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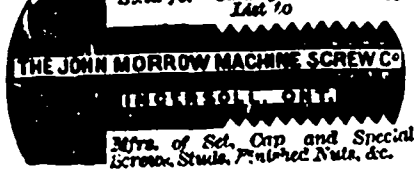
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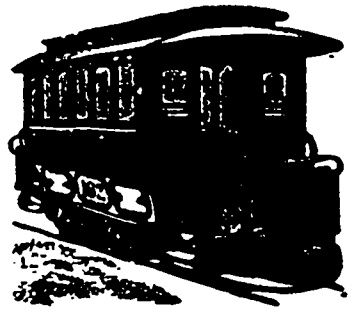
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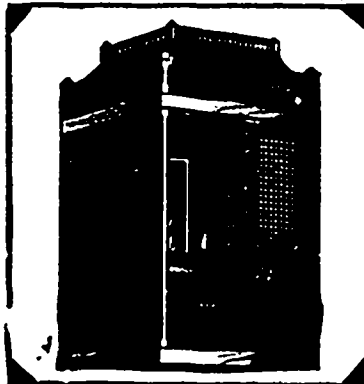
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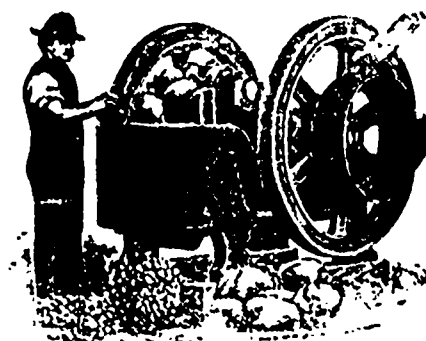
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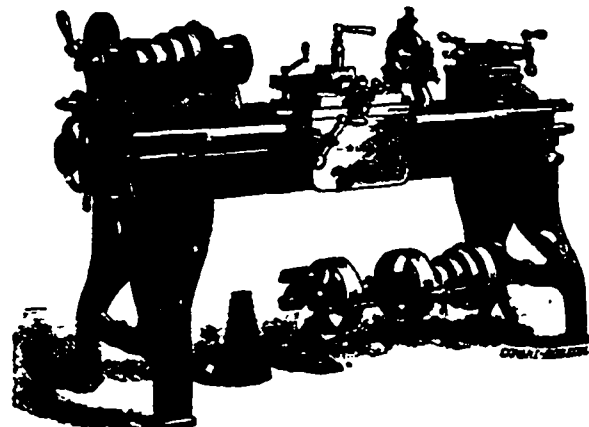
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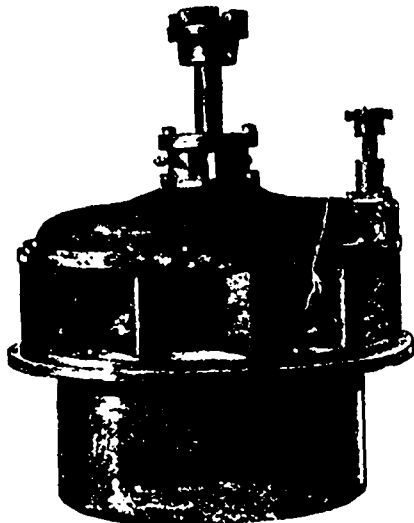
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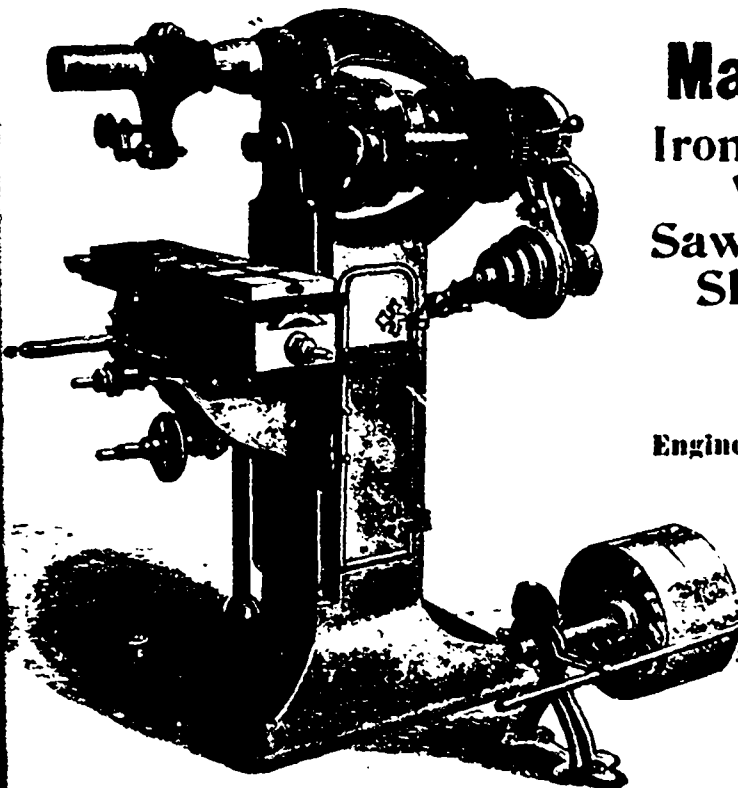
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Yours truly,
CENTRAL PRISON OF ONTARIO.
(Signed) JAS. MASSIE, Warden.

SHERBROOKE, Nov. 28, 1894.

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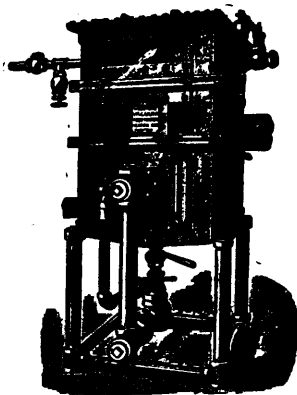
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Manufacturers and Capitalists Patent Acts of 1872,
and Amendments, Section 28,
NOTICE is hereby given to all persons de-
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manufacture of Aluminum and Alloys
thereof, for which certain letters patent of the
Dominion of Canada were granted on June
7th, 1889, to Chas. Martin Hall, assignor to the
Pittsburg Reduction Co., to wit., Nos. 31, 512,
31, 518, 31, 514, 31, 515, 31, 516, 31, 517; and also the
invention in aluminum alloys and manufac-
ture thereof, for which certain letters patent
of the Dominion of Canada were granted on
July 20th, 1892, to John W. Langley, assignor
to the Pittsburg Reduction Company, to wit,
No. 39,402, that the undersigned is prepared to
grant licenses upon reasonable terms under
each and all of same letters patent, and other-
wise place the patent inventions in possession
of the public in accordance with the provisions
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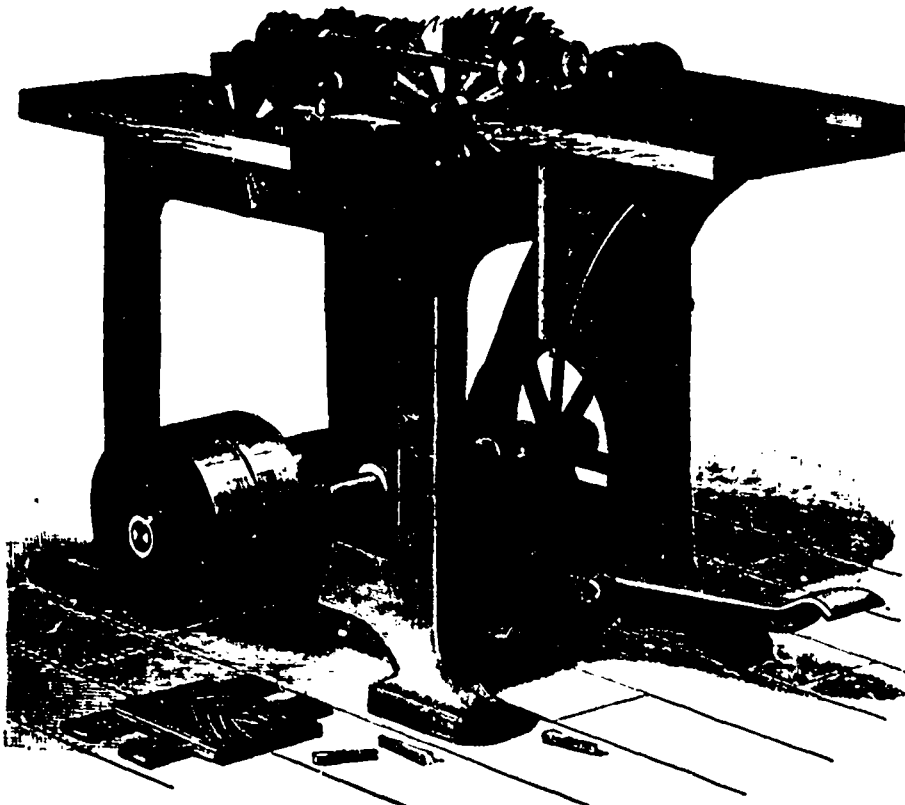
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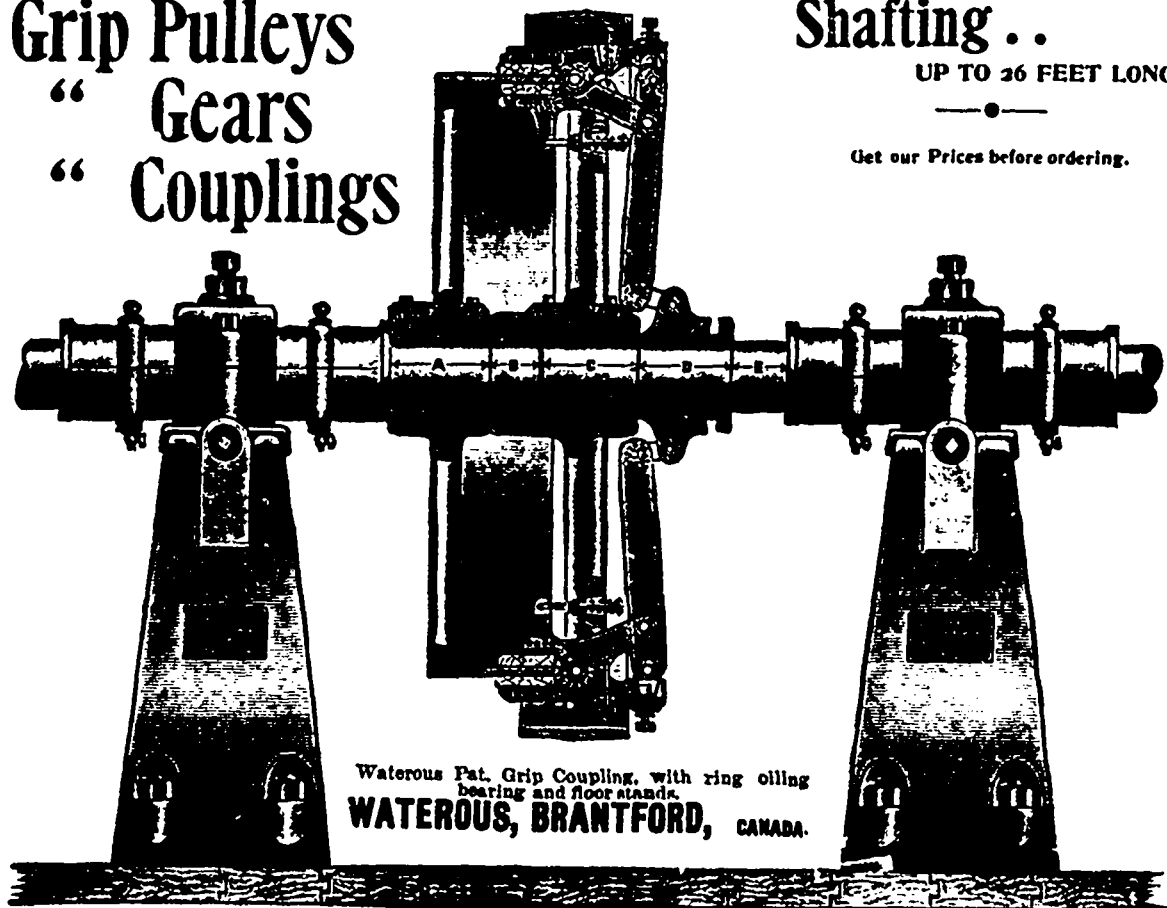
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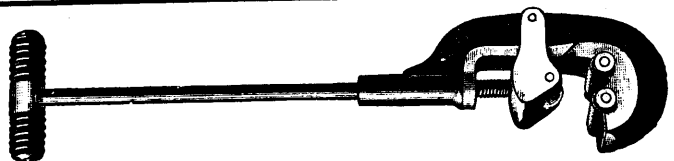
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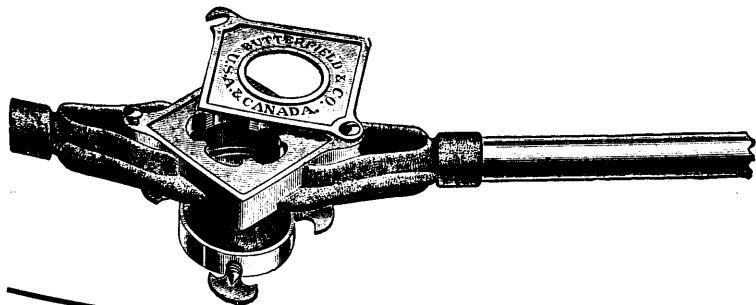


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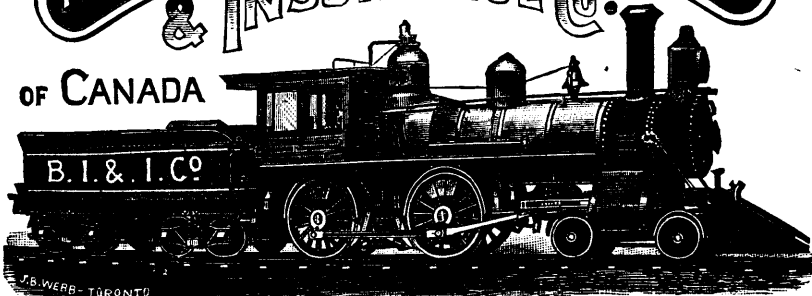
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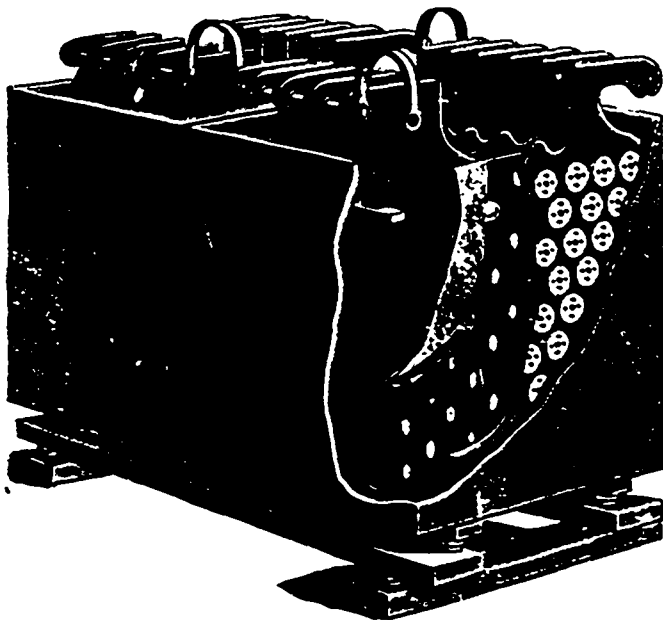
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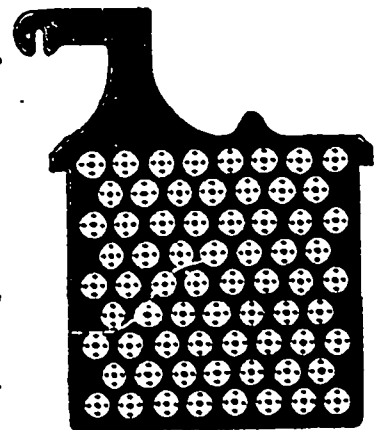
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SIR JOHN THOMPSON.

