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**CANADIAN MANUFACTURER**  
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DEVOTED TO THE MANUFACTURING INTEREST OF THE DOMINION

Vol. 25.

TORONTO, AUGUST 4, 1893.

No. 3.

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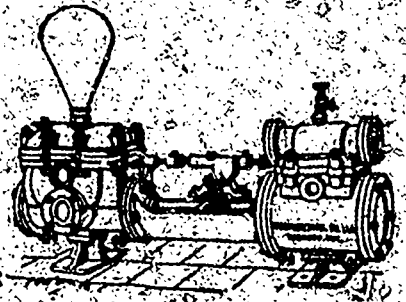
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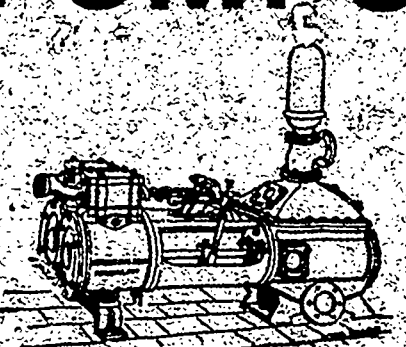
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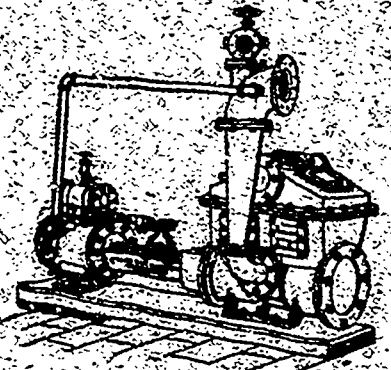


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**CUSTOMS RULINGS AND REGULATIONS.**

The attention of the Customs Department has been called to the want of uniformity in the assessing of duty upon brass pumps imported. Collectors are instructed that such pumps, whether hand pumps or stationary, are properly dutiable at the rate of 35 per cent. under the terms of Item No. 407 of the Tariff, and they have been advised that so much of Departmental Circular Memo. No. 459 B, as indicates any other rate of duty on brass pumps, than as stated herein is hereby repealed.

It has been brought to the attention of the Customs Department that the practice obtains at some ports in the case of goods of small value imported by express, of ignoring for the purpose of duty any parcel of a less value than fifty cents, and of charging duty on a value of one dollar upon all parcels of a value of fifty cents or over. Collectors are instructed that for the future all parcels coming by mail or express must be entered at the exact cost to the importers of the same, and duty must be collected on such fractional parts of a dollar in each case.

**A DELUSION AND A SNARE.**

At the recent so-called reciprocity convention held at Minneapolis, Mr. W. M. Springer, who was chairman of the Committee of Ways and Means of the United States House of Representatives, proposed a scheme for reciprocity between that country and Canada, a feature of which was that in the exchange of products between the two countries should be included manufactured articles, the chief component parts of which were produced in either country; and in suggesting how such an arrangement might be carried out, he said -

Such an arrangement as I have outlined does not involve any interference on the part of either country with the tariff laws or political institutions of the other country. Each will be left free to form and to regulate its economic and governmental policies as the people of each country may determine in reference to other countries and as to themselves. Each country would be permitted to make treaties, commercial or otherwise, with all other countries so long as they did not interfere with the commercial treaties and regulations between the two countries. The people of Canada should be left perfectly free from any interference on our part with them in determining or maintaining the policy which may exist between them and the mother country. Whatever that policy may be, it will not prevent perfect freedom of commerce between this country and that. We may assume that the nearer the Dominion will approach free trade with the United States, the more satisfactory will that condition be to Great Britain.

All of which, while it sounds very pleasant to the ear, would resemble the apples of the Dead Sea which turn to ashes and bitterness on the lips. Then if the United States should impose a duty on wool, or on pig iron, or on machinery for the manufacture of textile fabrics, Canada would of necessity have to impose corresponding duties, and thus place it in the power of the Washington Government to regulate Canadian traffic in those articles with Great Britain or any other country. It is impossible but that the United States must impose a duty upon wool, but Canada imposes no such duty, and therefore Mr. Springer's proposed reciprocity would increase the cost to Canadian consumers of all fabrics composed in whole or in part of wool.

In one breath, Mr. Springer tells us that the people of Canada would be left free from any interference on the part of the United States in determining or maintaining the policy which might exist between us and the mother country; and in another breath he tells us that we would be free to make any commercial arrangement with the mother country that did not interfere with his proposed reciprocity. In other words, we would be free to do just as we pleased only so long as it pleased the United States, but no longer.

But the most ridiculous and one-sided feature of Mr. Springer's proposition is that the reciprocity of manufactured products should be confined to only such articles the chief component of which should be the product of the exporting country. Thus American sugar would be allowed to come into Canada free, because the United States is a producer of a chief component of sugar; but Canada would not be allowed to export Canadian refined sugar to the United States, because we do not produce sugar. So, too, with the manufactures of cotton and wool. We do not produce any raw cotton, and we have to import largely of wool grown in Australia, therefore no Canadian cotton or woollen fabrics could be admitted free into

the United States. But the United States is the world's chief producer of cotton, and it is also a large producer of wool; and so American cottons and woollens would come free into Canada. So, too, with manufactures of iron. Canada is a large importer of all forms of iron, our cheapest and largest source of supply being Great Britain. This being the case, under Mr. Springer's proposed reciprocity we could not export merchandise the chief component part of which was British made iron; but the United States, being a large producer of all forms of iron, would be free to export all manner of iron merchandise to Canada duty free. So, too, with steel rails. The United States imposes a duty upon steel rails, and Canada is not a manufacturer of the article; and although steel rails can be made cheaper in Britain than the United States, although we now impose no duty on rails, our supplies coming from Britain, under Mr. Springer's arrangement we would have to impose just the same duty upon them as the United States does, withdrawing our trade therein from the mother country and transferring it to the dearer country. Indeed, one might go over the entire list of manufactures imported into Canada and not discover one article where there would not be a disadvantage against us and discrimination against Great Britain. It would be so in boots and shoes, and all leather goods. It would be so in brass and copper goods; in iron goods; in sewing machines and musical instruments; it would be so in about everything. In addition to the fact that the arrangement would destroy most of our manufacturing industries, it would also destroy our trade with Great Britain.

And then the absurdity of the idea that reciprocity with the United States would mean the doing away with of the customs houses along both sides of the international boundary. Suppose a large importation into Canada of say plain cotton goods manufactured in England, goods of similar character as those made in Canada. Such goods are generally cheaper in England than in the United States or Canada, and the United States as well as Canada imposes a tariff duty upon them. If, contrary to Mr. Springer's proposition, Canadian cotton goods were permitted to enter the United States duty free, who could say that the English goods had not been made in Canada? And suppose there were manufactured articles which were not in the reciprocity schedule, but which Canada should find it desirable to import from Europe, how could the United States prevent the import of such goods duty free from Canada if there were no custom houses? Even Great Britain, free trade as it is, maintains a large and expensive corps of customs officers.

The idea of reciprocity between Canada and the United States involving the free exchange of manufactured products is a delusion and a snare. It could not be made to work successfully or with any degree of satisfaction to either side.

#### PROTECTION TO SOUTHERN IRON.

MANY free trade journals point to the pig iron industry of the Southern States, which has within the past few years sprung into so much prominence and which has done so much to demoralize the industry in Pennsylvania, Ohio and other contiguous states, by underselling them in eastern and New England markets, and declare that if any necessity ever existed for tariff protection to that industry in the South, it has

ceased, and that there should be no American duty upon pig iron. And this is also the view taken by Mr. J. S. Jeanes, secretary of the British Iron Trade Association, in a paper written by him on "Southern Progress and Prospects," for The Southern States, a magazine recently started in Baltimore, and printed in its June number. In this paper Mr. Jeanes pays a well merited compliment to the South and its seemingly inexhaustible mineral resources, but he does not seem to properly comprehend the situation when he intimates that the South no longer needs the ægis of protection over its iron manufacturing enterprises. He says:

In a future article I hope to be able to enlarge upon the resources and prospects of the South as a manufacturing centre, with special reference to iron and textiles. Meantime I may add that if the tariff of the United States were repealed to-morrow there does not appear to me to be any region in the United States that would miss it so little as the South. The principal industries of the country can be carried on in the Southern States quite as well without a tariff as with one, and where this is the state of affairs the tariff only gives artificial assistance to localities that would not be otherwise able to compete against those that are sufficiently strong to fight for their own hand.

The cheapness with which iron may be made in the United States and in Great Britain is always urged by free traders against the bestowment of any sort of encouragement upon the industry in Canada, the contention being that iron could be bought cheaper abroad than it could be made for at home; and that if it cannot, then the encouragement is not needed. If the United States had never encouraged the home production of pig iron, but, acting upon this free trade postulate, had always bought its iron where it could be made the cheapest, it would not be the great iron producing country it is to-day; and no non-iron producing country can ever attain the acme of greatness; not even Canada. The greatness of the United States is due in large measure to that feature of protection which imposed a duty on pig iron; and whatever changes may be made in their tariff by the Democrats, now about assembling in Congress, it is not at all probable that pig iron will be put on the free list.

If protection was then so essential to the success of the pig iron industry in the United States, and if it is not at all probable even under Mr. Cleveland's administration that that protection will be withdrawn, how much more important is it to do all we can to build up the industry in Canada. We cannot do without the industry if we are to achieve national greatness any more than we can do without the iron; and we may be well assured that the same stimulus that surrounded the industry in the United States—the stimulus of tariff protection—will do for us here what it did there.

Mr. Jeanes is mistaken in supposing that because Southern pig iron can be made cheaply the protection it enjoys should be withdrawn, and this is the argument of The Bulletin to confute his contention. It is pointed out that the prices of Southern iron delivered in northern markets range from \$12.50 for ordinary forge to \$15 for the best foundry. These are exceptionally low prices. The prices of Cleveland and Scotch pig, which would, under free trade in the United States compete with these Southern irons, range from \$2.25 to \$10.75 per ton at furnace. Freight and other charges for transportation would increase the cost laid down in the United States to from \$9.50 to \$12.00 without duty; and so if the protective duty were withdrawn from the Southern iron, it could

not possibly compete with British irons in the Northern and New England markets.

If protection is so essential to the pig iron industry in the United States, how much more essential would it be to the pig iron industry in Canada if we had it.

#### ADJUSTING THE DIFFERENCES.

It would be well for the people of Canada to observe the course of events in the United States, and note how, under the coming free trade regime of Mr. Cleveland and the Democratic party, the differences of conditions as between labor and the employers of labor are to be adjusted. Immense wealth is invested in manufacturing industries there, and the change will most seriously affect its earning power. Hundreds of thousands of workmen are employed in these industries, and the change will introduce a new order of things that will be most painful in its results to them. Capital will not consent to lie idle and will not content itself with idleness if it can possibly avoid it. Labor, too, must have employment, and if a whole loaf cannot be had, of course it must accept a half loaf. But bread must be had. Tariff protection to manufacturing industries have been the sun whose glories and brightness have lighted the United States to a condition of wonderful prosperity. Under that effulgence every want, every necessity of the country for mechanical products and for such agricultural products as the capabilities of soil and climate made possible, have been fostered and encouraged until a condition obtains where no real want would be felt, where no distress would prevail even if a Chinese wall were erected around the entire country, shutting out any communication whatever with the outside world. That is what protection has done for the United States.

But the life-giving sun of protection has passed the zenith of its glory, and is fast descending beneath the horizon. Its days became numbered last November when an infatuated people turned their backs upon that policy that had wrought so much good for them, and accepted a theory that has never in the history of the world accomplished all that it promised. The darkness of the approaching cloud is making itself felt in all directions; and even now, in advance of the extra session of the Congress that Mr. Cleveland finds necessary to consider the condition of the country, and as a direct result of the impending change we find trade disorganized, financial institutions wrecked, the value of agricultural products depressed to an unprecedented degree, mining operations suspended, and the doors of factories and workshops being closed. Truly a painful and distressing picture, but one the disagreeableness of which will become more and more accentuated as the days pass by. There can be no prosperity, no happiness in the land where uncertainty prevails, and where those who are nobly fighting against fate cannot but fear that inevitable failure awaits them, and that their struggles will be in vain. Thus we see the suspension of operations in the richest and best iron mines in the country, and the workmen thrown into enforced idleness. Thus we see the fleets of fine vessels on the great lakes that were built specially for the ore carrying trade suffering because of the famine, and the seamen and others who had previously found lucrative employment on them, thrown into enforced idleness. Thus we see that hundreds of the

furnaces that had heretofore contributed to the production of the ten million tons of pig iron which they were capable of producing, withdrawing their fires and the employees of them thrown into enforced idleness. Hundreds of industrial establishments are either being closed outright or running on short time, and the employees of them thrown into enforced idleness.

Considering the cause which has led to this unhappy condition, the effect is quite natural and to have been expected. It is an unwise seaman who, seeing the approach of a storm, neglects to shorten sail and prepare therefor. Some of the stronger and better prepared concerns may survive the blow, but many must be inevitably wrecked. It has heretofore afforded much pleasure to some would-be statesmen to raise a cry against monopoly, and trade combinations, and bloated manufacturers, and against those who might venture to invest their wealth in industrial enterprises, contending that they were the oppressors of labor and the enemies of the country. No one denies the existence of selfish men, nor disputes the fact that they do sometimes use their opportunities and wealth for selfish purposes, but it is quite safe to say that the capital invested in that manner does not amount to one per cent. of that invested in business where only fair and legitimate results are sought for. But it seems that the cry against monopoly—a most foolish cry—had much, very much to do in creating the revolution of feeling in the United States that resulted in the advent to power of Mr. Cleveland and his free trade party. And now the country, having sown the wind, is beginning to reap the whirlwind.

No wise man, however, will, if he can prevent it, allow his capital to lay idle, to allow his factory to be closed, to allow his machinery to be destroyed by rust. And thus it is that some manufacturers, such as those who are large consumers of materials, the production of which gave large employment to labor, are looking to and preparing for adjustments of circumstances which will enable them to weather the storm. If they are manufacturers of machinery, or ships, or of articles where large quantities of steel and iron are required, instead of obtaining their supplies from American iron works, they are looking to see if, under the demolished tariff, they will not be able to procure their requirements abroad on better terms and at lower prices than what they can be procured for at home. It will not be because they desire to purchase abroad, but because the demolition of the tariff will result in the suspension of home works. Of course this means that millions of capital invested in American manufacturing enterprises, and hundreds of thousands of workmen who have found profitable employment in them, will be thrown into idleness. In most instances the capital will suffer serious damage and deterioration; and in all instances the workmen will have to seek elsewhere for employment. Those manufacturers who hope to keep their works in operation by using cheaper foreign materials, will be forced to still further economize by reducing the pay of their employes to a foreign standard; for it would be impossible to compete with foreign manufacturers, there being no protection, unless the home manufacturers were possessed of equal advantages as regards material and labor. If the business of the American manufacturer must be kept up, it can only be when there is a margin of profit for him; and if that margin can be obtained in no other manner, it must of a necessity be by a reduction of wages to labor. When the tariff is smashed, as it will be, and the workman finds that his pay is reduced, he

should understand that it was brought about not by any desire of his employer, but because of conditions which his employer could not possibly avert or control.

The people of Canada should closely watch the progress of events in the United States from this standpoint.

### THE UNITED STATES CONGRESS.

ACCORDING to President Cleveland's proclamation, the United States Congress will assemble on Monday next to consider the state of the country with special reference to the great depreciation in the value of silver, and the impending general financial crisis resulting in large measure therefrom. Although in the Congress that expired in March last the House of Representatives was overwhelmingly Democratic, the Senate was Republican, and this circumstance, together with the fact that the then President, Mr. Harrison, was also a Republican, the Congress now about assembling, both the Senate and House of Representatives will be organized by the Democrats, and Mr. Cleveland being also a Democrat, that party will have it in their power to shape the policies of the Government in whatever ways they please. It is supposed by some that soon after the organization of the new Congress some measure will be rushed through with a view to relieving the strain as regards the silver question; but there are others—many others—whose interests lie not in that direction, and who will make a long and stubborn fight against the passage of any act intended to demoralize silver or to still further decrease its value. The struggle over this question will be long and acrimonious, and it will be difficult to foretell the result of it. A feature of the situation will be that in the consideration of the silver question the lines will not be drawn according to the party predilections which controlled the elections last November; for there are many members in both branches of Congress, Democrats and Republicans alike, who will stand together to abrogate the Sherman law: and there are others of both political parties who will unite their forces to defeat any such proposition. The action of the recent silver convention at Denver, and the bitterness displayed there, indicate some of the fervor and eloquence that will make itself felt at Washington before the question is finally settled.

And while this silver question occupies so large a part of the public attention, and will demand so much of the time of Congress, another matter of no less importance will force itself to the front, and will not down at any man's bidding. We allude to the tariff. The President now in authority, and a large majority of members of the House of Representatives, and quite a number of the new members of the Senate, were all elected with a special view to the reorganization of the tariff upon lines entirely different from what has prevailed since the war of the rebellion. With some more or less important modifications the salient features of the Morrill tariff have been preserved ever since that distinguished statesman gave it to his country. Under that policy the United States has prospered to a degree never before known in the history of nations. It has undergone remodelling from time to time, but like all institutions of human origin, it contained features that were more or less distasteful and obnoxious to many; and the continual attacks made upon it by its enemies finally induced the electorate to agree to a change, entrusting the

change to the enemies of protection, who had promised to destroy it.

The method by which protection is to be destroyed is to be the work of the forthcoming Congress; and it is the feeling of unrest and uneasiness that pervades the country that is responsible to a large extent for the crisis that now impends and threatens the destruction of many of the most extensive and valuable industries of the country. If the change is carried out on the lines proposed by the leaders of the Democratic party, there will be a revolution in methods in the United States that many believe will be quite as disastrous as would be a bloody war; and it is to be most sincerely hoped that haste in changing the tariff may be made very slowly. The country is now having a slight foretaste of the more portentous evil that now threatens; and it will require all the coolness and discretion of the best men in Congress and out of it to restrain the impetuosity of the hot heads and to bring the ship safely out from the shoals and rocks that now environ her.

Regarding the financial features of the silver crisis now exciting so much interest in the United States, the causes of it are well described by Mr. B. E. Walker, general manager of the Canadian Bank of Commerce, of Toronto, as follows:—

The great cotton and wheat crops of 1891, exported mainly in 1892, doubtless gave a tremendous impetus to the imports of the latter part of 1892 and the spring of 1893. This was further aggravated by the McKinley tariff, under the operation of which certain changes were deferred until 1893, and large imports are, of course, being made in advance of these changes. The much smaller cotton and much smaller cereal crops of 1892, with the decline in prices and the large stocks at home and abroad, have created an enormous gap between exports and imports, which, quite apart from the return of American securities and the distrust as to the parity of gold and silver being maintained, was a sufficient cause for large exports of gold. The silver situation, however, outweighs all else in importance. During the existence of the Bland act, that is, from 1878 to 1890, many things helped to avert the disaster following the coinage of silver. Gold came into the country from abroad to a very large extent. The revenue from the high tariff enabled the Government to reduce the national debt at a pace unheard of in the financial history of the world. This caused the retirement of over \$200,000,000 of national bank currency, the bonds on which it was based being called in or sold by the banks because of the high premium. This contraction and the rapid growth of the country easily made a place for silver or silver-paper, created at the rate of \$2,000,000 per month. But now the country is required to absorb twice as much, and all the fortunate circumstances which helped to avert disaster under the Bland act have disappeared. Gold is not coming in, but steadily going abroad. The charges of the Federal Government, what with pension bills, public works, etc., have reached a billion dollars for the present Congress. The tariff and other taxes no longer meet the charges. They have fallen on a bad year of exports, and failing to act quickly enough in repealing the Sherman silver purchase bill, speculation in every direction has collapsed, and worse than this, very many solvent business men are unable to have their natural and moderate wants supplied. Within the last week or so two New York papers have tried to obtain a vote of congressmen and senators as to the repeal of the silver bill. If we are to be influenced by their reports, the repeal is nearly certain. Let us hope so. It is humiliating to see a great nation floundering in such a mess, when nothing but the simplest sense is necessary. Yet it is a matter of votes, and we can have no certainty until the repeal is actually accomplished.

