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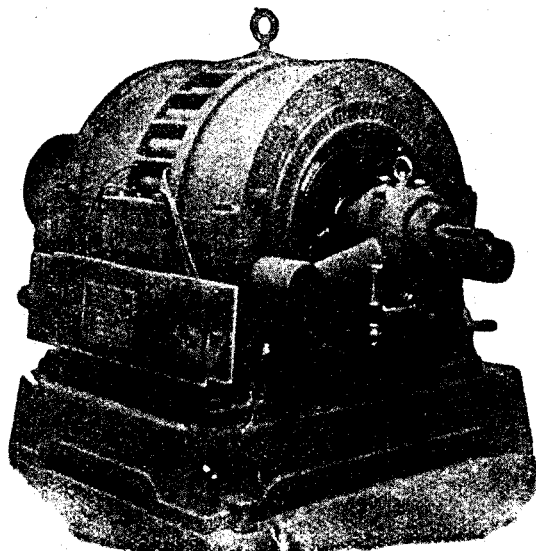
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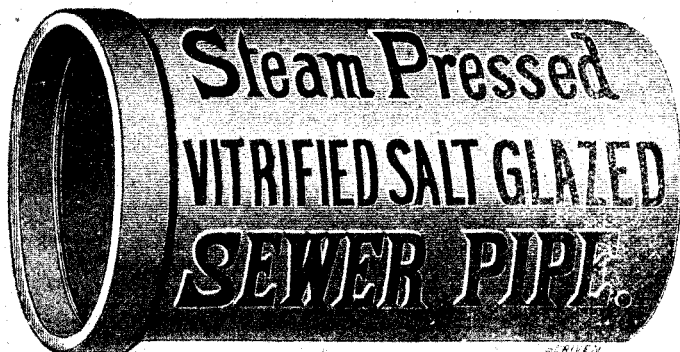
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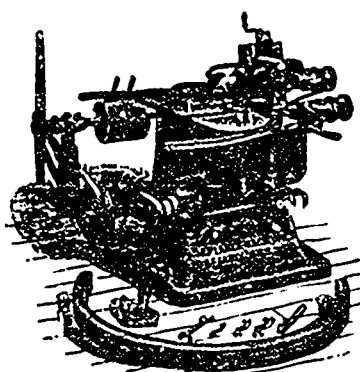
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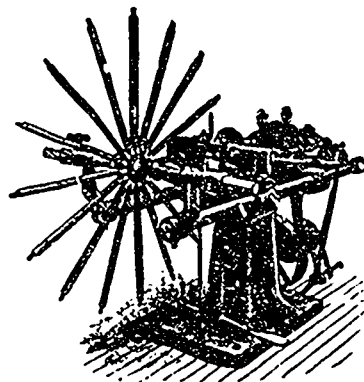
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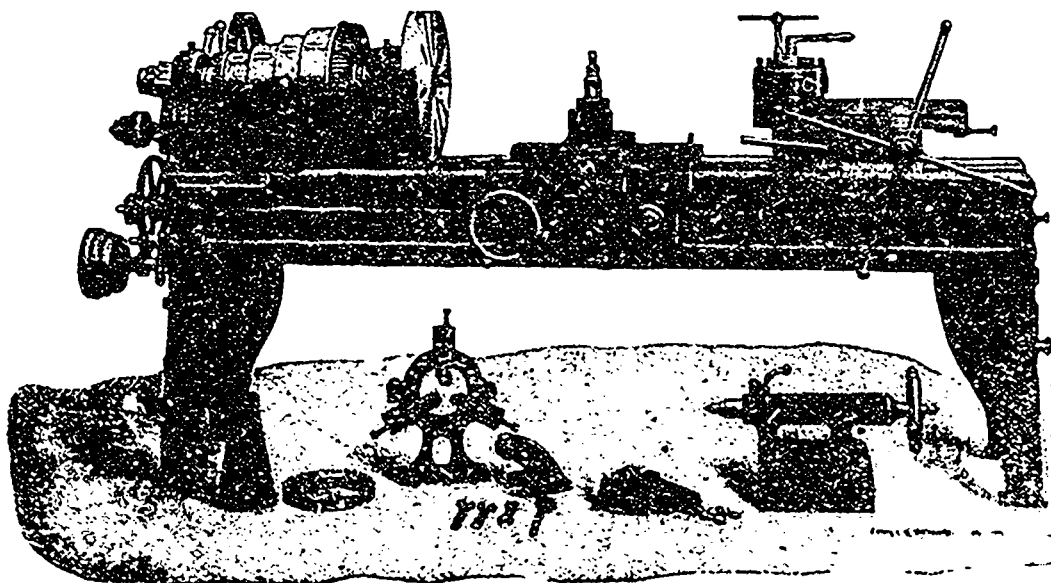
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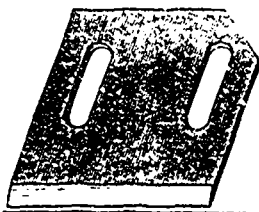
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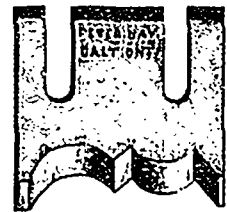
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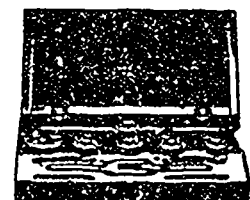
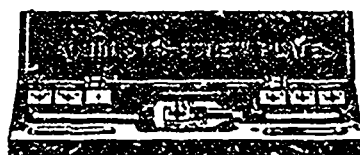
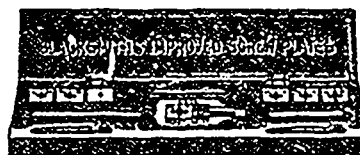
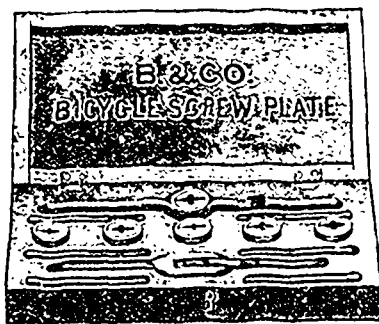
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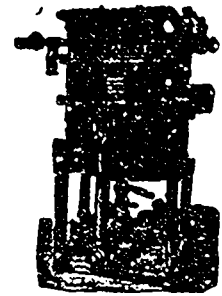
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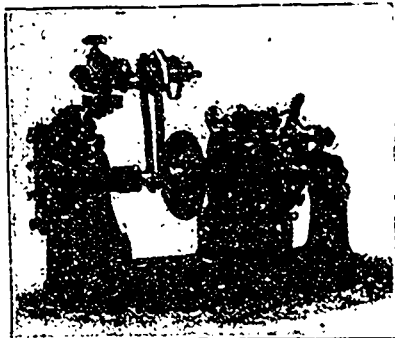
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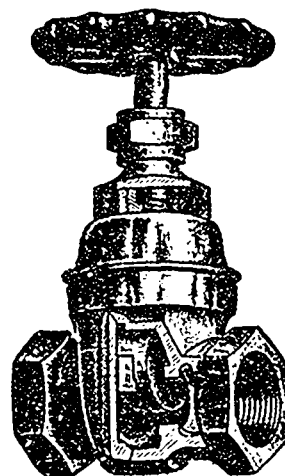
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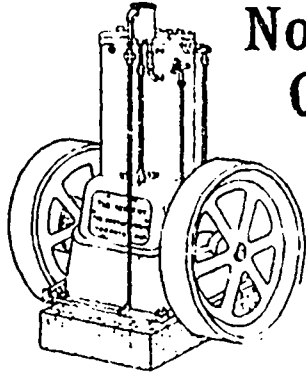
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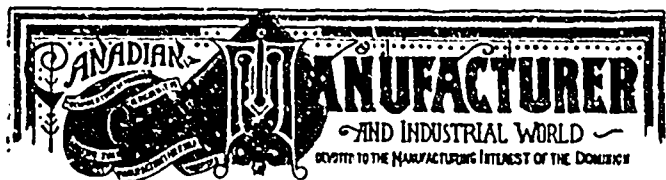
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THE INTERNATIONAL COMMISSION AT WASHINGTON.

It affords us pleasure to announce that the Executive Committee of the Canadian Manufacturers' Association have again secured the services of Hon. N. Clarke Wallace, M.P., to attend upon the British and Canadian Commissioners to the International Convention, which will reassemble this time at the city of Washington, D.C., to give them such information as they may require regarding the manufacturing industries and the trade and commerce of Canada. Mr. Wallace was of invaluable service to our manufacturers during the time the International Convention was in session at the city of Quebec, and his services will be equally available at Washington.

Any and all manufacturers who may feel interested in the doings of the International Convention, and in what may be the outcome of it, and who desire to prevent if possible the formulation of a treaty with the United States adverse to their interests, are invited to correspond with Mr. J. J. Cassidy, Secretary of the Canadian Manufacturers' Association, McKinnon Building, Toronto.

THE CANADIAN FLOUR MILLING INDUSTRY.

On a recent occasion the Dominion Millers' Association, in a protest made to the Canadian Commissioners to the International Convention against reciprocity with the United States in mill products, said that "Ontario millers cannot compete with the millers of the United States," and that "reciprocity in mill products would inevitably drive into bankruptcy and ruin the millers of this country," to which The Chatham Banner makes reply as follows:—

To those who have watched with pride the progress of the great milling interest of this Dominion, it is rather disappointing to be told by those who pretend to speak for the millers that they are so lacking in ability, or their methods of manufacturing flour are so inferior, that unless they were protected by a high wall their business would be ruined. It would be

humiliating indeed if such were the case, but one has only to turn to the trade and navigation returns to see how utterly untrue the statement made by the Millers' Association is, that we cannot compete with the millers of the United States. These returns show that our millers have been, year by year, exporting large quantities of flour made from Canadian wheat to Newfoundland, West Indies and Great Britain, competing in those markets, on even terms, not only with the millers of the United States, but with the whole world. At the present time we have in Chatham the Kent Milling Co., turning out, with their Blenheim mills, 900 barrels of flour and 300 barrels of cornmeal per day, running night and day, and exporting a large portion of their product to Newfoundland and the old country. We also have the T. H. Taylor Co., turning out 500 barrels per day, and exporting a large portion of their product. Then we have John Campbell, of St. Thomas, turning out 800 barrels per day, and nearly all of it going to Great Britain. J. D. Saunby, of London; Tilson, of Tilsonburg; Goldies, of Ayr and Guelph, Snider, of Waterloo; Wood Bros., of Brantford; Hodd & Cullen, of Stratford; Arch. Campbell, of Toronto Junction; Hay Bros., Listowel; all large millers, whose combined output would be several thousands of barrels per day, and all of them taxed to their fullest extent to supply their orders for home and foreign demand.

It will be noticed that while The Banner mentions the names of a number of the large flour millers of Ontario, it does not even profess to echo their sentiments in the question it discusses, and as all, or nearly all, these millers are members of the Dominion Millers' Association, it is a fair presumption that the protest of the Association against reciprocity, and not The Banner, expresses their views. It is insulting, too, to Ontario millers, to suggest that the reason for their objection to reciprocity is because they are lacking in ability, and that their methods of manufacturing flour are inferior to those of American millers, hence their desire for tariff protection. Quite inconsistent, too, is The Banner, when it points to the fact that Ontario millers have been year by year exporting large quantities of flour made from Canadian wheat to Newfoundland, West Indies and Great Britain. And why were these exports made if not for the reason that, American flour being shut out of Canada by the tariff, Canadian farmers had produced the wheat and Canadian millers had converted it into flour, and that the Canadian people had satisfied their hunger with a Canadian rather than an American product, which would not have been the case if American wheat and American flour had been admitted to Canada free of duty. Canadian millers, having supplied the home demand for flour, have given good employment to Canadian capital and Canadian labor in manufacturing flour for export to Newfoundland, West Indies and Great Britain. It is true that our millers have had to compete in those markets on even terms, not only with the millers of the United States, but with the whole world, and, this being the case, what more could be desired?

If The Banner is so anxious to give away the Canadian flour market to the American millers, "free gratis and for nothing," it should first create a desire on the part of Canadian farmers to have American wheat and flour put on the free list.

CANADA'S "CAPTAINS OF INDUSTRY."

We begin to-day the publication of a series of letters on the progress and prospects of Canadian towns and cities. The first article deals chiefly with Galt, "the Manchester of Canada," a Manchester in industry and enterprise, if not in magnitude. It is found that population is increasing satis-

factorily, that building operations are active and yet do not quite keep pace with the demand, and that the manufacturing industries of the town are expanding and the men kept busily employed. The public spirit of the citizens is shown by the building of an extensive new thoroughfare, and the improvement of roads and walks, and by the determination of the municipality to own and control the gas and electric plants of the town.—Toronto Globe.

We are glad that our esteemed contemporary has, at last, "begun" the publication of such information. It is late in the day, but it is never too late to do good, and to make up for lost time. Canada has long since attained its manhood, and its independence has been signalized by the establishment of thousands of industrial establishments and the erection of tall chimneys throughout the length and breadth of the land. In a great many lines Canadian manufactured products supply all the wants of the Canadian people, and the surplus of Canadian manufactured products, amounting in value to one-fourth of all the exports of the country, are exported annually. The Globe is a great newspaper, but according to its own admission it has never until now discovered how great a manufacturing country Canada really is. This ignorance is entirely inexcusable, for if it had made it a rule to invest the sum of only one dollar per year for many years past, in subscriptions to THE CANADIAN MANUFACTURER, it could have been well posted regarding the manufacturing industries of the country, and not at this late day be just awakening from its somnolent rest. But we congratulate it upon having at last "begun" to use its eyes.

Having "begun" the good work of telling of Canada's industrial progress The Globe continues as follows:—

We hope to have as cheerful a story to tell of all our Canadian towns; and we do not care particularly how much or how little of the prosperity is attributed to the policy which has prevailed in this country since the spring of 1897. In the main it is to be attributed to the good things Providence has given us, and to Canadian brains and Canadian brawn and muscle. In the main, too, future progress will depend not upon this or that Government or policy, but upon the thought and energy and enterprise of our people. A true patriot is the workman who needs not to be ashamed, the man who wins for Canadian products a name for honest and skillful workmanship. It is science in the workshop that is causing Germany to make such headway in the markets of the world. It is science that has made the reputation of Danish butter and Canadian cheese. It is science, combined with the most scrupulous honesty, that enables British manufacturers, overcoming every disadvantage of nature and of tariffs, to sell their wares at high prices in the United States and Canada. Pride in good work ought to be the mainspring of the ambition of our Canadian industrial towns.

The Globe evidently labors under the impression that the prosperity that characterizes Canada is to be attributed to the policy which has prevailed here since the spring of 1897—to wit, since the political party to which it owes allegiance came into power. It is reluctant in admitting that any degree of prosperity whatever existed before that time, and that Canadian brains, brawn and muscle was a factor of it. It is kind enough, however, to suggest that the future progress of Canada will not depend upon this or that Government or policy, but upon the energy and enterprise of Canadians; and it patronizingly pats our manufacturers and artisans on the back and advises them to win fame by becoming honest and skillful workmen. "Pride in good work," it says, ought to be the mainspring of the ambition of our Canadian industrial towns."

The Globe does not seem to be aware of the fact that the products of some of the factories and workshops of Galt, as well as of many other of manufacturing centres, are well and favorably known all over the world, and have been for many years, and enjoy a reputation for excellence of design and workmanship that they could not have attained in the absence of those essential qualifications that The Globe so patronizingly advises them to cultivate. It is pleasant and inspiring to find that this recognition is the basis of Canadian prosperity, effected by Canadian workmanship, Canadian industry and Canadian intelligence.

EFFECTS OF PROTECTION ON GALT INDUSTRIES.

The Toronto Globe waking up to the fact that Canada is indeed an enterprising country, gives an entertaining account of the progress of some of the manufacturing industries in several Canadian towns, that of Galt, Ont., dating back to 1897 when its would be free trade party came into power on the strength of the Manitoba school question. The Globe speaks of the hum of activity to be heard in the Galt workshops and factories, and very complacently appropriates the glory thereof to the present policy of the Government. All these industries of which Galt is so justly proud, were built up under the policy of tariff protection to our manufacturing industries, and the tariff conditions that now prevail are the basis under which they now prosper, and it is noticeable that The Globe makes no allusion whatever to any industry in which there is free trade with any country. We enumerate the different articles alluded to by The Globe as produced by these Galt factories, and the protection they now enjoy under our existing tariffs—every industry is protected:

- Safes and vaults, 30 per cent.
- Boilers, 25 per cent.
- Engines, 25 per cent.
- Machinery, 30 per cent.
- Edge tools, 25 and 30 per cent.
- Carriage springs, 30 per cent.
- Carriage gear, 30 per cent.
- Cream separators, 25 per cent.
- Heating apparatus, 25 per cent.
- Pumps, 25 per cent.
- Windmills, 25 per cent.
- Saws, 30 per cent.
- Knitted goods, 35 per cent.
- Shoes, 25 per cent.
- Jersey cloth, 35 per cent.
- Implements, 20 per cent.
- Stoves, 25 per cent.
- Carriages, 35 per cent.
- Office furniture, 30 per cent.
- Sashes and doors, 25 per cent.
- Leather, 25 per cent.

If The Globe attributes the prosperity of Galt's industries to the protection they receive, we are in accord with it. It is a matter of indifference to the parties most concerned—the manufacturers—that this protection was inaugurated by the Conservative Party and continued by the Reform Party. It is protection they require, and the party that will give them this in the most effective manner, will receive their most loyal and hearty support.

AN EXPERT'S OPINION OF RECIPROCITY.

The Boston Advertiser sums up the case of some of the American advocates of Canadian reciprocity in the following words :

Without the violation of any confidence it may be said that so far the members of the commission are still of the opinion that an agreement can be reached. Undoubtedly there will be opposition on both sides of the boundary to the terms which may be offered, but the very fact that concessions are made almost naturally implies some opposition on the part of interests which oppose any concessions whatever. The fact is important, however, that nearly all the great commercial and business organizations of this country have declared in favor of some trade treaty with Canada, and the resistance of a few special industries to unimportant concessions will probably have little weight with the commissioners. It is hardly likely that the commissioners of either country will consider terms that are likely to inflict really serious injury upon important home industries ; but unless the industries are prepared to make some concessions there could hardly be a trade treaty.

Anent which Mr. Swank, in The Bulletin of the American Iron and Steel Association of November 1st, says :

The Advertiser talks of "concessions ;" does it mean concessions by any New England industries which need and receive protection against foreign competition? Not at all ; it means concessions by Michigan lumbermen, Pennsylvania and Maryland coal miners, and New York and Western farmers, for the benefit of some of its own home industries. This sort of "reciprocity" is already doomed. Congress will never approve it.

The Advertiser is just as far wrong in another statement it makes. It says there is a general demand for "some trade treaty with Canada." Mere traders want it, of course, and some selfish manufacturing interests, but our manufacturers generally, and our farmers do not want it. They are satisfied with the Dingley tariff as it is.

In a letter to the Secretary of the Canadian Manufacturers' Association Mr. Swank says : "Reciprocity was always a device of our English free trade friends, and I am sorry that it ever found a place in our tariff legislation. I do not think that any of our iron and steel manufacturers want reciprocity with Canada." Mr. Swank also says that the position of THE CANADIAN MANUFACTURER on this question is in entire harmony with its support of a protective tariff for Canadian industries.