In the Canadian Gazette, published in London, Eng., is a leading article written by Sir Charles Tupper, in which he gives some reminiscences of Sir John Thompson, Premier of Canada, who was then lying dead in London. Following is the article:—

I knew the statesman whose sudden and untimely death we all deeply deplore, from the time when he was just entering upon manhood. He was then a clerk in a lawyer's office in Halifax and a reporter of the debates in the Legislative Assembly of Nova Scotia—of which I was a member

—and a most accurate and admirable reporter he was. I also knew his father well; he was a much respected citizen, and became Queen's printer and superintendent of the money order system. From the clerk's desk and reporter's gallery this young man went to the Bar, and we watched with sympathetic interest his rapid progress. He showed the greatest acumen, never missing a point, and soon rose by sheer ability, both as an advocate and a consulting lawyer, to the very first rank in his profession at Halifax. He was twenty-one years of age when he was called to the Bar, and by the time he was thirty-five he was a Queen's Counsel and Attorney-General, and afterwards Premier of his native Province. In these capacities he served Nova Scotia with distinction, and, in 1882, was appointed to the bench as Judge of the Supreme Court of Nova Scotia by the Dominion Government of which I was then a member.

In September, 1885, my son, Sir Charles Hibbert Tupper, who was then as now Member for Pictou in the Dominion House of Commons, suggested to Sir John Macdonald that could the Nova Scotian judge be induced to join the Ministry he would be found to be a jurist of a high order, an admirable speaker, and a great strength to the Ministry. I confirmed that suggestion. But the way was not at once clear. Sir John Thompson (Judge Thompson he was then called) listened to all that could be said of the service he might render Canada as a Member of the Ministry, but he would not leave the bench except with the concurrence of his closest friend and confidant, Bishop Cameron of Antigonish. Sir John Macdonald pointed out to me that there was no one who had more influence with Bishop Cameron than myself: would I go down to Antigonish and see the bishop? I went, and after pointing out to Bishop Cameron what a wide sphere of influence the step would open up for his friend, he concurred, and Judge Thompson became M.P. for Antigonish, and Minister of Justice and Attorney-General of Canada.

When Sir John Macdonald was explaining the Cabinet changes of 1885 to the Dominion House of Commons he simply said he would not praise the new Minister of Justice, the House would soon see for itself the wisdom of the choice. And the House did. The first speech of the Minister of Justice was a reply to Mr. Blake upon the Riel question, and no sooner had he resumed his seat than every man on both sides of the House recognized that as a lawyer and a debater he had no superior within those walls.

I have seen it said somewhere that there were some murmurings among the political supporters of his own party at the appointment. I knew of none. His selection as Minister of Justice was hailed with hearty approval by every one of the political friends of the Ministry, and that approval only increased as time served to bring into prominence his high integrity and marked ability. I was myself his colleague in the Dominion Cabinet in 1887-88, and I well recall what weight was attached to his judgment. While always extremely genial, he was diffident rather than otherwise, but when the time came to give his opinion he gave it in no hesitating spirit, and with a wealth of argument and good sense which gained for it the greatest possible consideration from Sir John Macdonald and every member of the Cabinet. His opponents, too, treated him with a respect which was most marked. Prominent among

those opponents was the Hon. Edward Blake, and the feeling of sorrow to which he gave expression before the Judicial Committee on Thursday will find a sympathetic echo among all the political opponents of Sir John Thompson's Government in Canada. There is, indeed, no party and no class in Canada that will not deplore his death as a terrible loss to the public life of Canada. Everyone who differed from him, either on religious or political questions, recognized his sterling character and unqualified integrity as well as his ability, and it is, I believe, no exaggeration to say that he leaves no enemy in the whole of the Dominion.

But it was not only as a colleague at Ottawa that I had the good fortune to be associated with Sir John Thompson. He was, as you may know, counsel on behalf of the United States Government before the Fishery Commission which sat at Halifax under the Washington Treaty; and when I was invited by the Governor-General and Sir John Macdonald to allow my name to be submitted to Her Majesty's Government as Plenipotentiary to Washington in connection with the Atlantic Fishery question in 1887, I only accepted on condition that Mr. Thompson should accompany me as legal adviser to the British side. I never regretted that condition, and the other British Plenipotentiaries—Mr. Chamberlain and Lord Sackville—soon learnt to appreciate his command of the question. We were all daily more impressed with him. Mr. Chamberlain sent me a telegram on the day of the death, expressing his deep regret and sympathy with Canada. "I was," he adds, "associated with Sir John during the negotiations at Washington, and learned to appreciate his worth and ability." Similarly, Lord Sackville, writing to me since the sad event, says:—"I sincerely condole with you and the Dominion of Canada on the death of Sir John Thompson. His great merits can only be appreciated by those who knew him, and his loss at this moment is a national calamity. The spirit which dictated his policy towards the Mother Land has been fully recognized, and will, let us hope, continue to animate both Governments." And then, if you seek to know what was thought of him in the United States, there is this singularly happy expression of sympathy from Mr. Bayard, the United States Ambassador in this country. "His worth, ability, and patriotism," says Mr. Bayard, "were well known to me, and I lament his loss, not alone for Canada, but for the community of good government everywhere. I am glad to see that honor is being paid by Her Majesty's Government by conveying his remains in a national ship to the shores of the country he loved so well and served so faithfully, and had there been any way of testifying my personal respect for his memory, I would promptly have availed myself of it. Will you do me the kindness, when it can be done without intrusion, to make expression of my sincere condolence and sympathy to the bereaved widow and family of the deceased statesman."

How fully this appreciation of Sir John Thompson's character came to be shared by the public men of this country may be judged by the fact that, though Premier of one of the countries most deeply concerned in the Behring Sea dispute, Her Majesty's Ministers placed such confidence in his judicial fairness and broad statesmanship that he was

appointed one of the British arbitrators upon the international tribunal, and Lord Hannen, Lord Russell of Killowen, Sir Richard Webster, as well as Her Majesty's Ministers, have put on record their appreciation of his clear grasp of all the points of that very difficult question, and his unswerving determination to find a just settlement to an unhappy international quarrel. One of the first callers upon him during his last visit to England was Sir Richard Webster. He was to dine with that distinguished advocate on Saturday, and with Lord Russell on Monday, and we were to spend Sunday and Monday with Lord Mount Stephen at Brocket Hall.

Of Sir John Thompson's loyalty to Canadian interests, one of his late State papers, the memorandum on the Copyright question, speaks with a power all its own, and of his close attachment to British institutions you can have no better evidence than the last word which fell from his lips in public at the Royal Colonial Institute meeting on Tuesday. It was an earnest plea for Imperial recognition and co-operation in a movement of the highest importance to British interests. His words have a sad, almost prophetic, interest now. "I have not," he said in his closing sentence, "the opportunity or the strength to deal fully this evening with these possibilities (arising out of the Ottawa Conference), but I venture to hope that the influence of this meeting and the influence of all who sympathise with our projects will be liberally extended to us, and that the feeling may be increased here, as it exists in the most distant portions of the Empire, that the day has come not only when the Colonies should be united more closely together, but when they should be more practically useful in connection with the heart of the Empire itself." And the same spirit breathed through his speech at the Ottawa Conference. The closing passage may well be remembered. It ran thus:—

We cannot but recall, on this occasion, that conferences have taken place in the Colonies at which they deliberated, after years of great development and progress, whether the relations which bound them within the Empire were not too restrictive for their future progress, and whether the time had not come when a separation should take place from the Mother Land. On this happy occasion, these delegates assemble after long years of self-government in their countries, of greater progress and development than the Colonies of any Empire has ever seen in the past, not to consider the prospects of separation from the Mother Country, but to plight our faith anew to each other as brethren and to plight anew with the Mother Land that faith that has never yet been broken or tarnished.

ONTARIO AT THE IMPERIAL INSTITUTE.

Frequent mention has been made in these pages, and a description given of the Imperial Institute in London. This Institute was intended to disseminate knowledge regarding the whole British Empire, each Colony and portion of the Empire being assigned suitable space in which to make exhibits illustrating its leading industries. We have also heretofore alluded to the fact that the Government of Ontario had appointed a curator, and caused a fine exhibit of products to be prepared and sent to the Institute. This Ontario Section was formally opened to the

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public last month, and this is what the Canadian Gazette of December 20 says of it:—

The tragic death of Sir John Thompson occurred on the day preceding that set apart for the opening of the newly-completed Ontario Section at the Imperial Institute, and thus what was intended to be a social festivity among Canadians in London was turned into an occasion of mourning. As soon as the death of the Canadian Prime Minister became known in London, Mr. Harrison Watson, the Canadian Curator at the Imperial Institute, consulted Sir Henry Tyler and Mr. John Paton, the Ontario Governors at South Kensington, as to the advisability of postponing the opening ceremony. That course was practically impossible at so short a notice, and so it was decided that the new section should be formally opened and the opportunity be taken to express the grief which all Canadians share. Everything in the nature of festivity was, of course, abandoned. There was no reception of guests, no congratulations on the opening of the new court—in fact, everyone felt that their chief object in meeting together was to express sorrow at the sudden death of Canada's First Minister.

About one hundred Canadians and friends of Canada accepted the invitation of the Ontario Governors, Sir Henry Tyler and Mr. John Paton, and many of them wore mourning out of respect for Sir John Thompson, who, it may be mentioned, had himself hoped to be present at the ceremony. Sir Charles Tupper also intended to address the gathering, but was detained at Windsor. Among the guests were Sir Saul Samuel, Agent-General for New South Wales; Sir Westby Percival, Agent-General for New Zealand; Sir Malcolm Fraser, Agent-General for West Australia; the Hon. Thomas Playford, Agent-General for South Australia, and representative of that Colony at the Ottawa Conference; Mr. Peter Byrne, Ontario's representative in England; Mr. Bickmore, Secretary to the Agent-General for British Columbia; Mr. Quinn and Mr. Flockton of the Grand Trunk Railway Company; Mr. Le Sage, Colonel Horsford, Mr. Percy Dodson, General Balfour, and others. A considerable number of ladies was also present.

At four o'clock Sir Henry Tyler took his stand by the solid-looking exhibit of Ontario marbles in the centre of the court, and at once spoke of the event uppermost in the minds of all. He said:—

We little thought, when we asked you to be present at the inauguration of the new Ontario section, that before the day appointed for the ceremony we should suffer from so great a blow as the death of Sir John Thompson. All friends of Canada must deeply regret the sad disaster. Sir John Thompson, as is very well known to you, had gone through a magnificent career in Canada. Succeeding Sir John Abbott as Premier, great hopes were entertained for his future; but, unfortunately, he has been cut off, and his family and all Canada—and, I may say, the whole British Empire—are left to mourn his loss. It is very characteristic of Sir John Thompson—and it is a touch of nature that goes to the hearts of all of us—that in his mortal illness he should think not of himself but only of the trouble and inconvenience he feared he was causing to those about him. In consequence of this blow that has fallen upon us, we thought it better to confine our operations to-day more especially to moving a resolution sincerely sympathising with the Canadian people in the loss they have sustained.

Sir Henry went on to point out the advantages of Ontario, and to speak of its abundant natural products which the Grand Trunk Railway distributed in every direction. He also referred to the sudden death of Lord Swansea, who was so much interested in mining in Sudbury and other parts of Canada, and after formally declaring the court open, moved the following resolution, to which a unanimous assent was given:—

That this meeting of Canadians and friends of Canada has heard with deep regret of the sudden death of the Rt. Hon. Sir John Thompson, K.C.M.G., the Premier of Canada, and begs to express its heartfelt sympathy with the Canadian Government and people at the irreparable loss which has thus been sustained by the British Empire as well as by the Dominion of Canada.

Mr. John Paton seconded the resolution, and announced that Sir Charles Tupper, who was to have spoken, had telegraphed from Windsor Castle stating that he had been detained there in connection with the sad death of the Premier. Mr. Paton added:—

The sudden calamity which has just befallen the Dominion of Canada and the whole Empire in the lamentable death of Sir John Thompson calls forth the heartfelt sympathy and profound sorrow of all. Summoned to the highest office in the Dominion at a time of exceptional difficulty, the late Prime Minister showed the highest statesmanship, and gained the respect and esteem of all creeds and classes of men. His invaluable services to Great Britain as a member of the Behring Sea Arbitration tribunal will perpetuate the memory of his great ability and judicial firmness.