## POINTERS FOR THE PUBLIC.

THE Globe publishes a letter supposed to come from a "British Canadian" in Montreal, in which he calls attention to the fact that the agricultural laborer in England can buy as much bread, tea, sugar, salt, currants, cocoa, cheese and bacon to-day for 89 cents as he could buy for \$3.47 fifty years ago; and this he offers as a good and substantial reason why Canada should adopt free trade. Fifty years ago Great Britain was just emerging from protection into free trade; and the argument is, that because the condition of that country is better now than it was then; that because it required \$3.47 to then buy what may now be had for 89 cents, Canada should forsake protection and adopt free trade. This luminous individual loses sight of the fact that if the articles enumerated can be had for a small sum of money in free trade Britain to-day, that similar articles can be had for as small a sum, probably smaller, in protection Canada; and that the very causes that brought about the reduction of prices operates as potently on this side the Atlantic as on the other. The argument is advanced, however, with a view to convincing agriculturists, mechanics and laboring men generally that they could purchase more of the necessities of life with their earnings under free trade than under protection.

In discussing the cause of low prices the Buffalo Express says that a good many people are taking a pessimistic view of the present condition of the markets for farm products, which is to a great extent unwarranted. Wheat now sells at a lower price than it has before for forty years. Other farm products are low, and so for that matter are a great many manufactured products, like cotton and woollen goods, implements and machinery. Some theoretical financiers assert that prices are low because of a dearth of money. Alliance orators say it is because the farmers are under subjection to capitalists. Hence we have the Populist attempts to keep up the dishonest practice of making 60 cents' worth of silver legal tender for a dollar; excessive taxation of railroad property, and class legislation of all kinds. Curiously, low prices are asserted by some to be an evidence of dull times and by others as proof of industrial progress. Low prices are thus taken to mean a bad business situation, and an increase of average general comfort, both at the same time.

Prof. Falkner, under the authority of the Senate Committee on Finance, is collecting tables of prices of the various articles of food and clothing, from the daybooks of merchants, and other genuine records, made during the last 30 to 50 years. He finds that prices of most articles have declined greatly in that time, though some articles of food, lumber and building materials are higher now than they were 30 years ago. It is also found that human labor has increased in value during the same time, so that the fall in prices of products is not due to a worse condition of business, because cutting down of wages or discharge of workmen always goes with bad business conditions. It is not want of enough of a circulating medium—money—because the laborer gets higher wages on the average and seldom fails to get them when due. There is money enough in circulation so that anyone can get all he earns, as fast as he earns it.

The last report of Hon. Carroll D. Wright, of the United States Bureau of Labor Statistics, covers the time from 1860

to 1891, and in that time there was an average increase in all wages of 60.7 per cent. From 1873 (when the asserted contraction of United States currency began) to 1891 wages increased 12.4 per cent. If the contraction of the currency was the cause of low prices, it was a double boon to the laborer, since his wages increased, and prices of clothing and necessities went down. A table of wages in the cotton manufacturing industry, presented at the International Congress on Labor which met at Antwerp last year, by Mr. L. Strauss, has in it the index to the true cause of lower prices generally, as compared with those of thirty years ago. He shows that the wages of weavers of unbleached cotton cloth in Massachusetts range from \$4 to \$7 per week, while in Belgium the rate per week is \$3 to \$3.20. Yet cotton cloth made in Belgium costs more than that made in Massachusetts. The Belgium weaver operates one to two looms; the Massachusetts weaver cares for four to six looms. The pay per loom in Massachusetts is \$1 to \$1.20; in Belgium \$1.60 to \$3.

According to the Iron Age, a German bridge builder paid 75 cents per day to workmen building a steel and iron bridge. An American bridge builder paid his workmen \$2.25 per day, and made as much on a contract as the German did on a similar contract. His workmen were so skillful that they could do most of their work by means of machinery. The German work was mostly unskilled handwork. The Minnesota or Manitoba farmer raises wheat which costs him 30 cents per bushel. In India, where wages are five cents per day, it costs 53 cents at the lowest average. It costs 60 cents to cut an acre of wheat in Hindustan, and only 50 cents per acre in Minnesota, with double the yield. More evidence might be cited, but enough has been given to show that the main cause of general low prices is the lessening of cost of production, through the use of machinery and skilled and higher-priced labor.

## MR. COCKBURN'S SPEECH.

DOMINION Day, July 1, was duly and appropriately celebrated at the Columbian Exhibition in Chicago, by the Canadians there assembled, in which a large number of other British subjects joined, many Americans taking part in the affair. The meeting was presided over by Mr. G. R. R. Cockburn, M. P. for centre Toronto, and his speech was so appropriate that we will do our readers a favor to reproduce a portion of it. Mr. Cockburn said:

But while the United States—our elder sister—has made such gigantic strides in every respect of human development, Canada, your younger sister, whose twenty-sixth birthday we are met to celebrate this day, has been no laggard in the race, but has nobly striven to prove that she is in every way worthy of the great mother from whom we are proud to claim descent. But twenty-six short years ago there was no Dominion of Canada. We were only a collection of separate colonies or provinces, owning, no doubt, a common allegiance to the motherland, but enjoying very little intercourse, commercial or otherwise with each other. The foolish and unconstitutional action of Great Britain, urged on by its obdurate King, drove you 117 years ago to confederate and form a separate and distinct nation, and your successful struggle taught our forefathers and their descendants the great and important lesson of how to govern a colony of free men with English blood coursing in their veins, and imbued with all the traditions of British liberty, which had been achieved after many a hard and bloody struggle in the fatherland itself. You are nearly



four generations old, we are not even one, and yet let me recount to you briefly what our confederation has been able to accomplish in that time.

We, though less than 5,000,000 of people, have acquired a vast and fertile territory—known as the great North-west—which formerly belonged to the Hudson's Bay Fur Company, and was the hunting ground of the savage. Well, we have opened up that vast territory, of untold millions of acres of the best wheat lands in the world, extending more than 3,000 miles from the Atlantic to the Pacific. We have constructed the Canadian Pacific railway, and no finer railway exists in this world. We have built the magnificent ocean steamers to open up the trade between our cities on the Pacific coast and the vast empires of China and Japan. Now we are starting a similar line to secure direct trade with our sister colonies of Australia. We have also our line of steamships to further develop our West Indian trade. We have spent in opening up the most magnificent line of water communications in the world—the canals and St. Lawrence system—no less a sum than \$54,000,000; also \$8,000,000 on our lighthouses and marine, for the registered tonnage of our shipping is over 1,000,000, and we are the fourth marine power in the world. (Applause.) In the development of our railway system we have been equally lavish, for we have devoted to this purpose the enormous sum of \$114,000,000, and we are now reaping the reward of our self-denial and liberality, for during the last ten years alone their mileage has increased by 110 per cent., the train mileage by 100 per cent., the passengers carried by 120 per cent., the earnings by 110 per cent. and the working expenses by 100 per cent., and Canada with its 15,000 miles of railway in operation stands now eighth in the list of all the countries in the world in its railway mileage and second to none in its equipment. (Applause.) Our fisheries are inexhaustible and were last year worth \$20,000,000. Of timber and minerals of every kind the supply is simply beyond human calculation. The fact that last week Canada carried off no less than 126 medals and prizes out of the 135 granted to the 677 competing farmers' exhibits in chée, leaving only nine to be divided among some 550; and the fact that in two-thirds of her exhibits in butter prizes have been awarded, are the best proofs that in agriculture we are no mean competitors.

While we have been thus rapidly developing the resources of our vast territory, let us say that a similar progress has been manifested in the immense increase in our home interprovincial trade, though for obvious reasons exact figures cannot be given. But when we come to the foreign trade we can get at figures which are accurate. We must not lose sight of the great fall in the value of articles of late years, and yet in spite of this marked decline we find that the exports have risen from \$73,000,000 in 1870 to over \$114,000,000 in 1892.

Many friends feared that the McKinley Bill would materially diminish our exports; but, on the contrary, they increased from \$96,000,000 in 1890 to \$98,000,000 in 1891, and in 1892 they had risen to \$114,000,000, and this year ending June 30 they nearly reach the sum of \$125,000,000. No doubt the McKinley Bill did reduce our exports to the United States by over \$2,000,000—(\$2,150,668)—but it drove us to seek new and profitable markets, and so within two years we increased our trade with Great Britain by over \$15,000,000, and with other countries about \$3,000,000. (Applause)

In short, our total trade is nearly \$245,000,000. We may lose your market, though we are anxious to retain it by any fair terms of reciprocity, but we are bound to secure our fair share of the trade of the British Empire, amounting to \$6,000,000,000 annually, one-third of it being colonial.

Now, while we have been marching thus steadily along, we find our credit abroad so good that the subscriptions to our last loan in England were three times greater than the amount required; that the overdue notes in the banks last year were only 1.03 per cent.; that the deposits in these banks have now reached \$223,000,000, and that since Confederation in 1867 not a single Canadian bank had failed to redeem its notes or promises to pay in good sound gold coin, while both in

the United States and in the sister colonies of Australia almost a monetary panic may be said to exist, and bank after bank has had to close its doors; not a single bank in the whole Dominion has ceased to exist; and so great has been the confidence of the Canadian public in their solidity that the discount rates have remained practically unchanged from Halifax to Vancouver, from the Atlantic to the Pacific.

We are therefore proud of our country, and we believe that no country on the face of the earth enjoys greater liberty, more solid progress and prosperity than does our fair Dominion, which, while silently conscious and proud of her own vast achievements, looks with loving, sympathetic pride on the wonderful achievements of her elder sister, who, we candidly acknowledge, has in the conception, execution and management of this great exhibition surpassed our fondest dreams and anticipations.

#### CANADA'S PUBLIC DEBT.

ON June 30, 1893, the total assets of the Dominion of Canada amounted to \$59,820,000, which does not include any expenditures made upon public works such as our canal system, public buildings and the Intercolonial and Prince Edward Island railways. The largest item in the assets represents the purchase of bonds for the sinking fund, the Government having now accumulated about \$30,500,000 in this way. In every issue of new bonds an engagement to annually retire a certain fixed percentage of the amount entitled is made, but by the system of bookkeeping followed, the repurchases are not deducted from the gross debt until the whole loan has been repaid. For example, while the gross funded debt outstanding is set forth in the Public accounts as \$209,167,000, the actual amount in the hands of the public is only about \$178,500,000, the balance having been repurchased by the Government in accordance with the sinking fund engagements, and included in the general assets. Other large items which go to make up the total assets, are some \$3,000,000 of cash, \$5,000,000 representing issue account and specie reserve, \$10,300,000 of provincial accounts, \$385,000 of Montreal harbor bonds, and \$3,664,700 of Quebec harbor bonds. Some of the items embraced in the assets are, perhaps, of somewhat doubtful value, as, for instance, the Quebec harbor bonds, which nominally bear 4 per cent. interest, but from which the Treasury has not derived one dollar since the capital appropriation, out of which the interest was formerly paid, was exhausted. The tangible character of the assets as a whole is manifested by the fact that in 1892 they produced an interest income of \$1,086,400, or an average of 2 per cent.

Turning to the gross liabilities of the Dominion, we find them to be composed principally of a funded debt of \$209,000,000, of which all but about ten millions is payable in London. Of the Canadian issues, only one bearing a higher rate of interest than 4 per cent. is still outstanding, namely \$2,433,000 of 5 per cents. issued in 1868 for the construction of the International railway, and which fall due in 1903. Nearly \$31,000,000 of the debentures bear 3 per cent. interest, that being the rate of the last two loans, \$24,000,000 bear 3½ per cent. and the balance 4 per cent. The next largest item of debt consists of deposits in the Government savings banks, these amounting to \$40,000,000, upon which interest at the rate of 3½ per cent. is paid. There is due the provinces \$16,407,000, principally for allowances of debt made to them at various times, and the Government has \$9,113,000 of trust

funds, in which item are included the Indian fund, contractor's securities, bank circulation redemption fund, and the amount granted Quebec on account of the construction of the Q. M. O. and O. railway. The only other considerable item in the liabilities is one of \$17,000,000, representing the Dominion note issue, which bears no interest and involves no charge except that of interest on the specie reserve held for the redemption of the notes. The average rate of interest paid on the gross debt was 3.30 per cent. in 1892; the net rate being 2.93 per cent.

#### EDITORIAL NOTES.

A NAUTICAL mile, or a sea mile is the length of one minute of longitude of the earth at the equator, at the level of the sea, or the 1-21,600 part of the earth's equatorial circumference. By the United States standard and is used by the coast survey, its length is 1,152,664 common statute or land miles; 1855.11 metres; 2028.69 yards; or 6086.07 feet; consequently, 1 degree of longitude at the equator equals 69.160 land miles; and a land mile equals 0.86755 part of a nautical mile. By the British standard the sea mile is about four inches longer than by the United States. Sometimes one minute of mean latitude is taken as a nautical mile. A minute of latitude at the equator is about 6.046 feet; and at the poles about 6,107 feet; the mean of which is 6,076½ feet or according to the British naval mile 6,080 feet.

THE value of exports from Canada last fiscal year was \$113,963,375, or nearly \$12,000,000 in excess of the highest figure ever before recorded, namely, \$102,137,000 in 1882. The year now closing will be another record-breaker. Up to May 31st we had sent abroad goods to the value of \$101,815,370, or \$5,208,959 in excess of the trade for the corresponding eleven months of the preceding year. When the full year's returns are complete, it will probably be found that the exports have reached a value of \$125,000,000, or a gain of nearly 50 per cent. over the figures for 1886. The imports for the eleven months have been \$10,161,682 larger than last year, and the aggregate foreign commerce of the twelve months will far exceed any preceding period.

IN 1888 the revenues of the United States showed a surplus of \$119,612,116 over expenditure: in 1892 the surplus was only \$9,914,453, and for the fiscal year now drawing to a close there will be a deficit of nearly \$10,000,000. The chief cause of the change which has taken place is shown in the official statement of the pension payments. From 1872 to 1879 the sum annually paid for pensions did not exceed \$30,000,000. In 1891 it had risen to \$124,415,000. The regular appropriation made last winter was \$166,531,350, and the sum required in the coming year may be even \$200,000,000. Fifteen years after the close of the late war there were 250,800 pensioners on the roll. Four years ago there were less than 500,000. Now there are 1,000,000.

ONE of the features of interest at the World's Fair will be the discussion of the system of profit-sharing, which is to be undertaken by the Profit-Sharing Association at several sessions of that organization, to be held during the summer at Chicago, when addresses will be made by a number of gentle-

men prominently identified with economic reform. Facts and figures will be presented showing the present standing of the movement at home and abroad, and the representatives of several foreign societies interested in the question will be present to take part in the discussion. The plan has already been so successfully inaugurated in many large business establishments, and under varying conditions, that it has begun to attract general attention in the industrial world. In fact, it has passed through the experimental stage, and the results may now be classified in such a manner as to furnish valuable data for the solution of the much vexed question of establishing the true relations between labor and capital. The outcome of the proposed conferences will be awaited with great interest, for there is no doubt that much new light will be shed upon many disputed points which have hitherto proved serious obstacles to the general introduction of the system in many important branches of trade.

GENERAL O. M. POE, in his annual report to the War Department at Washington, on the operation and care of the St. Mary's Falls Canal, states that during the year ending June 30, 1893, there was a falling off of traffic to the number of 1,778 passengers; in wheat carried of 7,506,280 bushels, and in unclassified freight of 71,862 tons. The number of vessels locked through was 12,160; lockages, 5,611; registered tonnage, 10,226,871; freight tonnage, 10,846,404; average time in making a lockage, 41 minutes 33 seconds; cost per lockage, \$7.56; cost per vessel, \$3.48. The total far exceeds that of any other fiscal year by 738,801 tons. The total expenditures to June 30, 1892, were \$373,886; during the fiscal year ending June 30, 1893, there was expended \$41,828, making a total of \$415,714.

THE Manufacturer's Record, Baltimore, Md., publishes a summary of bank failures in the United States from May 1 to July 22nd, inclusive, which shows 301 banking institutions with a capital of \$38,951,033 suspended. Five-sixths of these failures and four-fifths of the capital involved were in the Western and Pacific States.

It may seem strange to the uninitiated, but it is a fact well known to those who have been through the mill, that owners of steam boilers do not always encourage their engineers to report defects in them, but on the contrary try to bulldoze them into silence on the subject, by threatening them with a loss of their situation, and it sometimes does happen that a man is discharged for reporting such defects, or leaves the place because he cannot have them repaired, in which case there is always some reckless ignoramus ready to take the chances of disaster by keeping it in operation, and there is always someone willing to recommend him for the situation. Let us have laws passed requiring manufacturers to take out licenses permitting them to own steam boilers after they have proved themselves to be fit persons to own such property, for they are needed as much as license laws for engineers are, and perhaps more.

THE unique spectacle of a steam shovel standing on the ice and excavating or dredging clay from over the rock bottom of the Red river at Winnipeg, Man., was witnessed February 23 of this year. The material (hard clay) intermixed with large

stone boulders was about five and one-half feet thick, and had to be removed to reach rock bottom for the foundations of the big bridge which was being built at that point. The shovel used was a very powerful machine, and the whole work was done by Mr. W. G. Reid, a Montreal contractor of large experience in bridge work. The thickness of ice was thirty inches, and was found of ample strength to permit of the track being laid, which was an ordinary one, to within about thirty feet of a hole (22 feet by 60 feet) cut in the ice over the proposed location of the first pier, from which point heavier ties, 8 inches by 8 inches by 10 feet, laid two feet apart, were used. At the immediate edge of the hole were placed three long ties ten inches in diameter and fifty feet long, and over this track the shovel was worked to within six inches of the edge of the hole, where it was securely anchored with blocks and chains. After a distance of about ten feet in length along the full width of the hole had been excavated, a bent 8 feet by 8 feet and 13 feet 6 inches in height, made of ten inch timbers, was sunk to the level of the ice, and cross timbers fifty feet in length laid down, thus distributing the weight equally upon the ice and the bent. This method was continued until the whole excavation necessary for each pier was completed. The material excavated was discharged from the bucket upon sleds and hauled away. The success attending the execution of this work indicates a new field for the operation of the steam shovel outside of that for which it was originally intended, the contractor in this instance stating that the work was done in an exceedingly rapid and thoroughly satisfactory manner.

An important case, relating to conspiracy by a labor organization, was recently decided in England. It appears that the plaintiff, Temperton, was a builder and contractor. He made an agreement with some real estate owners to build houses for them, using bricks supplied by them. For some mysterious reason, this arrangement displeased the rulers of the Bricklayers' Society, who ordered their men in Temperton's employ to strike. The strike failed, and the officials of the Society, as usual, sought revenge by other means. They found that he had contracted with a certain firm for concrete sills and lintels for the houses, and succeeded in persuading the firm to break its contract. Temperton brought suit against one Russell and others, as representing the Bricklayers' Society, for damages for this interference with his business, and was awarded by the jury the comfortable sum of two hundred and fifty pounds, while the judge granted a perpetual injunction, to prevent further attempts of the sort. The Bricklayers' Society appealed, but the House of Lords confirmed the judgment on the ground that a conspiracy to persuade persons not to enter into a contract with another, or to break a contract already made, with the object of injuring the person with whom the contract had been or was to be made, was a malicious and wrongful act, for which damages could be recovered.