In our opinion the reason why the American manufacturers of iron and steel do not clamor for reciprocity is that Canada has no vast iron and steel industries such as theirs to protect, that our tariff on these articles as it now stands is not high enough to keep them out of the Canadian market, and that even the twenty-five per cent. preference shown to British manufacturers is not sufficient inducement to make them serious competitors with the American manufacturers in the Canadian market.

It is therefore quite evident that Canada will never have as prosperous an iron and steel industry as the Americans have until it is built up by means similar to theirs--by tariff protection.

RECIPROCITY AND PROTECTION FROM A BRITISH STANDPOINT.

We have pleasure in quoting the following editorial from the October issue of The British and South African Export Gazette :—

That the United States "home trade is made to pay for their export, and the British manufacturer has to compete with goods sold at a merely nominal profit, and in many cases at an absolute loss," was not only affirmed by Mr A. W. Keep and Mr. W. A. Colley, in our recent article referring to the alleged preference given by Cape buyers to American goods, but it has almost become an indisputable axiom in this country. THE CANADIAN MANUFACTURER, however, in quoting some remarks of mine on this subject, joins issue with this view. My esteemed contemporary says:—

"Our London contemporary, viewing the matter from the standpoint of the British manufacturer, falls into the usual free trade error in supposing that American consumers are taxed to bear the burden of fostering the American export trade. In nearly every line of products manufactured in the United States, it will be found, on examination, that the articles produced are sold in the open markets of that country as cheaply as British articles are sold in Great Britain, which fact can be verified by any intelligent person who will inquire."

This is news to me, as it certainly will be to my readers, and it would be interesting if my contemporary would further place us under obligation by assisting in making the suggested inquiries. In the meanwhile, I would call attention to the circular of the American firm alluded to, as an important piece of evidence at flat issue with the contention put forward by THE CANADIAN MANUFACTURER.

My contemporary then goes on to remark, anent the same subject : "We suggest to our British friends as a palliative—not a remedy, for no remedy will cure the trouble—fight the devil with fire. Free trade will not answer. It has been tried long enough, tried until every protectionist nation is leaving free trade Britain in the rear. Britain pays an average of about fifty or sixty per cent. on the value of her exports to the United States for the privileges of that market; the United States pays Great Britain for similar privileges—nil." It should be premised that the Dominion journal is an out-and-out protectionist exponent, which will explain its reactionary but doubtless well-meant views. All the same, it is worth pointing out that it would be begging the whole free trade position to allow that the United States pays "nil" for its privilege of trading with us. The well known enhanced price of numerous American articles of home consumption is the indirect taxation which its population pays for its closed home market and oversea trade. Will my esteemed contemporary, perhaps, explain the notorious dearness of, say, clothing, in the United States, as a case in point?

An ounce of facts is worth more than a ton of theories, and our esteemed free trade contemporary can but admit that it has not been many years since American manufactures were an unknown quantity in the South African trade—that it has not been many years since that trade was virtually in the exclusive control of British manufacturers. How is it now? Referring to its own pages it is seen that the imports of manufactures from the United States into South Africa include a very respectable portion of the whole ; that Germany and other European countries are large sharers of it, and that even Canada sells many of its surplus products there, certainly not to the advantage of British trade. It does not require any vast expansion of brain to comprehend that these countries do not trade with South Africa for any amusement there may be in it, but for profit, and it does not require a multiplicity of eyes to see that if free trade is a good thing for Great Britain, protection is a good thing for all these other countries that are crowding Great Britain so hard in the South African market.

Another salient point seems to have escaped the attention of our contemporary, namely : that this wonderful competition of foreign nations against Britain is made possible by the

tariff protection they afford to their manufacturing industries. Under protection their home markets have been preserved for their own manufacturers, and these, through the competition among themselves, have reduced the cost of production to a minimum, so that the consumers obtain their requirements at the lowest possible cost. It does not follow that because a duty is imposed upon an imported article that the amount of the duty is added to the price of the domestic article. If this were a fact British iron and steel ought to find a remunerative market in the United States, but protection in the first place, and competition in the second place, have established the industries in the United States and at the same time reduced the cost of production to a point where it is impossible for Britain to export iron and steel to that country.

Our contemporary thinks that it is worth pointing out that it would be begging the whole free trade position to allow that the United States pays nothing for its privilege of trading with Great Britain, and it anxiously requests this journal to explain what it calls the notorious dearness of clothing in the United States. Certainly. One reason is that wool is cheaper in the British than in the American market. Under the McKinley tariff the duties were made high to protect first, the farmers who raise sheep and produce wool, and second, to protect the manufacturers of woolen goods. When the Democratic party and Mr. Cleveland came into power, carrying out their free-trade theory, they removed the duty on wool, and the duty on manufactures of wool was put on a revenue basis, with the result that the farmers ceased to produce wool, being unable to compete with the cheaper wools of other countries; and in the manufacture of woolen goods the labor was performed in Great Britain and Germany instead of the United States. The change of policy resulted in widespread disaster, and it was not until a change of Government and the restoration of McKinloyism that the country began to regain its wonted industrial activity. The mistake was made in the effort to approach free trade; the effects of it will be felt by the masses until it is able, through its farmers and sheep growers, to produce all the wool required.

Even if it is begging the whole free trade position of Great Britain, will our contemporary inform us how it is that the manufacturers of bicycles in the United States, where high protection prevails, are able to undersell British bicycle manufacturers even in their own market? And yet bicycles are sold at as low prices in the United States as in Great Britain.

REVENGE AND ITS VICTIM.

Opposition to a strict enforcement of the customs laws assumes curious phases sometimes. It frequently occurs that importers place themselves in a position of antagonism to the Government and treat customs officers as enemies to be hoodwinked and thwarted whenever possible. Such importers fail to realize that their duties as citizens should prompt them to encourage and aid the officers intrusted with the enforcement of customs laws. Some people regard the collection of customs duties as all right until it affects their own business; then it becomes an unjust and iniquitous burden which must be resisted. For a customs officer to insist upon the payment of duties on imports at a just valuation as provided by law is to make himself exceedingly unpopular in certain quarters.

Within the past few months the United States Appraiser's Department at the port of New York, has been courting unpopularity on a large scale. In seeking to stop undervaluations of imported goods, the appraiser's officers have stirred up several hornets' nests and have aroused the ire of more than one importer whose modest valuations of his own importations they could not conscientiously accept. These perverse federal officers could not be made to see that because certain goods had been coming into the country at certain low valuations for a long period of years, the provisions of the existing laws should be nullified in their favor. The customs officers simply insisted that the letter and intent of the law be complied with, and for that they have been visited with denunciation and scorn. It has come to a pretty pass, say the offended importers, if we are not to be allowed to pay duties on our importations at our own valuations.

One firm of importers, says *The American Economist*, has determined to teach the United States Government a lesson. John Duncan's Sons, who have for more than twenty years been importing Lea & Perrins brand of Worcestershire sauce, in concentrated form, from Worcester, England, have determined to cease this importation rather than submit to the appraiser's valuation of their goods. They will cease their contributions to Uncle Sam's revenues and let that misguided defender of the American flag feel the weight of their righteous indignation. They actually propose to start a factory in the United States where they will produce the hitherto imported sauces. In this way they will evade the impertinent customs officials entirely and deal an effective blow at the Government's revenue. The extent of the injury that they will do to the Government and to the American people by investing capital in a plant and employing a lot of hands yet remains to be seen. They may possibly be able to manufacture their goods more cheaply there than abroad, and to sell them at a lower price, thereby offending the sensitive instincts of certain Americans who prefer the high-priced foreign article.

It appears that John Duncan's Sons have for many years been importing into the United States a large quantity of Worcestershire sauce in concentrated form. They brought the sauce over in casks containing nearly 100 gallons each, and after diluting it, put it up in bottles for the American market. This is the only country to which this particular brand of sauce is shipped in this particular form. All other countries receive it just as it is bottled at the home factory. Until recently, this concentrated sauce has been paying an import duty of 10 per cent. on a valuation of 81 cents a gallon. A short time ago the local appraiser decided that the Government was not getting its fair share of the duties on this concentrated material. Ascertaining that by dilution in the United States it took on a greatly increased valuation, he determined to take the marketable value of the goods into consideration in fixing the dutiable valuation. The latter valuation, therefore, was increased to \$6.50 a gallon, but the General Appraisers, on appeal, reduced this figure to \$2.41 per gallon, an increase of about 200 per cent., thus making the importation seizable under the law. The members of the firm of John Duncan's Sons say that even the valuation of \$2.41 is excessive, and that they will stop importing the sauce rather than submit to it.

Right here the firm's threat to "get even" with the federal

Government comes in. One of the members said: "The Government will gain nothing by this step. In fact, sooner or later, it will lose every cent of revenue that our sauce, until recently, was yielding. We will eventually start a plant in this country and make the same brand of goods."

The breezy originality of this method of "getting even" with a Government for imposing tariff duties, will, says The Economist, in most cases touch a chord connected with the risibles. Some persons might suggest that this is one way that the Dingley bill has of fostering home industries. There still remains plenty of unoccupied factory space in the United States, and doubtless the Government will find that such punishment as the establishing of new factories has its mitigating features. The importations of concentrated Worcestershire sauce by John Duncan's Sons have averaged about 40,000 gallons per year. From this the Government has derived about \$30,000 annually. Of course the customs officers would like to see this \$30,000 increased to \$100,000, but failing in their efforts to bring about such a reform they will doubtless console themselves with the reflection that their attempt to do their duty has added one more to the list of American industries and also helped to increase the number of American wage earners. Furthermore, some State, county and municipal Government may have occasion to cheerfully place upon their tax rolls another corporate taxpayer.

The incident is very similar to hundreds in Canada that we could mention. Any one who has any knowledge of the history of manufacturing industries in Canada knows that a very large number of our most successful establishments were offshoots of concerns in the United States and Great Britain, forced to come here through the operations of our National Policy.

AS TRUE AS WORDS OF HOLY WRIT.

An American free trade journal compares the results of the Canadian tariff which reduces duties, with the American tariff that increases duties, and expresses its preference for the former. It tells us that "the volume of imports into Canada has increased, in spite of the large reductions in duties, from \$19,478,000 in 1897 to \$21,467,000 in 1898. How greatly our own imports have declined, as well as the customs revenue, it is unnecessary to repeat."

The San Francisco Call, referring to the expression of its contemporary, says:—

If the principal object of a tariff is to provide revenue, a tariff which reduces duties is quite as likely to effect that object as one which increases duties. But if the object is to build up home industries, the tariff which increases duties is preferable. Under the reduced Canadian tariff a couple of millions of dollars' worth of goods have been imported that under the old tariff would probably have been made in Canada. The labor cost of these goods was distributed in the countries from which the goods were imported instead of being distributed in Canada. In these days, when all the world is fighting for markets, this result cannot be considered desirable. A market for goods in Canada should be worth as much to Canada as a market for the same amount of goods, and at the same price, is worth in China. Yet we find Great Britain, of which Canada is a dependency, ready to fight for a market in China, while Canada throws away its home market.

The free trade paper continues innocently: "The people who use cotton goods have to pay less for them. Woolen goods that cost \$1.25 may now be bought for \$1, and so on

in the case of many articles. The effect of the still lower duties that go into effect this year, ought to be carefully observed by our legislators."

The still lower duties will quite likely admit into Canada another couple of million dollars' worth of goods that Canada would have manufactured under the 1898 tariff. If it does not, it will be because a people whose work is taken from them are too poor to buy goods. If we turn to a consideration of the effect of increased duties in the United States, we can point to an excess of exports over imports of \$615,000,000. The loss of revenue on imports can be borne with equanimity in view of the fact that these \$615,000,000 of goods will be paid for in gold which will be distributed among the American people.

EDITORIAL NOTES.

THE CANADIAN MANUFACTURER will esteem it a favor if its subscribers will complain whenever there is any irregularity in the delivery of the paper. A post card addressed to THE CANADIAN MANUFACTURER, McKinnon Building, Toronto, or a telephone message to number 1274, will rectify the matter immediately.

THE CANADIAN MANUFACTURER is in receipt of a letter from a large importing house doing business in Melbourne Australia, who desire to be placed in communication with the manufacturers of linoleums, floor cloths, carpets, rugs, mats, tapestries, cretones, upholsteries, cabinet makers and furniture sundries, brassware, etc. The consumption of these lines of goods by the concern alluded to is very large, and there is an apparently good opening in Australia for Canadian manufacturers of such articles. For further information address THE CANADIAN MANUFACTURER, Toronto.

Several Ottawa Valley lumbermen visited Edwards' mills at Ottawa this week to witness the test of converting sawdust into calcium carbide, pyroligneous acid, etc. Mr. W. C. Edwards, M.P., who has been the principal promoter of the scheme, had the visitors in charge. They were shown through the building where the machinery is, and saw at one part wet sawdust being carried into a large drier and then into the machine proper, coming out in tarry oils, pyroligneous acid, carbon and gas. The machine gets its fuel from the gas obtained from the sawdust, so that the process is a continuous one. The purpose of the inspection was to allow the visitors an opportunity of seeing the machine at work. Every part of it worked without a hitch, and so quietly as to be almost inaudible. Prof. Ruttan, of McGill, took samples of the pyroligneous acid and the tarry oils, which he will test. The test will probably decide the success of the scheme.

The British Trade Journal, October 1st, shows that the imports of merchandise into the United States during the eight months ending August 31, 1898, amounted to £309,076,495, as compared with the corresponding period in 1897, £291,565,179, being an increase of £14,511,306; the exports for the same period in 1898, £152,784,073; in 1897, £15,685,901, being a decrease of £1,901,828. The Journal endorses the remarks of the Daily Mail on this position when it says:—"Our imports are increasing, our exports declining, and it is difficult to understand how the balance is made good."

Even taking into account our carrying and ship-building trades, have our investments abroad been so great recently that the present enormous disparity is balanced by the interest and dividends? Foreign countries are in no such case. Germany's exports for the half year ending with last June, are higher than a year previous. The United States have had a record year in exports; and Belgium's exports for the seven months are 10 per cent above last year's record." "We are the world's colonists and civiliziers, making commerce possible. It is we who open the door, and, apparently, for our competitors to enter." In another article on Egyptian Trade, The Journal shows the liberal character of the British policy in Egypt, where, after having administered the Government of that country for sixteen years, the imports into it from the United Kingdom and its colonies only amount to 37 per cent., while the British Empire purchases over 53 per cent. of all Egypt's exports.

The Liebig Company have a factory at a small town called Fray Bentos, in Uruguay, South America, engaged in the manufacture of meat extract, where 800 men are employed, and where, since its establishment thirty years ago, more than five million oxen have been used. Uruguay has a stock of nine million horned cattle reared in the most salubrious climate and under the most healthful conditions.

Generally speaking, Great Britain is a free trade country, yet lays an import duty on a number of articles. These include malt liquors, spirits and wines, playing cards, cocoa, coffee, tea, certain confectionery and dried fruits, tobacco, etc. Out of total imports into Great Britain last year of 451 million pounds sterling, the articles subject to duty had a value of thirty-one millions. England imposes a duty of 4d (8c) per pound upon tea, a rate equal to three cents per pound on coffee, \$1.20 per pound upon cigars, seventy-six at eighty-four cents per pound upon tobacco, and twenty-four at sixty cents per gallon upon still wines.

"Would you believe," asked the advertising man, "that I have had advertising managers offer to take space in the paper that I represented if the publishers would guarantee sales, the profits on which would pay for the advertising? Well, I have had that proposition made me and I have also been offered 'so much' for each inquiry the paper brought. Now, everybody who has made advertising a study knows that the returns which cannot be traced and the indirect benefits secured from advertising are of more importance than the traceable results. The business man who will not advertise because he fears that he won't get value received is like the man who won't insure his property or his life on the theory that if his property does not burn or he does not die, he will lose the premiums paid. The business man is after trade. He knows that in order to get it he has got to go after it. He knows that an article that is advertised and known is easier to sell than something unknown. He advertises to obtain publicity for his house and wares, and to state his claims for patronage. If the profits on sales from an advertisement do not pay for it, he knows that the advertisement has helped popularize his goods and that sales through travelling men and dealers are made easier increased by his advertising. He

also knows that if his goods meet his claims, which induce individuals and dealers to buy, that every first order influenced by an advertisement will result in a permanent customer. That is the way the shrewd advertiser figures. He selects papers of proven circulation that reach his trade. He knows that results are sure to follow, and the placing of his advertising is given as much attention and study as that of selection of stock, employing competent help, or any other department of his business."

An over-production of tobacco seems to have resulted in Essex and Kent counties this year from the zeal with which the farmers took up its cultivation. The representations of active canvassers in the spring led hundreds to plant the weed who previously had no knowledge of what its cultivation meant. The Canadian crop of tobacco this year is placed at ten million pounds at a low estimate, while from two to three million pounds of homegrown leaf is the most that has ever been marketed in Canada in any one year. The United States cannot be looked upon as a customer, as they have all the tobacco such as we grow that is required. The Leamington News calls upon Mr. Fielding to use his influence with the British Parliament to secure a preference there in favor of Canadian tobacco. None is grown in the old land, but an immense amount is consumed. The British customs tariff upon leaf tobacco is about seventy-six cents per pound. Meetings of tobacco-growers in Essex county are being held to consider the situation.—Toronto Globe.

Tobacco growers in Canada are more highly protected than any other class in the country, hence the zeal of the farmers in the cultivation of the article. It is all right, too, to keep out foreign grown tobacco of similar quality. Give the farmers a chance. Protection is a great thing for the farmers.

LITERARY NOTES.

Richard Harding Davis, who was one of the few war correspondents to follow the United States army from Cuba to Porto Rico, and who was with the advance from the time of landing until the close of hostilities, gives his impression of "The Porto Rican Campaign" for the November Scribner's. Captain F. E. Chadwick, Commanding the Flagship, New York, and Chief of Staff to Admiral Sampson, writes of "The Navy in the War," and presents for the first time a deliberate professional account of the way the situation was met and the lessons learned regarding modern types and classes of vessels. In going "From Denver to the Pacific" Walter A. Wyckoff reaches the end of his long journey across the continent as a day laborer. This installment which closes "The Workers—The West," describes his adventures in the Colorado mining camps and across the plains, and concludes one of the most striking recent contributions to magazine literature.

The up-to-date character of the Methodist Magazine and Review, for November, is shown by the timely article on Denmark and the Danes, with portraits of the late Queen and of the royal family, and by an illustrated article on Hong Kong, one of Britain's keys of empire in China. There are also illustrated papers on "Melrose and Abbotsford," "Sir James Simpson," the discoverer of chloroform, and "The World's Progress," and other readable articles make an attractive number. Toronto: William Briggs. \$2.00 a year.

The Thanksgiving Ladies' Home Journal marks the fifteenth anniversary of that widely read magazine and its editor reviews its past under the unique heading, "Fifteen Years of Mistakes," revealing his plans for its improvement and for its greater usefulness in the future. A page of illustrations admirably typifies "Thanksgiving in the Country," and another of photographs is filled with suggestions for decorations, etc., for "Thanksgiving in the Church," "My First Fight in the Jungle" is Henry M. Stanley's narrative of the first of his journeys into Africa. There are innumerable useful, practical articles. Of special interest to women is "Prize Dollar Dinners" for four people. The Curtis Publishing Company, Philadelphia.

past hundred years, as shown by the loss of about eight per cent. last year, and is going to other countries.