The exhibits, which, as a result of the labors of Mr. Harrison Watson, the Canadian Curator, and Mr. Plumb, the Assistant Curator, were displayed to the best advantage in the new section, well repay careful examination. The new section is in the upper west central gallery of the Institute. At the turn in the flight of stairs which must be climbed to reach the court, there is set a bronze bust of Sir John Macdonald, by Mr. Bain Smith, which was presented to the Institute by the Imperial Federation League. The thought naturally uppermost in everyone's mind on passing that bust last Thursday was that within the short space of five years three Sir Johns, three Premiers of Canada, had passed away. At the top of the stairs is a small space reserved for British Columbia exhibits.

The first object to claim the notice of the visitor in the new Ontario section is the complete collection of cereals in bottles. These are well arranged on a conical platform some ten feet in height. No fewer than 500 varieties of wheat, oats, barley, peas, and other cereals have been brought together from all parts of Ontario, and four large views, taken at that most valuable institution, the Guelph Experimental Farm, are set in the midst of the cereals, and give a pleasing relief to row upon row of bottles.

Passing around the grain exhibit, we find two finished and highly-polished examples of Canadian canoes, made by Messrs. Strickland & Co., of Lakefield, Ontario. One of the canoes made by this firm was presented to the Duchess of York at her marriage, and such is the popularity of these Canadian canoes that seventy were placed on the Thames alone last season, and the Lakefield firm disposed altogether of 200 to English buyers. Messrs. Cording & Co., of Piccadilly, also exhibit two of the canoes

made by the Ontario Canoe Company, and samples of the wood from which they are made are also on view. Standing on a pedestal are large specimens of Ontario marble, limestone, and granite, and above these are other examples of black and mottled marbles. Above these, again, are nearly fifty smaller specimens of dolomite, limestone, and granite, while, surmounting the whole, is a shaped block of the splendid pink marble of Quebec, which rests on a block of Red Syenite from the same Province. Next to the marbles is a long glass case containing mica from Lanark and other districts, terra-cotta from the Toronto Pressed Brick and Terra Cotta Company, with other products, manufactured and unmanufactured.

Towering above this case, to a height of quite 12 feet, is the feature of the section—a magnificent collection of fruits, which both Sir Henry Tyler and Mr. Paton declared to be the finest in the country. All the fruits are in bottles, but the diverse colours prevent the tameness so usual in bottled exhibits. Sir Henry Tyler called particular attention to this fruit trophy, which was one of the attractions in the Ontario section at the Chicago World's Fair. Everyone knows that Ontario produces splendid apples, but everyone does not know that in the Niagara peninsula grapes and peaches are cultivated successfully, while apricots, nectarines, almonds, and figs grow out-of-doors. The 600 specimens of fruit are indeed a remarkable proof of the fruit-growing powers of Ontario, and of the splendid sunshine of the Canadian climate.

Ranged round the walls of the section are numberless specimens of Ontario minerals. Gold, silver, lead, iron, copper, nickel, and zinc are to be seen; while interspersed between the cases containing these examples of the mineral wealth of the Province are small bottles of seeds and fruits. Also against the wall stands a collection of prepared woods, having at its head the arms of the Province—a red cross on white ground, with the maple-leaf below. On the walls themselves are numerous large photographs, presented by the Grand Trunk Railway Company, depicting lovely scenes in the woods, on the lakes, and busy scenes in the shipping centres and in the towns. Not the least noticeable among the photographs are representations of most of the trees of the Province.

THE CANADIAN BEET SUGAR INDUSTRY.

This journal has had frequent occasion to allude to the sugar beet factory at Berthierville, Que., under the management of Messrs. Michel Lefebvre & Co. Our contention always being that the sugar beet could be grown to as good advantage in Canada as any where else in the world, and that it was the duty of the Dominion Government to encourage the home production of beet sugar in manner somewhat as it was encouraged in the United States under the McKinley tariff. This question is constantly forcing itself before the public, and therefore we have pleasure in reproducing a letter on the subject written by Mr. R. H. Lauder, who has given it much study and investigation. Mr. Lauder's letter is as follows:

It is pretty generally known that some 10 or 12 years ago, three large, well equipped beet-sugar factories were erected at Faraham, Conticook and Berthierville, in the Province of Quebec. The history of the operation of

these factories was until recently a continuous record of failures and discouragement. The causes of this result were, injudicious location of the works, insufficient capital, unskillful management, and, above all, an insufficient supply and poor quality of the beets furnished.

The only factory now in operation is the one at Berthierville. Undeterred by previous disasters, and confident that many of the causes which produced them could be avoided or overcome, Messrs. Michel Lefebvre & Co., of Montreal, about three years ago, became proprietors of the Berthierville factory, and made considerable additions and improvements to the buildings and machinery. By invitation of the proprietors, I recently visited the works, with a view of informing myself as to the methods of operation and particularly as to the views of the farmers in that section with respect to the value of the advantages conferred by such factories on the agricultural interests of the surrounding country.

Berthierville is a village 55 miles east of Montreal on the north shore of a branch of the St. Lawrence river, and is connected with the C. P. R. by a spur of about two miles to Berthier Junction. The grounds of the factory consist of 17 acres of land, lying about one-quarter of a mile north of the river, which necessitates the pumping of about 700,000 gallons of water per day from the river to the factory. This distance from the river was necessary, because for a few days at the breaking up of every winter, ice jams cause an overflow of the river which rendered it compulsory that the factory should be erected at a sufficient distance to escape the overflow. The buildings of the factory proper are almost entirely of substantial, thick, stone walls, and have a total frontage of about 540 feet; they are considerably larger than is necessary for a sugar factory of the present capacity for manufacturing 200 German, or 220 Canadian tons of sugar beets daily. In connection with the main building there are several outbuildings, the principal one of which is the lime kiln, being a large, brick tower about 40 feet high. The buildings, exclusive of machinery, are said to have cost \$196,000, and, with the machinery, the total cost of the factory was \$396,000. There must have been some serious mismanagement, or worse, in making the cost amount to any such sum. In conversation with Mr. Alfred Musy, the superintendent of the works, I found from a tender which the company has received from one of the best sugar works manufacturing firms in France that a beet sugar factory with a daily capacity for manufacturing 500 gross tons of beets, and equipped with the very best modern machinery, can now be erected for less than the cost of this 200-ton factory. Without a visit to the factory one could scarcely believe that such massive machinery and so many different kinds of apparatus are required in the manufacture of beet-sugar. For the motive power, three large boilers of 150 horse power each and one boiler of 30 horse power are employed. The consumption of coal per day of 24 hours is fully 40 tons, and of lime from 12 to 15 tons. Further details as to the machinery, or description of the process of manufacturing would occupy too much space. The main object of this letter is to describe the methods of dealing between the factory and the farmer.

When Messrs. Lefebvre undertook to revive the business, they felt that the all-important point was to secure a sufficient supply of beets and the best quality possible under the then circumstances. In order to accomplish this, special inducements were offered to farmers. The very best seed procurable in France was imported, and sold to farmers at a little under cost. The Messrs. Lefebvre agreed to accept all sugar beets grown from their seed at \$5 per ton, which is a much higher price than will be necessary to be paid when the cultivation of this crop is thoroughly understood. They also agreed to pay this price irrespective of quality. Even with these inducements the quality of beets delivered at the factory from the crop of 1893 was insufficient to keep the factory in operation for one-half of the working season, and a large proportion of the beets was of very inferior quality. As might be expected under such circumstances, the operations of the campaign of 1893-94 resulted in very considerable loss. One favorable result of the season's business was a largely increased inclination on the part of the farmers to undertake the cultivation of sugar beets on a much more extensive scale. Together with this, there was good evidence obtained from the very fine quality of some of the beets furnished that a great improvement in the general quality of the roots might be confidently expected in the near future.

In the spring of 1894 the same arrangements were made with farmers as to seed and price to be paid for beets. Under a liberal arrangement made with the railway company, beets are transported from outlying stations within a distance of 55 miles of the factory at a uniform rate of 50 cents per ton. Quite a large proportion of the beets is received by barges from different points on the river. As a result of the liberal inducements offered to farmers, the Messrs. Lefebvre have been able to obtain an ample supply of roots for the whole of this season's work at the factory. There has been some improvement in the quality of the beets, but much remains to be yet accomplished in this respect. When it is considered that the Messrs. Oxnard, who had about eight years' experience with their two factories in Nebraska, have not yet been able to secure a sufficient supply for their factories, the Messrs. Lefebvre may be congratulated in having demonstrated through two years' operations that in Canada this preeminently important question of the sufficient supply of beets has been definitely settled. They feel sanguine that even under the present unprecedentedly low price of sugar this season's operations will result in a small profit.

I had an opportunity of obtaining some information with respect to the feelings of the farmers regarding this industry. No future trouble need now be apprehended with respect to the sufficiency of a supply of beets. Farmers feel that a sugar beet crop not only gives them an immensely greater return per acre than any other, but that the cultivation required greatly improves the land for future crops of every kind. The fattening of cattle, and the factory manufacturing of cheese and butter, within quite a long distance of Bertherville, have been greatly stimulated by the supply of the pulp from the factory, for which there is an active demand for all that can be supplied. In a few cases as much as 20 tons of beets per acre were

obtained. Hon. Mr. Beaubien, Minister of Agriculture, obtained 22 tons from an experiment on one acre. One farmer who works 150 acres cultivated 20 acres of beets last year, from which he derived a profit of about \$60 per acre, much more than he realized out of the whole of the other 130 acres. Another farmer, who raised nine acres, obtained 13 tons per acre, for which he received \$585. This farmer worked his farm with the aid of his son, and with one hired man for three weeks, from which it may be seen that the cost and labor in cultivating sugar beets is not such a heavy matter as is generally supposed.

If the present or a sufficient bonus shall be granted by Parliament, on home-grown sugar, the Messrs. Lefebvre have their arrangements completed for erecting a new factory of at least 400 tons daily capacity, and they believe that foreign capital can be obtained towards erecting two or three factories in Ontario.

In Europe the beet-sugar industry has been liberally fostered and aided in two ways. First, by a very high tariff on imports of foreign sugar. Second, by liberal bounties on the surplus sugar exported. The bounty system in Germany has been reduced from time to time, until now it amounts to a very insignificant sum, and it is said that the German sugar manufacturers would willingly see it abolished altogether, if France, Austria-Hungary and other European countries would adopt the same policy. This industry has never been established, nor can it be successfully established in any country, except under heavy import duties on foreign sugars, or liberal assistance from Government during its early years of operation. Many free traders object to the bounty system, by referring to the large amount which it has cost Germany. On the other hand, it may be safely contended that the success achieved has amply justified the expenditure incurred. The capital invested in the factories alone is fully \$80,000,000 and the value of the out-turn of the sugar for consumption in, and export from Germany during the last season and estimated for the present season is about \$80,000,000 each year. In view of the stimulus which this industry has imparted to every branch of the agricultural, manufacturing, commercial, transportation and financial interests of that empire, any large decrease in the operation or prosperity of the beet-sugar industry would prove a national calamity.

Canada has a soil and climate admirably adapted for the cultivation of sugar beet. It has a farming population as industrious and intelligent as any country in the world; it has as well educated and skillful mechanics as are to be found anywhere; it has an immense amount of idle capital looking for safe and profitable investments. There is every reason to believe that this industry will succeed as fully and as rapidly in Canada as it has done in any country, if afforded the like liberal Government encouragement and assistance which it has received elsewhere.

CANADA'S SPLENDID CANAL SYSTEM.

Remarkably strong testimony as to the superiority of the Canadian water route to the ocean was that published in the New York Times a few days ago. It was an interview on canal enlargement with Mr. Edward C. O'Brien, who was Commissioner of Navigation under President

Harrison, and who has recently been appointed Commissary General on the staff of Governor Morton, of New York. By the adoption of the constitutional amendment in the recent elections the New York Legislature is empowered to spend \$20,000,000 on canals in that state, and the interview with Mr. O'Brien, while intended to encourage the policy of canal enlargement, contains incidentally much valuable testimony concerning the wisdom and success of the Canadian Government's policy in enlarging the St. Lawrence canals to a 14-foot channel. After recounting Canada's achievements in canal construction, continental railway building, and bonuses to ocean lines—(exaggerating the amounts of money spent either unintentionally or to stir up New Yorkers) Mr. O'Brien goes on to say:

From Liverpool to New York is 3,040 miles. From Liverpool to Montreal is 2,796 miles. From New York to Duluth (via railway to Buffalo) is 1,437 miles, and via the Erie canal, 1,517 miles. From Montreal to Duluth, via the St. Lawrence, is 1,354 miles. From Liverpool to Duluth, via Montreal and the St. Lawrence, is 4,144 miles, which will shortly be unbroken deep water navigation. From Liverpool to Duluth, via New York, is 4,477 miles, or 4,557 miles, according as the route be via the New York Central railroad or the Erie canal to Buffalo. Montreal is 250 miles nearer Liverpool than New York is, and 83 or 163 miles nearer Duluth. From Liverpool to Duluth the route, via Montreal, is 333 or 413 miles shorter than the route via New York.

Let us translate these distances into dollars and cents and see what commercial advantages the Canadians will realize on the completion of the great eighty-three-and-a-half-million-dollar water route from the great lakes to the seaboard. Let us compare the relative costs of taking a ton of freight from Duluth to New York and from Duluth to Montreal.

On the lakes and the St. Lawrence we can, without serious error, assume freights to average 1 mill per ton per mile, and on the Erie canal 3 mills per ton per mile. Five hundred and twenty miles of barge transportation at 3 mills equals \$1.56, and 997 miles of steamship transportation at 1 mill equals \$1, making transportation to New York cost \$2.56, to which must be added 47 cents, port commission and transshipment costs at Buffalo, making the total freight from Duluth to New York equal to \$3.03 a ton.