In 20 years, ending January 1, 1893, the United States increased the consumption of wool from 274,000,000 pounds to 411,000,000, and the percentage of foreign wool used annually increased only 1.4 per cent. In 21 years ending same time that country increased the home consumption of cotton from 588,000,000 pounds to 1,599,000,000 pounds, and the percentage of foreign cotton used decreased 7.26 per cent. From

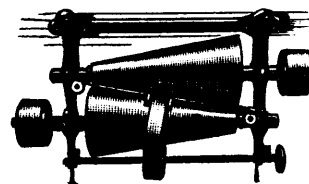
1871 the consumption of pig iron increased from 1,952,000 tons to 8,346,000 tons in 1891, while the percentage of foreign pig iron used was decreased from 11.68 to less than 1 per cent. The consumption of iron and steel railroad bars increased from 1,219,000 tons in 1871 to 1,299,000 in 1881. The percentage of foreign used decreased 43.18 per cent. or less than 2-100 of 1 per cent. In 29 years, from 1864 to 1892 inclusive, the country exported \$460,071,187 in gold and bullion in excess of all imports. During the same period it exported \$845,130,206 worth of all merchandise, over and above all imports, notwithstanding the balance of trade was against it nearly all of the first half of the time, amounting in all to \$1,100,000,000. The population increased during the same period about 30,000,000, nearly doubling. If during these 29 years the United States exported merchandise and gold amounting to \$1,300,000,000 above all imports of merchandise and gold, it would seem this amount represents the amount of the interest and dividends paid on borrowed money or foreign capital. This appears to show an average of about \$45,000,000 a year, or  $4\frac{1}{2}$  per cent. on \$1,000,000,000, which appears may be approximately the total of the average obligations on which American labor has paid, and has contracted to pay, guaranteed profits of one kind or another to foreign capital.

Just thirty-three days were required to construct in Chicago recently the largest grain elevator in the world, and in one week after its completion the house, which has a capacity of 3,680,000 bushels, had 1,000,000 bushels of wheat in store. More than 8,000,000 feet of lumber were used in the construction of the building, which is of the ordinary crib style. The elevator is equipped throughout with electric lights and is completely furnished with all styles of modern machinery. From 600 to 900 men were continuously employed night and day in its construction.

BRIGHT, breezy, seasonable, and beautifully illustrated, *Outing* for August is one of the best numbers of the popular magazine of healthful sport and innocent recreation that ever left the press. The contents are as follows: "Under False Pretences," by Louise D. Mitchell; "After the Trout," by J. Newman; "Our Sailor Soldiers," by Everett B. Mero; "Cycling on Mt. Washington," by Gilman P. Smith; "Lobster Spearing in Nova Scotia," by "Saint Aspinquid"; "Through Erin Awheel," by Grace E. Denison; "Blue-fishing on Jersey Shoals," by H. P. Beach; "A Family Camp in the Rockies," by Charlotte R. Conover; "Lenz's World Tour Awheel," "The Madam's Chicken Shoot," by Ed. W. Sandys; "Past Suburbans," by Francis Trevelyan; "The Racers for the America's Cup," by Capt. A. J. Kenealy, and the usual editorials, poems, records, etc.

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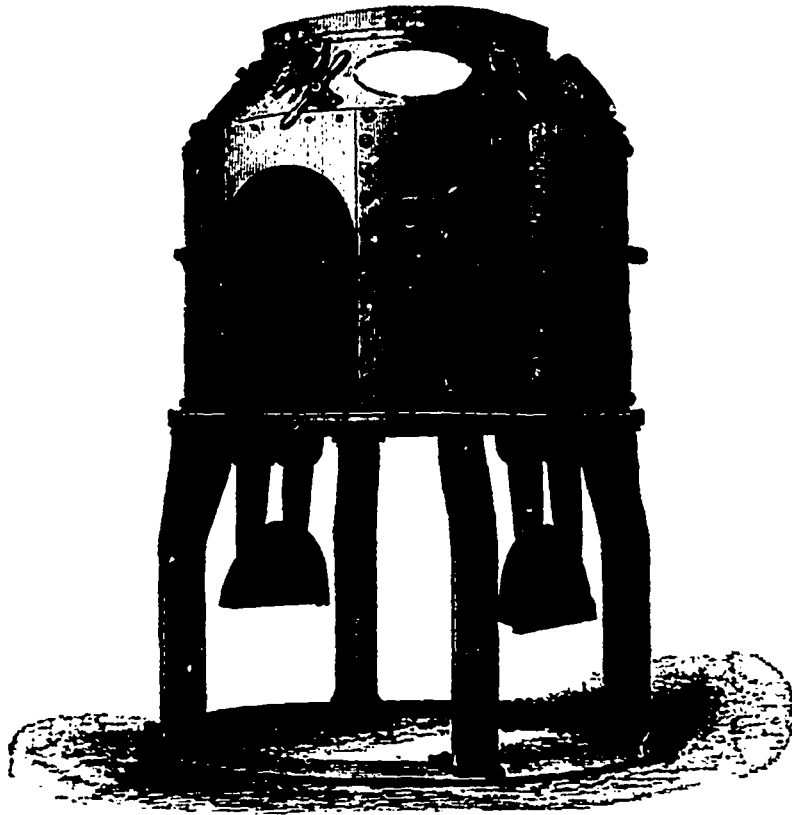
THE COLLIAU' CUPOLA FURNACE.

All foundrymen will immediately comprehend and appreciate the points of excellence of the Colliau Cupola Furnace, an illustration of which is herewith presented; and these are so apparent that a lengthy description is not necessary.

This furnace is now considered an almost indispensable requisite in all foundries, because of the economy in both fuel and iron obtained by its use, the rapidity with which the metal is fused being one of its strong points of recommendation. It is exceedingly simple in its construction, and it is made in eight sizes to meet the requirements of all branches of the trade.

The Colliau furnace is very extensively used, not only in the United States, where it is manufactured, but also in Great Britain and the continent, Mexico, South America, China and Japan, quite a number of them being in use in Canada, where they give the greatest satisfaction. Many of the largest manufacturing establishments in the United States use them.

The Hamilton Facing Mills Company, Hamilton, Ont., are the Canadian agents, and any further particulars will be cheerfully given by them.



While some people are complaining of hard times the Intelligencer rises to remark that Belleville was never in a more prosperous condition than she is today. There has been more building operations going on this year than for several years past. Nearly every factory and foundry in the city is working overtime and that at a season when trade generally is slack. The Brown Manufacturing Company has recently received orders for several bridges, which will give employment to a large staff of men for months to come. They are working overtime. All Spafford, of Walker's Foundry, states that they cannot meet the demands of their customers. The St. Charles Street Car Company are working overtime to fill orders which have been pouring in on them for six months past. And what with Mr. Graham's Evaporator, the Belleville Canning Factory, the Mack Machine Co., Harris & Walton's, and Pringle's Sash and Blind Factory, the different carriage factories, woollen mills,

the erection of a new and modern hotel, and the establishment of a cigar factory by H. Christi & Co., which will give employment to ten or twelve old Belleville boys, who have been brought back to the city, the outlook is indeed encouraging, and it behoves citizens to say so. Belleville Intelligencer.

**ALEX. P. MENDE, 14 Water St., New York**

Manufacturer of

**One Dip Blues and Black for Wool**

Fast to Fulling and Atmosphere  
Send for Samples and Prices

**WOONSOCKET SHUTTLE CO., 157 North Main Street Woonsocket, R.I.**

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Power and Hand Loom

**SHUTTLES**



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**ROCK EMERY Millstones**

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Grind Materials that Destroy other Stones

They are Made from  
**BLOCKS OF EMERY**

Cast or embedded in Metal; thus

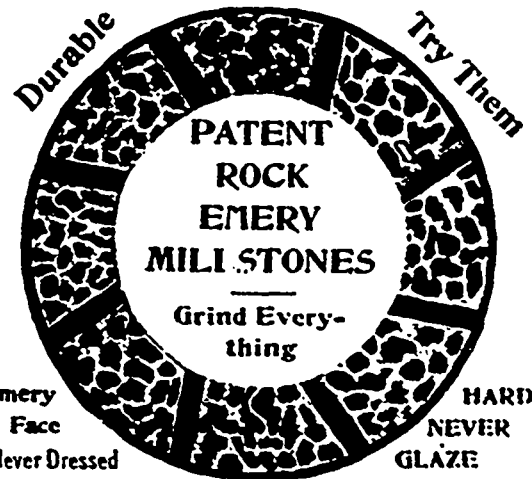
AN IDEAL GRINDING FACE IS OBTAINED

The Emery, incomparably hard, is always sharp, never glazes, and the softer metal between the blocks makes a **HONEY-COMBED FACE** more effective than the best French Buhr.

Wherever Buhrs do well  
These do better.

Fit ANY Millstone Frame

FASTEST **GRINDER** KNOWN

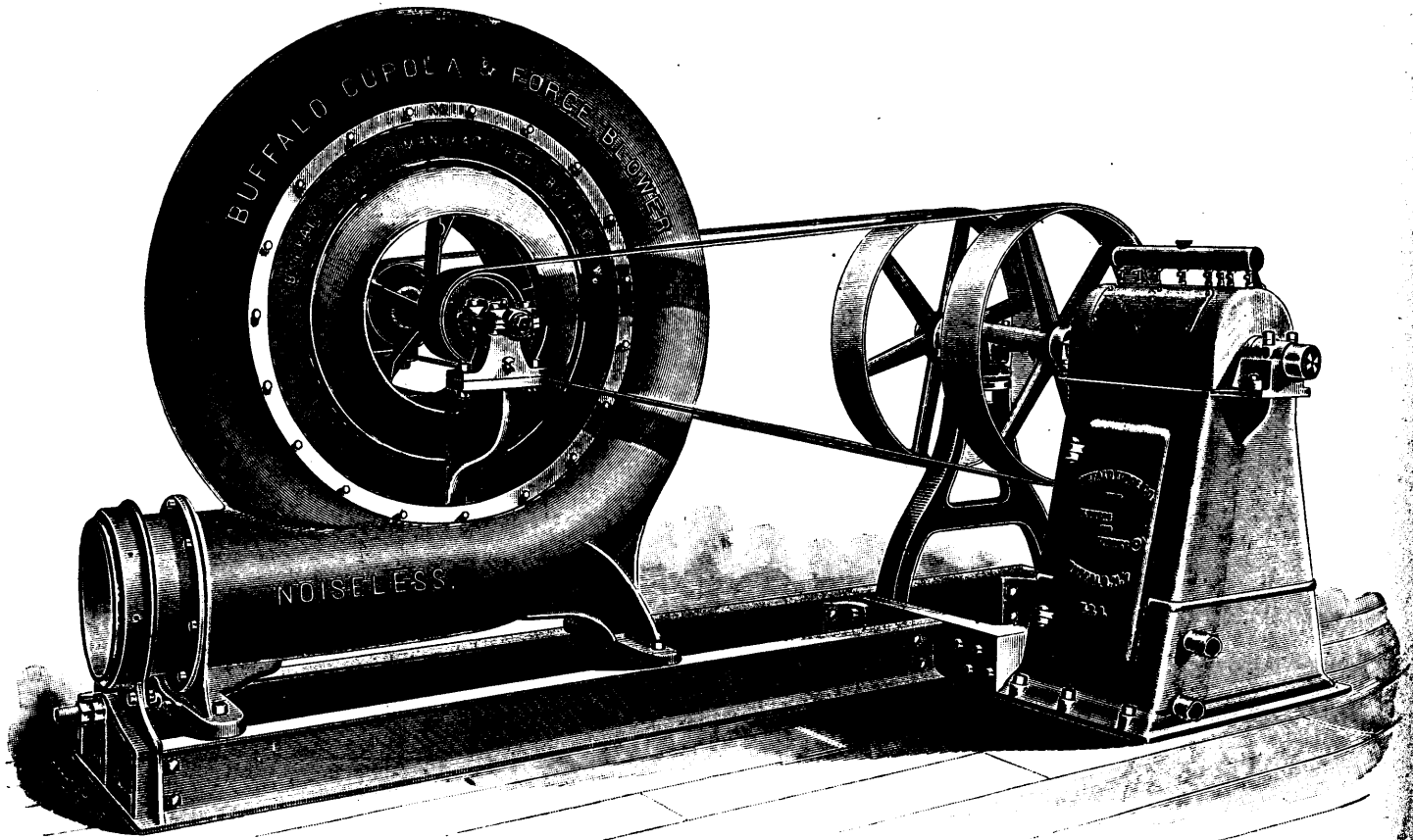


**Sturtevant Mill Co., Boston, Mass.**

### BUFFALO STEEL PRESSURE BLOWER FOR FOUNDRY CUPOLAS AND FORGE FIRES.

HEREWITH we illustrate the latest improved construction form of Buffalo Steel Pressure Blower on adjustable bed combined with double enclosed upright engine. This arrangement gives positive control over the tension of belts, and insures the greatest rigidity, ease and adjustment, perfect alignment, and where desirable, an immediate change in the speed of the blower. The latter is a very desirable feature especially in cupola work, because in hot weather it requires an increased volume of air to melt the same quantity of iron over that of cold weather. It will readily be seen that the above arrangement possesses marked advantages over a blower receiving power by belt transmission. A special description of this engine will be supplied by the manufacturers, Buffalo Forge Co., Buffalo, N. Y. A distinguishing feature of Buffalo Steel Pressure Blowers, common to those of no other manufacture of the same type, is the solid case, the peripheral portion of the shell being cast in one solid piece, to which the centre plates are accurately fitted, metal to metal. It will thus be seen that the objectionable and slovenly putty joints are entirely dispensed with. Ready access to the interior of the blower, without entirely taking it apart, is also thus afforded. With blowers of every other manufacture the "putty joints" feature of the shell or casing is an indispensable adjunct, although it is a construction which is, at the best, something to be avoided in an efficient machine.

The Buffalo Steel Pressure Blowers are designed and constructed especially for high pressure duty, such as supplying blast for cupolas, furnaces, forge fires, and blast machines, for any work requiring forcing of air long distances, as in connection with pneumatic tube



delivery systems. They are adapted for all uses where a high pressure or strong blast of air is required. The journals are long and heavy, in the standard ratio of length to diameter of 6 to 1. Attention is directed to the special cuts and description of the patented journals and oiling devices employed on these blowers, which are unique features.

The bearings are readily adjustable, and any wear can be taken up, which is an important point attending the durability and quiet running of a perfect machine.

The Buffalo Forge Co. claim for their pressure blowers the fewest number of parts of any like machines; in fact the blower is practically one piece, so that—under any service—the bearings are in perfect alignment, vertically and laterally, with the rest of the machine. In the items of durability, smooth running, and economy of power, they are first-class.

In every point of construction the greatest pains have been taken to simplify all parts, and at the same time to give them the greatest strength. To adjust, repair, and keep in order one of these blowers is a very small matter, and readily understood by a machinist of average ability.

Hundreds of the machines illustrated by the cut are in use in the largest manufactories in the world. They are also widely used by gas construction companies.

The manufacturers, the Buffalo Forge Company, Buffalo, N. Y., have recently issued a very complete catalogue containing valuable data regarding the application of these machines to all work for which they are suited, and will be pleased to forward a copy to anyone upon application.

#### LAMKIN'S PATENT



## A GREAT LOSS!

If you have any Pipes or Boilers uncovered you are losing out same at the rate of 80 cents every year on each square foot of surface exposed. By having them covered with our Mineral Wool Sectional Covering you will save 85 per cent. of this loss. The saving thus effected in fuel will in one year more than pay the cost of covering, which we guarantee to last as long as the pipes.

Our covering is the best fuel saver on the market.

Canadian Mineral Wool Co., Ltd., 122 Bay Street  
TORONTO

THE DOLGE PROFIT-SHARING SYSTEM.

THERE has been considerable published at various times in regard to the plan of profit-sharing adopted a year ago in the factory of Alfred Dolge & Son, at Dolgeville, N.Y. The reunions held annually by the employers and employees of this establishment have often called attention to the plan there adopted for the prevention of everything like trouble over the wages question. At a recent meeting of the Brooklyn Electrical Association Mr. Dolge gave a full explanation of his plan, which is of greater interest than any preceding publication relative to this factory. This plan he calls "a just distribution of the earnings." He began by stating the evident fact that production and not philanthropy must be the basis of any economic distribution of wealth, and in readjusting the relations between labor and capital so as to be practical and satisfactory to both, the first thing to do is to find what man actually earns in the production of wealth, and the next thing is to give it to him. Mr. Dolge's system, as detailed by himself, includes three main features.

First, the system of pensions, by which employees can retire with a pension of from 40 to 100 per cent. of their wages, according to the length of their services. After twenty-five years' service employees can retire on a pension of their full wages.

Second, the system of life insurance, by which each employee receives a policy of \$1,000 after five years' consecutive service, another \$1,000 after another five years of such service, and a third thousand after the third term of five years of such consecutive service. The firm, of course, pays the premiums on such policies.

Third, a system of endowment, by which all employees who by their skill improve methods of manufacturing, save material, or benefit the firm in any way outside of their regular work, are credited with such a portion of the firm's earnings due to such efforts as the books show they are entitled to, after all proper charges have been deducted. These sums draw 6 per cent. interest per annum, but the capital is only payable when the beneficiary is sixty years of age, or to his family at his death.

Particular attention was called to the system of pensions in connection with this plan of profit-sharing. It has been in existence in the establishment mentioned for sixteen years, and has produced the most beneficial results. One most pleasing illustration of the effects of this system was seen in the case of a man who for seventeen years had been a most faithful worker, but who had passed the stage of "economic efficiency." The pension system prevented him from being thrown upon the world, at a time when he was hardly capable of earning a living. For the last three years he has been drawing a pension of \$500 per year, and the business has been benefited by having a more effective worker in his place. In advocating the insurance plan, Mr. Dolge made the following rather novel plea:

"Every progressive manufacturer is continually aiming to improve his methods. In his calculation he makes proper allowance for the wear and tear of his machinery, so that he may be able to buy better machines. Why should he not do the same for his men? Why not insure them, so that he can replace them with younger men when they get old, and have given all their strength to him?"

There are some features in the plan adopted by Mr. Dolge that might not be favorably regarded by the majority of American workmen. It might be thought that in some respects it savors too strongly of paternalism, although such was certainly not the intention of its founder. Moreover, to secure the benefits of such an establishment, the worker must remain for years. The majority of mechanics do not care to serve for any great length of time in one establishment. Certain it is, however, that the rules and regulations made necessary by such a plan would result in getting together a most excellent force of workmen. It cannot be denied that the establishment mentioned proves what may be accomplished by the joint efforts of enterprising employers and reasonable workmen to better the relations between capital and labor. One great reason why such instances are rare is seen in the fact that workmen without the shadow of a reason blindly oppose everything that includes a formal agreement with employers. Too often

they do more, and deliberately break agreements that were made for the express purpose of obviating trouble.

Mr. Dolge expresses the opinion that the tendency of the times in the direction of securing the greatest economic efficiency at the lowest possible cost, will ultimately force a closer union of wage-earners and employers. Hence he believed that his plan is the most practical yet put in operation, and he expects that improvements will be carried on in that direction until the workers become virtually partners of their employers. Another opinion expressed in his address will be received with surprise by those who so readily denounce everything in the line of capitalistic combination. He believes that for the just and satisfactory solving of the labor question we have to look to the further development of great trusts and combinations, because these corporations will be better able to treat the question justly and successfully than any large number of small manufacturers or business men could be expected to do.—American Manufacturer.

