in consequence be profitably supplied at a lower rate than is charged for the present output of the mines. The fine coal and dust, formerly a waste product of the coal mines, can be used in making coke, and the saving

of this waste or "slack" will have a further influence in reducing the cost of coal.

The Montreal Star gives the figures on which an estimate of \$5.50 a ton for pig iron is based. The cost of 1.8 tons of ore required to make a ton of pig is placed at \$1.80; coke, 1.25 tons, \$1.80; limestone, .75 ton, 40 cents, the balance being the estimated cost of labor, repairs and incidentals. The estimate of \$1.80 for ore is based on the cost of production at the company's mine on Great Bell Island, Nfld., but it is probable that more expensive ores may sometimes be mixed with this product to make different grades of pig iron. The company owns a valuable mine in Cuba, and the location of its works is well chosen for securing by water the different varieties

and qualities of ore required from time to time. To convert the pig iron into steel billets the cost will be about \$5 per ton, making the total cost of steel billets from \$10.50 to \$11. At Pittsburg the price of grey forge pig iron has ranged from \$19 per ton in 1887 down to \$9.18 in 1898, while in the boom of the past few months it has advanced to \$21.50, Bessemer pig advancing to \$24. Bessemer steel billets have ranged from \$35 to \$40 per ton, and basic open hearth steel billets have sold at from \$42.50 to \$45 per ton. But omitting the present boom prices, there has been a range from \$32.55 to \$55.08 since 1887 for Bessemer steel billets at the Pittsburg mills. Alabama has heretofore held the record for cheap production of pig iron. During the recent depression the price of grey forge pig fell as low as \$5.75 at the furnaces. But the town is 276 miles from Mobile, the nearest seaport, and that is 2,199 miles farther from Liverpool than is Sydney. In addition to exceptional facilities for production, the Dominion Iron & Steel Company is favorably situated for reaching the British ports and other European centres of manufacture, and the gigantic scale of its business will enable it to secure favorable rates on ocean freight. These estimates go to show that the company will be able to sell iron and steel at a profit during the most severe depressions in prices, and the favorable natural conditions will insure financial success without taking into account such periods of inflation as the present.—Toronto Globe.

## ..CHICAGO.. TIME RECORDER

A RELIABLE TIME RECORDER MUST POSSESS THESE THREE QUALIFICATIONS:

1.—It must be an accurate Timepiece.

We use the famous SETH THOMAS CLOCK.

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

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

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

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

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

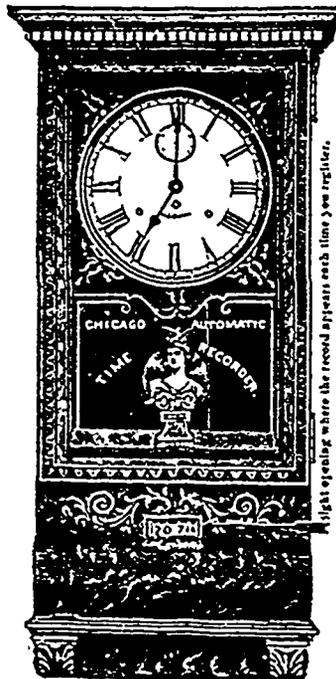
CHICAGO TIME REGISTER CO., CHICAGO, ILL.

SOLE AGENTS FOR CANADA:

**W. C. BULLOCK,**

348 Markham Street

TORONTO, ONT.



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ESTABLISHED 1823.

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(LIMITED)

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## RICE LEWIS & SON, LIMITED

### HARDWARE and METAL

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A COMPLETE STOCK OF  
STOCKS and DIES. PIPE VICES.

STILLSON & TRIMO  
WRENCHES.

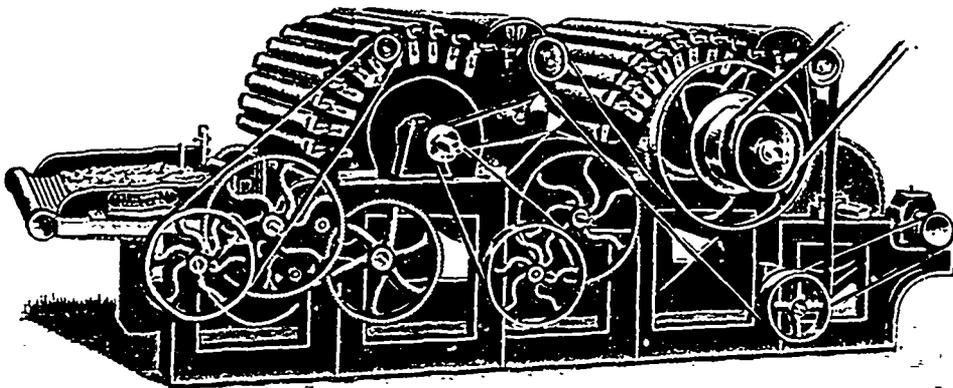
### STEAM PIPE.

Cor. King and Victoria, TORONTO

# P. & C. GARNETT, Limited

CLECKHEATON, YORKS, ENG.

TELEGRAMS, - GARNETT, CLECKHEATON.