"With the present direct communication with India, saving time and expense of transshipment, our enterprising manufacturers can secure a good share of this trade."

AGRICULTURAL IMPLEMENTS AND VEHICLES IN CAPE COLONY.

The following agricultural implements were in the possession of Europeans and natives in 1897. A large number were made in the United States:

Description.	European Owners.	Native Owners.
Ploughs.....	2,792	18,849
Harrows.....	2,463	920
Wagons.....	2,357	1,196
Carts.....	1,790	651
Mowing machines.....	456	2
Reapers.....	176	11
Cream separators.....	244	.....
Other machinery.....	1,571	213

Efforts are being made to have the duties on vehicles imported into Cape Colony increased. At a recent meeting of carriage manufacturers at Cape Town, reference was made to American competition, and it was stated that the colonial vehicle was better made and more solid than the imported article. A deputation was formed to urge the claims of the local industry upon the premier. There are twenty-three manufacturers of vehicles in Cape Colony.

CANADIAN CANNED MEATS.

The Department of Trade and Commerce, of Canada, is in receipt of a letter from Mr. Harrison Watson, Curator, Canadian Section, Imperial Institute, London, suggesting that Canadian packers of meat might desire to tender for contracts for supplying this article for the English Army, and in connection therewith gives the following information:—

These matters are under the control of the Director of Contracts at the War Office. Samples are supplied to the Director and if found to be satisfactory the name of the firm supplying the same is added to the list, and when supplies are wanted forms of tender are sent to the names on the list.

Where Canadian packers have no agents and might wish to look into this matter, Mr. Watson would arrange to bring samples before the authorities—full information being supplied to him as to prices, delivery, quantities, etc.

In this connection the following prices quoted by W. Weddel & Co., London, England, would be of interest:—Australian boiled beef, in two-pound tins, 6s. 6d. to 7s. per dozen; in 6-pound tins, 16s. 6d. to 18s. 6d. per dozen; Australian Corned beef, in 6-pound tins, 19s. to 21s. per dozen. American Compressed Corned beef, square tins, 2 pound tins 8s. 6d. per dozen, 4-pound tins 18s. per dozen, 6-pound tins 28s. per dozen, 14-pound tins 61s. per dozen.

PEARLS IN NEW CALEDONIA.

Commercial Agent Wolff writes from Nouméa, under date of August 2, 1898, in regard to the discovery of rich beds of pearl shells off the west coast of the colony. Several weeks back, he says, the representative of an Austrian house arrived in New Caledonia with the intention of monopolizing the industry. A syndicate has also been formed in Paris, with a capital of 1,000,000 francs, to exploit the beds, and has obtained a concession covering 130 miles. Mr. Wolff speaks of the importance of the discovery, and his desire that Americans might profit by it, although haste is necessary on account of the enterprise of foreign firms. He incloses a report by the representative of the Paris syndicate, which is summarized as follows:

"New Caledonia will soon, it is probable, play an important rôle in the production of pearl shells and pearls. The varieties of shells discovered are: First, the *avicula margaritifera*

containing a large number of pearls; second, the *molegrina margaritifera*, which furnishes a very beautiful white pearl, similar to those found in Tahiti and Gambier; third, a variety commonly called *epaule de mouton*, of which the mother-of-pearl is magnificent, with many colored reflections; fourth, still another variety of flat oyster, called *jambonneau*. The pearl is abundant, generally white and of a beautiful water. Frequently pink, yellow, gray, and black pearls are found, and large numbers are often found in the same shell. One is cited as containing the fabulous number of 256. To give a just idea of the riches of these seas, a little boat of one and one-half tons, furnished, in the year 1897, the enormous quantity of ten kilograms (twenty-two pounds) of pearls. Up to the present time, and in consequence of the difficulty of procuring divers, the waters have not been sounded to a greater depth than two meters (six feet seven inches). New apparatus and larger capital will give a great impetus to this industry, permitting soundings of eight, ten, fifteen, twenty and twenty-five meters, at which depth the large shells are found."

TRAVELING AGENTS AND FOREIGN LANGUAGES.

Consul Warner writes from Leipzig, of the value of the knowledge of foreign languages in the foreign commercial business. He says:

"Germany furnishes us, undoubtedly, with one of the best examples of real wide-awake and up-to-date methods in the struggle for commercial supremacy. Her efforts in China, Africa, and South America in this direction, within the past few years, have demonstrated most conclusively the great benefits to be derived from the possession of a thorough commercial knowledge of the language of these countries. The first move a man makes in this country, who has an idea of entering the export or import business, is to acquaint himself with the language as well as the habits and wants of the people with whom he expects to have dealings.

"Our commercial class, contrasted with that of Germany or Belgium, may be perhaps a trifle below the average. Commercial travellers from the countries named can read and speak the language of the people with whom they have relations, while many of ours are unable to make known their wants, much less carry on a business conversation. It can not be too strongly impressed upon the minds of those interested in commerce that the first thing to be learned is to be able to communicate in an intelligent way with prospective customers. This can only be accomplished by study and application. For a little exertion, we would be rewarded by a large increase in business and greater profits.

"While one can not say too much in commendation of the business men of Germany and of their methods in connection therewith, one may have earnest hope that our commercial men will take immediate steps toward seeing that young men who have an inclination to enter the mercantile world are afforded opportunities for securing the very best possible commercial educations. It will not be long before our business men will learn—if they do not know it now—that time and money will be wasted in sending agents to South America or other countries to solicit trade, who do not know the languages of the lands to which they are sent."

THE NEW JAPAN TARIFF.

The new statutory tariff of Japan, which was promulgated March 29, 1897, will go into effect on January 1, 1899. The new schedule provides for duties ranging from five to thirty-five per cent. ad valorem on a long list of articles, while raw cotton, cotton waste, and cotton with seeds, flax and hemp in an unmanufactured condition; and raw wools, including goat and camel's hair; together with rice, oil cake, silk cocoons, books and a few other articles, are on the free list. In connection with the new statutory tariff, the four conventional tariffs established by treaty between Japan and Great Britain, Germany, France and Austria-Hungary, will also

become effective. These treaties were not to have come into force till July 1, 1899, but as Japan reserved the right to put them into effect at an earlier date, it has been decided to establish all the new rates together on the first of January of next year. The present tariff of Japan is based upon conventions and has existed since 1866. It was forced upon Japan by the European nations, which fixed a maximum of five per cent. ad valorem on all goods.

GOVERNMENT SUPPLIES FOR CAPE COLONY.

Consul General Stowe sends from Cape Town, July 22, 1898, the result of certain "tenders" for Government supplies, which show the prices paid by the Government of the colony:

Articles.	Price.
Adzes with handles, complete, each	\$1.15
Augers, screw, each	\$0.24 to 0.66
Awls, brad, with handles, per dozen	0.48
Axes, per dozen	6.56 to 14.60
Barrows, per dozen	5.98 to 7.66
Bars, crow, per pounds	0.06 to 0.19
Bells, electric, each	1.21 to 3.16
Blocks, pulley, per mch	0.12 to 0.73
Bolts and nuts, per pounds	0.04 to 0.06
Braces, each	0.29 to 3.89
Brackets, per dozen	0.73 to 1.03
Brads, flooring, per 100 pounds	2.55
Brooms, bass, long-handled, each	0.44 to 0.66
Buckets, per dozen	0.08 to 0.44
Cans, each	0.73 to 1.33
Canvas, Cotton per yard	0.37 to 0.42
Casks, wine (according to capacity), each	1.21 to 5.11
Colls, Leclanche (large size), per dozen	8.27
Cells, Leclanche, boxes, each	1.09 to 1.46
Cement, Portland, per barrel	2.73 to 3.64
Chain, iron (short links), per, 100 pounds	3.53 to 4.31
Chisels, each	0.12 to 0.48
Detonators	0.73 to 1.03
Doors (according to size), each	2.43 to 4.13
Driers, patent, per pound	0.04
Dynamite, in cases of 50 pounds	15 \$1 to 21.29
Fenders, oil, each	0.36
Fenders, ship, cork	3.40
Files, per dozen	0.60 to 5.84
Filters, glazed earthenware and Pasteur, each	2.55 to 21.89
Forges, portable, each	17.27 to 32.84
Forks, digging, each	1.09 to 1.27
Fuso, safety, per 100 coils	0.48 to 18.24
Gimlets, per dozen	0.63
Glass, window (common), per box of 50 feet	1.70
Glue, per pound	0.10
Grease, antifriction, per 100 pounds	1.98 to 2.02
Grindstones, each	1.58 to 5.11
Gunpowder, blasting, per pound	0.20 to 0.26
Guttering, per running foot	0.06 to 0.11
Hammers, each	0.08 to 0.64
Handloz, per dozen	0.81 to 2.19
Harness, alum leather, per set	17.03 to 38.92
Harrow, each	12.16 to 24.33
Hasps and staples, per dozen	0.48
Hinges, per pair	0.04 to 1.39
Hoes, each	0.20 to 0.42
Hooks, each	0.12 to 0.60
Hose, India rubber, per running foot	0.20
Jacks, each	2.67 to 48.66
Junctions, each	0.08 to 1.46
Knives, drawing and pruning, each	0.30 to 0.54
Lamps, each	0.73 to 3.04
Lead, sheet, per 100 pounds	3.89 to 5.85
Loggings, lineman's, per pair	5.59
Levels, spirit (mason's), each	0.48 to 1.33
Lines, garden, road and metallic, each	0.16 to 2.67
Locks, patent, each	0.54 to 3.04
Mops and handles, best thrum, each	0.73
Oakum, per pound	0.08
Oil, lard and linseed (raw and boiled), per gallon	0.64 to 1.21
Packing, asbestos, millboard, per pound	0.20 to 0.30
Paint, per cwt	9.97 to 11.92
Picks, each	1.05 to 8.02
Piping:	
Earthenware, glazed drain, per foot	0.09 to 0.32
Lead, per 100 pounds	4.50

Articles	Price.
Planes, each	0.54 to 1.45
Plows, double furrow and hillside, each	12.17 to 72.99
Pouches, messenger's, per dozen	8.75
Punches, yelet, each	0.79
Pulverizers, disc, each	70.56
Rakes, gar-'en (with handle), each	0.30 to 0.66
Rope, per 100 pounds	10.95 to 14.19
Saws, each	0.52 to 3.76
Scales, parcel, with weights, each	5.84
Scissors, pruning, per dozen	5.59
Screw-driver (6 inch to 18 inch), each	0.12 to 0.48
Shovels, per dozen	5.47 to 6.81
Sickles, per dozen	1.69
Sieves (20 in. m diameter), double cased, per doz.	0.85 to 0.97
Soap, per box of 7 pounds	0.93
Spades, per dozen	7.30 to 7.72
Spanners, each	0.48 to 1.94
Spikes, per 100 pounds	3.16 to 3.52
Squares, carpenter's, each	0.24 to 0.54
Staples, per gross	0.10 to 0.16
Stocks and dies, engineer's, per set	5.85 to 10.22
Stones, oil, each	0.60
Strainers, each	0.29 to 0.73
Tallow, per pound	0.12
Tanks (200 to 400 gallons), each	10.94 to 2.72
Tar, coal, per gallon	0.24 to 0.36
Teeth, harrow, each	0.14
Tongs, pipe (No. 2 to No. 4), each	1.94 to 3.89
Trowels, each	0.18 to 0.42
Twine, sail, per hank	0.15
Varnish, per gallon	1.69 to 3.16
Vices, per pound	0.09 to 0.10
Waste cotton, per pound	0.09
Wax, shoemakers, per pound	0.16
Wedges, steel (various sizes), per pound	0.3
Wheelbarrows, cast steel, each	1.21
Windows (complete with weights), each	5.35 to 12.16
Wire, fencing, by the 100 pounds	2.43 to 2.79

FRANCE AS A MARKET.

The following is a copy of a report by Consul Brunot, of St. Etienne, France, made in answer to requests for information from the Philadelphia Museums:—

"In a recent publication on the subject of extension of markets for American goods, it was alleged, in effect, that the older European countries might be considered as exploited territory, already well supplied and but little likely to return a reward for the efforts of Americans seeking new outlets for their products. It is to be hoped that such a statement will not be generally accepted. It is far from being true in this section of France, at least, and doubtless in other parts of Europe as well. The success achieved in many well-known lines indicates altogether a contrary state of affairs. Europe needs the best goods in the world's market.

"As long as farming is carried on with wooden plows and ox carts, made after the style of Cæsar's time, there is room for modern utensils. Plows and ditching machines are needed here.

"The modern farm wagon would accomplish more towards relieving the agricultural depression than will Government subsidies. If there is any good reason why light road vehicles should not be preferred to the weighty carriages now in use, it is not apparent. The French two-wheeled freight cart, drawn by two horses, hitched tandem, is so heavy that the full strength of one animal is required to support the ponderous shafts and to steady the ungainly vehicle. The other must draw the load alone, the waste of power being evident. Were it not for the excellence of the almost level roads, such means of transport would be impracticable.

"Wooden shoes are the usual footwear in the interior of France, and are not an exception even in the towns.

"Paper products of certain classes might find a market in St. Etienne, Le Puy, Montbrison, and Lyons; especially packing and wrapping papers, ribbon rolls, piece-goods wrappers, lace rolls, dry-goods box stock, cardboard, and a peculiar grade of pulp board used by 'lisseurs,' or pattern makers for looms. There is no paper-box machinery in this city, though

immense quantities of small dry goods boxes are used, they are entirely handmade. Steam-laundry machinery is unknown in the interior cities of France. All the washing is done in a primitive way, by women, at the edges of streams, which often happen to be several miles out of the cities.

"Barber's chairs, if introduced, would be the cause of bringing down blessings upon the inventor.

"Roller window shades might succeed in replacing the present suffocating tapestry hangings, especially among unpretentious householders.

"England still enjoys the local reputation for building the best steam engines in the world though they are often but copies of American designs.

"Modern brick machinery should be able to supersede old hand methods, here as elsewhere. File cutting and bolt machines might also be considered favorably by local French mechanics.

"Building hardware is another item that deserves attention. The ponderous and insecure door and other locks in universal use, even in new buildings, would be museum curiosities in America; they are a perpetual nuisance here. (The writer's bunch of keys, five in number, necessarily carried about all the time, weighs a trifle more than eight ounces).

"There are but two elevators in the city, and one of these is more than out of date. Yet lofty buildings are the rule for both factories and dwelling flats."

CANADIAN FRUIT IN GREAT BRITAIN.

Professor Robertson, Dominion Commissioner of Agriculture says that the reports received of shipments of Canadian fruit to Great Britain in cold storage indicate that the trade promises to be both permanent and profitable. A shipment of pears recently sent over arrived in splendid condition, and was promptly sold at good prices. The professor was in Essex county a few days ago, and found a great many pear orchards just coming into bearing, so that the supply is on the increase.

"We can grow," said Professor Robertson, "splendid pears over an immense area in Canada, and now that we have cold storage, the produce can be shipped safely to the Old Country. I therefore look for this branch of fruit growing to become a considerable source of profit in the near future."

During the past summer nineteen creameries were run in the Northwest Territories under the auspices of the Dominion Department of Agriculture, and reports received from them show that they were all operated successfully, and turned out a large quantity of good butter, which was consumed in the Territories and British Columbia, or shipped to Japan, where it is meeting with great favor. This butter is not likely to come into competition with Ontario and Quebec butter, as there would be about two cents per pound freight rate against it, while there is about the same amount in its favor in shipping to Japan. Three of these creameries will run all winter, and another, part of the winter.

ADVICE TO EXPORTERS.

Consul General Stowe, at Cape Town, South Africa, gives the following advice to which Canadian exporters should pay attention. He says:—

"In the interest of manufacturers and their representatives, I would like to make the following suggestions:—

"When manufacturers sell or consign goods to dealers with the knowledge and understanding that the latter are to pay the freight, duty, and carriage on the goods, and, in addition, set them up in their warehouses, exhibit them, praise their merits, and advertise and travel in the interest of the goods, these dealers should be protected.

"Orders received by the manufacturer direct from seller or users should, in most cases, if filled direct, be a credit to the representative here. These direct sales, which I am informed occur quite frequently without any credit being given to the one who has really introduced the goods, have a tendency to cause a lack of confidence in the foreign dealer, through whose

instrumentality the goods have been brought to the notice of the foreign tradesman. The English and German manufacturers are very kind to the dealer who first takes hold of and introduces their goods, and in most cases credit him a commission on sales made direct by the manufacturer.

"The English and German manufacturers are also willing to bear a certain share of the expenses in introducing their goods. For instance, they will spend, or allow to the dealer, a certain sum for the advertising. I know of English paper and drug manufacturers who allow their representatives quite a large sum for advertising purposes, besides their commission or margin profit.

"Merchants visit the warehouses of the representative of the manufacturer here, examine the goods, obtain the price, the name of the manufacturer, and all other necessary information, and then, being pleased with the goods and desiring to purchase, write to their export commission house in the United States, with whom they have been doing business, to buy said goods direct of the manufacturer. I cannot ascertain that any advantage arises by this action, for it is not to be supposed that the manufacturer will sell to the export commission house at any less price than to his patron across the water; or if at a less price, the difference must be offset by the commission and other necessary expenses paid the export houses.

"While the export commission houses of the United States have been, and are now, the principal factors in the introduction and sale of American products into South Africa, yet when connections are once made direct with reliable houses here, these houses should be protected, or confidence in American manufacturers will be lost."

BICYCLES IN SCOTLAND.

Consul Taylor at Glasgow, writes: "At Coventry, the centre of the British cycle industry, compared with this time last year, there are said to be four thousand fewer persons employed, and many thousands of employes are now working only thirty hours weekly. This condition is attributed to the disproportionate increase of manufacturers over the number of riders. It is said there will be a marked reduction in the prices next year. For high-grade machines, the price will range from \$55 to \$75, and reliable wheels will be offered at \$35 to \$45.

"My own observation, so far as this district is concerned, leads me to believe that the tremendous influx of American wheels is accountable for the alleged overproduction. Certain it is that this year there has been a very marked increase in the number of American wheels in use, notwithstanding a determined effort, amounting almost to a boycott on the part of a majority of dealers, to keep out the American make.

"I attribute the increased sale of the American cycle not so much to its superiority as to the fact of its cheapness. All things being equal, so far as price and general appearance are concerned, the average British purchaser will select a British wheel, if indeed he will not give the British make the benefit of a difference in price. But British manufacturers and dealers, up to the present time, have insisted on maintaining prices far above those demanded for United States wheels, much to their own disadvantage. Whether they can make their present high-grade wheels and sell them at American prices, remains to be seen. The supposition is that the profit on each wheel has hitherto been something enormous, and that they can make the reduction in price intimated and still have a good margin.

"In view of the sharp competition which this contemplated reduction in price would mean for American wheels, the latter, to retain the advantage they now enjoy, must depend more on merit and superiority in the future than on the difference in price. In this connection, I suggest that more consideration be given to climatic conditions as they obtain here, and also to the character of work required of a wheel.

"As it rains here about three days out of five, it is practically always damp. Dampness produces rust, hence wheels with painted spokes, though not so showy, are more lasting. All

wheels should have both front and rear mud guards, and the latter, on ladies' bicycles, should come well down on the back of the wheel. I believe a wheel with a good, strong brake is adapted to this market, though it should be made detachable. The average rider here expects to use the same machine several seasons; consequently, durability must not be sacrificed too much for the sake of neatness and general good looks.