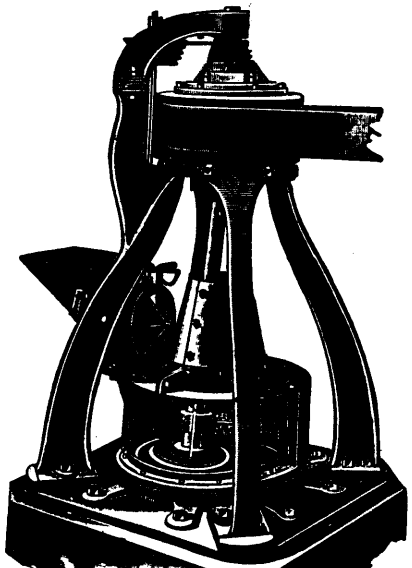
SOME new developments have recently been made in the iron mines at Londonderry, and we understand that they give promise of the speedy locating of several new belts of ore. One fine lead has been definitely settled, and the position of several others pretty fairly determined.

THE Western Wire Mattress and Furniture Manufacturing Company, Ltd., has been incorporated with a capital stock of \$50,000. Vancouver, B.C., is the principal place of business. R. A. Anderson, James R. Webster, J. S. Bailey and Dan Donaldson are trustees.

# THE GRIFFIN MILL

The Only Perfect Pulverizer

OF  
**QUARTZ,**  
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**ORES,**  
**PLUMBAGO,**  
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**CEMENT,**



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**PHOSPHATE**  
**ROCK,**  
**FOUNDRY**  
**FACINGS,**  
 And All Other  
**Refractory**  
**Substances.**

Will work either wet or dry, and deliver a finished product. Capacity, 3 to 4 tons per hour on Phosphate Rock, 1½ to 2 tons per hour on Portland Cement, Quartz or Ores, depending on hardness of material to be pulverized and fineness of product. Grinds from 30 to 250 Mesh with equal facility.

NO JOURNALS IN GRINDING CHAMBER. BALL RIGID ON SHAFT HAVING DIRECT POSITIVE ACTION ON MATERIAL. MINIMUM POWER PRODUCES MAXIMUM AMOUNT OF PRODUCT. IT IS ABSOLUTELY GUARANTEED IN EVERY RESPECT, BOTH AS TO CONSTRUCTION AND CAPACITY. FIRST COST, WEAR, AND OPERATING EXPENSE MUCH LESS THAN STAMP MILLS. LARGE NUMBER OF MILLS IN USE ON DIFFERENT MATERIALS WITH POSITIVE SUCCESS IN EVERY INSTANCE.

Correspondence solicited, and illustrated descriptive pamphlet furnished on application to

**BRADLEY FERTILIZER CO., 92 State St., Boston, Mass.**

# Inventions.

## CANADIAN PATENTS.

The following patents have been issued from the Canadian Patent Office, from July 7 to July 24, 1893, inclusive.

Information in regard to any of these patents may be had free on application to THE CANADIAN MANUFACTURER, or copies of American patents corresponding to these, where the American patent has been previously granted, can be procured through us for the sum of twenty-five cents.

### MECHANICAL.

- 43,517 Bean picker, Hiram A. Bacon, July 7th.  
 43,518 Railway car, James D. Morrison, July 7th.  
 43,519 Horse hay rake, Francis L. Osborn, July 7th.  
 43,520 Bolster standard, Ludlow G. Cook, July 7th.  
 43,521 Soil pipe collar, Aionzo W. Cram, July 7th.  
 43,522 Rocking grate bar for furnaces, William H. Heeson, July 7th.  
 43,523 Lubricator, Vital A. Emond, July 7th.  
 43,525 Elevator, Andrew McEachran, July 7th.  
 43,526 Hominy mill, Odeon H. Titus, July 7th.  
 43,528 Lasting machine, John T. Avery, July 7th.  
 43,529 Breast collar for horses, A. H. Fletcher, July 7th.  
 43,530 Potato digger, George E. and Martin J. Anderson, July 8th.  
 43,531 Grave vault, Frank C. Rheobottom, July 8th.  
 43,532 Door holding device, Madison W. Reeves, July 8th.  
 43,534 Valve for steam pipes of railway cars, Edward E. Gold, July 8th.  
 43,535 Band cutter and automatic feeder for threshing machines, John C. Lundy, July 8th.  
 43,536 Snow screen, Frans O. Skoglund, July 8th.  
 43,537 Thread splicing mechanism for knitting machines, George H. Colburn and Albert W. Stone, July 8th.  
 43,538 Means for tapping water mains and forming connections therewith under pressure, Harvey H. Burritt, July 8th.  
 43,539 Machine for purifying and bottling milk, William A. Clark, July 8th.

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## PATENTS

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Counsel Work Undertaken in Patent Causes.  
 Patent Suits Prosecuted before the Courts.  
 Validity and Infringements of Patents Investigated.  
 Searches made. Assignments and Agreements  
 Drawn. Advice on Patent Laws, etc.

Head Office, Canadian Bank of Commerce Bldg., Toronto

TELEPHONE 2589

CABLE ADDRESS "INVENTION, TORONTO."

- 43,541 Milking machine, Bryan Atwater, July 8th.  
 43,542 Advertising device, Stanislas Payette, July 8th.  
 43,543 Conveying apparatus, Thomas S. Miller, July 8th.  
 43,544 Game, George A. Cline, July 8th.  
 43,545 Apparatus for raising sunken vessels, Ernest Nichoff and Henry T. D'Entremont, July 10th.  
 43,547 Speed regulator for governors, Fred G. Mitchell, Francis W. Giddens and William T. Gartley, July 10th.  
 43,548 Metallurgical furnace, William Bell, July 10th.  
 43,549 Drum snare, James W. Pepper, July 10th.  
 43,559 Friction clutch, Harman Bunker and James H. McKeggie, July 10th.  
 43,551 Two wheeled cart, Harman Bunker and James H. McKeggie, July 10th.  
 43,552 Leaf holder for music, Joseph Wood, Walter Wilkinson and Sam Bateman, July 10th.  
 43,554 Cigarette machine, International Cigarette Machine Co., July 10th.  
 43,556 Compound lever, James L. Morrison, July 10th.  
 43,557 Car coupler, Berton A. Keeler and George C. Griffith, July 10th.  
 43,558 Injector, Ernst Korting, July 10th.  
 43,559 Apparatus for spraying oil, The Economical Gas Apparatus Construction Co., July 10th.  
 43,560 Sheet metal rolling mill, James Morrison, July 10th.  
 43,561 Street car replacer, James Findlay and Hugh Miller, July 10th.  
 43,562 Concealed joint, Daniel Conboy, July 11th.  
 43,568 Apparatus for extracting gold and silver from pulverized ore, J. W. Sutton, July 11th.  
 43,569 Cushion tyre, Woodburn Langmuir, July 11th.  
 43,572 Brake shoe, Archibald Brake, July 11th.  
 43,574 Stock feeder, George Lloyd, July 11th.  
 43,575 Adding machine, J. H. Jackson and C. A. Oakes, July 11th.  
 43,577 Pea harvester, John Bearman, July 11th.  
 43,579 Apparatus for making moulds for stereotyping, George Eastwood, July 12th.  
 43,580 Bread and cake knife, J. H. Clauss, July 12th.  
 43,581 Rubber tyre, Woodburn Langmuir, July 12th.  
 43,582 Worm gear, James F. Welch, July 12th.  
 43,583 Appliance for controlling fanlights, Robert Adams, July 12th.  
 43,584 Method of securing the handles of cranes to their shafts, T. H. Heard and W. K. Birkinshaw, July 12th.  
 43,585 Axle box, Herman Sichelshmidt, July 12th.  
 43,586 Bearings for railway vehicles, Herman Sichelshmidt, July 12th.  
 43,587 Projectile, Harry Allen, July 12th.

### G. de G. LANGUEDOC,

## PATENT SOLICITOR

CIVIL ENGINEER AND ARCHITECT

Associate Member Can. Society Civil Engineers. Member of the Society of Architects of the Province of Quebec.

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## PATENTS

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 THE UNITED STATES COURTS.

Over 21 years continuous practice in the U. S. Patent Office. Letter-  
 desiring information cheerfully answered.

OFFICES AT 131 DEVONSHIRE STREET, BOSTON, MASS.

- 43,589 Method of closing food receptacles, Jean Leenbruggen, July 12th.
- 43,590 Hermetically sealed sheet metal vessel, Gustavus A. Walber and Arthur E. Kleinfeldt, July 12th.
- 43,591 Apparatus for making butter, John H. H. Duncan, July 12th.
- 43,592 Mitre machine, R. B. Dettweiler, July 12th.
- 43,593 Battery plate, E. P. Usher and W. F. Draper, July 12th.
- 43,594 Waterproof garments, Otto Van Ostrum, July 12th.
- 43,595 Sewing machine, Charles W. Davis, July 12th.
- 43,596 Lightning arrester, Elihu Thomson, July 13th.
- 43,597 Lightning arrester and discharge protector, Elihu Thomson, July 13th.
- 43,598 Sleigh, George V. Wyant, July 13th.
- 43,599 Gate brace, C. C. A. Sienknecht, July 13th.
- 43,600 Apparatus for carrying and keeping horses, Carl Huhn, July 13th.
- 43,601 Contrivance for fastening scaffolds, Albin Kuhn, July 13th.
- 43,602 Apparatus for moulding earthenware articles, William West, July 13th.
- 43,603 Brace for turning bits, Ephraim Alpaugh, July 13th.
- 43,604 Kiln system, W. C. Trotter and George Clayton, July 13th.
- 43,605 Lifting apparatus for sack barrows, William Robinson and Frederick D. Ferguson, July 13th.
- 43,606 Mode of securing pneumatic tyres on wheels, Albert Whitehouse, Arthur Whicker and W. N. Black, July 14th.
- 43,607 Ball and socket joint, Joseph G. Falcon, July 14th.
- 43,608 Milk pan cover, Sarah Newell, July 14th.
- 43,609 Chimney, Richard B. Holmes, July 14th.
- 43,610 Safety tunnel warning device, George W. Thompson, July 14th.
- 43,611 Harness saddle, Henry Schmitz, July 14th.
- 43,612 Lard and butter cutter, Samuel Murray and Charles Epps, July 14th.
- 43,613 Oil pump, R. O. Graham and F. C. Smith, July 14th.
- 43,614 Roofing joint, William H. Jellison, July 14th.
- 43,615 Clothes dryer, Thomas C. Searls, July 14th.
- 43,616 Seat spring, George Coxon, July 14th.
- 43,617 Self-fastening shade pull plate, Samuel R. Scottron, July 14th.
- 43,618 Butter mould, Charles Boeckh, July 14th.
- 43,620 Clothes line, F. G. Lane, J. W. Kelly and Fred Sterzing, July 15th.
- 43,621 Dumping scow, H. S. Griffin and E. W. Blackhall, July 15th.
- 43,622 Tree baler, H. O. Thomas, Christopher Cusack and John W. Stevenson, July 15th.
- 43,623 Speed and whistle recorder for locomotive engines, B. F. Stockford, July 15th.
- 43,624 Machine for cutting cycloidal revolvers, John T. Wilkin, July 15th.
- 43,625 Portable water motor, John Bolgiano, July 15th.
- 43,626 Rustic seat, Albert Graf, July 15th.
- 43,627 Circular sifting machine, E. A. Weinhold, July 15th.
- 43,628 Wire stapling machine, E. R. Johnson, July 15th.
- 43,629 Book-binders' bevelling machine, Ross Gillmore, Oscar Rapp and Anton Rapp, July 15th.
- 43,630 Hub band, George Monteith, July 15th.
- 43,631 Machine for making metal balls, E. G. Hoffman, July 15th.
- 43,632 Car starter and brake, Carlo Sacco, July 15th.
- 43,634 Rubber overshoe, J. F. O'Brien and James Cooper, July 17th.
- 43,635 Clothes line, F. G. Lane, J. W. Kelly and Fred Sterzing, July 17th.
- 43,636 Machine for jointing shingles, Gardner Clish, Duncan McDonald and Silas Tupper, July 17th.
- 43,637 Glaziers' table, Joseph Cloutier, July 17th.
- 43,638 Fastener for boots and shoes, M. S. Hungerford, July 17th.
- 43,639 Steam engine, Joseph Hill, July 17th.
- 43,640 Sleigh, Joseph McIntyre and William Dadds, July 17th.
- 43,641 Potato vine sprinkler, Hector T. Sutherland, July 17th.
- 43,642 Friction ratchet clutch, R. F. Hargraves, July 17th.
- 43,643 Cash recorder, W. B. Metcalfe and F. A. Ziegler, July 17th.
- 43,644 Inhaler, John J. Hartnett, July 17th.
- 43,645 Buckle, W. S. H. Schmidt, July 17th.
- 43,646 Blank book, H. H. Hoffmann and F. H. Hoffmann, July 17th.
- 43,647 Support for the hoes of agricultural implements, Robert Galloway, July 18th.
- 43,648 Cultivator, Richard Sylvester, July 18th.
- 43,649 Washing machine, R. H. Wilson, July 18th.
- 43,650 Cycle, James Lochrie, July 18th.
- 43,651 Disk harrow, William J. Copp, July 18th.
- 43,653 Door knob, Francis Lattimer, July 18th.
- 43,654 Churn, Eli Danner, July 18th.
- 43,655 Nut lock, Israel Wolfe, July 18th.
- 43,656 Knockdown paper roll holder and cutter, N. R. Streeter, July 18th.
- 43,657 Alphabetical Railway Guide, Herbert Ellsworth, July 18th.
- 43,658 Nut lock, Gerolt Gibson, July 18th.
- 43,659 Harvester binder, T. H. Noxon, July 18th.
- 43,660 Steam boiler, R. W. King, July 18th.
- 43,661 Stirrup for riding saddles, J. A. Krewson and T. J. Smith, July 18th.
- 43,662 Fruit press, S. R. Thompson, July 18th.
- 43,663 Knee caps, W. R. Mulock, July 18th.
- 43,664 Steam engine, John Abell, July 18th.
- 43,665 Implements for tightening wire fence strands, John Whitaker, July 19th.
- 43,666 Locking device for railway joints, J. L. Pope, July 19th.
- 43,667 Rail joint securing device, J. L. Pope, July 19th.
- 43,668 Disk harrow, J. S. Corbin, July 19th.
- 43,669 Harrow attachment, M. S. Henry, July 19th.
- 43,670 Sulky plow, Perry Ries, July 19th.
- 43,671 Set works for saw mills, Hector Gawley, July 19th.
- 43,672 Velocipede, W. R. Jarnain and George E. Coleman, July 19th.
- 43,673 Disk harrow, D. M. Osborne & Co., July 19th.
- 43,674 Separator, Alice Morris, July 19th.
- 43,676 Stove, Bernhard Hellmann; Bohumil Ludikar and Franz Suda, July 19th.
- 43,677 Coffee mill, George Coleman, July 19th.
- 43,678 Sheathing lath, Andrew Baldwin, July 19th.
- 43,679 Wire covering mechanism, W. H. Avis and R. C. Fisher, July 19th.
- 43,680 Coin and slot machine, C. P. Young and C. F. Spangler, July 19th.
- 43,681 Printer's quoin, John W. O'Neill, July 20th.
- 43,682 Car coupler, James Gates and George Reid and Thomas Elliott, July 20th.
- 43,683 Washing machine, James Austin, July 20th.
- 43,684 Band cutter and feeder for threshing machines, Alice Morris, July 20th.
- 43,685 Harvester binder, Mercer Bros & Company, July 20th.
- 43,686 Car coupler, L. S. Manning, July 20th.
- 43,687 Wire drawing machine, C. H. Haag, July 20th.
- 43,688 Measuring machine for stock taking, A. C. Scurr, July 20th.
- 43,689 Spool holder, A. F. Morgan, July 20th.
- 43,690 Combination tool, J. N. Parker and M. E. Peters, July 20th.
- 43,691 Method of making wire netting, Lysaght Bros. & Company, July 20th.
- 43,693 Locomotive ash pan, John Williams, July 20th.
- 43,694 Type setting machine and the production of matrices for stereotyping, E. V. Beals, July 20th.
- 43,695 Car coupler, C. A. Dunn, July 20th.
- 43,696 Bolt and bar for doors, J. A. Leggett, July 20th.
- 43,697 Medicinal compound, J. M. McLeod, July 20th.
- 43,698 Air heating stove, L. P. Converse, July 21st.
- 43,699 Hay carrier, W. H. Wortman and A. B. McKay, July 21st.
- 43,700 Adjustable hay carrier pulley, W. H. Wortman and A. B. McKay, July 21st.



- 43,701 Grain crusher, John McLauchlan, July 21st.  
 43,702 Centrifugal separator for cream and butter, Adolph Wahlin, July 21st.  
 43,703 Rotary engine, Consolidated Car Heating Company, July 21st.  
 43,704 Car coupler, J. E. Matterson, July 21st.  
 43,705 Cook stove, O. L. Gadoury, July 21st.  
 43,706 Lock for doors, drawers &c., F. W. Harris, July 21st.  
 43,707 Stuffing box, G. H. Hitchcock, July 21st.  
 43,708 Car coupler, Gould Coupler Co., July 21st.  
 43,709 Chime attachment to wheels, A. M. Freeman, July 21st.  
 43,710 Potential Indicator, G. A. Lintner, July 21st.  
 43,711 Shovel, plow and cultivator, with adjustable rake, George Beatty, July 21st.  
 43,712 Pulley, C. H. Waterous, July 21st.  
 43,713 Hydrocarbon lighting device, A. S. Cody and Daniel Hinkson, July 21st.  
 43,714 Advertising device, J. H. Cairncross, July 21st.  
 43,715 Street car fender, W. W. Peay, July 22nd.  
 43,716 Street car fender, Thomas Davies, July 22nd.  
 43,717 Sofa and bed, B. T. Lawton, July 24th.  
 43,718 Fluid engine, W. C. Church, July 24th.  
 43,719 Printing, art of, C. B. Woodward, July 24th.  
 43,720 Paper board, R. B. McEwan, J. L. McEwan and R. W. McEwan, July 24th.  
 43,721 Machine for justifying composed lines of type, J. W. Schueckers, July 24th.  
 43,722 Knock-down box or crate, J. C. Meem, July 24th.  
 43,723 Scale for cutting coats and vests, J. J. Smith, July 24th.  
 43,724 Chain, Ludwig Herman, July 24th.  
 43,725 Flier for balling machines, E. E. Biederman, July 24th.
- SCIENTIFIC PROCESS.
- 43,524 Extraction of gold and silver from ores or compounds containing the same, and apparatus applicable for use in the treatment of such materials by means of solvents, John C. Montgomerie, July 7th.
- 43,533 Method of introducing disinfectants into water closets-sewers, etc., George T. Orton, July 8th.  
 43,546 Process of reducing crude peat into a marketable form for fuel, The Ontario Peat Fuel Co., July 10th.  
 43,553 Art of making sulpho acid from petroleum, Hans A. Frasch July 10th.  
 43,567 Method of making butter, Douglas A. Thurston, July 11th.  
 43,692 Dissolving gold and other metals out of ores and compounds, and obtaining the metals therefrom, B. C. Molloy, July 20th.  
 43,652 Method of producing non-alcoholic beer, A. H. Hobson, July 18th.  
 43,619 Method of drying and vulcanizing wood, Charles Howard, July 14th.
- ELECTRIC.
- 43,527 Telephone system, Charles W. Brown, July 7th.  
 43,540 Electric glow lamps, Edward A. Colby, July 8th.  
 43,555 Electric current and current governor, Charles Wiese, George G. Roe and Herbert G. Ralfe, July 10th.  
 43,563 Insulated trolley wire support, John S. Gustin and Frank O. Weydell, July 11th.  
 43,564 Insulated trolley wire support, John S. Gustin, July 11th.  
 43,565 Electric switch, The Consolidated Car Heating Co., July 11th.  
 43,566 Electric motor, W. J. Still and Randolph MacDonald, July 11th.  
 43,570 Storage battery, E. P. Usher, July 11th.  
 43,571 Storage battery, E. P. Usher, July 11th.  
 43,573 Electric railway, O. A. Enholm, July 11th.  
 43,576 Telephone combination, Sir Charles S. Forbes, July 11th.  
 43,578 Electric motor, William J. Still, July 12th.  
 43,588 Method of treating ore, Thomas A. Edison, July 12th.  
 43,675 Method of and apparatus for the regulation of dynamos and motors, The Reliance Electric Manufacturing Company, July 19th.  
 43,631 Electric propulsion of cars, W. J. Still and Randolph MacDonald, July 15th.