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

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



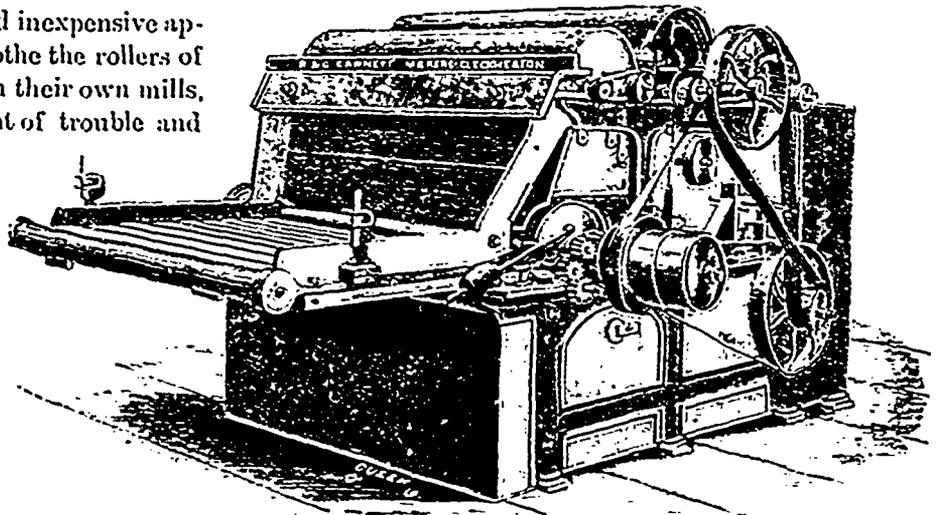
Garnett Wire.

Garnett Wire, or Metallic Card, made with any form of tooth, in Swedish Charcoal Iron or Cast Steel, with points hardened by electricity

This Wire is used for covering iron rollers, breasts of woolen cards, lickersin of cotton cards, comber doffers, etc.

## Patent Garnett Clothing Apparatus

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

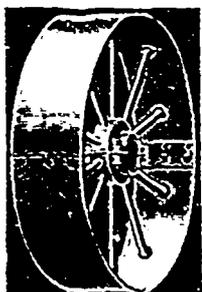


Improved Wool Cleaning or Burring Machine.

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

## WROUGHT IRON PULLEYS

Light, True and Unbreakable.



Cast Iron Pulleys.

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

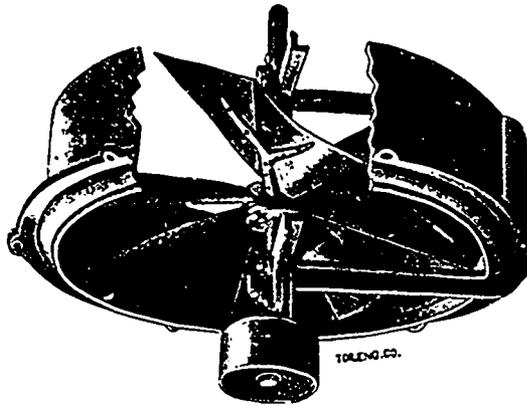
**DISC FANS.**

The common types of Disc Fans will not force, or exhaust air against resistance. They will not draw or force a full volume of air through pipes unless the pipes are the full diameter of the fan, the pipes have to be very short with few elbows and very easy turns. The usual method of arranging these fans to work against a small resistance is to set the blades at a smaller angle to give them forcing power. This arrangement diminishes the receiving capacity to a great extent.

The fan here illustrated is made to force air against resistance either in exhausting or forcing air.

As will be seen from the cut (at the part broken off), the frame enclosing the fan is curved so as to

come down in front of the blades. This enables the fan to hold all the air it gets. As all fans take in air at or near centre and discharge at the periphery, this



small reduction in the opening does not at all diminish its capacity for taking in air. The blades are curved or concave as far as the middle of each blade, so as to do the greatest possible service in taking in air, besides being concave they are set at an angle which allows the taking in of the largest amount of air. From the middle backwards, the blades curve or bevel in the opposite direction so as to give the greatest possible forcing power. Thus the air passing through fan cannot return between the wheel and casing as it can in the common type of disc fan. As far as this fan has been tested it has been found capable of handling more air for its size, and power required to drive it, and will force against greater resistance than any other.

These improvements are fully covered by patents and the fans are made by the McEachren Heating and Ventilating Co of Galt, Ont. These fans are used for ventilating, removing dust from flax mills, rag cutters, rag dusters, carpet cleaning rooms, and paper machines, etc., smoke, gases and offensive odors from blacksmiths' shops, moulding shops, glue factories, etc., steam from dye houses, paper mills, pulp mills, felt factories, laundries, soap works, etc. They are connected with coils of pipes for heating all classes of large buildings, and for drying of all kinds of materials.

The blades and shafts are made of steel; the shaft runs in extra long lapped boxes, supplied with self-oiling chambers which allows a fan to run a long time without any attention. The fans are generally driven by belt, but can be supplied with direct connected steam engines, electric or water motors.

The Sawyer-Massey Co., Hamilton, Ont., will erect a large brick addition to their factory.