Via the St. Lawrence to Montreal the items of cost will be: 1,355 miles at 1 mill, equal to \$1.35; 26 hours' detention in the locks, equal to 26 cents; tolls, 19 cents, making the total freight cost from Duluth to Montreal \$1.71 a ton. It will be seen that the natural and artificial advantages of Canada's location and her deep waterway to the sea will give Montreal an advantage over New York of \$1.32 a ton, or 35 1-3 mills a bushel on all freight received from the great lakes.

The Canadian statesmen realize fully that their commerce and commercial cities must, in the future, grow mainly on what substance they can draw out of the United States. Therefore, these great, costly, ambitious, and well-laid projects, the aims of which are, first, to provide a cheaper route outward for American exports and inward

for American imports than any United States route; second, the extension of Canadian trade and Canadian-British influence into all the States bordering the great lakes and commercially auxiliary to them; third, the building up of Montreal, and fourth, of British supremacy on this side of the Atlantic by making the great heart of the continent, and the richest and most prosperous States of our union commercially tributaries to and dependent on the Canadian gateway to the continent.

Thus they plan to divide our States in interest, the interior against the seaboard, and by thus weakening us to strengthen British interests; for all experience proves that where trade goes there interests and sympathies follow and centre.

Mr. O'Brien complains that the Americans have "done absolutely nothing," having "only" expended \$40,000,000 in general and local improvements on the great lakes, of which sum \$14,158,223 is to be the total cost of the 20-foot channels connecting lakes Erie, Huron, Superior and Michigan.

These improvements, he continues, are most important, both specifically and as parts of a grand general scheme to provide deep navigation from Duluth and Chicago to New York. They have proved most important to our internal commerce, and of the highest value to the people whose commodities are transported over them.

But, in default of provision made by our own Government, by which the vast commerce of these waters can cheaply reach the sea at an American port, that commerce will go to those foreign ports which it can reach cheaply; that is to say, the vast commerce originating in our interior states will go to Canadian seaports, and Canada, by her foresight, will reap the advantages of the expenditures made by our own Government.

Canadian commerce will be built up at the cost of American seaports, and our interior states will become separated in interest and in sympathies from our seaboard states. We look at our Erie canal, with its seven feet of water, and its 72 locks, and lose ourselves in admiring its greatness. It has played a great part in the history of the state and of the nation. But boats carrying 250 tons on seven feet of water, at a speed averaging three miles an hour, cannot compete with boats carrying 1,750 tons on 14 feet of water at a speed of 10 miles an hour.

The limit of capacity for transportation of our state canals is fixed by the amount of water which can be stored on the watershed from which it is supplied; and with the present system of locks the limit of tonnage which can be expeditiously and profitably handled is in the neighborhood of 4,500,000 tons per annum.

To deepen the canal and increase the draught and tonnage of the boats would not materially increase the capacity of the canal, for the available water, if used in the present type of lock, will lock only a given number of tons, no matter whether those tons be carried in big boats or in little boats.

It is the opinion of engineers who have made the subject a study that, to materially increase the tonnage and usefulness of the canal, the proper thing to do is to introduce some system of balance locks. Such locks have been in practical everyday use for eight or ten years at La Louv-

riere, in Belgium, at La Fontenettes in France, and more recently, on the Manchester canal, in England. They lock boats of tons with one-fortieth the amount of water necessary to use in the type of lock now used in this state.

It must be born in mind that Canada has not realized the advantages of her great expenditure, because her canal system is not complete. The strength of a chain is the strength of its weakest link; the capacity of a navigation system is measured at its point of least capacity. The weak link in the Canadian water route is the Beauharnois canal, with only nine feet of water.

But this weak link will soon be replaced by a strong one, namely, the Soulanges canal, with 14 feet of water over the lock sills, and 17 feet in the stretches. This canal will be finished within three years, and then the Canadian 14-foot system will be in full working order from Lake Superior to Montreal. There will be no weak links in the chain then, and we will feel it pinch.

Now are these energetic northern neighbors satisfied with what they have done and are doing. They are considering a canal and navigation from Montreal to Georgian Bay, via the Ottawa and Mattawa rivers, Lake Nipissing, and the French river. This is the shortest possible route from the seaboard into lakes Michigan and Superior, and it is entirely within Canadian territory, and removed from our interference.

Both commercial and military reasons are urged in its behalf as an interior and short line. It is only 1,057 miles from Montreal to Duluth, as against 1,554 miles by the St. Lawrence route, being 317 miles shorter. It is 400 miles and 480 miles shorter from Duluth to tidewater than the New York state routes, and it is 650 and 730 miles shorter from Duluth to Liverpool than the New York routes.

The Canadians are also considering the introduction of very high, quick-acting lifts in their canals. They have chartered a company which proposes to make the descent from Lake Erie to Lake Ontario with two lifts, each 160 feet, in lieu of the 25 locks now in use, and to descend the total difference in altitude between Lake Erie and Montreal harbor with only six lifts, in lieu of the 55 now in use.

Thus will be effected a saving in time between Lake Erie and Montreal of at least 20 hours, which, translated into cents, means a saving of 20 cents per ton, or over half a cent a bushel on Canadian commerce, and a handicap of that amount on our commerce.

It is also the avowed intention of the Canadian Government to make the St. Lawrence river and canals free, thus reducing the cost of freight to Montreal 10 cents per ton, or 2-3 mills per bushel. The struggle for supremacy in the carrying trade within this continent will begin in earnest when Canada opens the Soulanges canal.

We have lost the ocean carrying trade. We once carried a large trade for other nations and the bulk of our own exports and imports in our own vessels. But our shipping has dwindled both actually and relatively, compared to that of other nations, until we now depend almost entirely on foreign ships.

Since 1858 the proportion of our foreign trade carried in our own vessels has dwindled from 73 7-10 per cent. to

12 3-10 per cent., or five-sixths. Shall we wait supinely and lose our lake and coast shipping also?

The city and the state of New York have a greater interest at stake than any other city or state in the union. The United States customs district of New York collected during the fiscal year ending June 30, 1893, nearly 70 per cent. of the total duty collected on imported merchandise of the United States, and here also was shipped over 40 per cent. of our total exports for the same year.

New York has 28 1-10 per cent. of the total tonnage, 38 per cent. of the Atlantic and Gulf coast tonnage, 23 per cent. of the lake tonnage, 27 7-10 per cent. of the total steam tonnage, 46 5/8 per cent. of the steam tonnage on the Atlantic and Gulf coast, and 19 1-3 per cent. of the steam tonnage on the lakes. New York has 3 1-6 times as much tonnage as Michigan, more tonnage than floats on the great lakes, and almost as much as any other four states.

This ascendancy in shipping is due to the great advantages of the port of New York and the good and cheap rail and canal transportation between New York and the great lakes. It is threatened by the improvements now being completed by the Canadians, whose port of Montreal will, in 1897, have 30 feet of water, be fully protected from the ice shoves, can be equipped with the most modern facilities for handling freights, and will have deep water communication with Duluth and Chicago, and an advantage in freights over New York of \$1.32 a ton, or 3.53 cents a bushel.

When the Canadian canals are made free, Montreal's advantage will be \$1.42 a ton, or 3 8-10 cents a bushel, and when all the improvements now projected are completed, \$1.63 a ton, or 4 1-3 cents a bushel.

The cost of handling grain in New York harbor is 1 1/2 cents a bushel; freights and insurance to London are 3 1-4 cents a bushel; a total of 4 3-4 cents a bushel.

You see that in the near future it will cost less than half a cent, or no more, taking into account the shrinkage, to send a bushel of grain to London via Montreal than to send it to New York via Buffalo. In view of these facts, how can New York hope to keep her ascendancy in foreign trade and shipping? New York cannot keep her place without an effort.

In order to meet the requirements of American commerce, we must have the best possible internal connections and the cheapest possible freight rates between the great lakes and New York city, and to get such freight rates we must have adequate waterways between the Hudson and the great lakes.

Mr. O'Brien concluded by recounting the other great canal building and waterway enterprises now on foot and completed in various parts of the world, and declares that New York is apathetic in this matter. Without intending it, he has furnished one of the most convincing vindications that could be given of the Canadian Government's canal policy, and the effect the 14-foot channel is going to have on the freight rates to the European markets on our farmers' products.

INDIAN IMPORT DUTY.

When the Manchester, Eng., Textile Mercury learned that the Indian Government had determined to impose a

duty upon all cotton goods entering that country, it was taken suddenly ill with spasms. Hear it :

If this information be confirmed the results will immediately be of the most serious character to the East Lancashire weaving districts and the South Lancashire spinning districts which supply them with yarn. The opinion here amongst persons best qualified to judge is that it is the settled intention of the Indian Government to impose a duty, and that the Home Government will not announce the fact until Parliament opens, when it will be stated as having been done, and will come into operation next day. Mr. Fowler, the Secretary of State for India, is averse to receiving deputations on the matter, professing to be fully conversant with the views of Lancashire upon the subject. We fear, however, that he is far from being fully cognizant of the vital importance of resisting the step, or of the killing influence it will have upon the industries of this country—not the cotton trade merely, but the many dependent and distantly-related ones. There ought to be an immediate organization of Lancashire members pledged to resist this injustice and capable of immediately ejecting any Government that permits it. Professional politicians will think twice before consenting to it when they see a body of determined men pledged to resist it. The triumph of a party or the continuance in office of a Government is absolutely of microscopic importance compared with the welfare of the most important industry in the country, which it is proposed to treat with such gross injustice. We would not say "Perish India" rather than this should occur, but we would say, Perish its political connection with this country rather than "the services" composed of Englishmen should be allowed to stab the parent country in the back in such a manner. We trust that those whose duty it is to stir in these matters will at once see to it. They should not rest content with an emphatic mandate having been issued to the Indian officials forbidding it.

And yet there are those who tell us that the consumer pays the duty. We hope that civil war is not about to break out in England, and that the Lancashire district will not secede from the rest of the Kingdom. The question is, what will Britain do about it ?

CULTIVATING THE SUGAR BEET.

Prof. W.H. Wiley, of the United States Department of Agriculture, an authority on the subject, has the following to say regarding the cultivation of the sugar beet :

The culture of the sugar beet is intensive culture. It is a kind of agriculture which can be carried on with high-priced lands, where ordinary crops of cereals would not pay. It is already difficult in this country to grow wheat, maize or oats on land worth \$100 an acre. The fixed charges on such land are high, \$6 or \$7 an acre, and these fixed charges, together with the high taxes which are paid, eat up the profits of cereal culture. Such lands, however, could be profitably cultivated in sugar beets, where the yield per acre is higher and the returns are paid to the farmer for intense culture and high fertilization. An instance of this is seen in Chino, where lands have rapidly increased in value under the stimulus of beet culture, and farmers get high returns from the growth of the sugar beet.

The establishment of sugar beet culture becomes a true object lesson in agriculture. Every field, properly cultivated in beets, becomes an agricultural experiment station. The influence of beet culture is felt upon every other crop. The yield per acre of cereals, root crops and grasses is al-

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ways found higher in a community after the introduction of beet culture. It is a blessing not only to the person who engages in it, but also to his neighbors.

Slovenly agriculture is impossible with the sugar beet, and the curse of American agriculture is its slovenliness. If there is one thing our farmers need to learn more than another, it is how to farm. Another great argument in favor of an indigenous industry is the stimulus which it will give to American agriculture. The markets for our farm products are now overstocked and the prices of our farm products are phenomenally low. As I have often pointed out, the nation which exports its agricultural products as a source of revenue must eventually become pauperized. It sends out of its boundaries blood and marrow. The only agricultural products which can safely be exported are sugar, oil and cotton. The establishment of an indigenous sugar industry would rend it unnecessary to send agricultural products away from home in order to get money to buy our sugar. We would have a larger home market, a larger home consumption and less necessity for going outside to purchase. The mere fact that over \$100,000,000 in gold would be kept at home annually, in the price of sugar alone, is a matter of no mean importance. When you add to this the stimulus to agriculture and other industries which the establishment of an indigenous sugar industry would give, we see an advantage to American agriculture which is almost incalculable.

LAND TAXES.

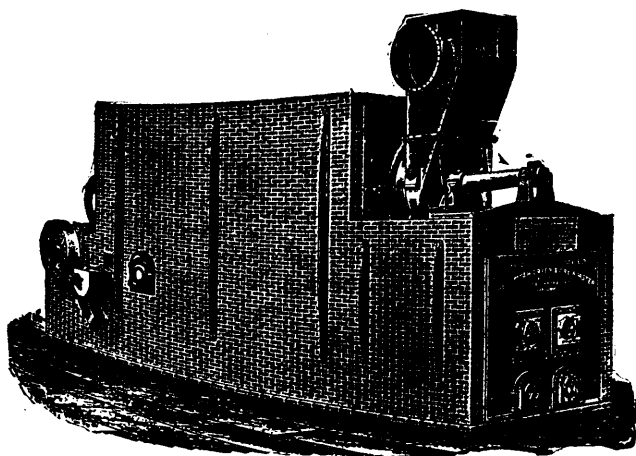
A few days ago the authorities of the city of Toronto sold a large number of building lots at public auction for

non-payment of taxes, many of them not bringing enough to pay the charges against them. These lots were all located in extreme east and west ends of the city, but within the corporate limits. They all front upon streets that have been opened, some of them paved; all of them supplied with gas and water mains, all lighted at the expense of the city, and all within the limits of police and fire protection.

Mr. R.W. Prittie, a large real estate owner, has written a letter to The Globe regarding the matter, and criticizes the conditions that make such events possible. He tells us that on many of these lots the assessment amounts to \$1 per foot per year, or as it is divided up, \$350 per acre, and that the land is only worth from \$50 to \$75 per acre for farming purposes, and that as building lots they will not be wanted for the next ten years. He thinks that the city should exclude these lots from city assessment, and place a farm land assessment on them until they are built upon. Productive wealth, wherever found, Mr. Prittie tells us, should be assessed and taxed according to its ability to earn for the purpose of civic requirements, and we should cease taking imaginary values in vacant lots beyond farm values; that property should pay a rate on only its productive value; that a house should not pay taxes when unoccupied, and that it is inequitable, when a house is vacant through no fault of the owner, that he should be called upon to pay taxes on it or on the land it occupies.

Undoubtedly one of the greatest curses Toronto is now suffering from is the system by which immense fields of land immediately adjoining the city were laid off into street and building lots, and made to become parts of the city.