"There is a tendency toward higher gear, though it ranges all the way from sixty five to eighty.

"Wooden rims are no longer a serious objection. Some manufacturers here have adopted them. Highways are lined with hedge fences, and in the month of August they are trimmed, resulting disastrously to the tires of the cyclists. The tire that will withstand thorns the best will be the most popular. Manufacturers should remember that prejudice goes a long way here.

"A foreign wheel that breaks down in any one of its parts arouses more adverse criticism than the same accident to a dozen British wheels. Hence special care should be exercised in the selection of parts for export use."

WINDMILLS IN SOUTH AFRICA.

A large number of windmills of American manufacture have already been introduced into South Africa, but, as they are entered at the custom-house under the head of agricultural implements, it is not possible to give the number or value. Suffice to say that a demand for this class of goods will soon be in evidence, as the different governments in South Africa are making ready, after many experiments to present bills to the legislative bodies for the establishment of various systems of irrigation.

Well drills have been introduced, but not in sufficient numbers to meet the demand. South Africa is, to a very large extent, an arid country. It has its wet and dry seasons, although enough rain falls during the wet season, if it were conserved, for irrigation purposes. A scheme is on foot to grant to parties drilling wells a certain "bonus" from the Government, in addition to the charge for the work, to be paid by the landowner, provided the well produces water. The Government of Cape Colony has employed William Ham Hall, an American, as consulting hydraulic engineer. He has made an exhaustive survey, and his report to the Government is comprehensive.

While the plans of the Government, if carried out, will be in the line of large reservoirs, etc., other portions of the country, not in the vicinity of the proposed improvements, will have to depend upon wells, from which the water will be pumped by windmills or other appliances. The exhibition at Grahamstown, to be held during December, 1898, and January, 1889, will present the opportunity for manufacturers of windmills and pumps to exhibit their productions.

The only drawback to the success of irrigation is that a large number of the farmers of South Africa, although own-

ing large tracts of land, cultivate but a few acres. From these acres they produce enough to support themselves, and they have no ambition to do more.

The English styles of windmills are heavy and cumbersome, and our manufacturers need only to push trade to win success. It is useless to send circulars, for but little dependence can be placed upon them.—Consul General Stowe at Cape Town, S. A.

FRENCH IMPORTS OF CASK STAVES.

The Austro-Hungarian Consul at Bordeaux in his report on 1897 says the year had sad results for all who do business in cask staves as have but rarely occurred in the annals of the trade: the drop in prices continued, and prime Bosman staves 36 in. by 1 in. by 4 1/2 in. fetched only 960 frs. to 975 frs. per 1,616 staves, inferior sorts not even 900 frs. Whilst the importation from Austria-Hungary receded, the importation from the United States increased by about fifty per cent., and the competition the American, as compared with the Bosman, staves create is likely to augment from year to year. Although they do not equal the Bosman wood in really good quality, the American cask staves yet meet with a rapid sale in consequence of their faultless manufacture, and of their better turn-out, on an average, as regards dimensions. Thus, whilst of Bosman wood seventeen to eighteen staves of long wood are required for the making of a cask 16 in. by 1/2 in. by 1 in., seven staves of American wood suffice for the same purpose. Their putting together is also effected in a quicker and easier manner than that of the Bosman staves. A smaller quantity of the raw material, saving of labor, and cheaper prices are three factors which sufficiently explain the increasing attention which these woods meet with.

CANNED MEATS IN MADAGASCAR.

The United States Consul General at Tamatave reports.—It is only recently that canned meats have been on sale here. The French manner of canning a variety of edibles is somewhat different from ours, meat being the chief component part. There is an active demand for this article in the local market, and there is a considerable supply of canned ham, English brawn, and casks of corned beef and pickled pork, said to be American products. English canned meats are also to be had, consisting of Oxford sausages, retailing at 1.75 francs (34 cents) each, lunch sheep's tongues, at 3 francs (57 cents), preserved ox tongues, at 4 francs (77 cents) each, curried brawn, at 1.25 francs (24 cents), etc. The cans labelled "Armour & Co." sell at.—Ham, 1.75 francs (34 cents), English brawn, 1.50 francs (28 cents), corned beef, from cask, 18 cents per pound, pickled pork, 19 cents per pound. The freight charges on such articles coming from English and American ports are \$8 per ton. The customs duties on such goods coming into the port of Tamatave are.—

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Canned meats, \$4 per 200 kilograms (440.92 pounds); casks of corned beef, \$6 per 200 kilograms; pickled pork, \$5 per 200 kilograms. In addition, there is a municipal tax of 1 per cent. on net cost. French goods are free. The annual importation of these goods into this port is approximately as follows:—English, about 400 dozen tins; French, about 800 or 1,000 dozen tins; American, about 400 dozen tins; and corned beef and pickled pork, about 150 casks. The consumption of such products is dependent largely on the foreign population.

WEST INDIAN TRADE.

The Governor of Jamaica, W.I., has communicated with the West Indian Chamber of Commerce, advocating the establishment of a West Indian trade agency in Canada, the idea being that Canada and the West Indies could reciprocate with mutual advantage.

IMPORTS OF FOREIGN GOODS INTO CEYLON.

The Belgian Consul at Colombo states that the imports of Belgian goods into Ceylon reached the value of 249,902 rupees in 1896, against 96,029 rupees in 1895; while exports to Belgium from Ceylon were valued at 944,725 rupees. The principal Belgian articles at present imported into the island are iron, wire, sheet zinc, bar iron, girders, sheet iron, arms, pottery, glass and glassware and playing cards. In his opinion there are many other cheap articles of Belgian manufacture, for which there is still an outlet to be found in the colony. Articles of foreign origin which successfully compete with British he says are: arms and ammunition, iron wire, bread and biscuit, butter, cements, clocks and watches, cotton yarn, pottery and porcelain, furniture, lamps, glass and

glassware, metals, musical instruments, colors and paints, paper, galvanized and plated articles, soap, brandy and gin, woollen tissues, and cotton articles.

NORWAY REQUIRES APPLIES.

The Department of Trade and Commerce has received an official report from Mr. C. S. Sontum, commercial agent at Christiania, reporting that the past season has been very bad for the crops in Norway. The result is that cereals are being imported, and already several cargoes of wheat, flour, and rolled oats have been imported. The apple crop has been almost ruined, and Mr. Sontum directs the attention of Canadian shippers to the possibilities of this trade. The Norwegians prefer Baldwins of first-class quality. Evaporated apples would find a ready sale, fifty-pound boxes being preferred to any other system of package.

THE PAPER TRADE OF CAPE COLONY.

There is a growing demand in Cape Colony for wall papers. According to a recent German consular report, the imports of wall paper into Cape Colony amounted last year to the value of 500,000 marks. The imports were chiefly from Great Britain, Germany's share being insignificant. The extension of the press has caused a greater importation of newspaper, the value last year amounting to 1,115,000 marks, an increase of 70,000 marks compared with the previous year. The trade is chiefly in the hands of British manufacturers. Other paper goods were received to the value of 5,100,000 marks, Great Britain participating to the extent of 4,100,000 marks. Germany comes next, then the United States, Belgium, Holland and France.

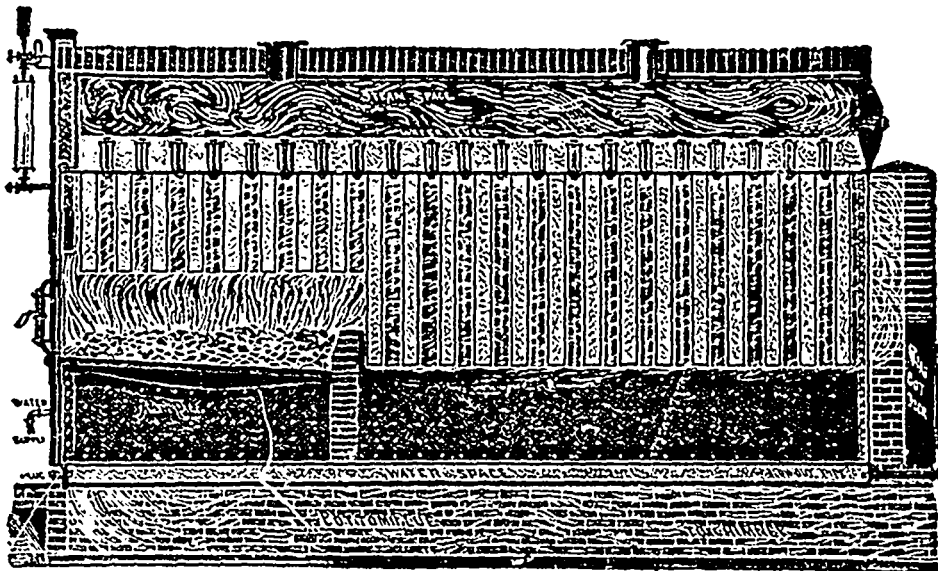
E. A. WALLBERG, C.E.,

Bell Telephone Building, - MONTREAL, QUE.

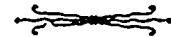
HEAD CANADIAN OFFICE FOR

KINGSLEY WATER TUBE BOILERS

*Manufactured in Montreal,
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*For Steam, Power
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Installations...*



*The Most Economical Boiler,
and the Cheapest, when
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Can be installed in any Basement,
requiring only 6½ feet in height.

GUARANTEED: A Saving in Fuel of 30 per cent. over Return Tubular Boilers.
A Saving in Fuel of 50 per cent. over any Cast Iron Heater.

...Catalogue Free.

CAPTAINS OF INDUSTRY.

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

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

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

During the past month the Londonderry Iron Company shipped from their works at Londonderry, N.S., 882 tons of water pipe, and six tons of special castings, which went to towns in Nova Scotia, New Brunswick, Prince Edward Island and Quebec.

The British Columbia Mills Timber and Trading Co's mill at Vancouver, B.C., was partially destroyed by fire recently.

The Radial Road Company, will erect a large car barn in Burlington, Ont., 120 x 60 feet. The contract has been let to James Houlden, and will amount to over \$2,000.

Lindsay, Ont., has passed a by-law to loan \$20,000 to the Sylvester Mfg. Co., manufacturers of agricultural implements to induce them to locate there.

Gaspard Rochette's tannery at St. Rochs, Que., was destroyed by fire October 22nd. Loss about \$30,000.

The Hastings sawmill, Vancouver, B.C., was destroyed by fire October 26th.

W. Powers is erecting a new sawmill at Midway, B.C., to replace one recently destroyed by fire.

The negotiations by which the principal vinegar factories in Ontario are to be amalgamated under one management have been completed, and letters patent have been applied for the incorporation of the new company. The scheme contemplates the taking in of seven factories in Ontario and the concentration of the vinegar manufacturing business in Toronto. The company is to be capitalized at half a million dollars, and it is probable that Mr. William Wilson, a large manufacturer of Toronto, will be the

President. The firms that are understood to be interested in the new enterprise are:—William Wilson, T. A. Lytle & Co., and the Badgerow, Scott Company, Limited, of Toronto; Doran Bros., and the Hamilton Vinegar Works of Hamilton; A. Haaz & Co., Kingston, Ont., and S. Allen, Norwich, Ont.

The Ontario Department of Agriculture has begun some experiments in growing hemp on the waste lands of Muskoka. Through Dr. William Brodie of Toronto, a number of places have been selected, pieces of land that are at present producing no economical crops, patches of old beaver meadows overrun with weeds. Packages of seed have been sent up for fall sowing. If these succeed in sprouting and making growth the hemp will probably be permanent, for it should reseed itself, just as it has done in the Humber valley since early in the century. The hemp may be cut every fall and used for paper-making, or it may be heated and the fibre sold. The seed also has a market value. If patches of hemp can be grown on land suitable for other crops, the farmers of Muskoka may be able to add something to their annual product. The department has undertaken the experiment to find out whether the plants will continue from year to year.

The Sydonham Glass Works at Wallaceburg, Ont., have extended their works, a new building for manufacturing flint glass lamp chimneys, etc., having recently been erected, besides additions for making moulds. The flint glass departments of the company's works will be running to their full capacity

in November. The works cover about six acres, and give employment to some 200 hands. Mr. D. A. Gordon is manager.

A tug eighty-five feet long, sixteen feet beam, is being built at Nelson, B.C., to handle the C.P.R. freight barges on the Kootenay Lake and River between the temporary terminus of the Crow's Nest Railway at Kuskanook and Nelson.

The Ottawa Stock yards and Abattoir Company is being incorporated with a capital stock of \$50,000.

The remaining building of W. H. Tighe's fruit evaporating factory at Chatham, Ont., was destroyed by fire Oct. 26th, the other portions of the works having been burned the previous week. The entire loss to Mr. Tighe is about \$12,000. Employment was given to some 285 hands.

The Kent Mills Company, flour millers, Chatham, Ont., made a shipment of 4,000 barrels of flour to Newfoundland last week.

The machinery is being placed in the new pulp and paper mill at Grand Mere, Que., and operations are expected to begin some time during the present month.

Parrsboro, N.S., is pushing the project of a pulp mill. Engineer Allison has handed in his detailed report, a copy of which has been forwarded to Sir Charles Tupper in England. It supports all the statements in the prospectus, and shows Parrsboro to be in a peculiarly advantageous position for pulp making. Cheap coal, excellent shipping facilities, abundance of raw material, and any amount of water are some of the advantages pointed to in the report. Mr. Allison has had considerable experience in pulp matters; hence his report is looked upon as rather conclusive.

The Iron Mask Gold Mining Co. of Rossland, B.C., have decided to operate their hoisting, drilling and carrying apparatus by electricity and for this purpose have placed with the Royal Electric Company at Montreal an order for 100 k.w. S.K.C. Synchronous motor. The current for this motor is supplied by the West Kootenay Power Co.

The Toronto Elevated Railway Co. are applying for incorporation with power, subject to the consent of the municipalities affected, and subject to all other existing rights, to construct and operate a system of elevated railways in Toronto and adjoining municipalities, and in conjunction therewith a system of surface street railways in Toronto and other municipalities within a radius of fifty miles of the city.

INGERSOLL-SERGEANT Rock Drills

FOR MINES, TUNNELS AND QUARRIES

PISTON INLET Air Compressors

STRAIGHT LINE
DUPLIX and
COMPOUND.

FOR ALL DUTIES.

... COMPLETE MINE EQUIPMENT ...

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

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

Thibboulot's carriage factory at Quebec, Que., was destroyed by fire October 26th. Loss about \$12,000.

The Calgary Brewing and Malting Co., Calgary, N.W.T., will erect an elevator to cost about \$15,000.

The ratepayers of Smith's Falls, Ont., will vote on a by-law to grant a bonus of \$10,000 to The Smith's Falls Malleable Iron Works, with a view to their enlargement.

The Queenston Heights Bridge Company will make application to the Department of Railways and Canals, for the approval of the Governor in Council of an agreement between this company and the Lewiston Connecting Bridge Co. of New York State, in relation to the bridge to be constructed across the Niagara River at Queenston Heights, under the Act of Incorporation of the Queenston Heights Bridge Co. as amended.

A proposition is being considered by the Minister of Railways and Canals to operate by electricity the thirteen miles of the Intercolonial Railway that connects Dartmouth and Windsor Junction, N.S.

The management of the Intercolonial Railway have spent about \$100,000 this year in enlarging and adding to the equipment of its Union street power house, at St. John, N.B., so as to concentrate there all the power for the railway and for electric lighting, and to abandon the Wentworth street power house. The equipment of the Union street power house now includes twelve engines from 250 to 600 h.p. each, and boilers rated 1,250 h.p. The new smoke stack is 175 feet high. The company has added five open motors and two closed cars to its rolling stock this year.

The M. Campbell Fanning Mill Company shipped from their Chatham, Ont., factory 1,006 mills, and 660 baggers, between September 3rd and Oct. 14th. These went to places in Ontario and to points in Manitoba, Quebec and New Brunswick, one shipment going to New Zealand. From Detroit the same company shipped several hundred machines to points in New York, Michigan and Minnesota.

The Gould, Shapley & Muir Company, Brantford, Ont., manufacturers of wind mills, etc., are moving from their former premises to the old Verity Plow Works, and the Brantford Bicycle Works are occupying the buildings vacated by the Gould-Shapley Company, the bicycle company's automatic machinery being transferred there.

J. D. Shier's sawmill at Bracebridge, Ont., was destroyed by fire Oct. 28th, loss about \$5,000.

The Brantford, Ont., City Council has granted exemption from taxes for ten years to the Chalcraft Screw Company and to the new bicycle company which is being organized. The latter is known by the name of the W. G. Nott Bicycle Company. Application has been made for a charter of incorporation for it.

Mr. Knapp, of Prescott, Ont., the inventor of the roller boat built for him last year in Toronto by the Polson Iron Works Company, says that he has succeeded in forming a strong company in Chicago, to be called the Lakes Roller Boat Transportation Company which will this winter construct a roller boat 120 feet long. Mr. Knapp is sanguine that, with this financially strong company, the roller boat will be an accomplished fact before spring.

John Aush has started a saw and shingle mill at Lunenburg, Ont.

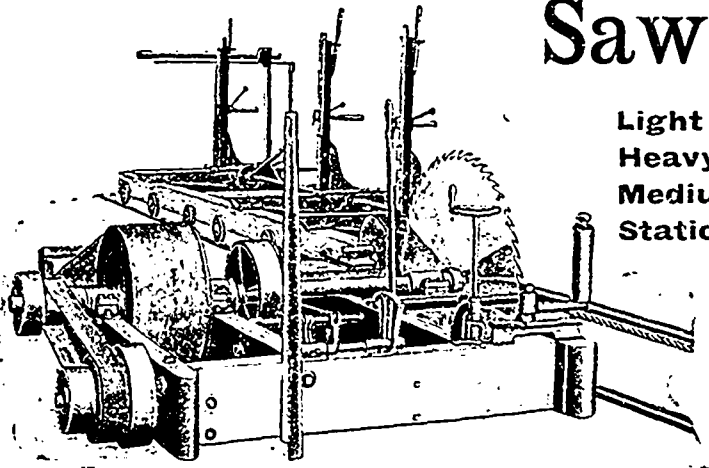
A deputation from Halifax, N.S., headed by Mayor Stephens, was in Ottawa a few days ago to urge upon the Government the necessity for the construction of a floating elevator in Halifax at a cost of \$15,000 for the winter service, pending the completion of the new Government elevator.

The erection of the new pork-packing establishment of the Park-Blackwell Co., Limited, Toronto, has been completed. The building is a commodious structure of four storeys, is equipped with the latest up-to-date machinery and appliances, and is situated conveniently to the hog and cattle markets. The company anticipate requiring about three thousand hogs and one hundred head of cattle weekly. This enterprising company contemplate entering the export trade, in addition to giving attention to their large and growing home trade.

The St. Thomas Brass Company, St. Thomas, Ont., have recently erected works in which they are manufacturing considerable quantities of railway brass work, etc. This is a branch of the Buffalo Brass Company, of Buffalo, N.Y., of which Mr. H. H. Hewitt is president. The St. Thomas work cost about \$10,000.

Rhodes, Curry & Co., Amherst, N.S., have an order to build fifteen cattle cars for the Quebec and Lake St. John Railway.