**The Jones & Moore Electric Co.,**

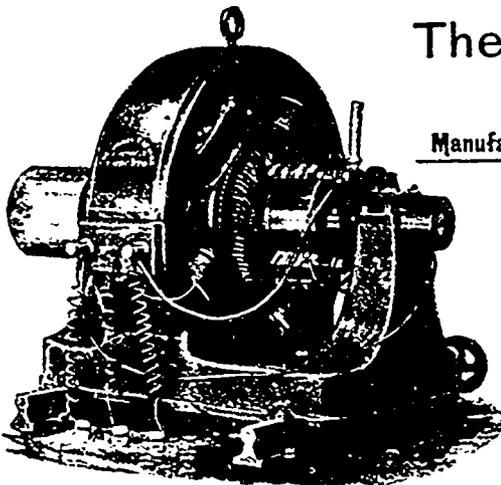
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All Work Fully Guaranteed

**ELECTRIC LIGHT and POWER PLANTS a Specialty**

A Few Second-Hand A 1 Machines For Sale Cheap

20 and 22 ADELAIDE STREET WEST TORONTO

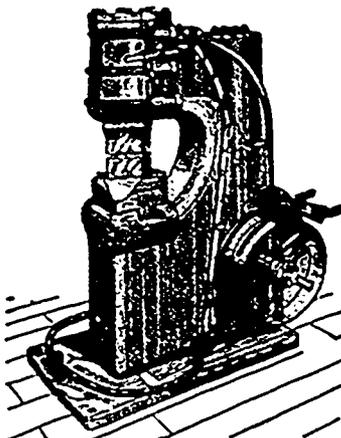


**The Yeakley Vacuum Hammer.**

Canadian Patent November 9, 1897.

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

**George Brush**  
EAGLE FOUNDRY,  
MONTREAL.



**T. H. & A. H. DRYDEN**

Manufacturers of and Dealers in

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Grain Elevators      Portable Mills  
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MACHINES MADE TO ORDER  
All kinds of Repairing Promptly Attended to

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**"IDEAL" ACETYLENE GAS BURNERS**

\$2.40 per dozen; \$20.00 per gross.

FOUR LIGHT CLUSTER—\$2.00 each. Larger sizes on application.

**"IDEAL" Carbide Sub-Merging Acetylene Gas Machines,**

15 to 2,000 Lights. WRITE FOR PRICES.

**"IDEAL" BURNERS and MACHINES** are the BEST in AMERICA.

Manufactured by **J. WALLACE & SON,**  
GET THE "IDEAL."      HAMILTON, ONT.

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Manufacturers of....

**OIL-CLOTHS** of Every Description

Floor Oil-Cloth, Table Oil-Cloth,  
Carriage Oil-Cloth,

Enamelled Oil-Cloth,  
Stair Oil-Cloth, etc.

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

**THE NEW BICYCLE SYNDICATE.**

If suitable buildings can be obtained Canada, perhaps Toronto, will have another huge bicycle manufacturing concern within the next few months. The expectation was until lately that the Canadian Cycle & Motor Company would practically have the field to itself, except for the importation of the cheaper grade of wheels from the United States. The result of negotiations begun by Mr. L. H. Foster, of Detroit, with prominent Canadian capitalists, however, is the establishment of a rival plant of very large proportions, which will embrace most of the independent companies in Canada not now in the other consolidation. Mr. F. S. Evans, of the Canadian Typograph Co., of Windsor, Ont., who was in Toronto a few days ago in connection with the new company's affairs, and who will be manager of the company, gave out the following statement:

"The very large trade in Canada previously done by the companies now incorporated in the American Bicycle Co. is to

be preserved and continued by a syndicate of Canadian capitalists, who have purchased for Canada from the American Bicycle Co. all their patent rights, good-will and business, and will immediately establish in Canada a complete manufacturing plant, capable of turning out not less than 30,000 bicycles per year. In addition to this, the plants of the Canadian Typograph Co., manufacturers of the E. and D. bicycle, the E. C. Stearns Co. and of the Wheeler & Christio Saddle Companies will be incorporated into it. Nothing but the latest improved machinery will be put in. This plant will be established in Canada within the next sixty days. Toronto has been chosen as the site, if suitable buildings can be secured. The company will have a capital of \$2,500,000, which has all been arranged for, and contracts have been signed for the delivery of all the property and machinery. It will also manufacture automobiles, and will turn out in Canada all the different styles of these carriages controlled by the American Bicycle Co. in the United States."

**LIQUID AIR FOR DOMESTIC PURPOSES.**

It is now a' most certain that liquid air will soon be put on the market at very moderate prices. The practical householder, therefore, is already beginning to ask questions.

"Oh, what use will it be to me?" he queries. "Why should I pay money for cans of air, liquid or other? It is very curious and interesting, no doubt, but what can I do with it? And isn't it dangerous stuff anyhow to have about the house?"

To answer these very natural questions as fully as possible, yet briefly and in plain language, is the purpose of this article.

First, how will it be supplied, how long can it be kept, and is it safe to handle?

It will be brought to your house like milk or seltzer water, in protected cans, containing any desired quantity from a quart or two up to twenty or thirty gallons. The style of the cans will doubtless vary. The simplest are nothing more than tin cylinders, closed at the bottom, but open at the top and heavily felted.