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Of course this was done for speculative purposes, for it could not be shown that the additions were at all necessary. Many of the streets in these additions have been equipped with gas and water mains and are paved, and all of them are lighted, and receive fire and police protection. Those who engineered the schemes by which the limits of the city were thus extended probably realized large returns for their shrewdness, and those who thought themselves also very shrewd, but were not in becoming purchasers of these outlying lots, are now whining because the city demands some returns for the immense outlays made for improvements. If the owners of these outlying fields had not forced their annexation to the city, they would now be only paying taxes on acres of land valued for farming purposes, instead of upon building lots within the city limits; and they have none but themselves to reproach for the predicament they find themselves in.

We quite agree with Mr. Prittie that our system of taxation is radically wrong; but we cannot agree with him in his ideas of correcting it. We do not think that the buildings erected on land should be taxed at all, but that the land itself should be always taxed, whether it is occupied or not. Why, pray, should a man be punished by the imposition of heavy taxes when he places his capital in fine buildings? What, pray, makes the land valuable upon which buildings may or may not be? Pass along any of the best business streets of Toronto, King street, or Yonge street for instance, and observe elegant structures in close proximity to dilapidated hovels. As regards the location, municipal advantages are as favorable to one as

to the other—no more, no less. Why tax the enterprising man for erecting a fine building which is an ornament to the city, and not tax the owner of the hovel which is an eyesore and a disgrace? The enterprising man pays a large price for the land he occupies, and the miser and fossil understands that his land is greatly appreciated in value because of the neighboring fine building. What does he do to increase the value of his own land? Absolutely nothing. Years ago he may have bought it for a song, or perhaps he may have inherited it, but he does nothing to increase its value. He waits until the enterprise of others makes it valuable, and when his judgment tells him it is time to sell, he sells it and becomes a money lender. That sort of thing won't do.

But that sort of thing is one of the things that retards the prosperity of the city, and that prevents it becoming a great manufacturing centre as it ought to be.

A VALUABLE PUBLIC DOCUMENT.

Mr. W. G. Parmelee, Deputy Minister of Trade and Commerce, has compiled a valuable public document which has recently been issued by his Department. It is a departmental report for the three months ended 30th September, 1894. Regarding it Mr. Parmelee says:

"In order to place before those interested in the trade of the country statement of the values of imports and exports, revenues and expenditures, as compared with figures showing those for the corresponding month and months in the previous year, and such other general information, in-

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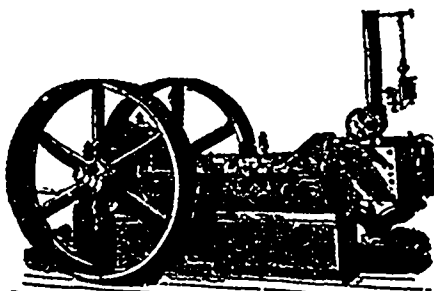
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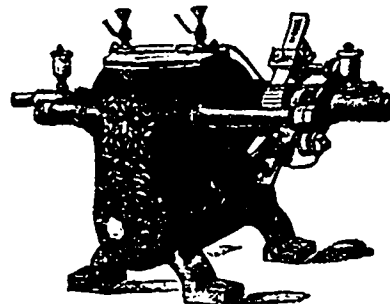
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cluding Tariff changes, as it may be important to Canadian exporters and others that they should be furnished with as early as possible after coming into force, the Minister of Trade and Commerce has directed the publication of reports supplemental to those issued annually, commencing with one for the quarter ended 30th September, 1894. The statistical figures embodied in these reports respecting imports, exports, revenues and expenditures, it must be understood, are unrevised, and consequently may not aggregate at the end of the fiscal year those in the statements as published in the annual reports, but as they are approximately correct, the finally ascertained differences will not be so great as to detract from their present usefulness. Although it has not been found practicable to always give the source from which the information has been derived, the statements in respect of Tariff changes and general trade have been in most cases taken or compiled from published official statements; in those instances where not from official sources care has been taken to publish only what has the appearance of being authentic." The scope of the work referred to is divided into five classes:—1. Statistics; 2. New tariffs; 3. Tariff changes; 4. Commercial agencies; and 5. General commercial information. Part I. contains the import and export returns of Canada, the duty collected, Inland Revenue collected, revenue and expenditure, all during months and three months ended 30th September. Part II. contains the new tariffs of Canada, British India, Jersey and Guernsey, and St. Vincent. Part III. gives the tariff changes in the United Kingdom, Victoria, Mauritius, Gold Coast Colony,

Gambia, British Guiana, Trinidad, Bahamas, and Bermuda. Part IV. contains reports of Commercial agents at Jamaica, Antigua, Montserrat and Dominica; St. Kitts, Nevis and Virgin Islands; Barbadoes, Trinidad and Tobago; Demerara, Norway, Sweden and Denmark, and Australia. Part V. contains the tariff legislation of Spain for Cuba and Porto Rico in regard to codfish, together with trade notes respecting the lumber market at Samoa; imports of flour, St. Helena; flour and wheat, South Africa; commerce of South Africa; cultivation of fancy pease in Canada; market for Canadian flour in Porto Rico; Denunciation of reciprocity arrangement with United States by Guatemala, and the same of a similar arrangement with United States by Brazil.

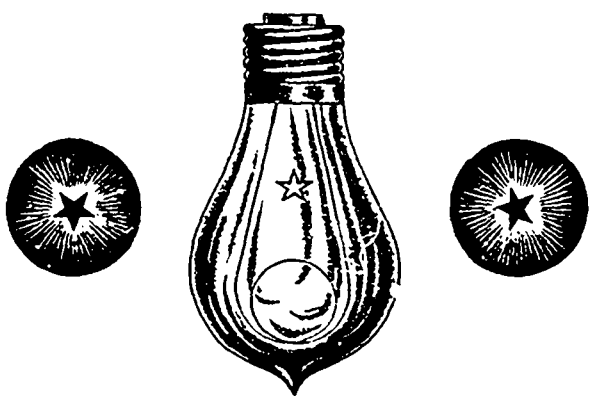
FREE TRADE AND THE BRITISH SUGAR REFINING INDUSTRY.

We commend the following article to the Toronto Globe, Montreal Herald and all other freetraders, republished from the Liverpool Carrier, which cannot be accused of being an advocate of protection:

The pessimistic prophets who have for some years been declaring that the sugar refining industry of this country would be ruined sooner or later by the bounty system of other nations will now find fresh confirmation of their assertion in the publication of the announcement that another well-known Liverpool house has resolved upon a stoppage of their works.

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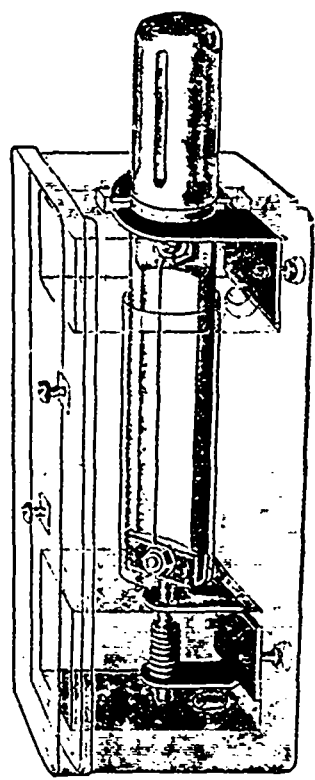
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refinery in Blackstock street, have determined upon this serious step—they hope it may be only temporary—in consequence of a combination of circumstances which prevent a manufacture from cane being a profitable transaction at present. The closing of their refinery means that at any rate two hundred men, many married and with families to support, will be added to the already too large army of the Liverpool unemployed. This firm, which has been in existence for about fifty years, is one of the two in Liverpool which have continued to refine only sugar from the cane.

There has been such an increase in the import of beet sugar, both raw and refined, from France, Germany, and Austria, all bounty-growing countries, that prices have reached an abnormally low point, foreign "crystals" selling at about three-ha'pence per pound wholesale, and the result has been that such a low price is offered in this country for cane sugar that it pays growers better to sell their produce in American and Eastern markets, and they send here only very small quantities. Even these it is impossible to manufacture at a profit, and how long the one Liverpool firm that now pursues this policy will continue the heroic endeavor to refine from cane only is a matter causing some speculation in the minds of many merchants of experience. Those who have had to do with the sugar industry of Liverpool for the last twenty-five years can realise what a difference this is from the palmy days when cane sugar was everything and beet nothing. Nowadays beet rules the sugar world, and cane has to play second fiddle, with consequences more or less

disastrous to all engaged in the trade; and instead of nearly all the sugar being refined from the cane, the great bulk of it is now from the beet.

The sugar war has been sadly disastrous to this country. Mr. Gladstone's consolation that more sweets were now manufactured in this country is no salve to the hundreds and thousands who have been deprived of their livelihood in a war in which all the glory belongs to the peddling philosophers or the political economy under the heading of "Free Trade," and all the profit to the bounty-maintained foreigner or to the speculators who are to be found preying upon the disasters of commerce just as there are always men who find the disasters of war a profitable business to them. The present position of the sugar industry in Liverpool is not encouraging. The closure of the refineries of Messrs. Heap and Messrs. Jaeger Brothers has now been followed by the stoppage of Messrs. Leitch & Co.'s works, and the general statement of refiners is that the margin of profit is at the disappearing point. Yet they know that if they all stopped to-morrow the consumers would not suffer, the flood of Continental sugar being enormous and likely to continue so as long as the bounties on all exported sugar range from 30s to £4 a ton. Outside Liverpool the results are much worse. Bristol has practically ceased to refine; there are only a few of the Clyde refineries continuing the struggle, and the London sugar refineries will certainly not boast of being prosperous, the well-known firm of Martineau having at present a temporary stoppage of their works.

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PRINCE ALBERT, N. W. T., Nov. 5th, 1894.

Yours truly,
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DEAR SIR:—Mill running A.1. and in first-class condition.

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WM. & J. G. GREEY, Toronto.

DEAR SIR:—I am operating the mill you built for the Whitewood Milling Co. I consider, for a fifty barrel mill, it is pretty hard to beat.

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EDITORIAL NOTES.

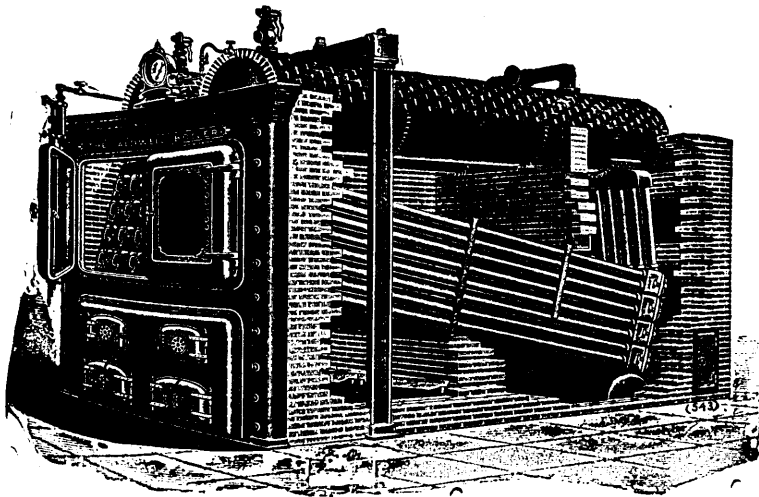
Hereafter shingles and pulp wood from the United States will enter Canada free of customs duty. In the tariff Act of last session the following clause appears: "Shingles and pulp wood, or either of them, can be imported into Canada free of duty upon proclamation of the Governor in Council, which may be issued whenever it appears to his satisfaction that shingles and pulp wood, or either of them, from Canada may be imported into the United States free of duty." The Dominion Government having received assurances that the United States is admitting Canadian-made shingles free of duty, a proclamation of the Governor-General will appear to-morrow reciprocating in this respect with the United States.

A decision has been made by the United States Board of General Appraisers which is of the utmost interest to the pulp and paper making industry of both the United States and Canada, but more particularly the latter. Collector of Customs Hopkins, at Detroit, September 11, seized a carload of pulp entered by the Laurentides Pulp Company, of Three Rivers, Que., for under-valuation. The company entered it at \$13.44 per long ton of 2,240 pounds. The collector held it at \$15 a short ton of 2,000 pounds. The company appealed to the Board of General Appraisers in New York city. Not long after, while paying duty on the valuation fixed by the Detroit collector, he seized another carload on the same grounds of under-valuation, having raised it 12½ per cent. The company appealed again to

the general appraisers. Several hearings were given the matter and the board handed down a decision to the Treasury Department ruling against the decision of the collector and in favor of the Laurentides Company, fixing the valuation of wood pulp at 60 cents a 100. This is a victory for the Canadian company and will be the means of bringing American capital to Canada for investment in timber preserves and pulp mills.

The example set by the Imperial Postmaster-General in permitting the use of ordinary cards with a one-cent stamp attached to pass through the post offices in the same way as the regular postal cards, has been quickly followed by the Postmaster-General of Canada. Where postal cards are not immediately available the advantage thus afforded will be appreciably felt. The Postmaster-General is evidently determined to obtain for his department the approval of the public. With the new year the new arrangement came in force. A private post-card with a one-cent stamp attached will now be carried in the mails of this country in the same way as the regular official postal-card. In order that readers may become acquainted with the departmental regulations governing the use of private post-cards we reproduce them. They are as follows: "The cards must be composed of ordinary cardboard, not thicker than the material used for the official post-card. The maximum size, having regard to the variety of form, must correspond as nearly as possible to the size of the ordinary Canada post-card now in use. The minimum size must not be less than ¾ inches by 2¼ inches. The cards must not be folded. On the

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address side, upon which the postage stamp used in prepayment must be fixed, nothing may be written, printed or otherwise impressed, except the name and address of the person to whom the card is delivered, and the name and address of the sender of the card, and the words "private post-card." Nothing may be written, printed or otherwise impressed across the postage stamp. On the reverse side of the card, any communication, whether in the nature of a letter or otherwise, may be written or printed. Nothing whatever may be attached to a private post-card." The infringement of any of the foregoing rules will render the card liable to full letter postage.