# WHITING

ALL GRADES

IN LUMP, OR FINELY BOLTED, AND VERY DRY.

**English Cliffstone**

**PARIS WHITE**

"WESTMINSTER" Brand

ALSO IN LUMP OR FINELY BOLTED.

We are the Largest Manufacturers of these Goods in the United States and they are

**Standard in Quality**

We give SPECIAL ATTENTION to the preparation of a BOLTED WHITING for use of Rubber manufacturers, and in Compounds for the Covering of Electric Wires.

Shall be pleased to send Quotations and Samples when desired.

**The H. F. TAINTOR MNFG. CO., 281 Pearl St., New York**

## Captains of Industry.

*This department of the "Canadian Manufacturer" is considered of special value to our readers because of the information contained therein. With a view to sustaining its interesting features, friends are invited to contribute any items of information coming to their knowledge regarding any Canadian manufacturing enterprises. Be concise and explicit. State facts clearly, giving correct name and address of person or firm alluded to, and nature of business.*

The Coal Saving and Smoke Consuming Company of Montreal are applying for incorporation with a capital stock of \$50,000.

A large grindstone weighing one ton burst at the Gananoque Spring and Axle Company's Works last week. No serious damage was done.

MESSRS. HERRON & BALDERSON, Perth, Ont., have dissolved partnership. Mr. Robert Balderson will continue running the grist mill under his own name.

SIENLAX asphalt is being used in Montreal. Advices were received last week by Messrs. Anderson, McKenzie & Co., shipping agents of the Sicily Asphalt Company, of the sailing of the steamship Bertie from Mazzaretti, Sicily, on July 7th, with a cargo composed of 200 tons of crude asphalt rock.

MESSRS. A. DENOIS and W. M. Fogarty are about to manufacture boots and shoes in Montreal under the name of A. Dubois & Cie.

WEDDELL & Co., of Trenton, Ont., have the contract for the new bridge at the Narrows of the River Trent. It is to cost about \$12,000.

The slate quarry near Danville, Que., is becoming a great success under the energetic management of T. F. Pharoh. He has fifty-four men all steadily at work by method. The Waterous engine of 70 horse-power drives all the drills, hoists and the various machinery. There are some benches of pure slate thirty feet thick, and single pieces are got out of 7 to 12 tons weight. It is worked up into blackboards, washtubs, flooring, roofing and slates, it being the only slate factory in Canada.—Sherbrooke Examiner.

MESSRS. RICHARD & HORDE have leased the Manitoba Wire Works, Winnipeg, and are going to make large improvements.

THE Toronto Carpet Manufacturing Company have just added some 12,000 feet to the floor space of their factory by annexing part of the adjoining building. They are adding more looms and machinery; some of the looms they are building themselves. This company is the only one of our Canadian carpet manufacturers who have sent an exhibit to the Chicago Fair. The Journal of Commerce, New York, in speaking of the Canadian exhibit, says: "The Toronto Carpet Manufacturing Company make a good exhibit of two and three ply ingrain carpets, which compare very favorably with the best goods of the kind made in Great Britain or the United States."

THE Fraser Valley Fruit Cannery Company, Ltd., capital stock \$50,000, has been incorporated to take over the Fraser Valley Fruit Cannery at Chilliwack, B.C., now operated by F. M. Chaldecott & Co. Geo. M. Stuart, W. H. Kendall, Wm. Paterson and F. M. Chaldecott are trustees.

MESSRS. J. BINGEMAN & Co.'s brush factory, Berlin, Ont., is now in operation.

THE Port Colborne Smelting Works are going to build a new furnace.

MESSRS. J. L. GRANT & Co., Ingersoll, Ont., are erecting a large addition to their pork packing works.

THE Waterloo Woolen Company, Waterloo, Ont., have been fitted up with new machinery.

JAS. A. BELL, engineer of Elgin county, Ont., reports that a 30-foot span bridge is to be built over Big Otter Creek, between Bayham and Middleton; that the Grange street (St. Thomas) bridge is to be rebuilt at a cost of \$1,933, and the Port Farwell bridge at a cost of \$1,860.

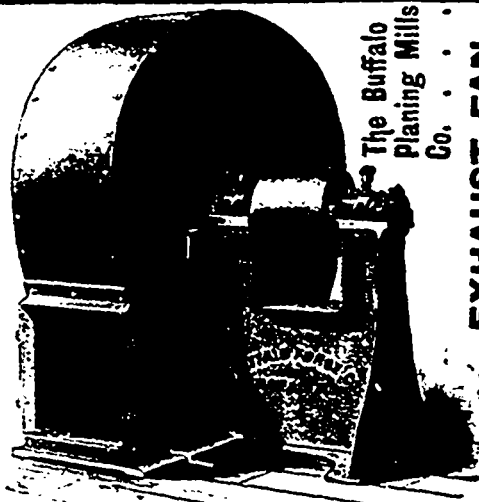
MESSRS. N. K. FAIRBANK & Co. will build a lard factory at St. Henri, Montreal.

MESSRS. JAMES MURCHIE & SONS have purchased the Morrison lumber mills at Fredericton, N.B.

MESSRS. JAMES DUKE & Co., Vancouver, B.C., have started work again on the Columbia Carriage Factory.

THE Niagara Falls Electric Railway propose building a bridge across Smeaton's Ravine near Queenston.

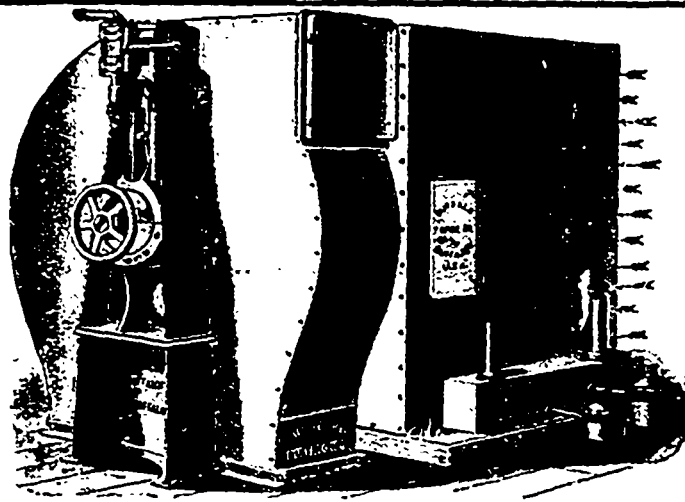
MESSRS. FOSTER & LOCKSTON have started a planing mill at Galt, Ont.



The Buffalo Planing Mills Co.

EXHAUST FAN

Buffalo Forge Co., Buffalo, N.Y., U.S.A.



Lumber Dry Kiln Apparatus.

• A. LEOPRED •

Graduate of Laval and McGill

**Mining Engineer**

MAIN OFFICE, - CITY OF QUEBEC.

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MINES, MINERAL PRODUCTS.

The Toronto Fringe and Tassel Co.

19 FRONT ST. WEST, TORONTO

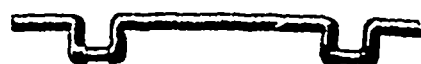
Manufacturers of

**SUSPENDERS & SUSPENDER WEB**

FRINGES, TASSELS, CORDS

Upholstery Trimmings and

UNDERTAKERS' TRIMMINGS



**Wrought Iron Loom Crank Shafts**

Forged by Special Machinery from one bar, without welding, and of all length of sweeps from

**Two to Two and a-Half Inches**

or more, to fit all makes of cotton looms. Write for particulars.

**GOVEL MACHINE CO., Fall River, Mass.**

FAC-SIMILE OF SOME OF THE WIDE

# DOUBLE LEATHER MAIN DRIVING BELTS

MANUFACTURED BY US



Makers of all the **ELECTRIC LEATHER BELTS** for Toronto, Hamilton, Brantford, Peterboro  
Winnipeg, Victoria, B.C., and other Electric Railways.

Also for Toronto Incandescent, Kingston, Ottawa, Brockville, Napanee, Peterboro, Orillia, Barrie,  
Collingwood, Stratford, Aylmer, Ingersoll, London, Chatham and  
other Electric Light Stations.

---

**Belts Made for Every Kind of Work**

## **The Haworth Belting Co.**

**9 Jordan Street, - TORONTO.**

The Tennycupe manganese property, near Walton, Hants County, N.S., has passed into the hands of the Provincial Manganese Mining Company, Ltd., and a prosperous future seems assured. The property, which has been worked for many years, has yielded a very handsome profit to the former owners, but now that it is to be mined upon an extensive scale and in a systematic manner still better results should be obtained. Among those interested in the property are D. C. Fraser, M.P., New Glasgow, George E. Boak, J. T. Burgess and Lewis W. Desbarres, Halifax.

The first shipment of ready-made houses for Jamaica was forwarded a few days ago by Messrs. Rhodes, Curry & Co., Amherst, N.S. When completed the dwelling had the appearance of a pretty one-storied cottage 27 x 20 feet and 17 feet high. Everything required in the construction of the house was cut and fitted to its place and each piece numbered, and when all was complete, the house was taken apart and stored piece by piece in a box car. The climate of Jamaica is one which necessitates the building of houses that while affording protection from the heat and rain are not readily affected by humidity, and also need to be constructed of material capable of resisting the attacks of worms that burrow in the softer and sappy woods until the entire construction is honey-combed. For this purpose the Southern or hard pine is indispensable, and of this material the house in question is constructed.

The old pottery shaft, New Glasgow, N.S., has been reopened by W. P. McNeil, who will test the size of the coal seam and will probably mine about twenty tons a day for local consumption.

The Royal Carpet Company, Guelph, are extending their business. Formerly their product was sold only in Ontario, but now they have established agencies in Victoria, B.C., and Halifax, N.S., and so far report orders good from these places. The latest advancement they have made towards having a complete carpet factory is the building of a dyehouse 80 x 40, with a second storey over the boiler and engine rooms, for drying and bleaching their yarns. They claim they now make a clean good yarn, thoroughly scoured with their new scouring machinery, and dyed perfectly fast in color, with the best materials to be had. Of late there has been a good demand for carpet fringe, and this company at once had a loom made and are now supplying large quantities to the trade. They make it in all colors and in any style. Every year some member of the company visits the chief carpet centres in the United States to look out for any new and successful methods that may have been made to improve the carpet industry. Mr. Alvin Burrows has gone over there this season for a month's visit, and it is hoped he will be able to introduce more improvements in the way of machinery, etc. They are now running thirty looms steady and have sufficient work for them for this season, giving employment to 44 hands. All the superintending and travelling is done by the four brothers who compose the company.

Over hundred men are at present at work on a ten mile section of railway from the colliery of the Dominion Coal Company at Glace Bay through Cow Bay in the direction of Louisburg. The contract for the work was awarded to McDonald & McMannus, who have orders to go ahead with all possible speed in order that the road may be completed at an early date.

The new hoppers built for the Dominion Coal Company by the Amherst Car Works, have been delivered in Cape Breton.

**TO LET ! FACTORY FLATS**

With power to suit

From two to fifty horse power. Apply

F. W. BARRETT, 68 Esplanade West, TORONTO, ONTARIO

**PRESS PAPERS : :**

We carry in stock Press Boards 21 x 31  
We can make any size and thickness  
to order on short notice. Mill Boards  
and Pulley Boards always in stock.

Special attention to letter orders.

CANADA PAPER CO., (Ltd.), 15 Front St. West, Toronto  
578 CRAIG STREET, MONTREAL

**FOUNDRY FACINGS**

Core Compound, Ceylon Plumbago, Foundry Supplies and Moulding Sand

Canadian Agents for

Root's Positive Blower

Colliau Cupola Furnace

HAMILTON FACING MILL CO., Hamilton, Ont.

M. & L. SAMUEL, BENJAMIN & CO.

**HARDWARE**

**METALS**

Chemicals and Manufacturers' Supplies

No. 30 Front St. West - Toronto

ENGLISH HOUSE:

Samuel Sons & Benjamin

1 Rumford Place, LIVERPOOL

**Michigan Emery Wheel Company**

194 Catherine Street, Detroit, Mich.

**Solid Emery**

AND

**Corundum  
Wheels**

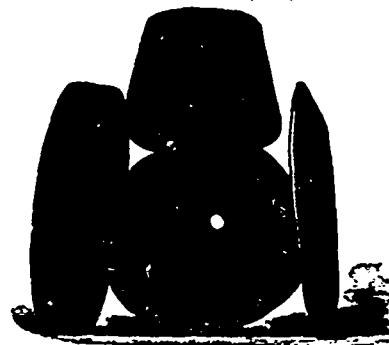
To Run Wet or Dry Special Shapes



**PERFECTION  
SAW GUMMERS**



SEND FOR PRICE LIST



**ELEVATORS**

FENSOM ELEVATOR  
WORKS  
52-54-56 DUKE ST  
TORONTO.

ELECTRIC HYDRAULIC  
STEAM & HAND-POWER  
PASSENGER & GOODS  
ELEVATORS. DUMB WAITERS

THE Napanee Soap Company, Napanee, Ont., who moved into their new factory last fall are now enlarging their business and adding a number of new lines to their list of manufactures, brown goods and toilet soaps among the number.

THE Hamilton and Dundas Railway Company are asking permission to convert its road from steam to a trolley line.

THE plant of the Vancouver Electric Railway, Light and Power Company, has been advertised for sale by tender.

THE Kay Electric Works, Hamilton, have appointed Mr. John A. Burns, 686 Craig Street, Montreal, their agent for that city.

W. H. FITZPATRICK, Hopewell, N.S., is trying to form a company to put in a plant to supply electric light to New Glasgow, eight miles distant.

WITH further reference to the proposal to adopt electrical power for opening and closing the locks at the Canadian Sault Canal, Collingwood Schreiber, who has returned from Sault Ste. Marie, says that he is well satisfied with the feasibility of the motive power, and that the necessary arrangements are being made for putting an electric plant in.

THE Waterloo Woollen Manufacturing Company are putting in a new Wheelock engine.

A SYNDICATE composed of Detroit men is trying to get a charter for an electric railway from Walkerville to Tecumsech, from the Sandwich East council. The distance is thirteen miles, and the company say they will give a bond for the early completion of the work.

TENDERS for the new building to be erected by the Gore Mutual Insurance Company, Galt, Ont., will, we believe, be asked for at an early day. Mr. Mellish, architect, is busily engaged completing the details.

MESSRS. E. SMITH & SONS, founders, Pembroke, Ont., have dissolved partnership. The business will be continued under the same name by E. Smith, D. Smith and H. Smith.

F. SUMMERFELDT's grist mill, Pefferlaw, Ont., was burnt out July 25th; \$500 insurance on stock.

THE grist mill belonging to Messrs. Way & Co., Pefferlaw, Ont., was burnt down on July 25th. Loss, \$12,000; insurance, \$5,000.

A. McMULLEN has rebuilt the saw mill at Folly Lake, N.S.

**FIRE! - FIRE! - FIRE!**  
**THE ONLY TRUE FIRE-PROOF**  
**PAINT MANUFACTURED IN CANADA**

Write for the testimony of eighty witnesses who have made personal tests, and be convinced.  
**The R. J. DOYLE MFG. CO.**  
 Lock Drawer 464 Owen Sound, Ont.

**WIRE**

- Coppered Steel Spring,
- Tinned Mattress Wire,
- Broom and Brush Wire,
- Soft Coppered Wires,
- Hay Bailing Wire,
- Flat Wires.

Write for Catalogue.

WE GUARANTEE THE QUALITY OF ALL OUR WIRES.

MANUFACTURED BY

**The B. Greening Wire Co.**  
 LIMITED  
 HAMILTON, ONT.

CUT NAILS      ALL SIZES      WIRE NAILS



ASK FOR THE GRAHAM NAILS

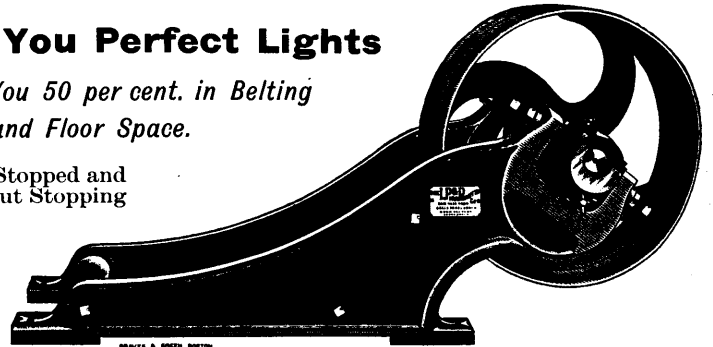
**L. P. D. TRANSMITTER**  
**FOR DRIVING DYNAMOS**

**Will Give You Perfect Lights**

*Will Save You 50 per cent. in Belting and Floor Space.*

Dynamo can be Stopped and Started without Stopping Engine.

It is used by some of the largest companies in Canada and the States.



**DARLING BROS., Reliance Works, Montreal**  
 Sole Makers for Canada.

WE MANUFACTURE  
**FANS FOR NOTHING**

but hard work, and having had twenty years experience we know how to get steam out of Dye Houses and the largest possible product from Dry Rooms

Our Compound Wheel is the most powerful in the world, and if we can't be of actual value to you we don't want your money.  
 Send for Circular and Information **BARNEY VENTILATING FAN CO., 70 Pearl St., Boston, Mass., U.S.A.**

**THE CANADIAN OFFICE & SCHOOL FURNITURE**  
**PRESTON, ONT.**

FINE BANK, OFFICE, COURT HOUSE & DRUG STORE FITTINGS  
 OFFICE, SCHOOL, CHURCH & LODGE FURNITURE  
 SEND FOR CATALOGUE.  
 J.L. JONES TORONTO

The Gotham Cheese factory, three miles north of Freeborn, Ont., was destroyed by fire July 29th.

MESSRS. HAYNES BROS., saw manufacturers, St. Catharines, have sold out to William Chaplin.

The Ottawa Electric Railway Company have secured the contract for carrying the mails between the railway stations and the post office. The contract price was \$4,000.

MESSRS. D. WILLIAMS & COMPANY, Collingwood, Ont., have put a new boiler in their woolen mills; it was purchased from the Canada Machinery & Supply Co., Brantford.

The Welland Power and Supply Canal Company, of St. Catharines, Ont., are applying for incorporation with a capital stock of \$500,000.

The Pearce Company, Ltd., Marmora, Ont., are applying for incorporation with a capital stock of \$175,000, to take over the business of T. P. Pearce & Co.

The McLerran-French Paint Company, Toronto, are seeking incorporation. The capital stock is to be \$90,000.

Windsor, Ont., Gananoque, Ont., and Newcastle, N.B., have been added to the list of ports at which petroleum in tank cars can be entered.