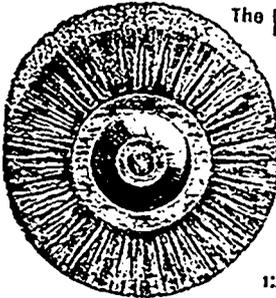
**MR. C. B. THISTLETHWAYTE**  
OF SYDNEY, NEW SOUTH WALES,

Will be in Canada about November 1st, to arrange for Australian agencies. If you have no agents in that country please write, stating lines of goods you make suitable for that trade. Best of references. Address: THE CANADIAN MANUFACTURER, McKinnon Building, Toronto.

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

The Dominion Leather Board Co.,  
MONTREAL, QUE.

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The **PRESTON BRUSH FACTORY**  
Manufacturers of ALL KINDS OF BRUSHES.  
ORDERED MACHINE BRUSHES } Special  
Mail Orders Promptly Filled.  
11-B Salisbury, Prop., BOSTON, U.S.A.

ESTABLISHED 1849.

CHARLES F. CLARK, President.

JARED CHITTENDEN, Treasurer.

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

Executive Offices: OFFICES THROUGHOUT THE CIVILIZED WORLD.  
346 and 348 BROADWAY, New York City, U.S.A.

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

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

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

Steam and Gas Engines,  
Pumping Machinery,  
General Machinery.



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193 BARTON STREET EAST  
HAMILTON, ONT.

CITY AGENTS WANTED.

WRITE US BEFORE PLACING YOUR ORDER.

**ONTARIO GOLD MINING DISTRICT:**

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

**A Few Mines**



**BRITISH COLUMBIA:**

- Le Roi Mine.
- War Eagle Mine.
- Old Ironsides Mine.
- Centre Star Mine.
- Crown Point Mine.
- Knob Hill Mine.

**CANADIAN RAND DRILL COMPANY, Montreal**

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



In these liquid air can be kept about twenty-four hours. You can dip it out as wanted with an ordinary long-handled dipper. If, however, you should drop the dipper just after using it, it would shatter like thin glass when it struck the floor. With a ladle of copper or aluminum this little accident could not occur, as these metals are not made brittle by cold.

By the use of more elaborate vessels—some of which have already been tested and patented—the liquid air can be kept for a number of days. From these it is drawn off by a sort of a spigot. It can be sent by rail and delivered at distant points.

Liquid air is as safe to handle as boiling water, and requires about the same precautions. Here extremes meet. Intense cold burns like heat, and liquid air has even been used to cauterize ulcers.

Yet you need not fear to touch it. You may thrust your hand into a basin of it with perfect safety, just as you may touch hot iron with your moistened finger, provided the hand is instantly withdrawn. If spilled on your clothes it will not harm even the finest fabrics.

But never venture to put liquid air in your mouth—if you wish to live. And in taking up a dish containing it use a handkerchief or holder of some sort, exactly as if it were hot.

In another respect liquid air is like boiling water. It must not be confined. Plug up your tea-kettle and it will soon burst. If the plugged kettle contained liquid air it would do the same thing even though set upon a block of ice, for this strange stuff is always boiling and you can't prevent it.

Be careful also not to wet cotton waste or

any other loose, combustible substance with this fluid. Such a mixture is violently explosive, though only until the liquid gas has evaporated; and it will not explode unless fire is put to it.

These things remembered, liquid air is more innocent than spring water. If a careful work upset on your parlor carpet there would be no harm done.

And now, assuming that a two-gallon can has been delivered at your door, what can you do with it?

Of course the most obvious use is for cooling things—any sort of refrigeration.

A bowlful set in your refrigerator will do all the work of a big cake of ice, but much better. It will slowly waste away, but the product is nothing but air—and cold. It is absolutely dry; there will be no drip. In fact, any closet or cupboard can be used as a

# SADLER & HAWORTH

Manufacturers of

## OAK-TANNED LEATHER BELTING

MONTREAL AND TORONTO.

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

**Reduce Your Fuel Bills**

**Increase Your Output...**

BY USING

**The IMPROVED JONES UNDERFEED STOKER**

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

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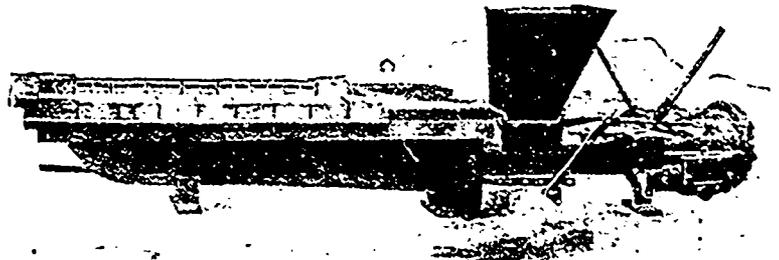
**The General Engineering Co. Limited**

SOLE MANUFACTURERS FOR CANADA,

Head Office. 80 CANADA LIFE BUILDING, - TORONTO.

Montreal—A. TREVETHICK, - Box 1123.

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refrigerator with liquid air, only it will waste a little faster.

You want a glass of ice water. Pour the water into the tumbler and drop into it half a teaspoonful or less of liquid air. Then watch it a moment, for it is a beautiful experiment. After dancing and bubbling and showing all manner of jewel tints for about a minute the liquid air disappears. Your glass of water is now cooled, and has a little lump of ice in it.

To cool an oyster let one drop of the liquid fall on it. Too much would freeze it harder than flint. Should you happen to put too much on a lump of butter you could pound it into yellow powder with a hammer, though it would soon thaw.