The Toronto Web Co., 101 Adelaide Street West, Toronto, although a new concern, display in their office some old relics particularly interesting to Canadians. These are the cannon that was placed in front of the Parliament Buildings in Toronto, and was used for firing the first salute when Upper Canada was announced as an entity and material part of the British Empire; the desk used by the Speaker of the first Legislative Assembly of Upper Canada, and the letter copying press used by the first Attorney-General of that Province. These articles are all in a good condition of preservation.

The sympathy of the whole country has gone out towards the Globe Printing Company because of their loss by fire last week of their entire establishment, including building and contents. This, we believe, was the largest and most complete printing establishment in Canada, as,

without doubt, The Globe was the most important newspaper. Owing to the pluck and energy of the managers, The Globe was out in time on Monday morning, not missing an issue, and it is now as good a newspaper and as full of fight in the bad cause of opposition to the National Policy as ever, for the fiery ordeal through which it passed has not effected a change in its judgment in that respect. When the news of The Globe's disaster became known, the proprietors of every other daily newspaper in Toronto proffered their plants and appliances to help it out, the offer of The Empire being accepted, and The Globe, ultra free trade, and The Empire, protection, are now both composed from the same type cases, printed on the same presses, and issued from the same building. This exemplifies the fact that, among the newspaper fraternity at least, no matter what differences may exist regarding policies, brotherly love prevails and every moral and social virtue binds. So mote it be.

How is it the new Premier, a believing protectionist, has not promised a duty on wheat to bring the price up to the old level?—Toronto Globe.

Seeing as how The Globe lost its copy of the Tariff in the recent fire we beg to inform it that the duty upon wheat is 15 cents per bushel.

A copy of Mr. (now Sir Mackenzie) Bowell's many-paged work on the Canadian tariff, published just before it was all changed, was among the losses in The Globe fire. Toronto Globe.

From its frequently demonstrated ignorance of the sub-

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ject it might be supposed that The Globe never possessed a copy of the Tariff.

The Herald thinks the Conservative National policy is fittingly represented by an elephant. The Herald probably got its idea from the weight of the beast when it walks over its party at election times. -Montreal Gazette.

The trade now most active on the Pacific is the shipment of canned meats from America to the Asiatic warriors, notwithstanding the late peace tidings. Japan took the initiative and discovered that the Chicago stock yards' products were a better inspiration to martial deeds than boiled rice, but since then China, too, has been reaching out after the flesh pots of America. As a consequence there are now more food products at Tacoma and Portland, awaiting shipment, than the trans-Pacific steamers can carry. Flour and wheat are thus going abroad as well as meats. Should the Asiatics develop a preference for American food in times of peace as well as war, it is unlikely that they can produce it at home, for the country is too thickly populated for wheat fields or cattle ranches. They must get their supplies abroad. Chicago Industrial World.

The Germans tax themselves heavily to supply the English with cheap sugar. According to The Empire the English should retaliate by preventing themselves from buying it. But the English let the Germans keep right on at it. They would not complain if the Germans sent over

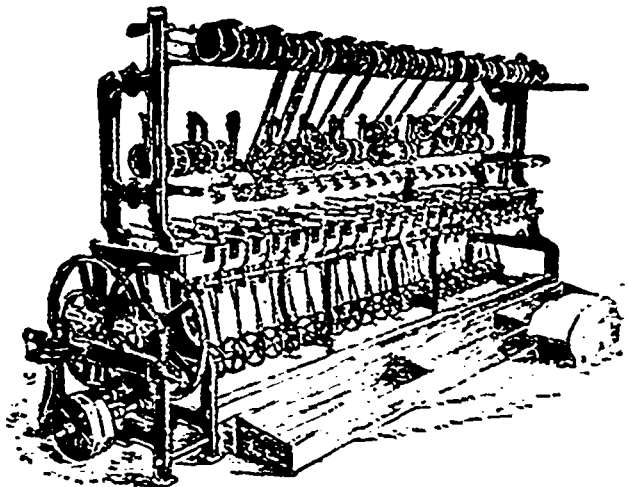
sugar for nothing. They would let the Germans send them gratis not only sugar but tea, bread, butter, fuel, clothing, furniture and everything else that is useful. And they would risk the devastation which, according to protection theories, must follow such a deluge. --Toronto Globe.

The Germans pay a very small bounty upon the export of sugar, and they certainly do not tax themselves heavily to supply the English or any other people with cheap sugar. Under the German system the growing of sugar beets is a large and profitable industry, and the manufacture of them into sugar is also a large and profitable industry, that gives employment to thousands of the German people who would otherwise have no employment. The idea is that it is better to pay a small bounty out of the public treasury, and keep these thousands of people in remunerative employment, than not to pay the bounty but be compelled to pay a much larger amount to support these people in idleness. The German idea is correct.

Steel rails are now sold in the United States for \$22 a ton the lowest price for which they can be bought anywhere in the world. If it were not for the wise policy of protection under which the iron industry of the United States was established and developed, the people of that country would now be buying steel rails in England for double the price which they are paying. --Hamilton Spectator.

Great pity it is that Canada has never adopted that feature of the wise policy of protection which has resulted, in the United States, in the establishment of an industry that produces steel rails at a price lower than anywhere

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else in the world. If Canada had adopted such a policy we might also be producing cheap rails, but as it is, no steel rail has ever been made in Canada.

Allusion was recently made in these pages to the possibility of the Waterous Engine Works Co., of Brantford, Ont., removing their works to some other place. It was explained that the location now occupied by the concern in Brantford was entirely too small to successfully conduct their large and rapidly increasing business, and that very much larger premises must be had. The company proposed to the corporation of the town that if the town would purchase the present premises at a certain price, the money would be expended in the erection of new works there, otherwise another location would be sought. The matter assumed the shape of a by-law to purchase the old property, which was submitted to the voters a few days ago, with the result of 1,230 votes being cast in favor of the by-law and only 179 against it. The fact is, Brantford will not allow the Waterous works to leave that enterprising town. To a Courier reporter Mr. C. H. Waterous, after expressing his gratification at the result of the vote, said: "We shall at once commence the work of looking for a site and everything possible will be done to get the new works started. We stand badly in need of enlarged premises and you can rely upon it that we shall make all possible haste in getting into them."

I value your journal very highly as a journal of mechanical information and as an advertising medium. The best

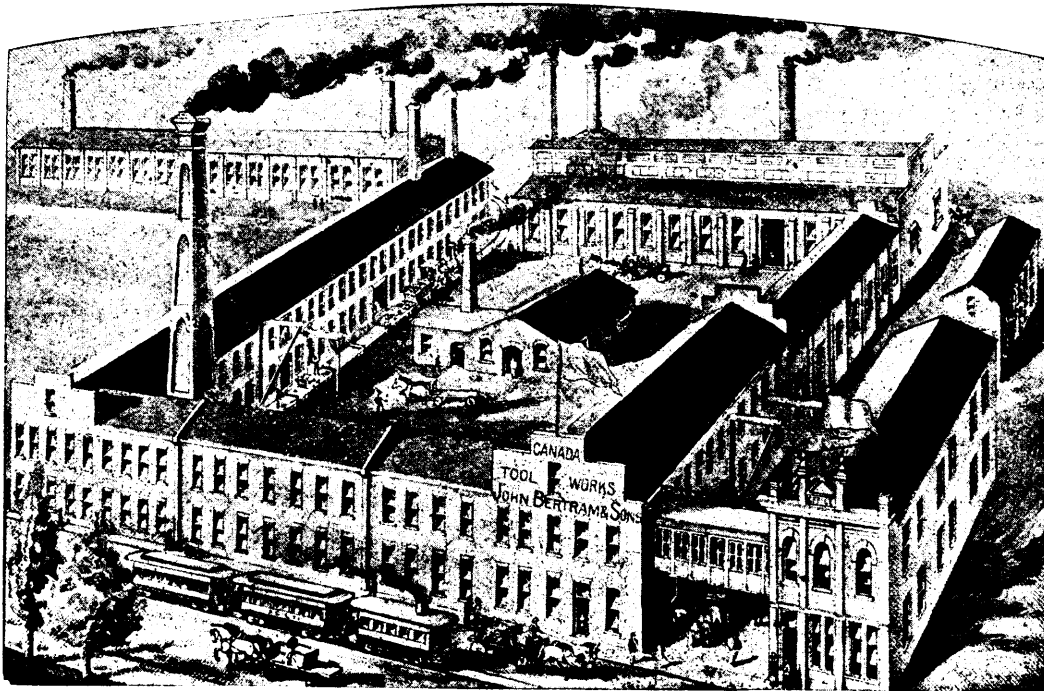
orders I have had during the past year came through my ad. in your paper. J. D. McEACHREN, Galt, Ont.

Manufacturer of drying, heating, and ventilating machinery, automatic boiler cleaner, etc.

Discussing the great importance of the immediate purchase by the Toronto City Council of steam fire engines the Toronto Globe says:—

This is a matter that cannot be delayed. The Council should bring its energies to bear on the matter at once. Fortunately, the course to be taken does not require much consideration. Speaking of the situation Mr. Keating, the City Engineer, said that the city should at once procure three Merryweather engines. The excellence of these engines is a matter of general knowledge among those familiar with the subject, so that there is scarcely room for long discussions as to the merits of machinery, with its accompanying lobbying and log-rolling.

Why should Mr. Keating be so anxious for the city to purchase Merryweather engines? Who in Toronto knows anything about them? They are not made in Canada. But there are steam fire engines built in Canada quite equal to Merryweather or any other engines built anywhere in the world, and there are scores of Canadian built steam fire engines in constant use in cities, towns and villages throughout Canada that are giving the utmost satisfaction. We need not go a hundred miles from Toronto to obtain such engines. The Waterous Engine Works Co., of Brantford, and John D. Ronald, of Brussels, build them. The excellence of these engines is a matter of general knowledge throughout Canada among those familiar with the subject, included in which are not, evi-



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dently, Mr. Keating and the Toronto City Council. Mr. Keating seems a little overanxious to effect the sale of Merryweather engines, and his assertion that there is no time for discussion regarding them, with accompanying lobbying and log-rolling, suggests the possibility of some such corruption as has been recently investigated in Toronto official circles.

City Engineer Keating ought to go slow in talking about lobbying and log-rolling in connection with the purchase by the Toronto City Council of steam fire engines, while he is using his official position and influence to force the sale of Merryweather engines. Is he agent for the sale of them; and if he is successful in inducing the city to purchase them would he receive any commissions for his services?

Perhaps the largest sufferer by the recent great fires in Toronto are Messrs. S. F. McKinnon & Co., who had just occupied their elegant new place at the intersection of Jordan and Melinda streets, but who had not opened their doors to business. With their warehouse filled with merchandise, and just having prepared themselves for business, before an order had been filled the fire came and destroyed both building and contents. With but little left wherewith to ascertain their fire losses, the adjustment thereof was placed in the hands of Mr. A. C. Neff, both the insurers and the insured entertaining the confident belief that the adjustment would be precisely what it should be accurate, and just to all concerned. Mr. Neff is a

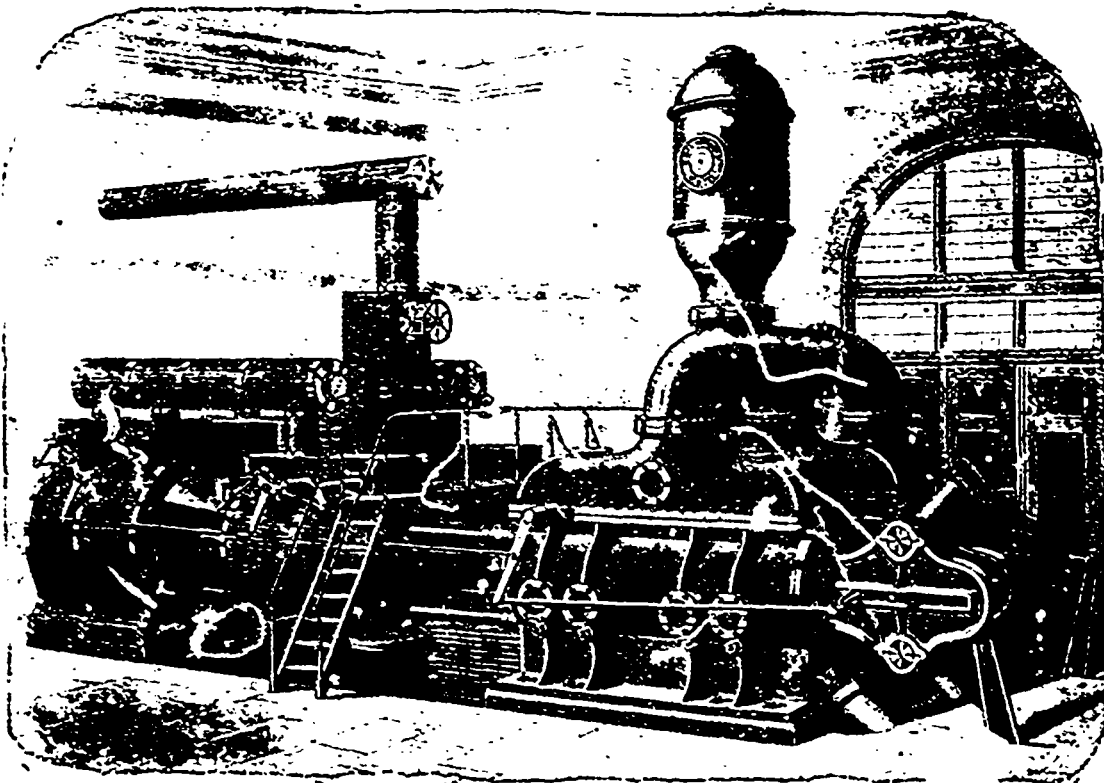
young man well known in the community, and this mark of the confidence in which he is held is exceedingly gratifying to his friends. He will certainly do himself credit both as an expert accountant and an adjuster of insurance losses.