The Grand Trunk Railway Company have ordered the construction at their Point St. Charles, Que., shops of 200 additional flat cars to be thirty-five feet long with capacity of 60,000 pounds, to cost about \$100,000. They are to be used over the system between Portland Me., and Chicago, Ill.



Saw Mill Machinery.

Light Portable Mills for the Klondike
Heavy Portable Mills for British Columbia
Medium Portable Mills for the East
Stationary Mills of all sizes

LATHE MACHINES. EDGERS' TRIMMERS.
BELL AUTOMATIC ENGINES
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...AGENTS WANTED...

CLOTH AND PAPER.
GLASS & FLINT PAPER.
"Atlas Brand"

"FLORA" Knife Polish
in 3d. Gd. & 1/ Tins.

Ground, Washed & Flour

WHEELS of highest
quality for general
& special purposes.

Grinding Machinery.



The Manitoba and Northwestern Railway is about to add to its equipment thirty stock cars of the most modern pattern.

The West India Electric Company, a Canadian concern, expects to have about twenty-two miles of electric railway in operation in Kingston, Jamaica, by next March. The principal stockholder in this company is Mr. James Ross, of Montreal. Mr. Hoggate is manager and chief engineer at Kingston.

Rhodes, Curry & Co., Amherst, N.S., have contracted to build for the Intercolonial Railway three postal and baggage cars, four baggage cars, and six second-class sleeping cars.

The Grand Trunk Railway has started work at its Point St. Charles works, Montreal, on the first of six large modern locomotives. They will be practically the same as the Moguls recently purchased by the company for the lines west of the Detroit and St. Clair rivers.

The new charcoal furnace of the Deseronto Iron Company at Deseronto, Ont., is nearing completion, the expectation being that it will be blown in about December 15th. The fuel to be used in this furnace is a by-product of the Standard Chemical Company, belonging chiefly to the Rathbun Co., of Deseronto, which had previously been sold to charcoal furnaces in Michigan, but which is not kept out of the United States by the Dingley Tariff. Upon the success of this new furnace depends the erection of others of the same sort in that region of Ontario.

The works of the Macdonald Mfg. Co., Toronto, manufacturers of decorated tinware, stamped ware, etc., were destroyed by fire Oct. 28th, loss about \$65,000. These works were located in the building known as the Old Upper Canada College, an old landmark of Toronto.

Woodstock, N.B., remarks a correspondent, is a wide awake town. Its business men have just given a fresh evidence of the

fact by subscribing funds to pay the expenses of a pulp mill export, to visit the town and report on the chances for a successful pulp mill there. Meanwhile, at Grand Falls, nearly a hundred men are employed by a company which, besides St. John capitalists, include the vice-president and secretary of war for the United States and a couple of senators of that country. They are opening a canal which is part of a great scheme of improvements to utilize the power of the falls for a pulp mill and other manufacturing enterprises. Across the province, at Campbellton, nearly a thousand men are at work on the Restigouche and Western railway, of which some nine miles are graded, and which when completed through a rich timber region to the Upper St. John, will give this Grand Falls pulp mill access by rail to the seaport of Campbellton, and open up to the lumberman and settler a splendid region of excellent natural resources.

The cultivation of the cranberry promises to attain to large proportions in Nova Scotia in the future, if we are to credit the numerous reports which reach us concerning the success achieved by individual farmers who have lately devoted attention to the matter. There are numberless patches of bog ground scattered all over this country which offer ideal sites for the cultivation of this berry and as prices during recent years have been good, we can well understand how the subject has attracted the notice of owners of suitable acreage. The crop in this province during the present year is said to be much smaller than that of a year ago, due to the presence of an insect which has done considerable damage to the vines. We believe that the number of cranberry growers will be increased considerably during 1899, more especially as a very profitable and encouraging reception was accorded to some consignments of this fruit which were recently sent to England, and which has led to further enquiries as to the possibility of obtaining future supplies.—Maritime Merchant.

The Oxford, N.S., woolen mills are to be lighted by electricity. The dynamos will be operated by the company's own plant.

Work on the new shoe factory at Fredericton, N.B., has begun. The new building will be 200 by 50 feet and will be three stories high, with a basement which will be of brick. The company obtained a bonus of \$10,000, a free site, exemption from taxation, and free water, and will have a paid-up capital of \$75,000 before manufacturing has started. The company claim that it will be the most modern equipped boot and shoe factory in Canada, and will have a capacity of two thousand pairs a day.

The Bulletin, of Hawkesbury, C.B., reports that several American and Toronto gentlemen have recently made a trip over the route of the proposed shore line railway to Port Hood, with a view to identifying themselves with the project. The Bulletin understands that they were favorably impressed and hopes are entertained that work will shortly be resumed and vigorously prosecuted until the road is completed.

Fred. W. Eddy, of West Newton, Mass., has taken up a large tract of land at the head of North East Margaree river, N.S., on which is a large amount of valuable timber which he proposes to take down the river to Margaree harbor, where he has purchased a mill site on which he is placing a fifty horse power boiler and engine, a rotary mill, shingle machine, and stave machine consisting of a cylinder saw heading rounder and stave jointer. The Robb Engineering Company, of Amherst, are supplying the machinery and will have it on the ground early in November. This will be one of the best and most completely equipped sawmills in Cape Breton.

Work of drilling is proceeding regularly at Lake Ainslie oil wells in Cape Breton. It is stated a depth of 2,200 feet has been reached, and the prospects are exceedingly bright for a find of oil at no distant date.

THE CANADIAN RAND DRILL CO. have moved their General Sales Office, controlling Canadian Territory, to 18 Victoria Square, Montreal, in order to facilitate their business, which has been rapidly increasing during the last two years. They have established an office at 88 York St., Toronto, one in Halifax, one in Rat Portage in charge of Mr. George J. Ross, and one in Rossland in charge of Mr. Mendenhall. They are as usual manufacturing largely along the lines of duplex construction which they have advocated from the first. A duplex compressor costs a little more in the first place than a straight line machine, but the difference in economy of the two offsets the difference in price. Their Toronto office has lately contracted with the Canadian Copper Co., the largest nickel producers of Canada, for a very large mining plant. The Canadian Gold Fields of Marmora, they have also just equipped with a large Corliss Compressor.

Through the Halifax office the Intercolonial Coal Mining Co., of Westville, are also installing one of their high class machines for pumping. Duplex construction permits of an economical arrangement of cylinders in proper ratio to the steam pressure at hand, and to the air pressure required.

The Rat Portage office last year installed from start to finish a large plant at the Sultana mine, a large plant at the Foley mine, and also a large plant at the Mikado. They are now putting in machinery at the Cameron Islands mine, and also a large plant for the Boulder Gold Mining Co., which is controlled by Mr. Leclair and other American capitalists.

The Rossland branch has rather the advantage of the others in that it has a large warehouse at its back and is able to fill orders from stock. They have lately contracted with the Knob Hill mine for a large power plant and two mining plants, the object being for the second mining plant being supplied with power from the one Compressor located at Knob Hill.



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

Wire Screens for Every Class of Material.

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

Special Attention given to Miner's Requirements.

Large quantities of pulp are being shipped to Great Britain from the Port Medway, N.S., pulp mills. Three steamers are now being chartered to take full cargoes across.

James Richardson & Son have ordered from The Electrical Construction Co., of London, Ont., a forty horse power multipolar motor to operate G.T.R., elevator No. 2.

The Government are asking for tenders for the construction for the Intercolonial Railway of fifteen consolidated locomotives, which will be modern in every respect, and conform to the best American practice. They will weigh, in working order 160,000 lbs., and have driving wheels fifty-six inches diameter. One of them will be fitted with the Cleveland patent cylinder as a further experiment. Tender and engine truck wheels to be wrought iron; main driving

wheel, centre of steel, all others of cast iron or steeled cast iron Axle boxes and cross heads of cast steel. Iron tender frames with heavy 10 in. channel beams. M.C.B. automatic couplers to be applied on both engine and tender. Toughened steel crank pins and piston rods. Steel cab. Westinghouse train signal. Muffled top valves. Metallic packing all round, including air pump. Chime whistle. Double latch reversing lever.

The town of Brampton, Ont., has offered a bonus in the shape of a free building valued at \$10,000, exemption from taxation, and free water, to the Williams Shoe Co., of Galt, Ont., a concern employing about seventy hands. It is probable that the company will accept the offer.

The Economy Manufacturing Company, of 613 Washington Life Building, 141 Broad-

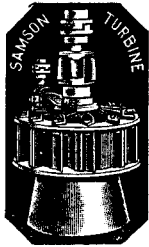
way, New York, have just completed the installation of their Hydro-Carbon Gas Fuel System at the plant of the B. Greening Wire Company, Limited, Hhmlton, Ont. This plant was equipped under the superintendence of Mr. H. Etches, Mem. Inst. Mec. Eng. of 83 Front St. W. Toronto, the local representative of the company in Canada.

Messrs. Krug Brothers, of Chesley, Ont., have recently given an order to the Electrical Construction Co., of London, Ont., for a lighting plant including a 150 light multipolar dynamo for incandescent lighting.

W. H. Tighc's fruit evaporating factory at Chatham, Ont., was destroyed by fire Oct. 21st.

Dr. Dawson, director of the Dominion Geological Survey, has recently had specimens of feldspar prepared for exhibition in the Imperial Institute, London, Eng. The demand for feldspar has been considerable lately, but its export from Canada is likely to be very limited. Feldspar of various kinds and fine quality is found near Ottawa.

James McDermid, Winnipeg, Man., is building a twelve stall round house, machine and car repair shops, storehouse, blacksmith shop, coal trucks, ash pits and turn-tables, for the Canadian Pacific Railway, at Calgary, N.W.T. The work will be finished early in the new year, and will cost about \$75,000.



WATER WHEELS

For Heads of 3 Feet to 2000 Feet.

ADAPTED TO MILLING AND ALL POWER PURPOSES.

Recent tests at Holyoke enable us to guarantee:
The Largest Power ever obtained from a wheel of the same diameter. The highest speed ever obtained for the same power. The highest mean efficiency ever obtained when running from half to full gate. We guarantee also: A runner of the greatest possible strength. A gate unequaled in quickness and ease of opening and closing.

Write for pamphlet, stating your Head.
JAMES LEFFEL & CO., Springfield, Ohio, U.S.A.

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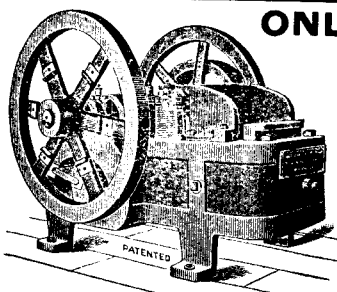
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FINE CRUSHER

BREAKS LARGE, or when set close
 Reduces to GRAVEL and SAND.

FOR ORES.

ROLL JAW CRUSHER.

STURTEVANT MILL CO., BOSTON, MASS.

Crocker Patent Turbine



This Wheel is to be found in representative plants in nearly all parts of the Dominion. It possesses among its leading features

LARGE POWER FOR THE DIAMETER. SUPERIOR STRENGTH AND DURABILITY.
GREAT EFFICIENCY AT ALL DEGREES OF GATE OPENING.

Designs prepared for complete plants and the best development of power possible under the peculiar circumstances of head, etc., in any locality.

CIRCULARS AND PRICES ON APPLICATION.

inch Crocker Wheel Plant at the works of the Boston Rubber Co., St. Jerome, Que.

The JENCKES MACHINE CO.,

42 LANSDOWNE STREET
 SHERBROOKE, QUE.

Messrs. J. A. Des Rivieres & Co's planing factory, Ottawa, was damaged by fire to the extent of about \$3,000.

The McLaughlin Carriage Co., Oshawa, Ont., have ordered a 100 h.p. Robb Arm strong engine from the Robb Engineering Co., Amherst, N.S.

The Forest Product Co., Toronto, are applying for incorporation with a capital stock of \$47,000 to manufacture lumber cooperage stock, etc.

The Ozone Company of Toronto, has been incorporated with a capital stock of \$20,000 to manufacture patent medicines, etc.

The Renfrew Farmers' Hedge and Wire Fence Co., Renfrew, Ont., has been incorporated with a capital stock of \$22,000.

The Eclipse Office Furniture Co., Ottawa, Ont., will erect a new brick factory, to be 135 x 43 feet, three storeys high, with basement, to cost about \$12,000.

Two patent suits of considerable interest to Canadian manufacturers have recently been contested before our Courts. The American Dunlop Tire Company seek an injunction from Justice Burbridge, of the Exchequer Court, to restrain The Gould Bicycle Company, of Brantford, and the Brantford Bicycle Supply Company from making and selling the "electric tire" which is claimed to be an infringement of the patent for the well known Dunlop detachable tire. Such a broad interpretation of the patent is required to establish infringement that the Dunlop Tire Company will have a

practical monopoly of double tube wire held tires if they succeed in their present suit. The interests of the Canadian defendants were looked after by Messrs. Ridout & Maybee and Mr. J. L. Ross.

The Sherbrooke, Que., Gas and Water Co. are erecting an electric system direct to the new works of the Quebec Central Railway at Newington, Que.

The Empire Tobacco Co., Granby, Que., are applying for incorporation with a capital stock of \$300,000.

The Dundas Electric Co., Dundas, Ont., has been incorporated with a capital stock of \$40,000.

Walter Bros., Rat Portage, Ont., will build another steamer for the Lake of the Woods trade.

The town council of Waterloo, Ont., will submit a by-law to be voted on to raise \$50,000 for the purchase of the waterworks of that town and to complete the system.

Messrs. Brigham & Ingram, of Stratford, Ont., have placed an order with The Electrical Construction Co., of London, Ont., for an eight horse power motor to operate their wood yard.

The Salvation Army Printing House, Toronto, have given an order to the Electrical Construction Co., of London, Ont., for a motor equipment consisting of three direct belted slow speed, 300 R.M.P. multipolar seven horse power motors, and two, two horse power motors.

The Hastings Sawmills Co., Vancouver, B.C., will erect a large sawmill at Village Bay, B.C.

The Westinghouse Electric and Mfg. Co., Pittsburg, Penn., has just received a contract for generators, dynamos and motors from the Chinese Government, to be installed in a newly erected woollen mill at Tien-Tsin.

The Waterloo Mfg. Co., Waterloo, Ont., are erecting a large warehouse which will be completed this fall.

A. E. Howse's grist mill at Nicola Lake, B.C., was destroyed by fire recently, loss about \$14,000.

Mr. John Scott, of Galt, Ont., has let contracts for the construction of a modern opera house in that town. It will be fitted up and decorated in the most approved plan. The stage will be fifty feet wide and twenty-eight feet deep.

A new and interesting game has recently been brought out by Messrs. Patterson & Fennel, Berlin, Ont., called "Hockey," and aims, in a game of mental skill, to reproduce the characteristics of hockey as played on ice. A puck is used, which is carried or passed by the men in their moves, according to the rules laid down. Messrs. Ridout & Maybee are applying for the patents.

The Toronto Street Railway Company have under consideration a scheme to inaugurate a system of radial trolley electric roads to extend from Toronto to many different towns in Ontario.

The Swansea Forging Co.

Successors to ONTARIO BOLT CO.

MANUFACTURERS OF

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Track Bolts and Nuts—Bridge and Roof Rods—Wrot and Cast Washers—Drift Bolts—Square and Hexagon Nuts—Railroad and Contractors' Supplies.

CARRIAGE, MACHINE, PLOW and SPECIAL BOLTS.

BRIDGE and BOILER RIVETS.

DROP FORGINGS ALL KINDS.

Carriage Hardware.

Works and Head Office—

SWANSEA, Near TORONTO, CAN.

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

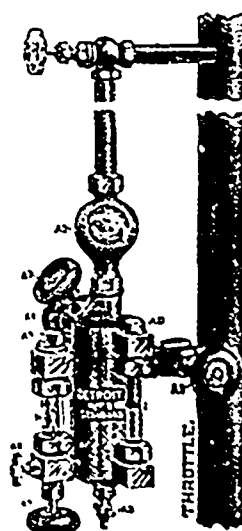
RICE LEWIS & SON

(LIMITED)

COR. KING AND VICTORIA STREETS, TORONTO.

ADVERTISE IN THE CANADIAN MANUFACTURER.

SEND FOR RATES.



THE BEST JUDGES OF ENGINES

THOSE WHO BUILD HIGH-GRADE ONES.
ALL USE

The **Detroit
Sight-Feed
Lubricators**

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

Send for Catalogue and Prices.

Detroit Lubricator Co.,
DETROIT, MICH.

GALT.

In proportion to its population Galt, Ont., is perhaps the most generously equipped as to industrial establishments of any Canadian town. The Toronto Globe has been investigating the industries of Galt, and makes the following report thereon:

GOLDIE & McCULLOCH Co.

In the van comes the Goldie & McCulloch Co., Limited, one whose transatlantic and foreign trade in general, as well as its connections on this continent, has won a name enjoyed by few. The Goldie & McCulloch Co. has introduced the newest and most modern labor-saving machinery, yet more men are employed than for years past. The staff is not remaining stationary, the army of hands being on the up grade. The company's shops occupy an entire block, exclusive of the safe department. Magnificent offices were put up this year, and a blacksmith and a moulding shop gave work to a large force of men all summer. A carpenter shop is now in course of construction. The moulding shop is capable of an increase in output of thirty per cent., and not only is the number of employes greater than it was nine months ago, but the firm is in a position to take on more men at a moment's notice, a possibility that is likely shortly to be realized. This concern, one of the largest in Canada, has been working all day and the greater part of the night since early spring. Short time has been an unknown quantity. The Company's new buildings represent a large outlay. The Goldie McCulloch Co. handle perhaps the greatest variety of foundry manufactures of any firm in the country, and to the safes, vaults, boilers, engines, machinery, etc., have been joined other things equally profitable and saleable. The order books show what an extremely satisfactory year 1898 has been.

COWAN & Co.

Cowan & Co. have reason to be content with their share of public patronage. They are now employing eighty hands, an average over last year's. Their old country trade

has become quite a factor and its full possibilities have not been reached. Their custom is of a superior class, and not only that, but it surpasses that of other years. There are orders on hand for months ahead, and taking it all in all '98 is the best year Cowan & Co. have experienced; they, too, having equipped their shops with the latest labor-saving appliances.

JAMES WARNOCK & Co.

James Warnock & Co., edge tools, carriage springs and carriage gear works, report a vast improvement since 1896. Then there was not full time, while to-day sixty-five well-paid men are working ten hours of the twenty-four. Especially pronounced have been the last seven months. In this connection Warnock & Co. have secured a big slice of the Pacific coast trade and several months will be occupied in filling the orders already received.

THE C. TURNBULL CO.

The C. Turnbull Company, which manufactures woollen underwear, is finishing a large three-storey addition to its factory, which will be one of the largest in Canada. In 1896 forty persons were engaged. In two years the number has risen to eighty. Business shows a proportionate growth. The company's factory on West Main street, which was the nucleus of the enormous plant will soon be part of the newer quarters on

WANTED.

First-class. Energetic Boiler and Engine Salesman, thoroughly acquainted with latest Engineering Practice in Steam Power work. Salary and Commission. Address Autograph application STEAM, Care Canadian Manufacturer.

Felts for Pulp Mills

20 years in the business — the first to make Felt^s 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.

ELECTRIC REPAIR & CONTRACTING CO.

GEO. E. MATTHEWS, Manager. 621 LaSalle St., MONTREAL. TEL. 2177.

COMPLETE ELECTRIC PLANTS INSTALLED.