Many kinds of food and drinks are much improved after being thus frozen and thawed.

To make ice cream pour a little liquid air into the cream or custard and stir vigorously.

To cool your parlor on a sultry day take half a bucket of liquid air and splash it about the room. It will dance over the floor in bright globules and fill the room for a moment with a cloud of mist, but it will wet nothing and do no injury even to the most dainty upholstery.

It will not only cool the air but will make it pure, for there is always an excess of oxygen in liquid air. In the sick room this cooling and freshening of the air will be simply invaluable especially in fever cases. In the case of diseases such as yellow fever, the germ of which cannot endure frost, all danger of contagion and spreading fever may be averted. The protection to nurses will be perfect.—New York World.

**THE BOOM IN THE NOVA SCOTIA COAL TRADE.**

Unless something unlikely happens the present year will be a record breaker, both as regards increase in output, in comparison with increase in previous years, and total shipments. For the nine months ending Sep. 30th, there has been a very much larger increase in shipments than during any twelve

months previously. At the present writing it looks as if the shipments by Dec. 31st will reach two and a half million tons, at least. The figures for three of the larger companies alone, show the increase in shipments, for the nine months to be 310,000 tons, apportioned as follows.

Dominion Coal Co.....	232,000
Acadia Coal Co.....	50,000
Cumb. Railway & Coal Co.....	28,000
	<b>310,000</b>

The Dominion Coal Company should for

the three remaining months of the year, show shipments in excess of the closing months of '98, of at least 75,000, and the other collieries should all show increases so that it is possible to look for a half million tons, increased output.—Mining Record.

**THE AMERICAN PAPER TRADE.**

The following rather queer and contradictory combination of facts and ideas are published consecutively in The Paper Mill:—  
"The clamor for an export duty on pulp wood has broken out anew in Canada. A

**THE "SAFETY" Acetylene Gas Machine**

Manufactured by

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

DUNDAS, ONT.

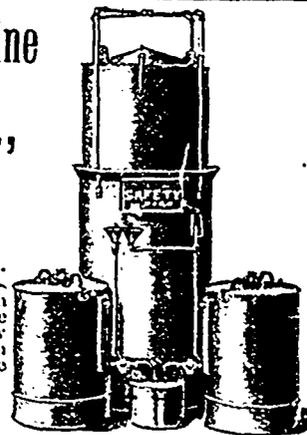
WHAT SOME OF OUR FRIENDS SAY OF US:

DEAR SIR.—In reply to yours of the 7th inst., I am quite satisfied with the Acetylene Gas as a means of lighting. The light is quite steady, brilliant and soft, and lights every part of the church thoroughly. While I know practically nothing about working the machine, my warden tells me it is very simple. With ordinary care I consider it perfectly safe, safer indeed than lighting with coal oil. There has been no smell of gas in the church. We have been using it now since February 1st.

ARTHUR H. WHALLEY.

LANCASTER, ONT.

St. John the Evangelist Church.



**Felts for Pulp Mills**

20 years in the business—the first to make Felts in Canada; capacity 1,000 lbs. per day. All our Felts are woven endless, without a splice. Our Felts will last longer and make dryer Pulp. All up-to-date mills use our Felts. New mills, when in need, write for samples and prices.

HAMELIN & AYERS, Lachute Mills, P.Q.

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

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

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

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

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

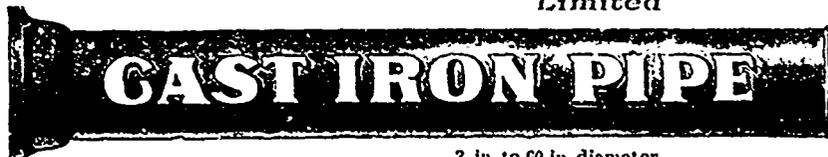
- LATHES—Engino, Gap, Brelk, Turrot, Fox, Spinning, Etc.
- PLANERS—Standard, Crank, Plato, Etc.
- DRILLS—Standard, Sensitive, Multiple, Radial, Etc.
- MILLING MACHINES—Lincoln, Plain, Universal, Etc.
- SHAPING MACHINES—Whitworth, G. & E. Rack-Driven, Etc.
- HAMMERS—Steam, Sandage Drop, Stiles Drop.
-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

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

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3 in. to 60 in. diameter.

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

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COMMERCIAL DEPARTMENT

**H. HAACKE & CO.,**

11 Southampton Row,

LONDON, W.C., ENG.

manufacturer who has recently returned from England to the Dominion, tells the trade that a delegation of English manufacturers is coming over soon, to urge the Canadian Government to impose such a duty, in order to "spoil the Philistines," or in other words, to embarrass the American paper industry. There is really no danger that such action will be taken, for it would bring into force the retaliatory clause of the American tariff law, and thus would shut the Canadian manufacturers of pulp out of a very good market. The present demand for an export duty on pulp wood is of little interest to Americans, other than this: That it indicates a disposition on the part of some Canadians to tear down the industries of their neighbors rather than to build up their own."