On Sunday of last week Toronto was visited by what was up to that time the most destructive fire that had ever befallen it; and four days later, on Thursday, even a more calamitous conflagration occurred. The fire of Sunday originated in the basement of the Globe Printing Company's building and before it could be brought under control the whole structure, and several adjoining and neighboring buildings were also in ruins. Included in this were the works of the Toronto Lithographing Co. in The Globe building, the printing house of the Brough Printing Co., the factory and offices of the Robin, Sadler & Haworth Belting Co., the large new warehouse of Messrs. S. F. McKinnon & Co., Webb's dining rooms, and N. Rooney's dry goods warehouse; besides which considerable damage was done to a number of other buildings and their contents, the most unfortunate feature of the event being the loss of life of a brave fireman and the serious injury of several others who were caught under a falling wall. The fire of Thursday originated in the Osgoodby Building, within a few yards of the ruins of the McKinnon building, and before it could be subdued it had effected even greater damage than the fire of Sunday, the greatest loss, probably, being that of the factory of Messrs. R. H. Gray & Co., manufacturers of ladies' underwear, etc., where some 200

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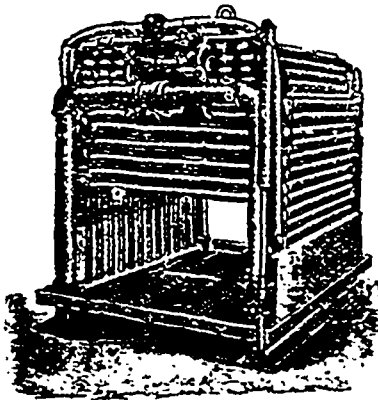
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hands had found employment. The most noticeable feature of these conflagrations was that while most of the buildings were from four to six stories high, the firemen were not able to throw water higher than the windows in third stories, because of insufficient water pressure and the lack of steam fire engines. The fact is, Toronto has no such engines. Toronto has long been cursed by an inefficient government who have refused to recognize the necessity of adequate fire appliances; but it is promised, now that more than a million dollars worth of property has gone up in smoke, that a number of steam fire engines shall be procured. But they have not yet been bought.

American capitalists propose to establish a million-dollar pulp and paper mill at Kakabeka Falls, on the Kaministiquia river, Algoma. Should the mill be built, and the poisonous refuse from it allowed to drain into the river, then good-bye to fishing in that stream from the mill to the river's outlet, and for some distance around the outlet.-- The Empire.

This is an evidence of how great intellects grasp important questions. The Empire is a strong advocate of the National Policy and at all times desirous of seeing the manufacturing industries of Canada built up. But at the same time it can't tolerate the Yankees. All that the average Canadian knows about the Kaministiquia river is that it is in Algoma, and that at certain seasons of the year anglers resort thither for sport. And the fact that the refuse from a pulp mill if built there might interrupt this amusement is sufficient reason to The Empire to discourage the erection of such a mill there at a cost of a million dollars. Canada could well afford to have a hundred fish-

ing streams thus ruined on such terms, even if American capitalists were the investors.

Speaking of the recent civic investigation had in Toronto, Don, in Saturday Night, has this to say:—

I think it is quite proper to designate the investigation as an extraordinary court. Anything born under the sanctity of law and bearing the name of a court and doing the duties that citizens should perform for themselves, and yet having power to hold midnight sessions and stop men on the streets in order to give evidence, is a spectacle so anomalous and startling in this nineteenth century that we must award proper praise to those conducting it who have refused to abuse their great powers. The country must be in a strange state of disturbance that necessitates the delivery over to any tribunal of the preposterous jurisdiction given to our civic court of enquiry. Had this civic episode, in which the Street Railway Company was the disturbing figure, been in the time of the French Revolution, it would have been easy to imagine the methods adopted to repress those who were exercising a corrupt influence upon the men chosen by the electorate. If Fouché had been chief of police we could imagine him keeping "tab" upon the people, and the people as represented by contractors keeping track of him, and detective shadowing detective and public officials being under surveillance. But near the close of the nineteenth century, in democratic Canada, it is startling and disturbing to know that both citizen and public servant were under the hand of a tribunal which finds its greatest power in the evil opinion that will be held of a man who refuses to testify, even if he incriminates himself while being examined on general lines rather than testifying in a particular matter. That this tribunal has been successful is no satisfactory warrant for a repetition of the experiment. Nothing should replace the trial by

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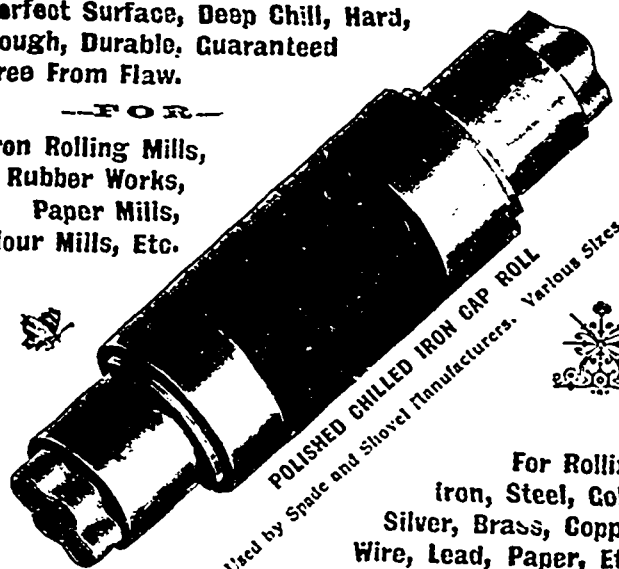
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ballot of men who work for promotion or are induced to present themselves for public positions. It seems to me thoroughly unconstitutional, outside of the limits of personal safety and public propriety.

The distinction of Knight Commander of St. Michael and St. George has been conferred upon the Honorable Mackenzie Bowell, Premier of the Dominion of Canada. From this it would appear that the position of leader of the Canadian Government is one worthy of the distinction, and this will, no doubt, make the attainment of the position one to be more eagerly sought after than ever by some for whom the office might otherwise have no attractions. The present ministry is the sixth since Confederation, two of which, the first and third, were presided over by the late Right Hon. Sir John A. Macdonald, who received the distinction of K. C. B. The late Honorable Alexander MacKenzie, who was leader of the second ministry, declined the honor of knighthood. The fourth ministry was presided over by the late Honorable J. J. C. Abbott, who received the order of K. C. M. G., the fifth was that presided over by the late Sir John Thompson, K. C. M. G., and now the sixth sees its leader with the same distinction as that accorded to his two predecessors in office. This conferring of titles upon the leaders of the Canadian Government is a token of appreciation of the Dominion's standing, and is a compliment to the country as well as to the individual upon whom it is conferred. The Canadian Cabinet now enjoys the presence of three members bearing the order of St. Michael and St. George, Sir Mackenzie Bowell, Sir

Adolph Caron, Sir Charles H. Tupper, all of whom are K. C. M. G., and Sir Frank Smith. The estimation in which the Dominion is held since Confederation by the Imperial Government is vastly different as evidenced by the conferring of these distinctions, from what it was prior thereto.—The Shareholder.

"The workingmen will find in Mr. Bowell a consistent and staunch upholder of protection." He will let labor come in free, but will tax everything the workingman must buy. These illustrate two ways of stating the same fact.—Toronto Globe.

Another way of stating the same fact is this:—It is not the policy of the Government to restrict immigration, for the people of Canada desire to see the country filled with good classes of people who will be able to make better livings for themselves here than they can anywhere else; and to obtain such immigrants their occupations must receive such tariff protection as will shield them from the pauper labor from which they have fled. Most assuredly the workingmen will find in Mr. Bowell a consistent friend and a staunch upholder of their interests.

The London Daily News, in commenting on the fact that the British colonies have unhesitatingly used their commercial freedom against the mother country, says, by way of palliation, that young nations must learn by experience. This is beyond doubt a fair expression of English opinion regarding our protection policy. They give us the pardon age extends to youth. Poor, young, impulsive and inexperienced people, they don't know any better. Of course it is not at all flattering. But to those Canadians who do

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NO COAL STRIKES TO CONTEND WITH.**

know better it is satisfactory that Englishmen, with their clear knowledge of economic affairs, can take so lenient a view of a perpetual series of blunders which must be almost criminal in the light of their clearer understanding. Toronto Globe.

It is questionable whether this idea, as The Globe suggests, is a fair expression of English opinion regarding our protection policy, for there is a deep undercurrent of sentiment in England strongly in favor of some sort of protection that will protect the British workman against the fierce competition of France, Belgium and Germany. The Globe and the Daily News are facetious in extending to us the pardon age extends to youth—in fact their facetiousness really amounts to insolence. No doubt the rulers of Britain are possessors of much knowledge in statesmanship, but all such knowledge is not confined to the British rulers. The Globe forgets that there are several other nations and peoples on the earth, all of which are doing about as well, financially and otherwise, as Britain, and that not one of them has a fiscal system such as hers, for, with the exception of Great Britain, every nation on the face of the earth practise and observe protection. And these nations—Russia, Germany, France, Spain, Italy, United States are not poor, young, inexperienced, nor impulsive, as The Globe says they are, neither can Canada be ranked as such. The Globe, and the Englishmen who imagine they have a clearer knowledge of economic affairs than all the rest of the world, are conceited. They are like the one obstinate man on the jury who thought he alone was right and the other eleven wrong.

Speaking of the boot and shoe industry the Montreal Herald says:—

A low tariff will help every indigenous industry; and as the shoe trade is peculiarly one native to the country it should rejoice at the prospect of freedom from the conditions which to-day hamper it's development.

Our esteemed contemporary has a way of rolling the words indigenous industry beneath its tongue as it would a sweet morsel, losing sight of the fact that, correctly speaking, no manufacturing industry is or can be indigenous. Certain varieties of animals and trees may be indigenous to Canada, but manufacturing industries, no. They are exotics.

A neat and deserved compliment is paid to Sir Charles Tupper by Don, the well-known and facile writer in Saturday Night, of Toronto, in the following:—

I imagine that many of the great honors bestowed by the Queen upon the remains of Sir John Thompson were suggested by Sir Charles Tupper. Her Majesty has too much to think of to be concerned as greatly in the death of a colonial premier as she appears to have been, even though the death occurred in her own castle. With his great experience and his natural aptitude for such affairs Sir Charles Tupper without doubt induced Her Majesty to bestow extraordinary evidences of attention on Sir John Thompson's funeral. All of these are to the advantage of Canada, and it is not at all cold-blooded in speaking of the death of one of this country's greatest sons to point out that in death, as well as in life, he was an important and conspicuous link in the chain of empire which surrounds the world. That so much attention has been paid to him and his lamentable death is only quoted as another

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ALTERNATING CURRENT INDICATORS

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ELECTRICAL INSTRUMENT CO.

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.. AGENTS ..

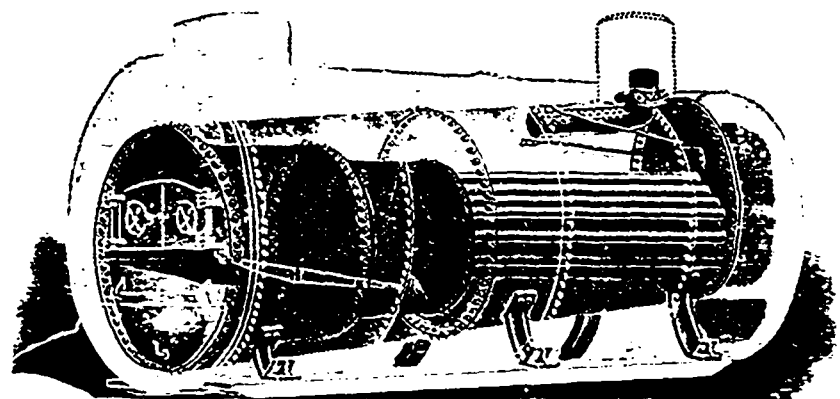
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The Canada Machinery Agency, 345 St. James Street, Montreal, Agents.
Wm. McKay, Seaforth, Ont., Travelling Agent.

evidence of how all things Canadian could be made conspicuous if Canada's master hand were always near our sovereign and its master intellect always endeavoring to let it be known that this is the greatest, most successful and attractive colony in the great Empire of Britain.

The new Premier believes in protection. This will doubtless make it easier for the yearly pilgrims who go to the capital during the coming session. But of course it will make it harder for the rest of us. -Toronto Globe.

Pilgrims in visiting the capital will feel assured of a gentlemanly reception at the hands of the new Premier, which is more than could be said of visitors to Sir Richard Cartwright when he was a minister, when he told them to go to the devil. Does The Globe see the difference?

Mr. F. P. Shumway, Jr., Boston, Mass., has sent us a copy of Effective Advertising, which contains proofs of some advertising pages which he prepared during the past year for trade papers, and which he thinks worthy to be reproduced as specimens of what he can do. Mr. Shumway has won his success as an advertising solicitor by securing large returns to advertisers from small investments for advertising. He has recently increased his facilities and is enlarging his business.

Mr. K. W. McKay, secretary of the Ontario Good Roads Association, has sent us a notice to the effect that the second annual meeting of the Association will be held in

Toronto, on the afternoon and evening of Feb. 7th, and the forenoon of Feb. 8th. While the programme for the meeting has not yet been completely arranged, it is expected that there will be addresses and papers from a number of prominent men interested in the movement, in addition to from some of officers of the Association. Among these may be mentioned His Hon. Lieutenant-Governor Kirkpatrick, Hon. Thomas Ballantyne, His Hon. Judge Woods, of Chatham; Mr. A. F. Wood, ex-M. P. P., and others. Delegates have been invited from the Boards of Trade, Municipal Bodies, and the various Agricultural Associations and Societies of the Province. The meeting, it is hoped, will be a large and thoroughly representative one, such as the importance of the movement for road improvement merits.

The price to be paid for the 30,000 tons of steel rails recently ordered by the Pennsylvania Railroad Company is \$22 per ton. Last year the company paid \$24 per ton for its rails, and the present price is the lowest on record. -Toronto Globe.

According to the Globe's theory the duty upon rails is added to the price, no matter where they are made. Under the new American tariff the duty upon steel rails is seven twentieths of a cent per pound or \$7 per ton. If these rails were bought in free-trade Great Britain or Belgium the freight could not be less than \$2 per ton, which, together with the duty, would reduce the price there to say \$13 per ton, which is several dollars less than rails ever sold for in those countries.