ELECTRIC APPARATUS OF ALL KINDS REPAIRED ON THE SHORTEST NOTICE.

Armatures Rewound for all Systems. Commutators Refilled.
Write us, our Prices are reasonable and work good.



The Diamond
Machine & Tool Co.

TORONTO, ONT.

Manufacturers of...

Machine Screws

OF EVERY DESCRIPTION.

SEND FOR
CATALOGUE
and
PRICE LIST.

Dominion Oil Cloth Co.

Manufacturers of...

OIL-CLOTHS of Every Description

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

Office and Works

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

WOOLEN MACHINERY

...FOR SALE...

24 Hutchison & Hollingworth Dob-
cross Looms.

20 Harness. 3 Box, 9/1.

9 Leeming's, of Bradford, England,
"Dandy" Looms.

6 Harness. 1 Box, 10/1.

1 Hand Loom, Complete, with
Shuttles, etc.

32 Harness. 4 Box.

1 Waste Shaker.

2 ft. 8 in. wide, 24 in. diameter.

1 Iron Doffer.

36 in. diam., 60 in. wide, with
24 in. shaft.

1 Knowles Pump—Steam.

43 in. x 33 in. Water Cylinder.

1 Horizontal Engine.

Six Horse Power.

All of the above can be seen run-
ning at the Factory, ST. GABRIEL
LOCKS, MONTREAL.

We are prepared to entertain any
reasonable offer for above.

Further Particulars on application.

Montreal Woollen Mill Co.

MONTREAL.

North Water street. Turnbull's goods command a ready sale from one end of the Dominion to the other.

VICTORIA WHEEL WORKS.

Until 9 o'clock every week night have the Victoria Wheel Works, owned by Robt. Scott & Son, been in operation this year. The output is twenty-five per cent. in advance of last year, and the prospects indicate an even better showing next year. With Scott & Son the orders sent in along would keep the men busy well on into the future.

MCEACHREN HEATING AND VENTILATING COMPANY.

A young but promising firm is the McEachren Co., which makes heating, drying and ventilating appliances of the most improved types and latest designs. The company dates its inception from 1896. This year it gives work to thirty-three mechanics, and has made its foundry twice as capacious as it was. The new buildings comprise a pattern shop and another equally commodious. Day and night have been needed to attend properly to orders.

WILLIAMS SHOE COMPANY.

Another new industry is the Williams Shoe Factory. It was purchased by a local stock company last year, when twenty-five or thirty people found work there. This fall travellers cover the provinces; a building of sufficient size has been procured, and between seventy-five and eighty men and boys make shoes for the Williams Company. Quebec and the Maritime Provinces are opening up a goodly field.

ROBERTSON & TAYLOR.

Last year Robertson & Taylor entered into a business new to Galt, the manufacture

of cream separators. They began on a small scale, and now, a few months later, have a comparatively large staff. Their business is expanding, and improved facilities are being provided.

NEWLANDS & CO.

Newlands & Co., manufacturers of Saskatchewan buffalo and Astrachan robes, oiderdown and Jersey cloth, etc., may be said to have a monopoly in their particular line. Their factory is one of the most substantial in the town, and their yearly returns compare favorably with the best. The factory contains between sixty and seventy workpeople, and there are quite a number on the company's books who do not work in the factory itself. Newlands & Co. made quite a hit with their Klondike sleeping bags, of which they sold a large number during the exodus to the northern gold fields. Their goods were never more popular than now, and nine o'clock at night is the hour of closing.

R. McDougall Co.

The R. McDougall Co., Limited, has raised its foundry a storey, thus supplying needed accommodation. The company's products, heating apparatuses, pumps, windmills, etc., are sold all over Canada. The building, just enlarged, is likely to be added to. The firm is busier than in 1896, has more men and ranks high among the manufacturers of its class. The present year has been more marked in the way of progress than any other.

SHURLY & DIETRICH.

An important industry is the Maple Leaf Saw Factory, owned and operated by Messrs. Shurly & Dietrich, who are interested in a similar works in St. Catharines. As with their

follow manufacturers, Shurly & Dietrich are this year surpassing any former efforts. The men are on full time, and this will continue all year, with next year as good, if not better. With regard to employes, 1898 is ahead of 1896. Shurly & Dietrich's floor space is in keeping with their business.

GALT KNITTING CO.

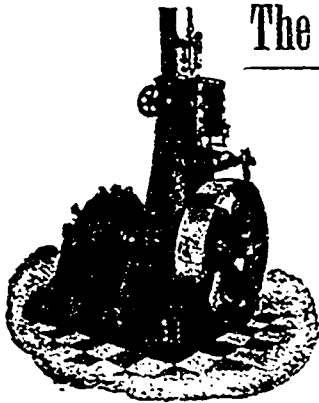
The Galt Knitting Co. has eighty persons in its employ, working full time. Ten hours a day tells that times are good with the firm. The company, too, has found it necessary to employ carpenters and builders. A new dye house has just gone up.

MACGREGOR-GOURLAY Co.

This year the MacGregor-Gourlay Co. has concentrated its shops into a compact square. The company assumed the Stevens-Hamilton Company's business some time ago, and moved the plant to a large building put up for the purpose. In all the departments the same activity prevails. The machine shops have more machinists, and the pin factory has kept pace with the other branches. The MacGregor-Gourlay Co. bought out the London Tool Co. this year, and with the plant came more men. The company has in view the erection of a substantial shop opposite the present foundry. There has been full time and over, and night shifts are a possibility of the near future.

CANADIAN FRUIT AND HONEY.

A letter has been received at the Department of Agriculture from the Lord Mayor of Manchester, Hon. Robert Gibson, in which he says:—"The samples of maple syrup, maple sugar, and clover honey have duly arrived. The honey and syrup I have



The Whitelaw-Shepherd

...ENGINE...

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

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

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

Electrical Construction Co. of London
(Limited)

MULTIPOLAR MOTORS
AND
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. 12 York St., Toronto. 131 Granville St., Halifax.

There is no Pulley Like a Dodge Pulley!

Some DEALERS will tell you they have something just as good; but he is talking for profit every time.

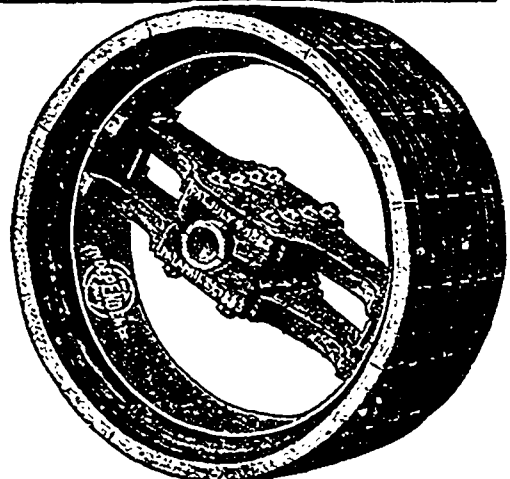
CONSULT US WHEN YOU WANT PULLEYS

We will tell you all about Pulleys—then you may decide for yourself.

WE ARE HEADQUARTERS IN THIS COUNTRY FOR PULLEYS

We make from 100 to 200 every day. Are we making yours?

DODGE MANUFACTURING CO., OF TORONTO, Limited,
74 York Street, Toronto, Ont.



submitted to some large buyers of such material here, who seem much pleased with the samples, and have promised to communicate with their Canadian agents. I shall indeed be pleased if it leads to business, as the more the Mother Country can reciprocate with her colonies, the better for all.

A letter from Mr. F. B. Girdlestone, general manager of the Bristol docks, has also been received. He says:—"The package of peaches and pears was delivered to my house on Saturday morning last. The contents came to hand in splendid condition, and all I can say is that if your country can deliver fruit of this quality, and in such condition, the market in this country is an unlimited one. I have sent specimens around to friends, who pronounce the condition excellent and wonderful."

OUR ADVERTISING MAN.

"I have often wondered," said the advertising man, "why some men, whether in buying goods or contracting for advertising space that they really want, persistently speak disparagingly of what they are going to buy or contract for. I have sometimes thought that it was a chronic habit with them, and again have been led to believe that the thought that that course would secure them better terms in some shape or other. Here is one experience (and I have had numerous similar ones). I had heard from several sources that the advertising man of a certain large concern had boasted of the splendid results obtained from the paper I represented, and consequently, when I went for a renewal of my contract, I expected to

be received with open arms, so to speak. On the contrary, the company's advertising man received me politely, but stiffly, and informed me that he 'guessed he wouldn't renew his contract with me;' that he 'didn't believe the advertising profitable at the price he was paying.' He said that some papers had paid him well and that he intended to renew with them, and probably increase the size of his advertisement. 'I've tried your paper and it did not pay' acts like a solar plexus blow when fired at an advertising solicitor. He can make little defence. But I knew that my paper had paid him and took matters easy. He offered to try my paper another year at a reduced price, but that I could not give him unless he took a larger space. He took the larger space, remarking that perhaps his card had been too small to attract attention. Now, that man gained nothing by belittling my paper, and I would have written the notice of the additions to his plant with better grace had he acknowledged the value of the advertising he had had. I am glad to say, however, that the majority of advertisers with whom I have done business are always glad to acknowledge the benefits secured from their advertising."

F. E. ATTEAUX & CO.

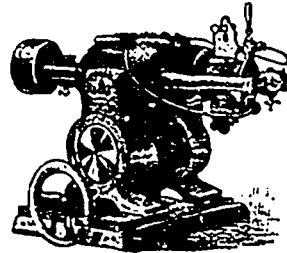
221 Front St. East,
Toronto,

15 Lemoine Street, Montreal.

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

Dyewood Extracts,
One Dip Alizarines,
Aniline Colors,
Dyestuffs and
Chemicals.

Jones & Moore
Electric Company



ELECTRIC LIGHT
...AND...
POWER PLANTS

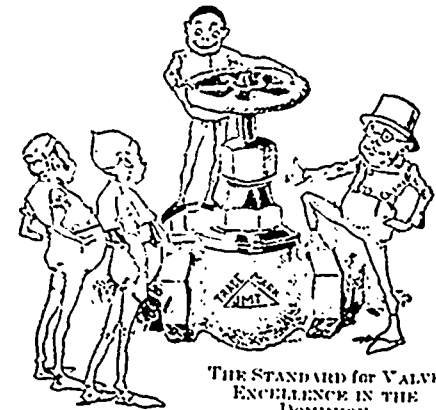
Multipolar Machines
25 to 100 K. W.

16-Light Arc Plant for sale cheap. Good as New.

22 Adelaide Street West, - Toronto.

ANOTHER TORONTO INDUSTRY.

The Hamilton Glass Company, who have for a number of years operated their main factory in Hamilton, Ont., and who recently established a branch of their works in Toronto, will remove its entire plant from Hamilton to this city, and make window glass and all the other varieties of the company's product in the Toronto factory. The following letter from Mr. Fleming, the Assessment Commissioner, to the Board of



THE STANDARD for VALVE EXCELLENCE IN THE DOMINION.

J.M.T.
VALVES

PERFECT
Material and
Workmanship
For Hot Water
and Steam.

When requiring or specifying Valves, insist on getting an article that will not need continual attention and frequent repairs.

THE BEST IS NONE TOO GOOD FOR YOU.

The J. M.T. series has an established record, and are known by this trade mark on every Valve.



Manufactured only by.....

THE JAMES MORRISON BRASS MFG. CO.
LIMITED.
TORONTO.

ESTABLISHED 1823.

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

WILSON BROS. BOBBIN CO.

(LIMITED)

CORNHOLME MILLS, TODMORDEN, ENGLAND.

BOBBIN AND SHUTTLE MANUFACTURERS.

THIRTY PRIZE MEDALS AWARDED.

HIGH-CLASS WORKMANSHIP. SEVENTY YEARS' REPUTATION.

LARGEST BOBBIN MAKERS IN THE WORLD—(Over 1,200 Workmen).

Address--

CORNHOLME MILLS, TODMORDEN, ENG.

BRANCH ESTABLISHMENT:

ATLAS BOBBIN WORKS, GARSTON, LIVERPOOL.

OFFICE AND SHOWROOMS:

14 MARKET PLACE, MANCHESTER

Control, shows the terms on which the transfer was made:—

“Gentlemen, - Several months ago I commenced negotiating with the representatives of the Hamilton Glass Works, who are carrying on manufacturing in Hamilton, and also have a factory here, but who were contemplating the removal of all their works from Hamilton to Toronto, and I have arranged that the present by-laws 3,203 and 3,362 exempting the lands which they purchased about five years ago from taxation, shall be extended for five years from the date of their expiry, which will be five years from the first of January next, and that two additional blocks of land, one situate on the east side of Lisgar street, containing one and three-fifths acres, and the other situate on the south side of Armour street, containing two and one-sixth acres, shall also be exempt from general taxation for ten years from the first of January, 1899. The larger block of land is being purchased from the Ontario Government, and is now exempt from all taxes; so that by this agreement the city receives school taxes upon a block that is now exempt, and will be enabled to

assess the same and the buildings that will be erected upon it for school purposes, and, in addition it is made liable for local improvement rates, for which it is not liable at the present time. The intention of the glass works is to greatly enlarge their buildings here, remove within a short time all their machinery to Toronto, close up the Hamilton factory and manufacture all their goods here. Their representative informs me they employ about one hundred and twenty hands in Hamilton. By the agreement existing between the company and this city, they are to employ ninety five hands here daily for at least eight months in the year. As their plant will be increased by the erection of flint works, the number of hands will be increased to a daily average of at least one-hundred and seventy-five for eight months in the year.

“Because of these considerations I recommend that the above concessions be granted.” The Board passed the recommendation unanimously.

The Goldie-McCulloch Co., Galt, Ont., have recently received a number of con-

tracts of unusual magnitude and importance. Among these is the contract for furnishing the new plant of the Metropolitan Street Railway Company, of Toronto, which is extending its lines to Newmarket and Aurora. This is a very large contract and includes two very powerful engines and four boilers, besides a considerable quantity of smaller machinery. This enterprising firm has also been awarded the contract for putting in elevator machinery for the Canadian Pacific Railway Co. in a new grain elevator in course of construction at St. John, N.B. This order also includes two large engines, boilers, shafting, etc. The Goldie-McCulloch Company can now handle the largest possible contracts for machinery of this sort.

The Paris Electro-Plating Co., Paris Station, Ont., have just completed an important addition to their works, including a moulding shop 50 x 32 feet for the manufacture of fine grey iron castings, of which they make a specialty. Other products of these works are stove trimmings, organ and piano trimmings, etc., also nickel, copper and brass electroplating.

FETHERSTONHAUGH & CO.

PATENT BARRISTERS AND SOLICITORS

ELECTRICAL AND MECHANICAL EXPERTS AND DRAUGHTSMEN

Head Office: Canadian Bank of Commerce Bldg., Toronto, Ont.

Patents Procured in Canada and all Foreign Countries.

Offices in Montreal, Que., Ottawa, Ont., and Washington, D.C.

THE WM. HAMILTON MNFG. CO., LIMITED,

Engineers and Builders

MODERN MINING and MILLING MACHINERY

“Gyrating Vanner”

SHAKES LIKE A PAN SEND FOR SPECIAL CIRCULAR



Department “E”



Contractors for the Design and Construction of Complete Stamp Mills, Concentration, Chlorination, Cyanide, and Smelter Equipments....



PETERBOROUGH, ONT., or VANCOUVER, B.C.

THE NEW PRINCIPLE IDEAL ACETYLENE GAS GENERATOR.

Acknowledged by Experts and Insurance Inspectors as the only perfect and safe system for Generating Acetylene Gas.

ADVANTAGES

Of New Style
Carbide Submerging
Machine

No Generator to Open to Recharge.

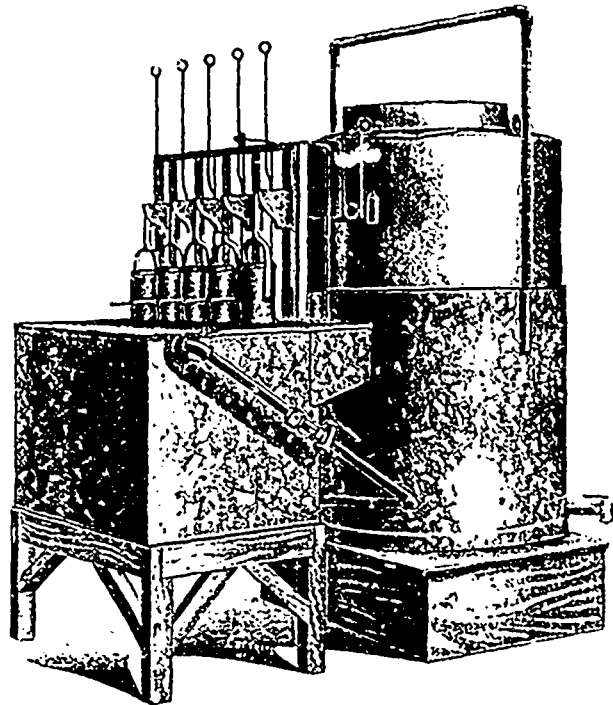
Gas is Generated under Water and is Cool and Pure.

200 Degrees less Heat in Generator than in Old Style.

Absolutely no Over Generation or Loss of Gas.

Can tell at a Glance exactly how much Carbide is Used, and how much Unused.

Separate Ideal Generators supplied for attachment to present Gas Holders where Sprinkling Generators are now in use.



DEFECTS

In Old Style
Sprinkling Machines.

Generator must be Opened to Recharge, with Loss of Gas and Bad Odour.

Gas Generated by Sprinkling is Hot and Impure.

More or Less Over-Generation and Waste of Gas.

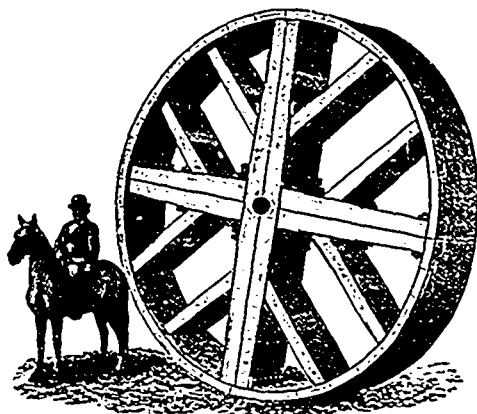
Cannot tell how much Carbide is or is not used without opening Generator.

J. WALLACE & SON,

MANUFACTURERS
- OF -

Acetylene Gas Apparatus,

156 KING STREET EAST,
HAMILTON, ONT.



Extra Large Wood Split Pulleys

FOR HEAVY WORK.

We have recently supplied several large Main Driving Pulleys, one of them being 144 inches diameter for 22 inch belt. We can supply them up to 32 ft. diameter, fully guaranteed to do the heaviest work.

STRONGER THAN IRON. LIGHTER THAN STEEL.

Write us for Catalogue and Price List.

REEVES PULLEY CO.,

Also Columbus, Ind., U.S.A.

TORONTO, ONT.

When Were
Your
BOILERS

Last
Inspected?