"Ground wood pulp is worth nearly 50

per cent. more than it was a few months ago, and it is hard to get at any price. Very little can be manufactured, as the water powers are at the minimum of efficiency. Sulphite pulp is scarce and costly, and soda pulp commands almost any price the manufacturer cares to name. The prices of paper are advancing and the demand is increasing. Some of the conditions which govern prices are temporary, but more are permanent, and it is the opinion of the shrewdest men in the industry that an era of prices considerably higher than those which have ruled for many years has begun."

"Our export trade for the seven months of this year ending with July was not as large as was that of the similar period of last year. It fell off only 2 per cent., but that is quite enough to show a movement in the wrong direction. The values were:

For the seven months of 1899, \$3,254,470; for the similar period in 1898, \$3,319,332."

"Incidentally, it may be remarked that the value of paper exported from New York during the past week was only \$27,254, a small amount as compared with the \$50,000 to \$60,000 worth that was exported in a week a year and a half ago. There was only one shipment of respectable value, and that was to Sydney, \$17,501 worth."

#### THE ALUMINUM INDUSTRY.

It is a difficult matter to comprehend the magnitude and vastness of the field of the aluminum industry. The very best authorities on aluminum claim that within a few years, or when the supply will meet the demand, 5,000,000 tons of aluminum will be consumed annually. The many uses of

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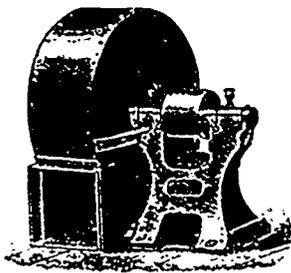
**The  
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Everything**

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

Prices furnished  
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**Dyewood Extracts,  
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Aniline Colors,  
Dyestuffs and  
Chemicals.**

aluminum are too numerous to mention, but a brief list may be of interest, viz.: Elevators, electric fittings, electric instruments, electric wiring, electric machinery, car fittings, cooking utensils, interior decorations, decorative metal work, ingots for castings, furnaces, plumbers' supplies, printing presses, radiators, railway cars, roofing material, registers, cash and hot air, signs, vehicles of all kinds, valves, waggon tires, yachts and novelties of all kinds. With the growing demand and rise in price of copper, and the largely increased demand for metal suitable for electrical, naval and railway construction, for which aluminum has shown great adaptability in its pure state, it is safe to predict that the demand for aluminum, which is now in excess of the supply, will be very largely increased. Aluminum, on account of lightness of weigh. will be cheaper for use, and by reason of its firmness, durability and non-corrosiveness, will largely supplant many of the other metals. This will produce great wealth in the aluminum industry.—The Shareholder.

**PEAT FUEL IN ONTARIO.**

THE CANADIAN MANUFACTURER has frequently taken occasion to remark upon the great wealth of bog peat to be found in practically inexhaustible quantities in many parts of Ontario, and the same may be said of many other sections of Canada; and mention has also been made of what has been and is being done in developing the manufacture of this peat into a most valuable fuel. Referring to it again, we may say that the industry is being developed in several sections of the Province by the patented process of Mr. A. A. Dickson of Toronto, and the re-

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(Limited)

Head Office, - SOHO MACHINE WORKS, TORONTO

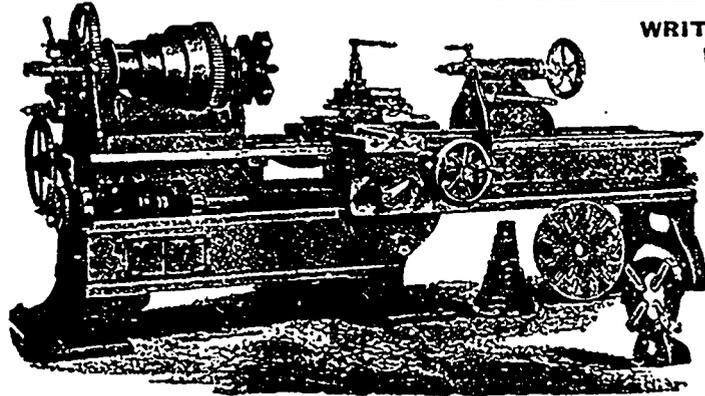
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and Supplies.**



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New York Philadelphia Chicago London

sult is gratifying. The process is controlled by the Canadian Peat Fuel Company, of which Mr. Wilson Irwin is manager. That gentleman states that within the next three years peat would be a strong competitor as a fuel with coal. Small quantities had been sold in Toronto during the past summer at \$4.50 per ton, and next year he believed it would be sold for \$3 per ton. The supply was subject to the work of the machines in use, which so far were not nearly plentiful enough to turn out a sufficient quantity of compressed peat to cope with the growing demand. Satisfactory progress, however, was being made, and in support of this a summary, which follows, was given in regard to local organizations working under license from the parent company.

Mr. A. J. Ardagh has been operating in the taking out of peat from a splendid bog

eight miles north of Stratford, and has 2,000 tons of peat stacked ready for compressing machines which are now being erected.

Mr. John S. Hogg has a fine plant working at a bog within three miles of Galt. The peat is of excellent quality and is being sold at \$5 per ton as rapidly as it can be dried and compressed.

At Barrie the Simcoo Peat Fuel Company have a plant in working order and are turning out a fine quality of fuel.

Mr. Alex. Dobson of Beaverton has had a plant at work since July 1st and is using the peat fuel thus manufactured for his own flour mills to his great satisfaction. He has introduced electricity in the work of excavating and turning and for drying, thus reducing the cost of production by a substantial amount.