The factory of the Canada Brush Company, Windsor, Ont., was totally destroyed by fire last week. Loss about \$18,000; insurance about \$8,000.

The Canada Machinery & Supply Co'y., Brantford, have shipped a large engine to George W. McMillan for his mills at Richibucto, N. B.

The Chaudiere Electric Light Company, Ottawa, has given an order for two tandem compound Wheelock engines, of 600 h. p. each, and six boilers with a capacity of 1,300 h. p., for use in the proposed auxiliary steam station of the company. The number of the company's lights have increased very rapidly during the past year, now aggregating between 19,000 and 20,000.

The Gould Bicycle Company, Brantford, Ont., have moved into their new factory, which is, we believe, the largest of the kind in Canada, and started running this week. The motive power is electricity. The two 20 h. p. motors were supplied by the Canada Machinery and Supply Co., Brantford.

The Canadian Nationalist, Brantford, Ont., says: "We are pleased to announce that we have finished the alterations necessary in our plant for the issue of this paper, such as putting in a large press new engine and boiler, shafting, &c., &c. The above contract was given to The Canada Machinery & Supply Co., of this city, and the whole outfit is giving us such excellent satisfaction that it gives us pleasure to recommend their work to the public."

The New York Journal of Commerce thus refers to the Canadian cotton exhibit: "Canada makes an excellent display of cotton goods as it does of almost everything else at the Fair. In two large cases, each 75 by 20, are the exhibits of the leading cotton manufacturers of the Dominion. They embrace sheetings, shirtings, prints, ginghams, webbing, bindings, tickings, dairy cloths, flannels, and nearly every kind of fabric made in this country or Great Britain. The Montreal Cotton Company, whose works are at Valleyfield, Que., show as many kinds of goods as are produced in any establishment in this country or Great Britain, and to all appearance they are of excellent quality."

The Robb-Armstrong Engineering Company, Amherst, N. S., have sold the Royal Electric Company, Montreal, Que., one of their Monarch Economic 75 h. p. boilers and a Robb-Armstrong automatic engine, to run the electric plant being installed at Montreal Junction, Que.

The electrical apparatus designed by Mr. Thomas Monto, C. E., for operating the lock gates was tried at Melocheville on lock No. 4 of the Beauharnois canal July 31st. It proved a success, the gates being easily opened and closed in about one minute. This invention will greatly reduce the cost of labor on the canals.

The Sutton Lumber & Trading Co., of Euculet, B.C., has been organized with a capital of \$100,000. W. J. Sutton, Wm. Sutton and J. E. Sutton are the first trustees.

SEELEY'S saw mill, at Greenwich Hill, N. B., recently destroyed by fire, will be rebuilt.

MESSRS. ARMSTRONG & COOK have purchased a 600 light alternating dynamo with lamps, etc. complete for Montreal Junction. The plant was supplied by the Royal Electric Company, Montreal, who also supply the steam plant for the same.

**Equalled by Few**

**Excelled by None**

# CANADA'S GREAT INDUSTRIAL FAIR

And Agricultural Exposition

# TORONTO

**SEPTEMBER 4<sup>TH</sup> TO 16<sup>TH</sup>, 1893**

**\$150,000 Expended in Improvements in 1892, and \$125,000 being Expended this year. No Standing Still**

*The Best and Largest Exhibition in the Dominion of Canada,*

And Attended Annually by over 300,000 Visitors. The Newest and Best Attractions Attainable. Brighter and Greater than ever. The best time to visit the Metropolis of Ontario.

**CHEAP EXCURSIONS AND LOW RATES ON ALL RAILWAYS, Etc.**

**ENTRIES POSITIVELY CLOSE AUGUST 12<sup>TH</sup>.**

For Prize Lists, Entry Forms, and all other information, address

**J. J. WITHROW, President.**

**H. J. HILL, Manager, Toronto.**

The Rathbun Company of Deseronto, Ont., have equipped their mill at Campbellford, Ont., with Dodge wood split pulleys throughout.

The Waterloo Woolen Company, Waterloo, Ont., also Messrs. J. & G. Black of Thurso, Que., have fitted up their new mills with the Dodge patent pulleys.

The Geo. Matthews Packing Company of Peterboro, Ont., has put in an intricate rope transmission supplied by Dodge Wood Split Pulley Co. of Toronto.

The Welland Power and Supply Canal Company, is being incorporated at St. Catharines, Ont., with a capital stock of \$500,000 to develop power, light and heat for commercial purposes, etc.

The Carter Motor Company is being incorporated at Stratford, Ont., with a capital stock of \$300,000 to manufacture the Carter motor and the Carter rotary engine, etc. Mr. James B. Perry of Toronto, is one of the incorporators.

DAVISON & HAY are putting an electric light in their mill at North Bay so as to run night and day. They expect to cut 17,000,000 feet this season.

A COMPANY was recently formed at Lethbridge, N.W.T., for the purpose of putting in a telephone system from Lethbridge to Lee's Creek, a distance of forty-eight miles. The Dominion Government gave a subsidy of \$2,100, and the Mormons have also contributed.

The lumber yard of John Davison, Halifax, N.S., was burnt out July 26th. Loss about \$3,000; insurance, \$700.

MESSRS. JOHN McDONNELL & Co.'s foundry and machine shop, Montreal, was partially burnt down July 27th. Loss about \$8,000, covered by insurance. The shop will be repaired at once.

The Westport, Ont., cheese factory, was destroyed by fire July 27th, together with about \$600 worth of cheese. The building was owned by E. G. Adams; the stock and machinery was owned by the Patrons. Loss about \$2,000; no insurance.

The Owen Sound Gas Company are putting in a new gasometer. New Westminster, B.C., has ordered a new electric light plant.

PRESIDENT CHARLTON, of the Hamilton Street Railway Company, says that next summer the trolley system will be extended to the beach. At present the line runs to the new racetrack, which is not more than three miles from the Ocean house. If the company has any difficulty about getting right of way along the Beach road it can arrange with the city to run along the pipe to the waterworks. If all the schemes projected go through Hamilton will be well served with trolley lines.

SMITH & MCGARVIN'S steam saw mill, Chatham, Ont., was destroyed by fire last month. Loss about \$5,000; insurance small.

The Dominion Organ and Piano Company, of Bowmanville, had the honor of shipping last week, on order from Sir Francis de Winton of the Duke of York's household, one of their elegant English case organs for the Princess May. This is a great honor, and is very creditable to Canada and the Dominion Organ & Piano Company.

D. Roy & Co.'s planing mills, Levis, Que., were burnt out July 19th. Loss \$15,000.

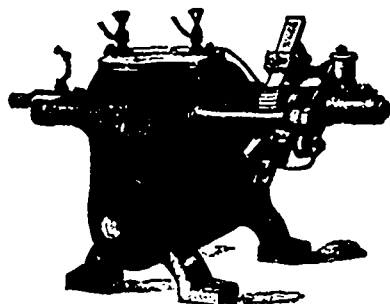
# Portland Cement

Drain Pipes, Calcined Plaster,  
Mortar Colors, Fire Bricks,  
Fire Clay, Enamelled Sinks,  
Wheelbarrows, Stable Bricks,  
Red and Olive Building Stones,  
Etc., Etc.

**WM. McNALLY & CO.**  
MONTREAL

# KAY ELECTRIC CO.

Manufacturers of



## DYNAMOS

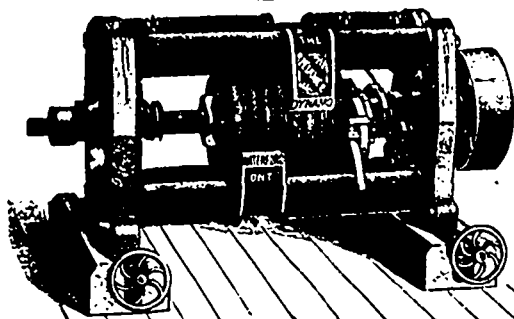
FOR  
ARC and INCANDESCENT  
LIGHTING.

PLATING MACHINES,  
MEDICAL BATTERIES

And all kinds of

## ELECTRIC APPLIANCES

HAMILTON, ONT.



THE  
RELIANCE  
ELECTRIC  
MANFG.  
CO., Ltd.

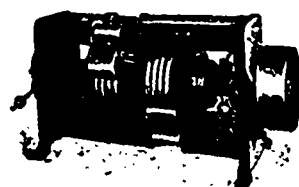
Manufacturers of the  
Reliance System of Arc  
and Incandescent Lighting

and Power Apparatus. The Rae System of Electric Railway.

Head Office and Works - WATERFORD, ONT.

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THE BALL  
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Established 1882. LIMITED  
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MANUFACTURERS, ENGINEERS and CONTRACTORS

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## Electric Light and Power Installations

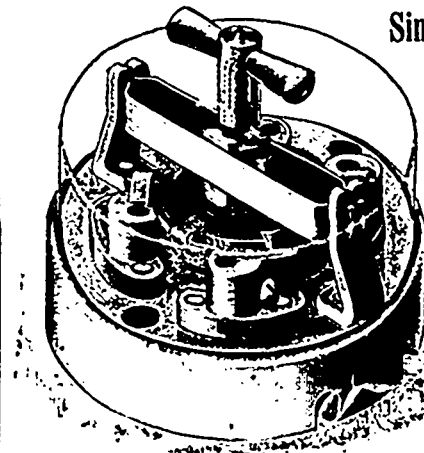
ARC and INCANDESCENT DYNAMOS, ELECTRIC MOTORS

ELECTRIC ELEVATORS A SPECIALTY

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Prices Reasonable. Guarantee absolute

Write for Printed  
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Single and Double Pole  
SWITCHES

From 5 to 150 Amperes

DOVETAIL ROSETTES.

LAMP SOCKETS.

All of Superior  
Workmanship and  
Design.

Manufactured  
by the

PERKINS' ELECTRIC  
SWITCH MFG CO.

Hartford, Conn.

For Sale by the Canadian General Electric Co., Toronto.

The Montreal Blanket Company are putting in two new Garnett machines, one for fine work and one for coarse.

D. S. SHAW and some other gentlemen are asking the Almonte council to grant them exemption from taxation for ten years on the stone mills of the Elliott estate, which they intend to use for a two set blanket mill and a file factory.

MR. VANDERBERG, of Nanaimo, B.C., is building a small screw steamer at the Smelter wharf, Revelstoke.

JOHN MURPHY is erecting a salmon saltery at South Westminster, B.C.

JAMES ROSSEAU & Co.'s tannery at New Westminster, B.C., was burnt down last month; loss, \$9,000; insurance, \$5,000. They will rebuild immediately.

JOSEPH W. WILLIAMS, representing London, Ont., parties, is said to have decided to build a tannery at Portage la Prairie, Man.

THE building of the new flour mill at Meleta, Man., is being pushed forward. The machinery is expected to be placed in position next week.

THE planing mill run by Wm. Dunk, Campbellford, Ont., was burnt out July 25th. Loss about \$1,200; insurance, \$750.

WORK on the Ottawa, Arnprior and Parry Sound Railroad is progressing rapidly.

THE Acton Tanning Company have commenced work again.

L. E. MORLOCK, Mount Forest, Ont., has purchased Peterson's woolen mill at Dundalk.

THE people of Mission City, B.C., are in negotiation with a Scotch manufacturing company with a view to securing extensive woolen mills. The mill, it is reported, will be one of the largest on the coast, and employ between 200 and 300 operatives at the start.

MR. ABER SMITH, Sackville, N.S., is making expensive improvements to his tannery.

THE Canada Colored Cotton Mills at Hamilton, Ont., are making improvements and repairs.

MR. CAYTHORP has bought the grist mill at Kintore, Ont., and will remove it to Thamesford.

BUILDING operations have been commenced on an elevator at Portage la Prairie, Man., for Messrs. Phillips & Richardson.

WORK on the Galt and Preston Street Railway will be commenced immediately.

MESSRS. J. McLAREN & Co., Wakefield, Que., intend to put in an electric plant for lighting their mills.

WAWANESSA, Man., is offering a liberal cash bonus and other inducements to any practical man who will operate a grist mill in that locality.

MR. R. M. WATSON has purchased the flour mill at Kincairdine, Ont., and put it in good running order.

MESSRS. DOW & CURRY will build an oatmeal mill at Pilot Mound, Man.

THOMAS CAIRNES, Portage la Prairie, Man., had his brewery destroyed by fire on July 27th; loss, \$15,000.

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Drills, Chucks, Reamers, Etc.

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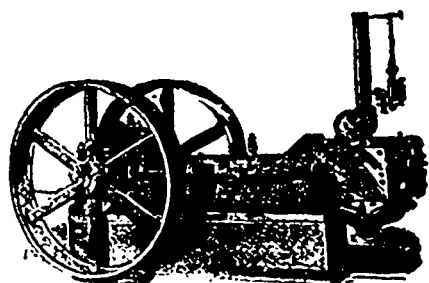
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-AND-  
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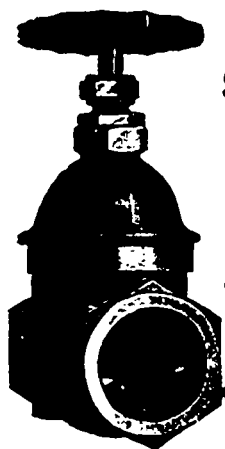
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THE first car for the electric railway at Peterboro' arrived there early last week, and went to the Canadian General Electric Company's works to be equipped with motors, etc. It is one of four which will be placed on the rails upon the opening of the road, and it was made by the St. Catharines firm, Messrs. Paterson & Corbin. It is a vestibule car, 24 feet in length and has been finished in elegant style, and when ready for the road will be fitted up equal to any electric car that is made. The exterior of the car is finished in dark wine color, with light trimmings. The interior is finished in the wood, and is therefore all light in color, while the seats are upholstered in light to harmonize. The style is the same as other vestibule electric cars, and the workmanship, both woodwork and painting, has been executed with a beautiful neatness and finish. The electrical equipment which will be placed in it will include the latest improvements. At night it will be lighted by five sixteen candle power incandescent lights, three of which will be inside and one on each platform. The three other cars which will arrive in a few days will be of similar style and finish, and will be equipped in the same way.

MESSRS. McRAE & Co., of Ottawa, are developing a new industry in Canadian lumber. They have secured the control of a German patent for the treatment of beech and birch woods. Mr. McRae, speaking on the matter said: "The great objection hitherto held against these woods is the fact that they are very difficult to season, and even when they have been seasoned fully 40 per cent. is defective. By the new process the sap is sweated out of the boards by being placed, in a green state, in steam chambers for twelve days, after which it is put into the drying chamber for two or three days, according to thickness, and then by a chemical application the wood is stained throughout a rich walnut color. The process has been tried on a large scale in Germany for the past eighteen months, and has proved such a success that experts acknowledge that wood so treated is superior to walnut, and the owners there write that they are quite unable to supply the demand. No country in the world has such beech and birch forests as Canada, and the discovery of this process will no doubt greatly enhance their value. A trial kiln has been built in Ottawa, and the first parcel, turned out last week, is so satisfactory that works for the treatment of twenty-five car-loads monthly will be erected there immediately, and arrangements made for the erection of two other

plants, one in western Canada and the other in the Province of Quebec. It is probable that the bulk of the first season's output will be shipped to England, where the wood is well known and can be readily sold on a profitable basis.

JOHN WATSON's box factory, London, Ont., was destroyed by fire July 30th. Loss, \$11,000; insurance, \$2,000.

THE varnish works in connection with James Hay & Co., Woodstock, Ont., were destroyed by fire July 29th. Loss, \$1,500; no insurance.

MR. ELLIS, St. Francis, Que., is building a new sawmill. The engine, boiler and machinery were purchased in Brantford, Ont., from the Canada Machinery and Supply Co.

## Cotton Manufacture and its Machinery

### WEAVING CALCULATIONS.

A Guide to Calculations Relating to Cotton Yarn and Cloth. By C. P. Brooks. New edition, cloth, 12mo, \$2.00.

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### MODERN COTTON SPINNING MACHINERY;

Its Principles and Construction. By J. Nasmith. 200 illustrations, 4to, cloth, \$6.00.

COTTON.—See Spon's Dictionary of Engineering: part 35: price 40c.

COTTON.—See Spon's Encyclopædia of the Industrial Arts, parts 12, 13, price 75c. each.

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## DODGE WOOD. SPLIT PULLEY CO., Toronto

Among the latest revolutions in the building of farm and team wagons is the great improvement brought about by Mr. Van Allen's patent arm or thimble skein. Heretofore these wagons necessarily weighed fully a quarter of their carrying capacity, but by the use of the patent arm or skein above mentioned, the weight of such wagons is reduced to about one-eighth of their carrying capacity. Incontrovertible evidence of this is given by the following certificate:

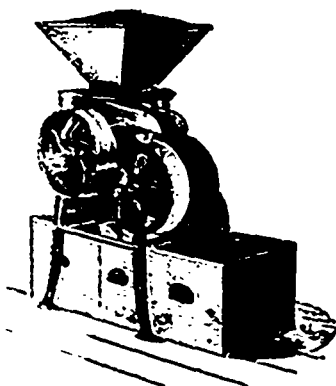
CHATHAM, June 24, 1893.

I certify I weighed, this day on the Market scales a 2 1/2 inch Giant Arm Wagon loaded with pig iron and found the weight of wagon and load to be 7,070 pounds. (Signed) THOMAS HOLMES, Weighmaster.

The gearing of above wagon weighs 618 pounds. None of the great American wagon making concerns rate the capacity of a 2 1/2 inch cast or steel skein wagon at more than 2,500 pounds. The Chatham Manufacturing Company, of which Mr. D. R. Van Allen is president and manager, are to be congratulated upon the fact that they are the sole and only builders of these wagons, and upon the further fact that they are so keenly appreciated by the general public that wagons built with those arms and known as Chatham and Chautauqua Giants, are taking the lead wherever introduced.

The Consolidated Electric Company, St. John, N.B., are continually adding new machinery to their plant which will enable them better to carry on their extensive operations. The latest improvement is a condensing apparatus which enables the company to condense the exhaust steam and use it over again, thus saving excessive water charges. This machinery was put in by the Northey Manufacturing Company, of Toronto, and is in many respects different from any other in the Dominion, or, perhaps, in America. Condensing machines are common enough, but the conditions connected with the erection of that in the Union street power station were unique. Ordinarily the water to cool the steam is got from a place on a level, or perhaps above the station, and but little trouble is found in controlling it. The water for the new machinery is taken from the harbor. The great rise and fall of the tide made this a somewhat difficult matter. A pumping station was built on the end of the wharf at the foot of Union street. In this a geared duplex power pump of the Northey Manufacturing Company's most approved design was placed. This pump is a monster, weighing about six tons and has a capacity of 1,500 gallons a minute. From the pump a large copper pipe runs to the harbor and it has a strainer on the end. Through this the water is lifted by the pump and forced through a pipe 10 inches in diameter to the condenser, when it returns by another pipe, emptying into the Union street slip. The large pump has to raise the water by suction, and then force it to the station, fully five hundred feet away. The lift at low water is a very great one, while at high tide it is not very far. The pump is operated by a thirty horse-power dynamo stationed in the pumping station and connected with the power station machinery. The condenser is what is known as a surface condenser, and is similar in design to those used on ocean steamers, but much larger. Working with it are two large air pumps which keep the condenser free of air, allowing the escaping steam to fall in an almost perfect vacuum on the tubes of cold water, which instantly condense it. The machinery is working well, and the managers are well satisfied with it and look for good results as a consequence of its installation.—St. John, N.B., Globe.

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For separating Iron Turnings, Filings, etc., from Brass and other metals. Made in two sizes: No. 1, price \$135; No. 2, price \$225. No. 2 is more than double the capacity of No. 1.