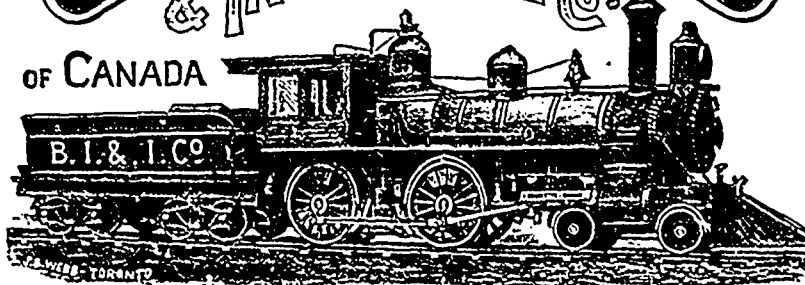
Consulting Engineers -
G. C. ROBB, Chief Engineer.
A. FRASER, Sec.-Treasurer.

JOHN L. BLAIKIE Esq.
PRES.

E. W. RATHBUN Esq.
VICE-PRES.

THE BOILER INSPECTION & INSURANCE CO.

OF CANADA



Head Office, TORONTO.

ARE
YOU
SURE

they are

SAFE

and in

Good
Condition?

A REMARKABLE IRON MINE IN NEWFOUNDLAND

A St. John's, Newfoundland, correspondent, who has just paid a visit to the new iron mine at Belle Isle, Conception Bay, describes the deposit as the most extraordinary of the kind in the world. There is no gaping shaft, no tall chimney, no puffing of steam engines or clanking of machinery. About 200 men were at work on the surface of the ground, scattered over a considerable area, some with pickaxes, shovels and barrows, putting the ore into wagons; others drilling, by steam or hand, holes into the bed of ore which were to be charged with dynamite.

Instead of a mine it is an open quarry of red hematite iron ore, which is detached from its bed far more easily than stone in a quarry. The ore lies in a horizontal stratum, three miles in length, and more than a quarter of a mile in breadth, and is about five feet in thickness. This bed is covered on the surface by about two feet of rock. This is just stripped off, and sections of the ore laid bare. Then, by blasting, masses of ore are detached, and long terraces are formed, rising in shelves above each other, and in these the men go to work with crow-bars, pickaxes, wedges and shovels. At certain intervals along these terraces the steam drill is at work, or the sledge hammer or jumper, making holes, which, when charged with dynamite, are exploded by electricity.


On penetrating this first stratum of ore a bed of rock is reached, some three or four feet thick, similar to the surface rock. When this rock stratum is pierced, another bed of iron ore is reached, of about the same thickness as the first. For anything yet known there may be a third iron ore stratum underneath this bed. The manager of the mine stated that there are in sight twenty millions of tons of ore in the stratum now being worked, and probably as many more in the second. A thousand tons per day can be taken from the deposit when needed. The Nova Scotia Steel Company of Glasgow, holds a lease of the property, and the ore is shipped to Pictou, to Glasgow, Scotland, and to Rotterdam. About 100,000 tons will be exported this year.

A GIGANTIC COAL-CARRYING ENTERPRISE.

At the present time one of the largest and most interesting enterprises ever conducted on the St. Lawrence river is being carried out by the manager of the Atlantic Transportation Company, Mr. W. S. Besse, of New York. This company was organized about a year ago, with a paid-up capital of \$3,000,000, with the intention of engaging on a more elaborate scale than any existing company was doing in the coal-carrying trade of the Atlantic coast. A contract was at once closed with the Chesapeake & Ohio Railway, probably the largest overland coal-carriers in the continent. Within a few weeks a fleet of forty barges, eight ocean tugs and four steamships was put into service. This fleet, however, has proved entirely inadequate to the demands of the trade, and it was decided to at once double its size. Accordingly on the 15th of September last Mr. Besse left New York for Buffalo, Toledo, Cleveland, Detroit and other lake port towns to purchase vessels. Incredible as it may seem, the fact remains that in ten days he had completed the work of buying forty-four vessels, the total carry-

... ORDER ...

“Capitol”



THIS IS THE STANDARD GRADE **CYLINDER**

‘Renown’ | ‘Atlantic’

ENGINE | **RED OIL**

NO BETTER OILS MADE
THE QUEEN CITY OIL CO., LIMITED
 SAMUEL ROGERS, PRESIDENT TORONTO, Canada

CHEMICAL
COMPOUND
COMPANY

CORRECTLY
COMPILED
CHEMICAL
COMPOUNDS

CIVILITY
CAREFULNESS
COMPLETENESS
CONTINUITY

DO YOU KNOW

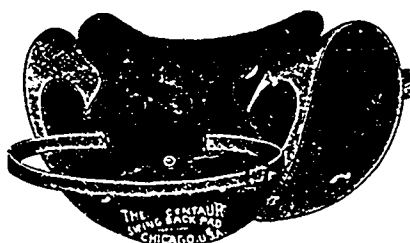
That you are paying for Boiler Compound all the time whether you use it or not?

IF YOU DO NOT BUY

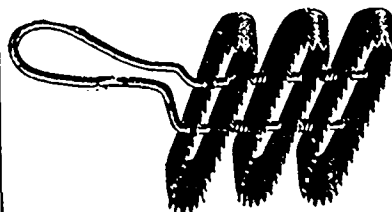
You will pay your coal dealer more than its cost in the extra Coal you burn.

Zinkolene Saves Money

THE CHEMICAL COMPOUND CO., 311 Temple Building, Toronto.



Centaur Ventilating Spring Back.
 Flexible and Self-Adjusting.



Centaur Spring Curry Comb.

CENTAUR VENTILATING COLLAR PADS.

FULLY WARRANTED.

Will Positively Cure and Prevent any Horse's Sore Neck.

PRICES, PER DOZEN, TO DEALERS, JULY 1, 1898 :

Original Centaur Pads, No. 1	.....	\$1 00
" " " No. 2	.....	1 25
" " " No. 3	.....	1 50
Centaur Zinc Pads	.....	3 50
Centaur Swing Back Pads, No. 1	.....	1 25
" " " No. 2	.....	1 50
" " " No. 3	.....	1 75
Centaur Zinc Swing Back Pads	.....	4 00

The Centaur Mfg. Co.,

EXCLUSIVE MANUFACTURERS
HARNESS and HARDWARE SPECIALTIES

HORSE FELT GOODS of all Descriptions.

FELT SWEATS. DEER SKIN COLLAR AND BACK PADS.

—SEND FOR PRICE LIST—

201-203 Lake Street, - - CHICAGO, U.S.A.

CANADA IRON FURNACE CO., LIMITED
Montreal, Radnor and Three Rivers

Manufacturers of the well-known

"C.I.F." Three Rivers Charcoal Pig Iron

Suitable for Car Wheels, Cylinders and Fine Castings,
 where the utmost strength is required.

UNSURPASSED IN STRENGTH BY SWEDISH, RUSSIAN
 OR AMERICAN CHARCOAL IRON.

Offices: *Canada Life Insurance Bldg., Montreal.*

**CANADA CHEMICAL
 MANUFACTURING CO.**

— MANUFACTURERS OF —

Sulphuric, Nitric, and Muriatic Acids—Commercial and
 Chemically Pure.

Mixed Acids for Explosives.

Liquid Ammonia, Glauber Salts, Copperas, Muriate Tin,
 Tin Crystals, Acetic Acid, Nitrate Iron, Bisulphite
 Soda, Acid Phosphate for Baking Powders
 and General Chemicals, Fertilizers, etc.

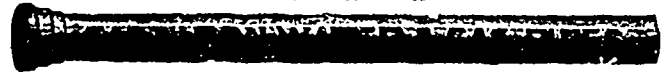
LONDON, - ONTARIO.

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SUCCESSORS TO (Limited)

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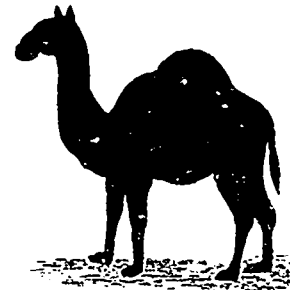


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Offices: - - - **Canada Life Building,
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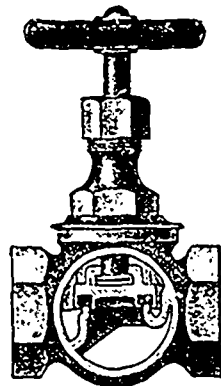
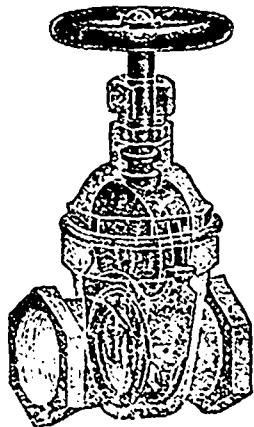
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FAIRBANKS STEAM SPECIALTIES.

**ASBESTOS
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 VALVES,**

In Brass and
 Iron Body.

Globe Angle
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**Asbestos
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Renewable
 Seats.

Asbestos Packed
 Cocks for Boiler
 Blow Offs.

YOUR ENGINEER would appreciate our Valves
 and Cocks. They enable him to keep **your plant**
 in good shape. Postal Card brings Catalogue.

PACKINGS.

VULCABESTON.

In Sheets of all Thickness, Round, Braided for Pistons and
 Valve Stems, Rope and Moulded Gaskets.

Fairbanks Flax Spiral Gum Core.

Spiral for Pistons, Flax in Four Grades, Gum Core in Four
 Grades and all sizes.

PRATT & CADY RETURN STEAM TRAP.

The Fairbanks Company, - 749 Craig St., MONTREAL.

ing capacity of which is 71,000 tons, and by the 3rd of October the first barge was at Cornwall. The difficulty of this work can be realized when it is remembered how hopelessly most of the lake carrying fleet has during the last few years become tied up with banks, estates, ship repairs, etc. In all nine steamers at an average cost of \$50,000, were purchased, and thirty-five schooners at an average cost of \$20,000, or a total investment of \$1,150,000. Having bought the fleet the task had only begun. The problem was to get it to its destination, Newport News. Many of the vessels were too long for the locks of the Beauharnois canal, and the only alternative was to run the Cascade Rapids. This was not a very promising undertaking, in view of the fact that heretofore only three vessels had made the attempt, and in each case an accident was the result. The pilots assured Mr. Besse that a channel of seven feet could not be secured through the Split Rock Rapids. Investigation, however, led to the undertaking of the task, and to-day one half of the big fleet is safely harbored at Quebec without an accident. The pilots of the American Line, which plied between Montreal and Kingston this summer, have been doing the pilot work through the Cascades, and other pilots have been running the Split Rock Rapids. Four tugs belonging to the Donnelly Wrecking Company have been engaged in the work, the Chieftain and Rival working in the rapids, and the Reginald and Island Wanderer towing between Cornwall, Coteau and Ogdensburg. If the same good fortune and weather that have attended the enterprise so far, are continued, Mr. Besse thinks that \$60,000 will land the fleet at the Gulf by the 1st of November. Already this large draft from the great lake freighters has advanced rates materially, and it will probably exert a desirable influence over the shipbuilding trade this winter. Mr. Besse, who has been identified with shipping interests all his life, gave it as his opinion that the time foretold by Sir Wilfrid Laurier when 90 per cent. of the marine trade of all America will be carried down the St. Lawrence is not far distant. This year the Parry Sound Line will handle fifty million bushels of grain at a saving of over a quarter of a cent per bushel in freight rates.

ADDITIONAL ELECTRIC POWER FOR MONTREAL.

Contracts have been awarded in the scheme of the Shewanagan Water & Power Company for the development of the power of the St. Maurice River at the Shewanagan Falls, near Three Rivers, Que.

These contracts call for the construction of electric-generating plants, which will cost over \$1,000,000 and take over a year to complete. Besides supplying power for manufacturing purposes, it is proposed to run an electric line to Three Rivers, nineteen miles away, and the transmission of power to Montreal, eighty miles away, also is mooted. It is calculated that this can be done with a loss of less than 10 per cent. There is a drop of 169 feet in the river available at the spot selected for the electric-generating plant.

Without the aid of a dam, but simply by means of a long flume, the Laurentide Pulp Company has the command of 20,000 horse power.

When the works now nearing completion on the Chambly Rapids are put in operation, Montreal, with the Lachine Rapids works,

will have over 50,000 horse power available for use in the city without the consumption of a ton of coal, and, if the project of transmitting power from the Shewanagan Falls proves practicable, this may be increased almost indefinitely.

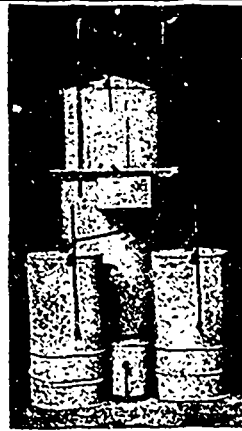
THE STURGEON FALLS PULP COMPANY.

The Toronto Globe makes the following explanation regarding the terms of the grant by the Ontario Government to the Sturgeon Falls Pulp Company:—

"The company agrees (1) to take up the property of the Sturgeon Falls Pulp Company and carry out and extend the objects of the original company; (2) to expend a million dollars in erecting paper mills, pulp mills, machinery, plant, etc., and utilizing the water power at Sturgeon Falls; (3) at least 240 hands will be employed, and at least 30,000 tons of paper turned out every year; \$250,000 of the million must be expended in the first eighteen months, \$500,000 within two years and the whole sum within three years.

By way of encouraging the establishment of the enterprise the Government sets apart

for the use of the company the spruce and jack pine on seventy-five miles of limits on the Sturgeon River and its tributaries. For all pulp timber taken from these limits the company is bound to pay the Government the dues which other persons who take pulp logs from Crown lands have to pay, which is at present twenty cents a cord, but this rate may be increased from time to time at the discretion of the Lieutenant-Governor in Council during the period of twenty-one years covered by the agreement. The company acquires no title to the land or pine timber thereon covered by the concession, nor is the land withdrawn from settlement. All that is aimed at in setting it apart is that the company in making so large an investment may be secured in a supply of pulp-wood to keep its mills running. The agreement with the Sault Ste. Marie Company, which was approved by both sides in the Legislature, served as a model for this one, although in one or two respects this is more rigorous. For example, the dues of twenty cents a cord, which are also imposed on the Sault Ste. Marie Company, are in its case unalterable for twenty-one years. In the case of the Sturgeon Falls Company they may be increased whenever it is thought



The "SAFETY" ACETYLENE GAS MACHINE

THE MOST SIMPLE AND THE SAFEST MACHINE MADE. It does what other machines cannot do. It generates Gas Cool. It washes and purifies the Gas twice. Automatically removes the Ash from the Carbide. Leaves the Ash perfectly dry and thoroughly exhausted.

EVERY MACHINE GUARANTEED.

Manufactured by.....

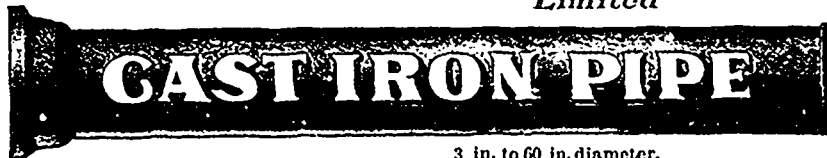
THE SAFETY LIGHT & HEAT CO., Dundas, Ont.

Proprietors and Sole Manufacturers for the Dominion of the celebrated CLIFF-WARDLAW GENERATORS.

ALEX. GAITSHORE, President. J. G. ALLAN, Sec.-Treas. JAS. THOMSON, Vice-Pres. and Gen. Mngt.

THE GAITSHORE-THOMSON PIPE & FOUNDRY CO.

Limited



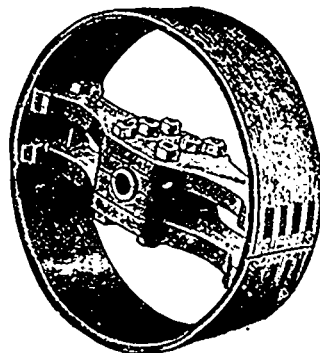
3 in. to 60 in. diameter.

For Water, Gas, Culverts and Sewers

Special Castings and all kinds of WATER WORKS SUPPLIES

FLEXIBLE AND FLANGE PIPE.

HAMILTON, ONT.



BENT WOOD SPLIT PULLEYS, RIM...

(REID'S PATENT).

The Strongest, Lightest and Best Belt Surface in the World

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

EVERY PULLEY GUARANTEED.

The Reid Bros. Manufacturing Co., of Toronto, 257 King St. West, Toronto.

The London Machine Tool Co., LONDON, ONT.

MANUFACTURERS OF GENERAL MACHINERY...

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

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

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

LATHES—Engine, Gap, Broak, Turret, Fox, Spinning, Etc.
PLANERS—Standard, Crank, Plato, Etc.
DRILLS—Standard, Sensitivo, Multiple, Radial, Etc.
MILLING MACHINES—Lincoln, Plain, Universal, Etc.

SHAPING MACHINES—Whitworth, G. & E., Rack-Driven, Etc.
HAMMERS—Stoam, Sandago 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, Rivoting, Etc. We shall also esteem it a pleasure to give quotations on Special and General Machinery in our line.

JOHN J. KELLER & CO.

104 and 106 MURRAY ST.
NEW YORK

220 Church St., Philadelphia.

135 Pearl Street, Boston.

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

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

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**LIGHT YOUR
FACTORY WITH**

LUXFER PRISMS

The latest device for

LIGHTING

dark rooms and
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By Daylight

For catalogue
and estimates
write to

**Luxfer Prism
Co'y, Limited.**

58 Yonge Street, - TORONTO.

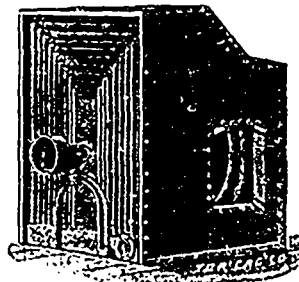
HEATING . . .

The Fan System of Steam Heating for Heating
of Factories and all Classes of Buildings.

DRYING . . .

Appliances for Drying

**Lumber, Brick, Wool, Cloth,
Hair, Soap, Glue, etc.**

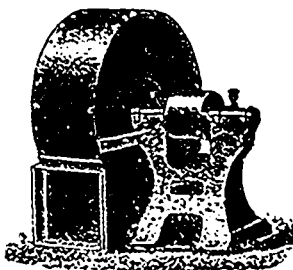


Heater and Housing.

VENTILATING . . .

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

WRITE FOR CATALOGUE AND PRICES.



Fan.

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

fair to do so, the general prevailing rates for such a privilege being the guide.

It should be observed that before making the concessions in question the Government insisted that the company should undertake not merely the manufacture of pulp, but the more finished product, the manufacture of paper. The company is under obligation to employ at least 240 men about the mills, but the employment of this number at the mills necessitates a considerable volume of work in the woods and on the rivers. This will afford employment for settlers in the winter, a great desideratum in now districts where the poorer settlers must find cash jobs to carry them over the lean years that every settler experiences while he is making his clearing. The agreement carefully provides that the logs taken shall be made into pulp and paper, and not exported as logs. It is, indeed, a beginning in Ontario of an industry that may become one of its greatest sources of wealth and employment, and it is a pity that the Conservative press cannot drop its dreary attitude of suspicion and examine the whole matter with an open mind and some faint spark of public spirit.

THE PENNYCUIK GLASS AND LIGHT COMPANY.

The following details of a new industry that is about to be established in Toronto will be read with interest:

The financial success that has attended the introduction of all of Mr. James G. Pennycuik's inventions and discoveries, from his lacing stud for boots, down through his range of sanitary improvements to Luxfer prisms, which has circled the globe in less than two years, has suggested to his trustee and others the advisability of at once placing upon the market his latest discoveries.