Near Kirkfield the Trent Valley Peat Fuel Company of Peterboro' have one of the best plants in Canada. They have introduced a mechanical dryer, making them quite independent of changes in weather. In addition they have adopted an improved method of excavation, and when in full working order their plant has a capacity of 100 tons per day. The deposit here is 20 miles by 3, with a depth of 25 feet, and is estimated to contain a sufficient amount of peat to keep Ontario supplied with fuel for the next twenty-five years.

At Picton the Prince Edward Peat Fuel Company are manufacturing fuel which is finding ready sale in the town and district.

The peat here is of excellent quality, almost as dense as anthracite coal and weighs, compressed, 88 pounds per cubic foot, the weight of the same measurement of anthracite coal being 93 pounds.

Mr. C. E. Matheson is engaged in the manufacture near Perth and his output has a ready sale.

The Brockville Peat Fuel Company are installing a good plant near that town and will shortly commence operations.

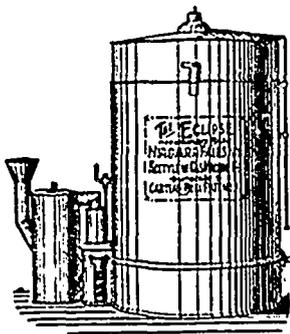
The Canadian Peat Fuel Company's own works at Welland have been remodelled. A large quantity of peat has been taken out and is ready for the compressing machines.

During the summer Mr. Irwin stated difficulty was experienced in obtaining necessary machinery owing to the excessive demands from all lines of manufacture upon makers of machines, consequently the progress, though sure, had been slower than anticipated. In Toronto as much compressed peat as the company had been able to obtain had been sold, with the result that the demand was now much greater than the supply, a sure evidence of satisfaction. As a domestic fuel it was ideal, clean to handle, free from clinkers, soot and sulphur. There was no room for doubt on the score of quantity, the peat beds of Ontario alone being almost unlimited. Reasonable time for development and manufacture was all that was required to make the fuel a strong competitor to coal.

Incidentally Mr. Irwin said that negotiations were on foot for the operation of plants

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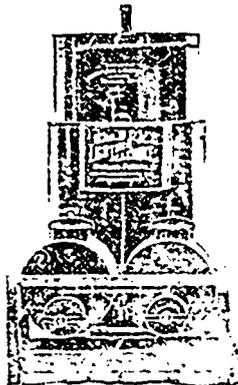
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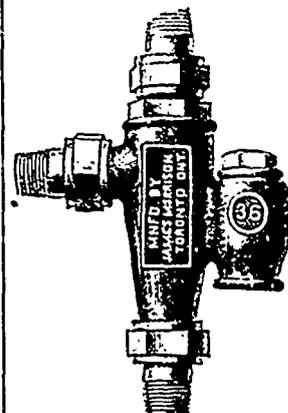
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in Manitoba and the Northwest and New Brunswick. The right to manufacture by Mr. Dickson's process in California and the Hawaiian Islands had been disposed of, and the rights for Arizona, Minnesota, North and South Dakota, Wisconsin and Michigan were under option. A company consisting of Toronto and Boston capitalists had been organized to operate at Hochimilco Lake, Mexico, where there was a magnificent deposit. In Mexico there was a great demand for fuel, owing to recent enormous development in manufacturing industries. Coal in that country was worth from \$18 to \$22.50 per ton, and was largely supplied from Wales. Peat fuel could be manufactured there at a cost far below the price of coal. In England arrangements had been entered into with a strong syndicate, headed by the Messrs. Pearson Bros., contractors for the Thames tunnel, the Liverpool graving docks, and other immense works, for the right to manufacture by the Dickson process in all countries throughout the world, exclusive of those mentioned. Mr. Dickson was at present in Ireland, where an experimental

plant was being erected at Tullamore, to demonstrate the commercial value of the enterprise to those interested.

VANCOUVER, B.C.

The present has been Vancouver's greatest growing year. The World recently published a list of the new buildings erected and in process of erection since first January. These amount in value to the enormous sum of \$2,475,050. The improvements and civic expenditure amount to \$280,000. This makes a grand total of \$2,755,050. It is believed certain that the three million notch will be reached by the end of the year.

In Ward I., the cost of new buildings totalled \$635,785; Ward II., \$1,394,710; Ward III., \$244,675; Ward IV., \$138,400; Ward V., \$71,480.

The names of the owners and streets, ward by ward, are given.

The showing is a splendid one, demonstrating that in the far west as well as in the east the present is Canada's greatest growing year.