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Wire Drawers, Galvanizers

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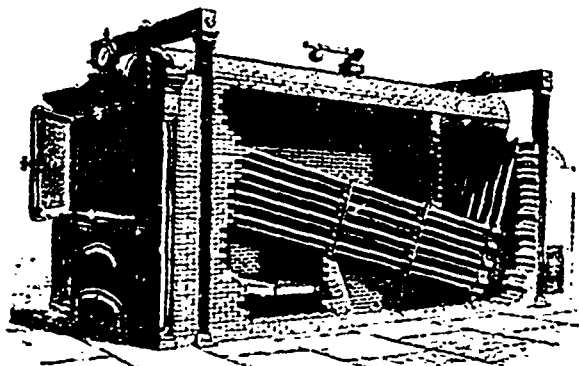
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Crescent Coat and Hat Hooks, Steel and  
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Skirtings, Oxfords, Shirtings, Cotton-  
ades, Awnings, Tickings, Etc.

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MONTREAL AND TORONTO

BORING has commenced at Winnipeg for natural gas. Toronto and Montreal capitalists are behind the enterprise.

BUILDING permits have been issued to the Toronto Incandescent Light Company to erect a large brick chimney at its works on Ter-aulay street; cost, \$5,000.

WALKER & CARSON propose erecting a flour and oatmeal mill at Carman, Man., with a capacity of 200 barrels of flour and 75 of oatmeal. They ask a bonus of \$7,000, and a municipal bylaw will probably be submitted upon the bonus question.

HIRAM WALKER & Co. have undertaken the work of piping natural gas to Walkerville from the South Essex fields. The cost will be about \$100,000. This may lead to some new industries being established in Walkerville.

THE Galt Gas Light Company will make additions to their works this year to the extent of about \$6,000.

THE Whitman & Barnes Manufacturing Company are now placing a line of hammers on the market in addition to their other numerous lines. They have also purchased the good will and business of the Capital Manufacturing Company of Chicago, so far as pertains to the wrench business. This covers the steel twisted handle wrench known as the Acme wrench, together with all their patents on combination wrenches, pipe wrenches, etc. The Canadian branch of the Whitman & Barnes Manufacturing Company is at St. Catharines, Ont., where all orders should be sent.

MR. F. H. SLEEPER, of Coaticook, has just completed an invention of an alternate electric motor, which is self-starting. It will be patented in Canada and the United States, and probably in England and Germany.

THE Standard Drain Pipe Company, of St. John, P.Q., have issued a very handsome catalogue.

J. J. MOREHOUSE, the head of the smelting works syndicate, arrived in Hamilton from New York last week. When spoken to regarding the proposed works Mr. Morehouse said that he had ordered most of the machinery, and had placed the order for the blowing machines early, as much care was necessary in their construction. The building will be of sheet iron, and when once begun will go up quickly.

THE grist mill at Exeter of Messrs. Rollins & Williams is to be ready for operation immediately after harvest this year.

AN elevator with a capacity of 25,000 bushels is to be built at Rosebank, Man., on the N.P.R.

EXPORTERS to the West Indies will be glad to know that in future there will be no wharfage charges in Jamaica on through goods shipped from inland points via Halifax and Pickford & Black steamers.

A NEW nail factory is now in operation in Carleton, N.B. All kinds of wire nails will be manufactured, and it is expected that the industry will soon reach a paying basis.

A NEW railway scheme is projected in Quebec. The town council of Joliette have taken steps towards the granting of a \$25,000 bonus, to aid in the construction of a road between their town and the city of Quebec.

STRUET BROTHERS, carriage makers, Westmeath, Ont., have sold out to Robert Howard.

## ROBIN & SADLER

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SPECIALTIES:

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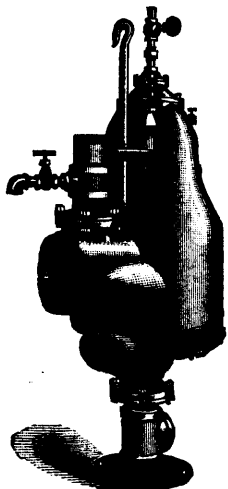
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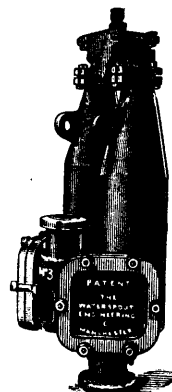
The most Durable, Handy, Economical Pump in the World

PRICES AND TESTIMONIALS FROM

*The Waterspout Engineering Co.*

**MANCHESTER, ENG.**

U.S. and Canadian PATENTS on sale



The moulding plant of Chown & Cunningham, Kingston, Ont., has been purchased by the Gill-Smart Manufacturing Company, Brockville, Ont.

The Goderich Brewing Company have bought the brewery business of Blal - Brothers, Saltford, Ont.

W. E. CLEMENT'S cheese factory, St. Anne de la Perade, Que., was burnt out July 24th.

E. L. DREWRY, brewer, Winnipeg, Man., will erect a 30,000 bushel elevator on his property.

We are in receipt of a pamphlet from Messrs. Darling Brothers, Montreal, referring to the Morse valve reseating machine, of which they are the sole manufacturers in the Dominion. The pamphlet gives a long list of firms using these machines, together with letters which speak very highly of them. Steam users should write Messrs. Darling Brothers for a copy of their illustrated catalogue.

MESSRS. SPON & CHAMBERLAIN, 12 Cortlandt Street, New York, whose card will be found in another column, inform us that the second edition of "Millis' Metal Plate" is just published. Molesworth's pocket book of Engineering Formulae, 2nd edition, will be ready next week. This firm, who publish a large list of technical works of all kinds, have just published "A Manual of Lime and Cement, their Treatment and Use in Construction," by A. H. Heath; "Twenty Years Practical Experience with Natural Asphalt and Mineral Bitumen," by W. H. Delano; "The Progress of Marine Engineering," by T. Main; "Steamships and their Machinery from First to Last," by J. W. C. Haldane, and "Reed's Portland Cements," new edition. Messrs. Spon & Chamberlain will be pleased to send their extensive catalogue of technical works upon application.

The Peterborough Hardware Company have commenced operations on their new buildings.

The Tobique Valley Railway, from Perth on the St. John River to Plaster Rock on the Tobique, a distance of twenty-eight miles, will be opened for regular traffic by the end of this month.

The Wellington Manufacturing Company, of Fergus, Ont., are applying for incorporation with a capital of \$100,000, to manufacture machinery.

MESSRS. BLAKE BROTHERS are starting a brewery in Ottawa.

THE Granby Rubber Company have recommenced operations with a large staff.

Mr. JOHN SCOTT, Galt, Ont., has sold his file works plant to a firm in Arnprior, Ont. The machinery was moved away last week. Messrs. Parkin & Byrne will move to Arnprior to take charge of the works. Galt Reformer.

THE Wm. Hamilton Company, Peterborough, Ont., were awarded the contract for the machinery for the new waterworks in that city. The new pumps are to be similar to those used by the Ottawa pumping station.

THE Brockville Gas Light Company are applying for incorporation as the Brockville Light and Power Company, and intend operating an electric street railway and electric light plant in Brockville, Ont.

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Write for full particulars of our **NEW WOOLEN REED**

THE Briar Hill Water Company, Toronto, are making application for incorporation with a capital of \$400,000.

W. BEATTY's saw mill, Parry Sound, Ont., was burnt down July 24th. Loss about \$10,000, partially covered by insurance.

F. DEMERS' flour and saw mill was burnt out last month. Loss \$5,000, insurance \$2,000.

MESSRS. PENDER & Co., St. John, N.B., are about to build a large addition to their nail works.

MESSRS. HAYDEN & DUNBAR, Woodstock, N.B., had a fire July 17th. The moulding shop was completely destroyed. Most of the machinery in the machine shop was saved. There was no insurance.

MESSRS. SMITH & MCGARVIN's saw mill, Chatham, Ont., was burnt out July 19th. Loss, \$4,000.

MESSRS. CROSS & WICKLIN, Stewarton, Ont., are making some improvements and adding more machinery to their tannery.

THE Ontario Standard Oil Company have purchased the big refinery at Sarnia, Ont., which has been idle for some time, and will put it in working order.

HOMER, CHRISTIE & Co., have started a cigar factory at Belleville, Ont.

A JOINT stock company is being formed in Vancouver, B.C., for the extensive manufacture of woven wire mattresses. Mr. Donaldson has been appointed manager. Mr. J. A. Anderson and Mr. J. Webster are interested.

THE buildings for R. McDonnell's new rolling mill at Toronto are being pushed forward. They expect to have them completed by the end of August.

THE Consolidated Plate Glass Company have built a new warehouse and offices at 71 and 75 Wellington Street West, Toronto.

THE Milton Pulp Company, Milton, N.S., have been incorporated with a capital stock of \$30,000.

MESSRS. GODARD & ANDERSON, electrical supplies, Ottawa, have dissolved partnership, Mr. R. Anderson continuing the business.

MESSRS. ELLIOTT & CARSCADDEN's paper box factory, Toronto, was damaged by fire July 26th. Loss, \$3,000; insurance, \$2,500.

THE George H. Harper Milling & Seed Company, of Wentworth, are applying for incorporation with a capital stock of \$45,000.

THE Vokes Hardware Company, of Toronto, are applying for incorporation with a capital stock of \$40,000.

MCGOURTY & DONOHUE, cornice makers, St. John, N.B., have dissolved partnership. Mr. Peter McGourty continues the business.

THE Hamilton, Ont., City Council are talking of building another high reservoir and put in new engines, as the present pressure is too low for fire protection.

VICTORIA, B.C., is agitating for a new water supply. There is some talk of bringing it from Thetis lake, a distance of seventeen miles.

**A SAVING OF 40% IS MADE BY USING OIL FOR FUEL UNDER THE AERATED FUEL CO. SYSTEM**

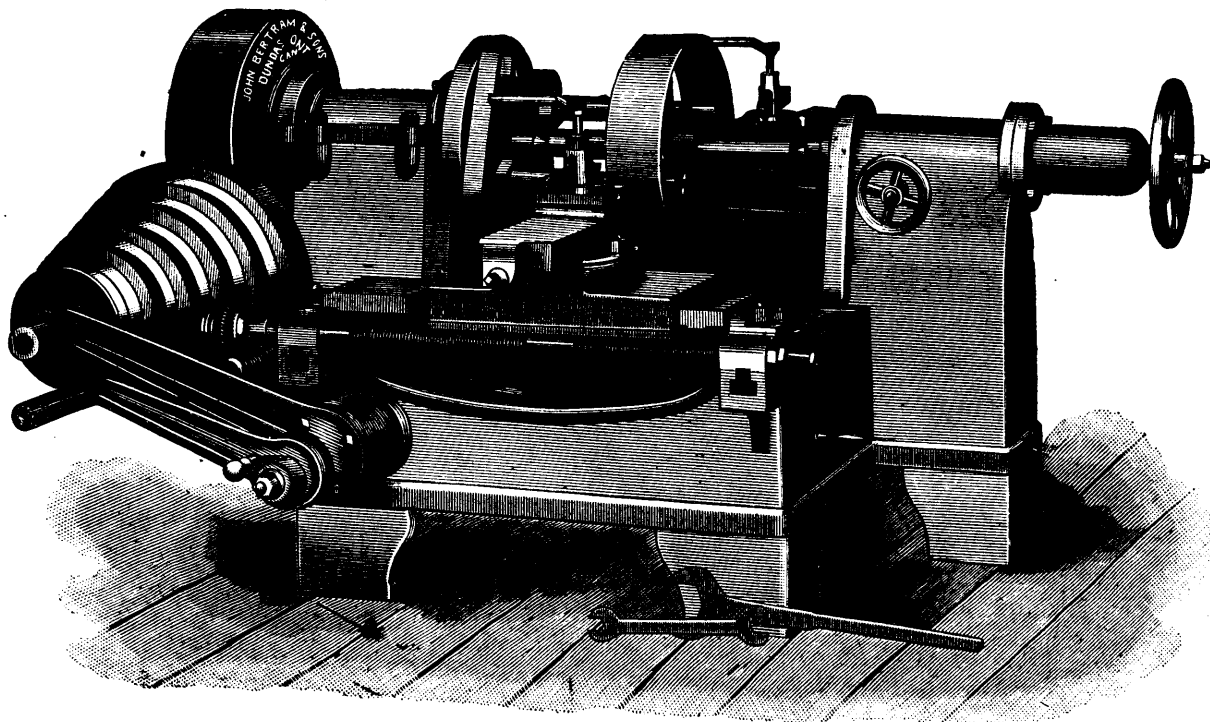
This system uses oil with a higher pressure of air, and is adopted in the United States and Canada for all kinds of iron and steel forging, tempering, welding, annealing, etc.; in glass works, for furnaces, glory holes, etc.; for generating steam; for burning lime, cement, sewer pipes, terra cotta, brick, etc.; for heating chemicals and asphalt; for japanning; for oxidizing lead; for drying sand, salt, etc.; for singeing cloth, etc. Its advantages over coal and wood are: A perfectly even fire, at all times under complete control, free from gas and dust, and ready for use in a minute after turning valve, and no increase in insurance rates.

Some of the companies now using this system in Canada are: The Massey-Harris Co., the Wilkinson Plough Co. (of Toronto), the D. F. Jones Mfg. Co., the Spring and Axle Co. and Geo. Gillies (of Gananoque), the Dominion Bridge Co. (of Lachine).

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# John Bertram & Sons, Dundas, Ont.



**50-inch. Pulley Turning Machine**

Visitors to the World's Columbian Exposition will find John Bertram & Sons in Machinery Hall With a first-class Display of their Latest Designed Machinists' Tools.

**The Canada Machinery and Supply Co.**  
OF BRANTFORD, ONT.

Are offering the following second hand Machinery at very low prices:

**BOILERS.**

- (ONE to brick in), 4 in. diameter x 12 ft. long, 11 3/4-in. tubes.
- (ONE portable fire box), 40 in. diameter x 12 feet long, 60 2-in. tubes.
- (ONE portable fire box), 36 in. diameter x 10 ft. long, 30 3-in. tubes.
- (THREE to brick in), 30 in. diameter x 7 ft. long, 31 2-in. tubes.
- (ONE 10' p. UPRIGHT BOILER.
- (ONE 11 p. UPRIGHT BOILER.
- (ONE 13 p. UPRIGHT BOILER.

**ENGINES.**

- (ONE with Cylinder 10 1/2 in. diameter x 15 in. stroke, Whitehaw make.
- (ONE 9 in. x 12 in., Waterous make.
- (ONE 9 in. x 12 in., Morrison make.
- (ONE 8 in. x 15 in., Waterous make, upright.
- (ONE 7 in. x 10 in., Leonard make.
- (ONE 12 h. p. PORTABLE ENGINE AND BOILER, on wheels.
- (ONE 3 1/2 in. x 9 in., Beckett make.
- (ONE 3 1/2 in. x 6 in., Leonard make.
- (ONE 3 in. x 6 in., Leonard make.
- (ONE 4 in. x 5 in., Levy make.
- (ONE 2 1/2 in. x 3 in. UPRIGHT MARINE ENGINE.
- (ONE 3 h. p. ENGINE and 1 h. p. UPRIGHT PORTABLE ENGINE AND BOILER, Leonard's make.
- (ONE THOMPSON ENGINE INDICATOR, in walnut case.
- (ONE SILSBY STEAM FIRE ENGINE, good as new.

**MACHINERY.**

- (ONE 21 in., Goldie & McCulloch make, PLANER AND MATCHER, with Shiner heads.
- (ONE 26 in., McGregor-Gourlay make, HEAVY SURFACE PLANER.
- (ONE HEAVY ONE-SIDE MOULDER.
- TWO 21 in., Cant-Gourlay make, SURFACE PLANERS.
- (ONE 30 in. Cowan make, PONY PLANER.
- (ONE HEAVY SHAPER, Cowan make, nearly new.
- (ONE IRON TOP JIG SAW, Cowan make, nearly new.
- (ONE GENUINE "BAILEY" GAUGE LATHE, almost new.
- (ONE ALMOST NEW SPINNING LATHE, for spun metal work.
- (ONE POWER MORTISER, Rogers make.
- FOUR DOWELL MACHINES.
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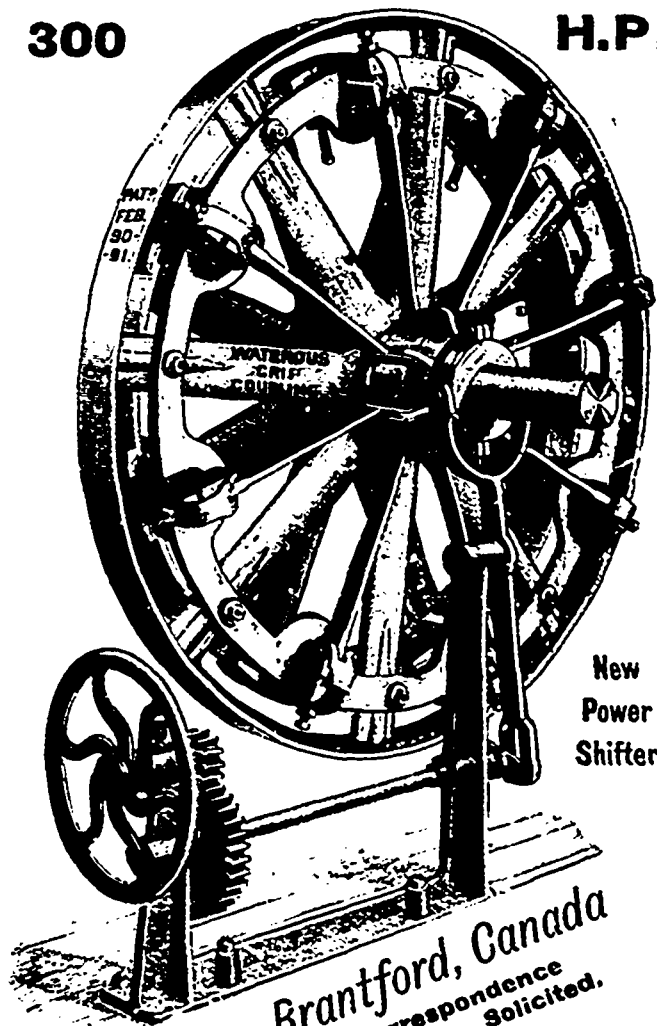
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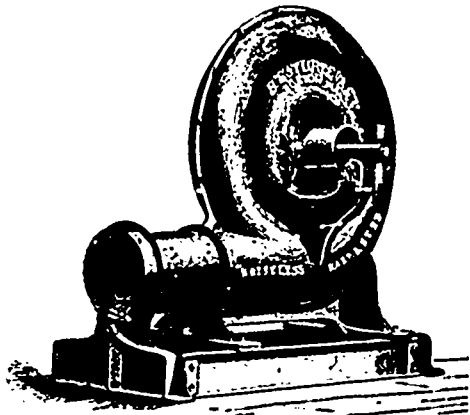
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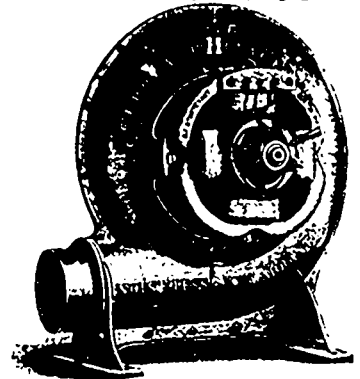
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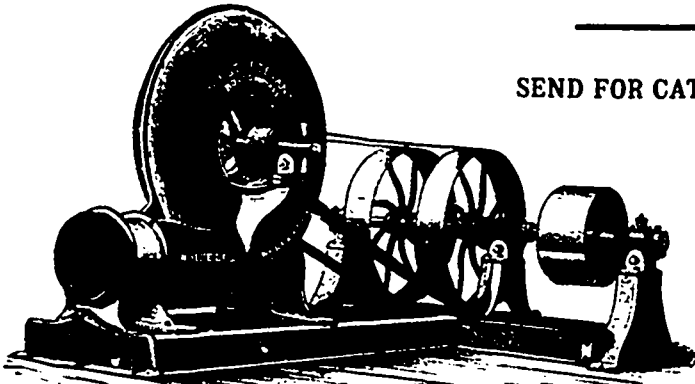
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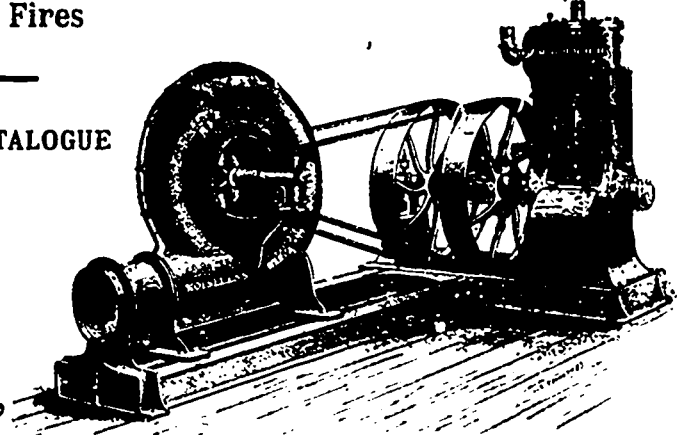