The first is his light diffusing globe for artificial light, by means of which he has succeeded in a very simple manner, as he expresses it, in taming the arc light. The value of this will be better understood when it is known that since the discovery of this light by Prof. Brush, of Cleveland, science has entirely failed to temper the terrible light to the eyes, or diffuse the dark shadows which render its general use comparatively impractical, unless at a loss of about 75 per cent. Edison pronounced it impossible to carry the light from the arc of the carbons much above the angle of forty-five degrees unless the lamp is turned upside down, and this, to attain the full benefit of the light also to be a failure, hence the ground glass globe with the loss of seventy-five per cent. of the light remained as the only remedy, until Mr. Pennycuik—at the suggestion of Prof. Brush, undertook the task, and at his very first experiment, in the Upper Canada College grounds, succeeded in not only tempering the light within a few inches of the eye, but in carrying the rays of light away up in a rising, horizontal direction. Thus the light from the rays fall like the sunlight, hence there are no intense lights and no intense shadows.

It will thus be readily seen that an article of this nature is of incalculable commercial value.

The second article which it is proposed to manufacture and place on the markets of the world is Mr. Pennycuik's glass conduit for the conveying of electricity without material loss of power.

The fact may simply be referred to, that the enormous powers of Niagara Falls, and other natural powers throughout the world,

THE ...

A. R. WILLIAMS MACHINERY CO.

(Limited)

Head Office, - SOHO MACHINE WORKS, TORONTO

Manufacturers of and Dealers in

High-Class Iron Tools,

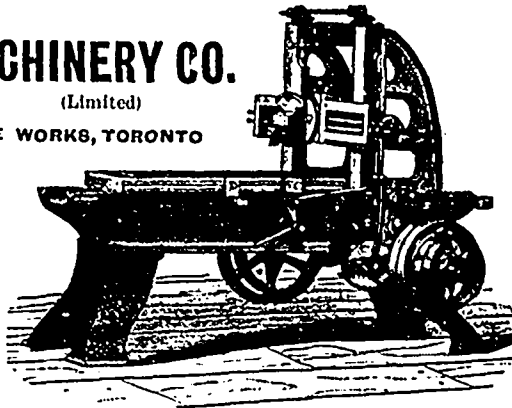
Wood-working Machinery,

Engines, Boilers,

Motors, Water Wheels,

General Machinery

and Supplies.



The Pulsometer

STEAM PUMP

OFTEN IMITATED BUT NEVER EQUALED ...

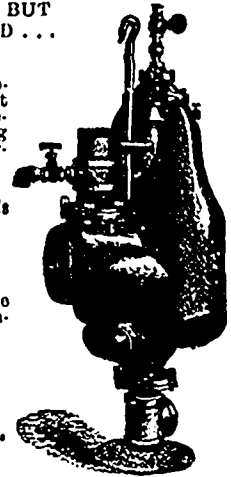
The handiest simplest and most efficient steam pump for general Mining, Quarrying and Contractors' purposes.

Muddy or Gritty Liquids Handled without wear.

Descriptive Catalogue with prices, furnished on application.

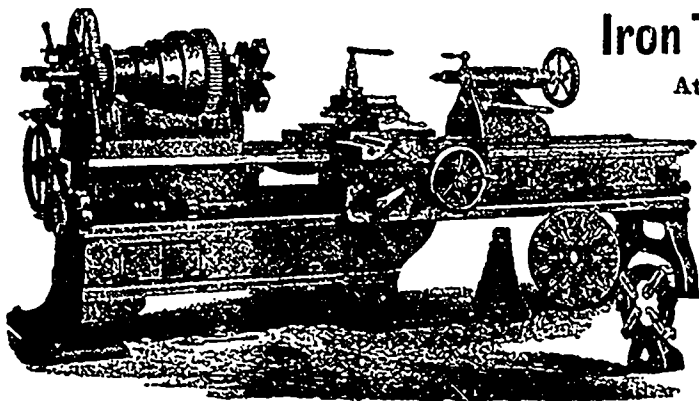
PULSOMETER Steam Pump Co.

New York, U.S.A.



A. R. Williams Machinery Co.

Toronto and Montreal, Selling Agent for Canada.



Iron Tool Works

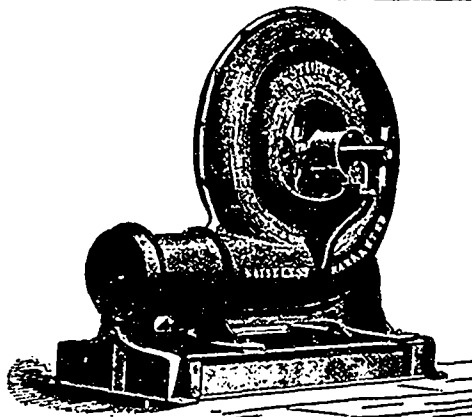
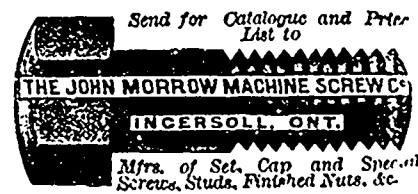
At London.

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183 Colborne St., BRANTFORD

345 and 347 St. James St., MONTREAL

Send for Circulars, Referring to this Advt.



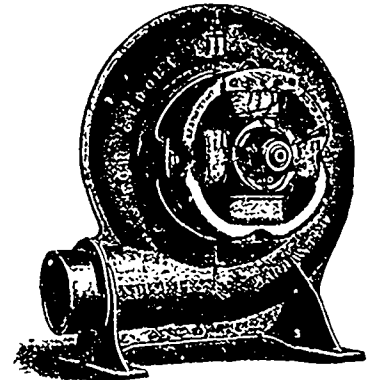
Blower on Adjustable Bed.

The STURTEVANT STEEL

Pressure Blowers

-FOR-

Cupola Furnaces and Forge Fires

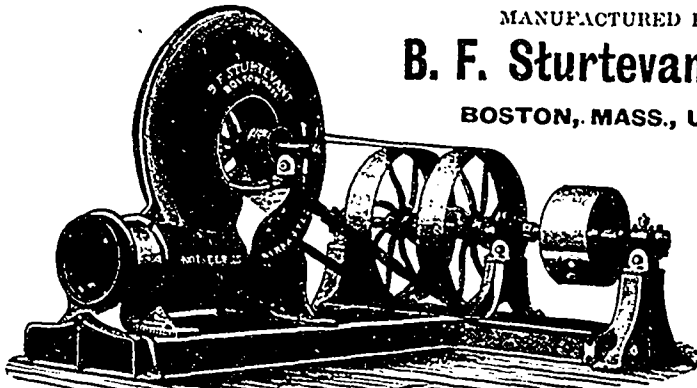


Blower with Electric Motor.

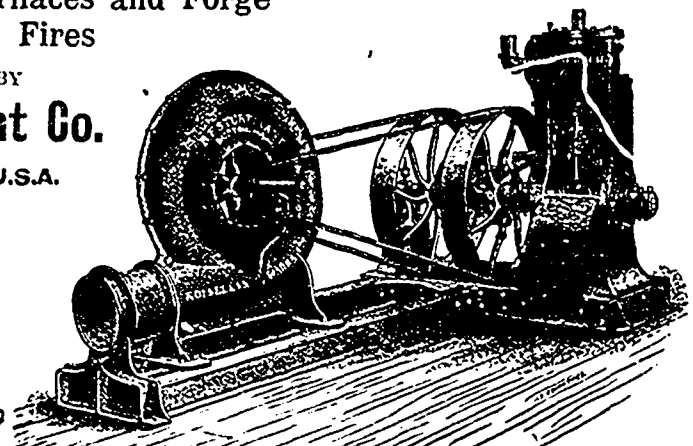
MANUFACTURED BY

B. F. Sturtevant Co.

BOSTON, MASS., U.S.A.



Blower on Adjustable Bed with Combined Countershaft.



Blower on Adjustable Bed, with Double Enclosed Engine.

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

are to a very large extent valueless if the electricity created by their force cannot, by ordinary appliances, be transmitted more than a brief distance, and that itself, at a large percentage of loss.

Mr. Pennycuik's attention having been called to this want by one of the prominent electrical companies of Massachusetts he very soon presented them with a sample of a conduit, comprising all the essentials necessary to the accomplishment of their desires, but to his astonishment was told that he has in the simple device, given them what every manufacturer of glass in Europe and America during the past twenty years had pronounced it impossible to make.

As an idea of the possible and probable demand for this article, it may be instanced that the president of an underground conduit company said when his company was ready to use Mr. Pennycuik's conduit, they would require at least one thousand miles for their city alone.

In addition to the foregoing, Mr. Pennycuik is the discoverer of the very simple principle of producing a mathematically perfect screw on glass as specially applied to the manufacture of electrical insulators for telegraph and telephone purposes. The effect of this patent was to completely revolutionize the production of these articles in every glass factory in Europe and America, as no such results as given by his method could be got from any one of the hundreds of patents on this article. It simply meant the prevention of paralysis to commerce by the destruction of the telegraphic system in the event of a storm or gale.

A fourth improvement or discovery of Mr. Pennycuik's is a remarkably beautiful glass tile for the decoration of floors, walls, or ceilings, containing or exhibiting the precious metals of gold, silver and bronze in profusion without a particle of these metals. This effect is given by applying his principle of Luxfer prisms to ornament. There is nothing that ages of time can destroy, and is simply bringing the highest of art within reach of the poorest.

The manufacture of these articles will be a prominent feature in the industry of the company.

Mr. Pennycuik's conservative principles advise going slow, but sure, and it may be deemed advisable to delay for a short period the establishment in this province of an extensive glass works to meet the wants of the Dominion.

The production of Luxfer prisms exhausts the productive energy of two of the largest works in the Dominion, and yet cannot meet the wants either in quality or price. Under Mr. Pennycuik's advice and care, this large industry may be added to this company.

A limited joint stock company has been formed to carry out the enterprise to be

known as the Pennycuik Glass and Light Corporation, Limited.

LONG DISTANCE ELECTRIC LIGHTING.

The opening of a thirteen mile transmission line for electric lighting purposes only, between Grand Valley and Arthur, Ont., marks a new era in electric lighting in Canada.

The village of Grand Valley is situated on the Canadian Pacific Railway, about 100 miles from Toronto and has a population of 200 souls. The enterprising people there desired electric lighting, but the town was rather small for the investment to be made for electric lighting only. Mr. John Philip, who owns and operates a sawmill at Grand Valley, however, was enterprising enough to give the people incandescent electric lights.

For this purpose he installed in his sawmill an S.K.C. two phase generator with a capacity of about 800 incandescent lamps. He found that after supplying the wants of Grand Valley he still had a capacity on his dynamo, engine and boiler to spare of about 400 lights, and as the electric lighting at Grand Valley was not sufficient to pay him a fair income on the money invested, he cast about for other means of utilizing the power, and for this purpose consulted one of the engineers of the Royal Electric Company, who suggested the idea of transmitting the current from one phase of his machine to the village of Arthur, about thirteen miles distant, and using the other phase for the lighting of Grand Valley. When the scheme was mooted and the people of Arthur approached on the subject they were very willing to fall in with the idea, but were very doubtful if the current could be carried that distance, in fact some of the "Electricians" who are travelling about the country laughed at the idea and said it was impossible. However, John Philip, being a sturdy old Scotchman, and having confidence in his advisers, undertook the work, and, on the evening of October 20th, the lights were turned on in the village of Arthur, and have been in operation ever since.

ADVERTISEMENTS RECEIVED FOR ALL PAPERS.

C. A. G. Browne

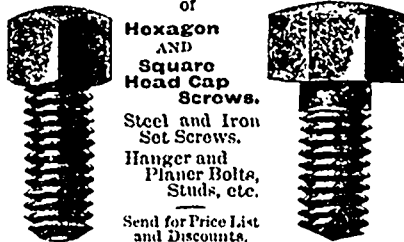
Advertising Agent,

145 Fleet Street

LONDON, ENG.

Solo Agent for Advertisements in Great Britain for this journal.

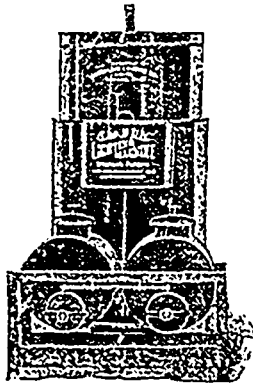
TORONTO MACHINE SCREW CO.



109, Adelaide St. W., - TORONTO.

Sun Lighting Machine.

ACETYLENE GAS.



The Acme of Perfection in Lighting.

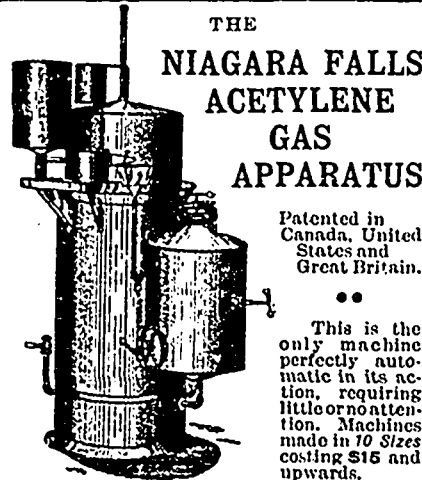
At the Minimum of Cost.

Suitable for any place where Artificial Light is required. Dwellings, Stores, Churches, Factories, Hotels, Street Lighting, etc.

Write for Catalogue.

THE Acetylene Lighting Co. (LIMITED).

LONDON, ONTARIO.



THE NIAGARA FALLS ACETYLENE GAS APPARATUS

Patented in Canada, United States and Great Britain.

This is the only machine perfectly automatic in its action, requiring little or no attention. Machines made in 10 Sizes costing \$15 and upwards.

Acetylene Gas the Coming Light. CHEAPER THAN ELECTRIC LIGHT COAL GAS OR COAL OIL

For Private Dwellings, Business Houses, Churches, Public Halls and Offices.

For particulars write to the **NIAGARA FALLS ACETYLENE GAS MACHINE CO. LIMITED.** NIAGARA FALLS, ONT.

Hamilton Acetylene Gas Machine.

SIMPLE, ECONOMICAL, DURABLE AND SAFE.

Adapted for Private Houses, Offices, Stores, Churches, or any building where a clear, bright and steady light is required.

300 in Use in the Dominion of Canada. Address Communications to

Hamilton Acetylene Gas Machine Co., Limited,

71 York Street, HAMILTON.

The entire loss in the transmission is less than five per cent, and the lights are equally as good in Arthur as they are at Grand Valley close to the machine. In this way Mr. Philip has had converted a non-earning property into one which will in future pay him a handsome return.

There are many existing plants in Ontario which, in the same manner could be made to increase their revenue—earning capacity; and we would commend this installation to the careful consideration of the proprietors of them.

The conception and carrying out of this work certainly is a credit to the Royal Electric Company, and is doubly a credit to the man who was willing to invest his money in an enterprise when he was advised by many of the so-called "Electricians" that the thing was an impossibility, and he certainly deserves to be put in the front rank of central station men in Canada.

GARBAGE GAS.

In 1894 one Oigny, in Montreal, discovered that by mixing garbage with a liquid hydrocarbon and certain other chemicals a fuel could be produced containing a considerable quantity of gas. Owing to the difficulty in getting rid of the surplus moisture, the fuel was never a commercial success. The inventor disposed of a share in the patent to Messrs. D. O. Frye and L. G. Harris, who in turn sold one-third to Mr. George H. Watson, Q.C., of Toronto, at the same time covenanting to give him the same interest in all future improvements. Mr. Harris has since then discovered a method

of utilizing the original composition in its wet state for the manufacture of gas, and this "garbage gas" seems likely to prove a very valuable product. Mr. Justice Falconbridge has just given judgment in a suit brought by Mr. Watson against Mr. Harris, declaring that the alleged improvement is an infringement of the original patent, directing the defendant to assign one-third interest to the plaintiff in his new patent, and restraining him from selling or using the invention to the exclusion of the plaintiff. The judgment is of interest to parties buying patents with the right to the inventor's further improvements. S. C. Smoke and J. G. Smith appeared for the plaintiff, assisted by J. Edward Maybee, as patent expert.

The Board of Trade, Sydney, C.B., has recommended the town council to accept the proposition of Davidson & Sons, boiler makers, Halifax, N.S., asking the town to establish their works in Sydney.

A. C. NEFF
CHARTERED ACCOUNTANT
 Room 500 McKinnon Bldg.,
 Tel. 1330. — TORONTO.
 Audits and Investigations a Specialty.

GEORGE WHITE-FRASER.
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CONSULTING and Electrical Engineer.
CONSTRUCTING
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H. F. STRICKLAND,
Electrical Contractor.
 35 ADELAIDE ST. E., TORONTO.
 Telephone 1838.
 SPECIALTY:—Electric Wiring, by skilled men.
 All work done according to latest methods, at
 lowest possible prices. Complete Isolated Plants.

JOHN J. GARTSHORE,
 19 Front St. West, Toronto.
RAILWAY, TRAMWAY, and
...Contractors' Supplies
METALS and SCRAP IRON
 Bought and Sold.

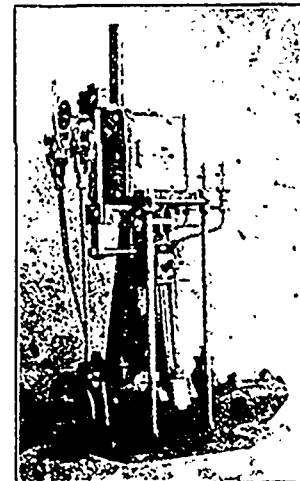
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 McKinnon Building, Toronto.
 Agents for
ENGLISH, COLONIAL AND GERMAN
MANUFACTURERS OF
WOOLENS, HOSIERY, SHIRTS, ETC.
 Reg. Cable Address "STRUKO," Toronto.
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Smith Wool-Stock Co.
 219 FRONT ST. E., TORONTO.
 Makers of
WOOL STOCK,
SHODDIES, Etc.

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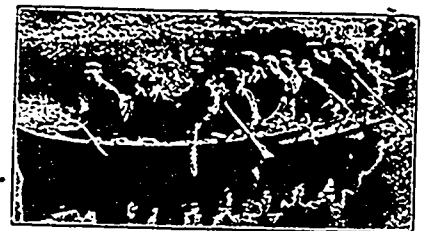
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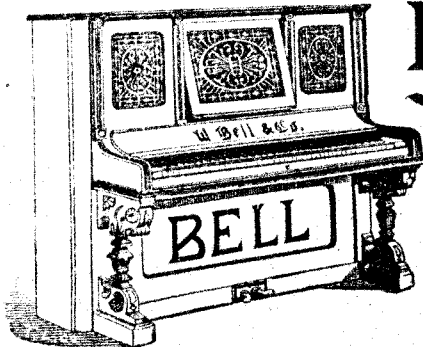
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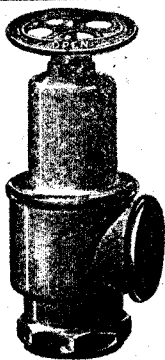
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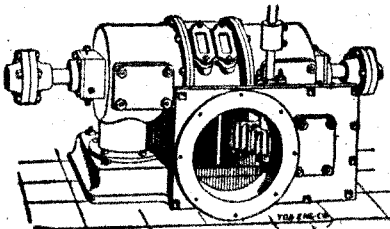
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