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Farming Implements  
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**GALVANIZING**

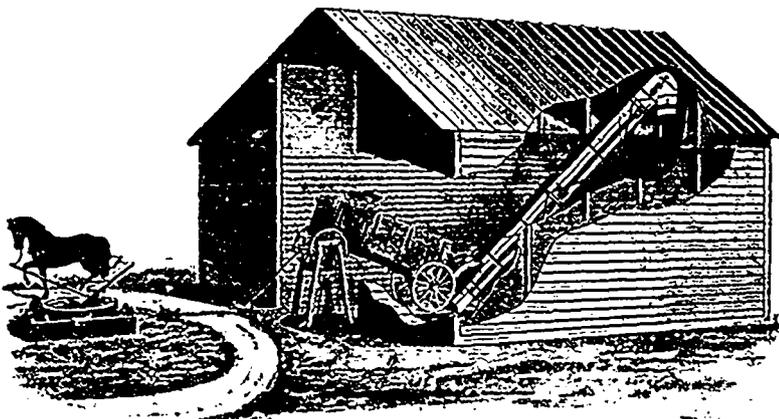
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**ONTARIO WIND ENGINE and PUMP CO.**  
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Is made by a NEW PROCESS, and is highly spoken of by sporting papers and sportsmen.  
Kills at greater distance than soft shot.  
Send to your Gunmaker for Samples

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The illustration shows a new **PORTABLE ELEVATOR and WAGON DUMP**—successfully introduced into the States, and for which the patents for Canada are for sale, or would license to build. If interested please address



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paid. The artisan classes are likewise in demand and good wages paid.

New mercantile establishments are being opened daily in all parts of the city, and sawmills, shingle factories, sugar refineries and all other industrial establishments are running to their full capacity.

Shipping from this port to San Francisco is increasing to enormous proportions. Steamers, arriving and departing every five days, are now unable to handle the business offering.

The wholesale business is increasing and a number of houses are enlarging their stocks, as trade imperatively demands.

The eight chartered banks here report business to be satisfactory. The weekly clearances now approximate \$1,250,000, ranking next to Winnipeg and by several thousand over any other western city. Money for legitimate business is abundant, at reasonable rates of interest.

**OPENINGS FOR MANUFACTURERS IN BRITISH COLUMBIA.**

A Vancouver correspondent of The British Trade Journal writes as follows:

As a British resident in a British Colony, I am desirous of seeing that the trade of Canada and especially of British Columbia shall be directed and conducted through British and Canadian manufacturers as far as possible. I enclose the Report of the United States Consul here to his Government at Washington on the opportunities for trade with British Columbia, and, from it, you will see that every United States Consul in every British Colony is practically an agent to push the trade of United States manufacturers. You will notice that he recommends a mercantile office here "to show samples and take orders for shipment," "also to send out travelling salesmen to do the same." You will note the long list of our possible imports. British manufacturers have no Consular agents in any British Colony, no combinations or showrooms to take orders or show goods, and evince no readiness to do business here.

In all parts of Canada there are openings for the establishment of branch factories in connection with established factories in Great Britain, and nowhere are there greater openings than in British Columbia for factories producing iron and steel, and all products therefrom, smelting and refinery, like Vivian's at Swansea, wood pulp for paper and other innumerable uses; coal (and all its products), of which the United States Government took all its supplies for Manila via Honolulu. Iron and steel factories should lead to iron shipbuilding, and there should be a large trade done here, as we have the growing trade of the Pacific Ocean to supply, and coal and iron here to cheapen the cost. So too with steel rails, which are now brought by the Canadian Pacific Railway from Carnegie's. The armour plates for the United States ironclad, which rounded Cape Horn for the Spanish war, were made at San Francisco from British Columbia iron from Texada Island. Steamers are now carrying 5,000 tons of coal each to San Francisco every trip.

It is not in your power to compete with the developed factories of the United States in many things, as they make duty free goods, but you can recover your lost ground by branch factories to utilize the varied resources of British Columbia, whether mineral, or agricultural, and so provide new openings under the British Flag for your surplus capital, manufacturers and skilled workmen, with security to all.

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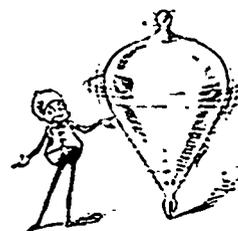


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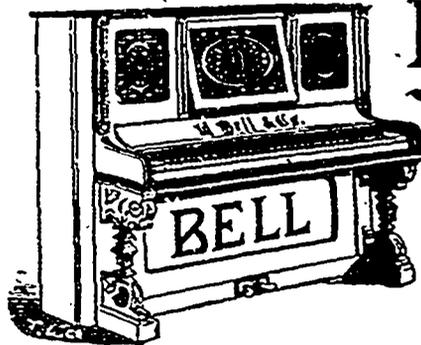
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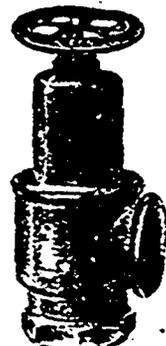
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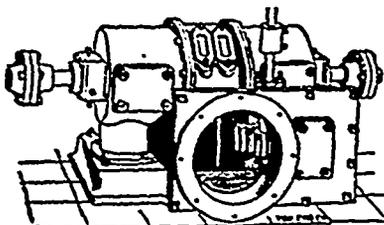
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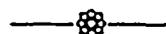
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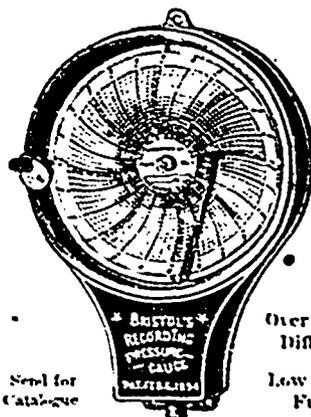
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