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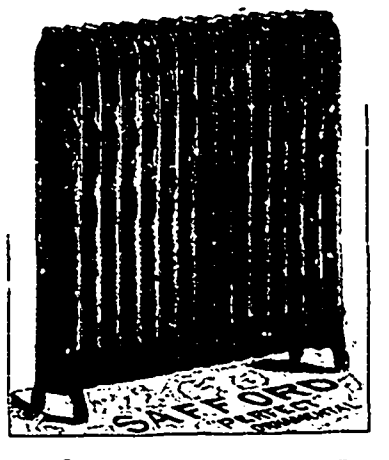


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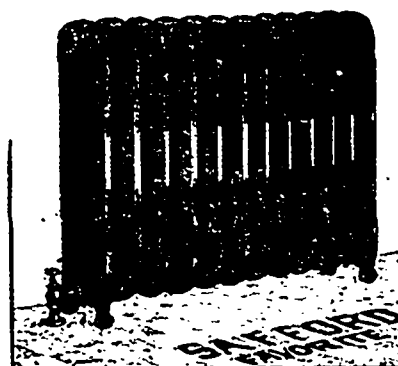
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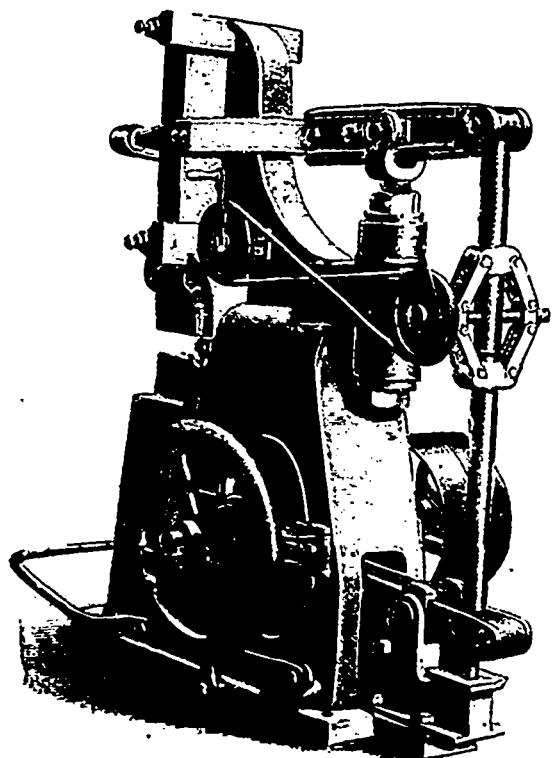
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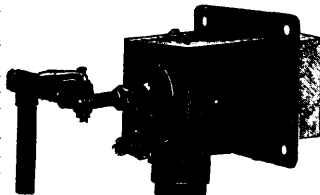
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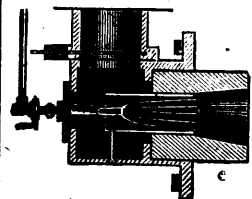
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	30 days	523.70	445.96	212.32	523.44	447.00	190.80	130.28	111.72	55.32
	60 days	519.12	549.20	350.34	531.84	448.20	349.56	257.88	214.00	134.24
	90 days	634.52	625.20	391.76	589.72	530.20	308.24	326.40	311.80	178.68
Average tensile strength of 25 to 50 lb bricks, each 1 in square, made in mould.	7 days	376.12	407.70	391.80	431.72	343.32	106.18	246.92	172.02	60.92
	30 days	491.22	512.30	375.30	532.40	423.88	271.08	131.02	164.16	60.72
	60 days	537.94	544.30	420.80	688.20	510.24	477.58	314.70	253.92	153.06
	90 days	614.74	623.40	427.60	636.84	542.88	472.16	313.36	400.32	236.82
Average tensile strength of 25 to 50 lb bricks, each 1 in square, made in mould.	6 months	637.24	601.12	408.20	648.52	546.08	484.84	389.48	389.32	254.00
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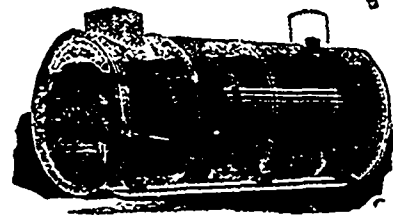
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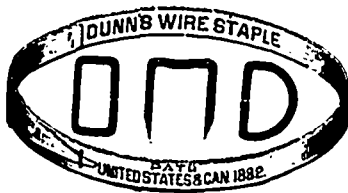
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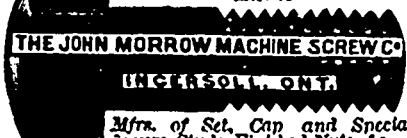
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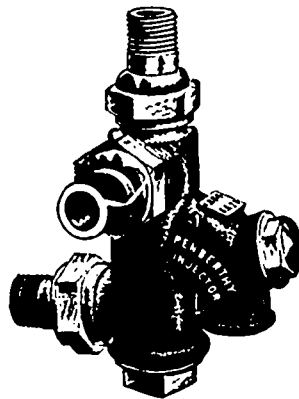
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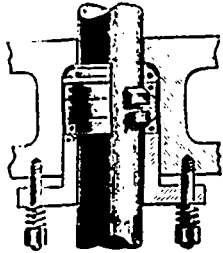
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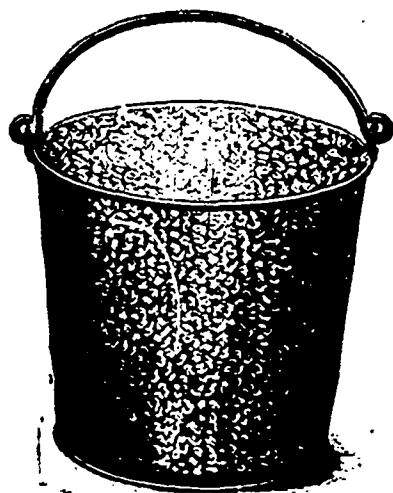
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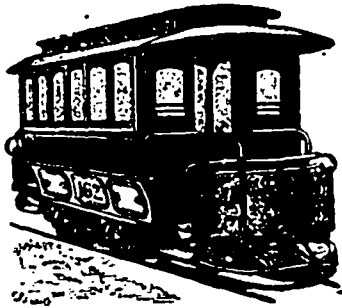
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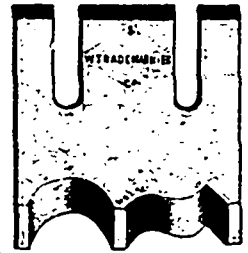
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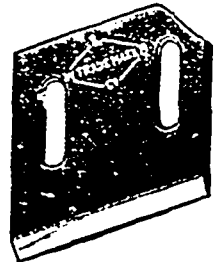
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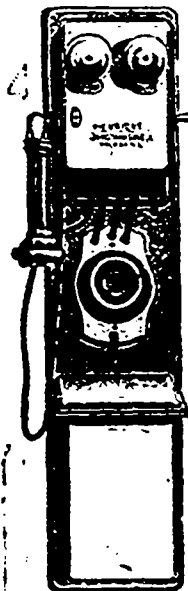
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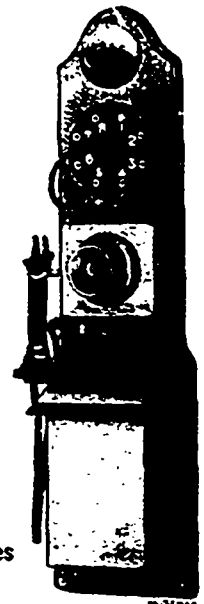
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**THE OBJECTS OF THIS ASSOCIATION ARE:**

To secure by all legitimate means the aid of both Public Opinion and Governmental Policy in favor of the development of home industry and the promotion of Canadian manufacturing enterprises.  
 To enable those in all branches of manufacturing enterprises to act in concert as a united body whenever action in behalf of any particular industry, or of the whole body, is necessary.  
 To maintain Canada for Canadians.  
 Any person directly interested in any Canadian manufacturing industry is eligible for membership.  
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ESTABLISHED 1885

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Besides achieving such result, we now also have, over all liabilities, including a re-insurance reserve (based on the Government standard of 50 per cent), a cash surplus of 1.50 per cent, to the amount of risk in force.

Such results emphasize more strongly than any words I could add the very gratifying position this Company has attained. I, therefore, with this concise statement of facts, have much pleasure in moving the adoption of the report.

The report was adopted and the retiring Directors unanimously re-elected. The Board of Directors are now constituted as follows:

James Goldie, Guelph, pres.; W. H. Howland, Toronto, vice-pres.; H. N. Baird, Toronto, Wm. Bell, Guelph; Hugh McCulloch, Galt; S. Neelon, St. Catharines; George Pattinson, Preston; W. H. Story, Acton; J. L. Spink, Toronto; A. Watts, Brantford; W. Wilson, Toronto.

**JAMES GOLDIE, Pres. W. H. HOWLAND, Vice-Pres. T. WALMSLEY, Treas. HUGH SCOTT, Man. Dir.**

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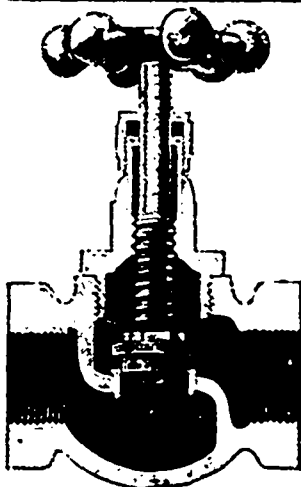
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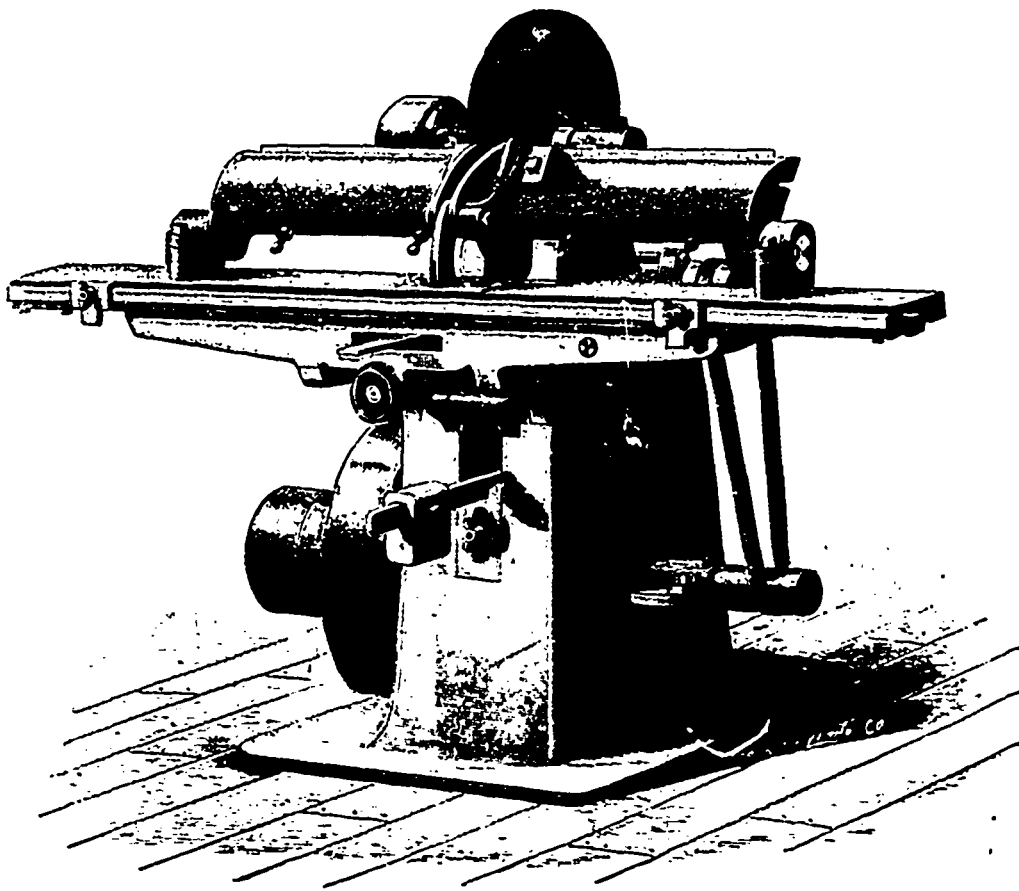
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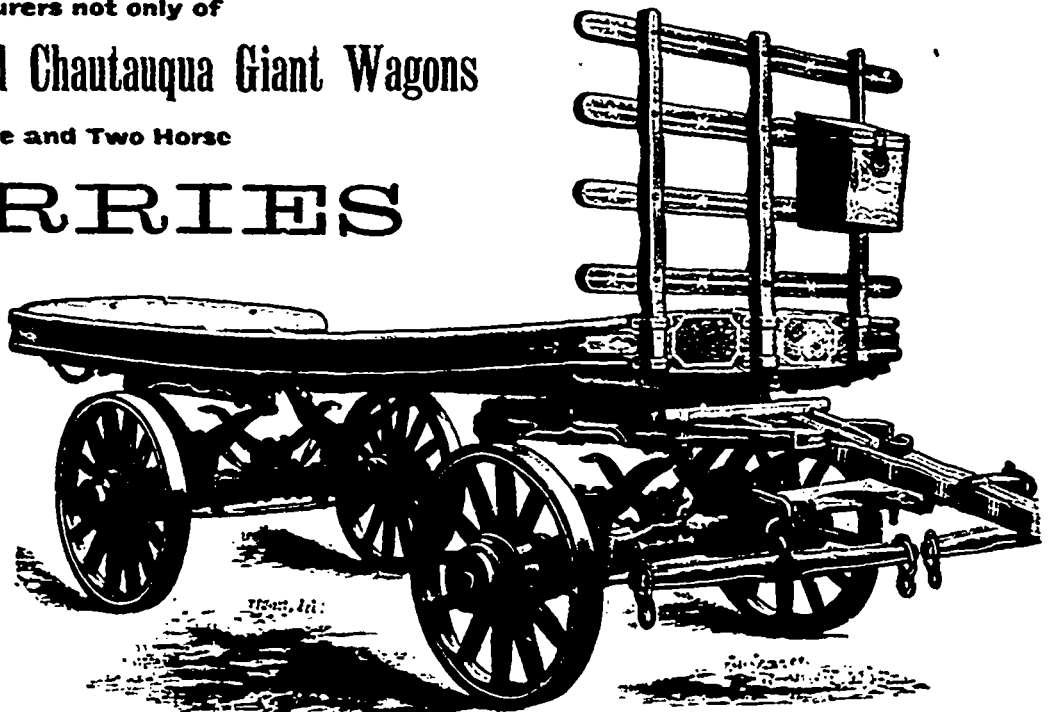
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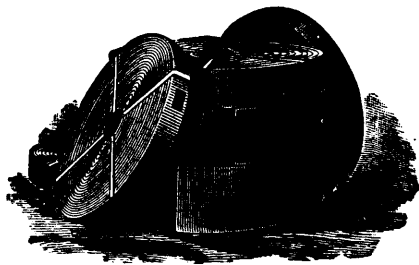
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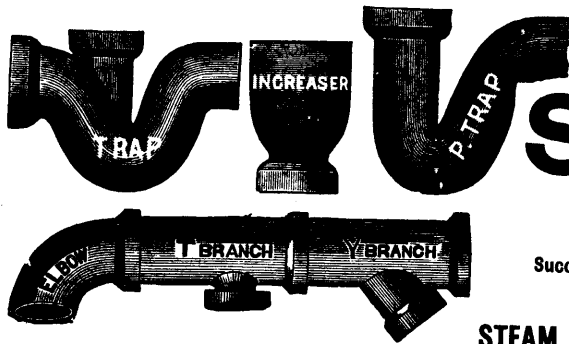
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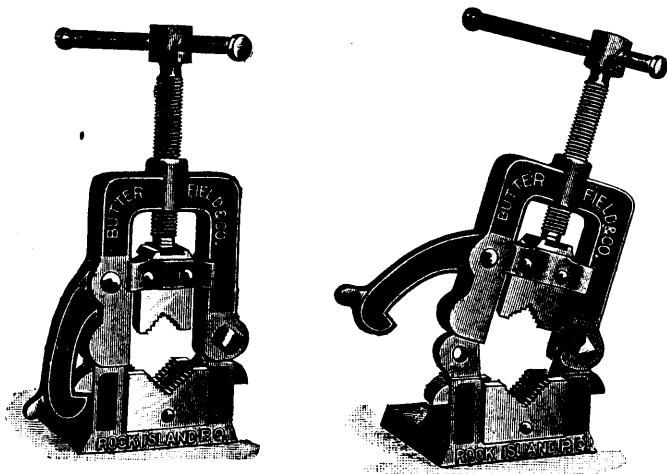
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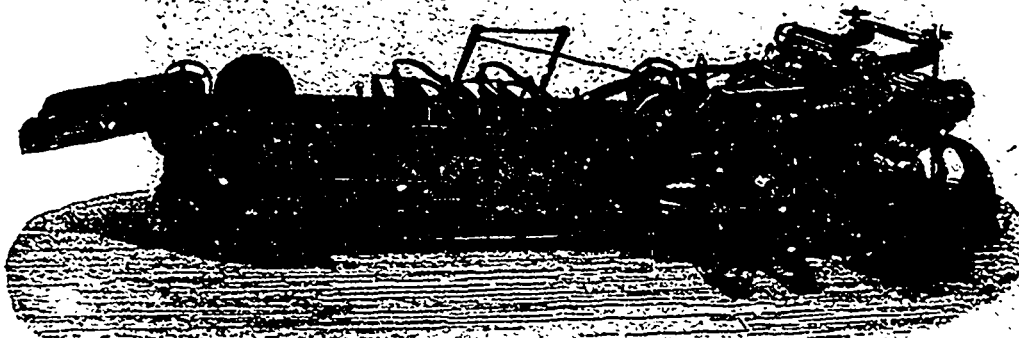
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