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Single and Double Yarns, Cop Yarn, Single and Double Hosiery Yarn in all Colors, including genuine "Fast Black."

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Red and Buff Pressed Bricks, and Ornamental Terra Cotta- Building and Sewer Bricks-
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PETERBOROUGH, ONT.

MANUFACTURERS OF

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Selling Agents, D. MORRICE, SONS & CO., Montreal and Toronto.

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 Spanish River Talc & Nickel Mining Co., of Algoma, has been incorporated with a capital stock of \$96,000.

At the next session of the Ontario Legislature, the corporation of the Town of Prescott will apply for the passing of an Act to enable said corporation to bonus the Prescott Elevator Co., to the extent of \$6,000.

The Hamilton & Dundas Street Ry. Co., are applying for an Act to amend the Acts relating to their company and to enable the said company to cancel all or any issue of stock or bonds, and to issue new bonds, etc.

John Pugsley has purchased the plant of the Napanee Pulp and Paper Company, at Napanee and Fenelon Falls, Ont., and after extending and improving them, will recommence operations. A new bleaching house is being erected at the Falls.

The corporation of the Town of Gananoque will, at the next session of the Ontario Legislative Assembly, apply for authority to pass by-laws for granting aid by way of bonus or by guaranteeing the interest upon the loan of \$10,000 to the Thousand Islands Carriage Co.

Messrs. Hiram Walker & Sons, Lim., Walkerville, Ont., are distributing among their friends a very fine and beautiful pocket memo book which contains a card upon the presentation of which at any of their branch offices entitles the holder to a sample of their celebrated Club whisky. The editor and the business manager are both members of the Walker Club.

The Toronto Web Co., Toronto, manufacturers of elastic and non-elastic web, ribbons, etc., of which Mr. George Margolius is manager, have just placed in their factory a new loom for the manufacture of silk belting. They have recently begun the manufacture of neck ties for gentlemen's ware, from the webbing made by them. Mr. Margolius was formerly manager of the weaving department of the Toronto Fringe and Tassel Co.'s works, having been previously engaged in similar business in Germany and in New York.

The Ontario Malleable Iron Co., of Oshawa, whose works were recently burned, have decided to rebuild.

The Kingston & Gananoque Electric Railway Co. will apply for an Act to incorporate the company and empower them to acquire the right of way and construct an electric railway between Kingston and Gananoque, with power to extend the same railway east as far as Brockville and north to Westport.

The Canada Paper Co., Windsor Mills, Que., are seeking tenders for the construction of a new dam at their works, to give a motive power of from three to four thousand horse power. The company will use the power for lighting the town by electricity. The outlay involved figures in the neighborhood of \$200,000.

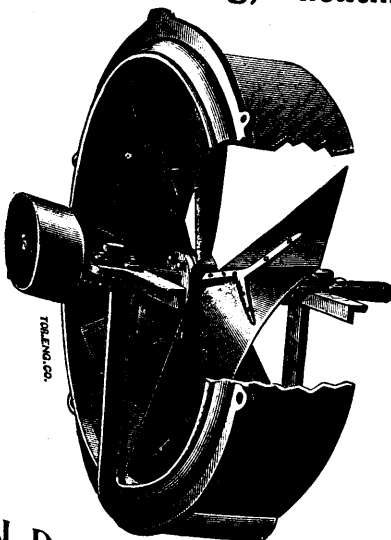
Mr. James Hardman, who for many years was the representative in Toronto and Western Ontario of Messrs. Robin & Sadler, leather belting manufacturers, of Montreal, has severed his connection with that concern and has accepted a similar position, covering the same territory, from Messrs. Goodhue & Co., leather belting manufacturers of Danville, Que. Mr. Hardman's Toronto address is at 90 Bay street. Messrs. Goodhue & Co. should congratulate themselves upon having secured the services of so competent a representative as Mr. Hardman, who has been in the business for some fifteen years.

At the machine shop of Mr. E. G. Shepherd, Sparks street, there are in course of construction a couple of ingenious machines designed for the manufacture of matches in the Maclaren factory shortly to be established at Buckingham. The mechanism is the joint production of Messrs. Manton and Shepherd, by whom it was patented recently, not only in Canada but in the United States and Europe. It is claimed for this machine that its capacity is at least double that of the contrivances whereby matches are at present manufactured. By the systems now in use the match-splints are made double the required length of the match, "dipped" at both ends and afterwards cut in half. During the latter process, owing to friction of the cutting machine, large quantities are destroyed by ignition, the proportion in high-grade matches running as high as 20 per cent. of the total product. The use of the Manton-Shepherd machine, its inventors claim, will effect a large saving in this respect. As it dips the splints in ordinary match lengths no subsequent cutting is required, consequently there is no loss by ignition. Another advantage claimed for the patent is that it "assembles" the splints in racks at such intervals as to prevent the match heads being joined together by the material in which they are dipped. This process is automatically performed by the machine, which effects a further saving, in that it is capable of utilizing much smaller blocks than the machines which use the double-length splints.—Ottawa Citizen.

McEachren's Improved Fan

PATENTED 1893

For Ventilating, Heating, Drying, Etc.



Specially adapted to
HEAVY WORK

Will handle more air at a *GIVEN PRESSURE* with a *GIVEN POWER* than any other Fan in the market.

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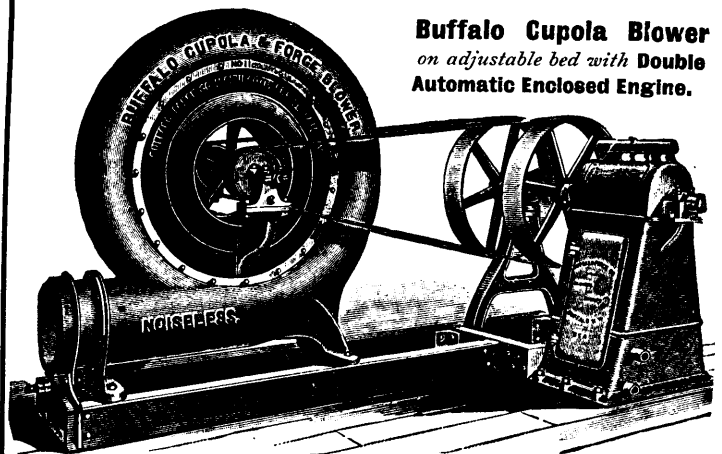
J. D. McEACHREN

- - GALT, Ont.

Rockwood, March 16th, 1893.

Mr. J. D. McEachren, Galt.
Dear Sir,—In reference to the Drying and Ventilating Fans that you put in last fall they are working well, keeping the rooms dry and comfortable. The wool dries with cold water coil; is drying 500 to 600 lbs. of wool per day WITHOUT HYDRO EXTRACTOR, on 6 x 12 feet of netting. If the room was larger we are sure that the capacity would be much increased. The Fan in end of dye house keeps the steam well drawn off, and the alterations on cloth drier have enabled us to dry more than double the goods than we could formerly. We would make special note of the small amount of power required.

Yours truly, HARRIS & Co.



Buffalo Cupola Blower
on adjustable bed with Double Automatic Enclosed Engine.

Buffalo Dry-Kilns, Shaving Fans, Forges, Blowers, Exhausters, Blacksmith Drills, Etc.

Are described in Sectional Catalogues FREE on application.

Their Efficiency, Smooth Running, and Durability are Unsurpassed

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BRANTFORD, ONT., BY CANADIAN MACHINERY & SUPPLY CO.

MONTREAL, QUE., BY CANADA MACHINERY AGENCY.

CHICAGO STORE, 22 and 24 WEST RANDOLPH STREET.

Messrs. Gaw & Co., Kingston, Ont., whose planing mill was recently destroyed by fire will rebuild the same immediately.

J. McAuley, Groveton, Ont., is erecting a large sugar house, and will go into the business next spring with improved equipment.

Mr. S. J. Cherry, Preston, Ont., whose grist and saw mill was recently destroyed by fire, will replace the same by a substantial brick structure.

The Union Card and Paper Co., Montreal, has been incorporated with a capital stock of \$100,000 to manufacture playing cards, cardboards, fancy paper, etc.

The Northern Elevator Co., Winnipeg, purpose building eight or ten elevators at country points in Manitoba next summer. The company also purpose building a large storage and cleaning elevator at Winnipeg

The corporation of the Village of Preston will apply to the Ontario Legislature at its next session for an Act to legalize a by-law of said corporation, wherein it was enacted that the said corporation might aid Jno. Ballantyne for the erection of a factory and foundry for the manufacture of wood-working machinery within the limits of the corporation of Preston, by lending him the sum of \$10,000.

Although Messrs Robin, Sadler & Haworth, the leather belting manufacturers of Montreal and Toronto, have been one of the sufferers of the recent fire in Toronto, the loss of their warehouse and factory on Jordon street will in no way affect their business, as they have engaged other premises on the same street and ask their friends to address them as formerly. All orders will have prompt attention, as they have been supplied with a new stock from their factory in Montreal.

The Montreal Watch Case Co., Montreal, has been incorporated with a capital stock of \$50,000 to manufacture watch cases, jewelry, etc.

The Canada Engraving and Lithographing Co., Montreal, has been incorporated with a capital stock of \$150,000 for the purposes indicated by the name.

The Phoenix Printing Ink Co., Montreal, has been incorporated with a capital stock of \$20,000 to manufacture printing ink, printers' and lithographers' supplies, etc.

The Rubber Shoe Co., of Toronto, has been incorporated with a capital stock of \$250,000 for the purposes of engaging in and carrying on the business of manufacturers and dealers in gutta percha and rubber goods, etc.

The Maclaren Match Co., with head offices at Buckingham, Que., are applying for incorporation with a capital stock of \$40,000 to carry on the business of manufacturers of matches, sashes, doors, wooden ware of all kinds, packing boxes and packing box shooks, and all kinds of pulp or paper ware or chemicals and timber and lumber in all its branches, etc.

The Dominion Blanket and Fibre Company, which has not proved a profitable undertaking so far as the shareholders are concerned, is, we are glad to learn, being thoroughly re-organized, and will start afresh on thorough business principles. The election to the presidency of Mr. E. A. Small, senior member of the well-known and pushing wholesale clothing house of E. A. Small & Co., is of itself a strong guarantee that the works of the company will be carried on on those strict business principles which will make it a success.—The Shareholder.

Wm. J. Matheson & Co. United

423-425 ST. PAUL ST., MONTREAL

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W. C. Barnes & Co., London, England.

Manufacture Lyonnaise de Matieres Colorantes, Lyons, France.

Albany Coal Tar Dye & Chemical Co., Albany, N. Y.



THE HURD PATENT AUTOMATIC RESPIRATOR.

OVER 15,000 IN USE,
Preventing Disease and Prolonging Life.

The most complete article ever offered for

Protecting the Throat and Lungs from Dust.

Poisonous Gases, and all other Impurities,

In places where persons are exposed and many times life endangered.

Mailed free to any address in Canada on receipt of \$2.15.

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Canada NIAGARA FALLS United States

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TWEEDS—Fine, Medium and Low Priced Tweeds, Serges, Cassimeres, Doeskins, Etottes, Kerseys, etc.

FLANNELS—Plain and Fancy Flannels, Overcoat Linings, Plain and Fancy Dress Goods, etc.

KNITTED GOODS—Shirts, Drawers, Hosiery, etc.

BLANKETS—White, Grey and Colored Blankets.

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Paton Manufacturing Co'y

of SHERBROOKE, QUE., for

WORSTED • KNITTING AND FINGERING YARN

Montreal Office

409 Board of Trade Building.

Toronto Office,

33 Melinda Street.

E. P. Suydon intends to erect a saw mill on Boundary Creek, B.C. Wm. Young contemplates starting a carriage shop at Maple Creek, Assiniboia.

Mr. M.L. Russell and an Ottawa electric firm intend putting in another electric light plant in Renfrew.

The large flour mills of McAllister Bros., at Pakenham, Ont., that were recently destroyed by fire, involving a loss of \$50,000 are to be rebuilt.

The factory of the Canada Wire Mattress Company at Toronto Junction, near this city, was destroyed by fire January 5, loss about \$30,000.

The ratepayers of Collingwood, Ont., voted favorably a few days ago upon a by-law to expend \$10,000 to extend the electric light and water system of that town.

The London & Springbank Electric Co., London, Ont., are applying for incorporation with power to construct and operate an electric railway, from a point in or near the Village of London West to a point on the Thames River near Springbank, and to construct a bridge over said river at or near Springbank.

C. R. Somerville, London, Ont., the manufacturer of "Mexican Fruit Chewing Gum" and other things, has just completed a large addition to his factory. He has spent \$2,500 on this addition, and besides, has put in \$2,000 worth of new machinery. He closes the year with as complete a factory as is to be found in Canada. He has introduced electric power, electric lighting and the latest system of heating and ventilation he could obtain.

The Toronto, Hamilton & Buffalo Railway Co., will apply at the next session of the Dominion Parliament for an Act to legalize the bonus by-law and to make its provisions binding on the company and to extend the times for the commencement of the line from Waterford to Lake Erie, and for completing the line to Toronto; and for power to build a line from some point in the counties of Brant or Wentworth to some point in the counties of Waterloo or Wellington, etc.

R. G. Olmstead, Hamilton, Ont., has invented a new snow brush for trolley cars, which was given a trial on Wednesday morning on the H., G. and B. electric road and proved very successful. It can be fastened to the front of an ordinary trolley car and will cost only about \$150 each, whereas the large plows in use now cost over \$6,000. The brushes are of steel and rest on each rail. They are geared from the axle but revolve four times as fast. There is also a small revolving fan underneath the car which prevents the snow banking up more than three inches between the rails.--Spectator

Messrs. Gilbert & Lockwood, Moulinette, Ont., contemplate erecting a sawmill.

The Waterloo Woolen Mfg. Co., Waterloo, Ont., have been putting in new machinery.

Myers, Robertson and Hackett are erecting a new saw mill on False Creek, Vancouver. The mill capacity will be 35,000 feet a day.

The North-West Shoe Co., has been incorporated with a capital stock of \$40,000, headquarters at Montreal, for the manufacture of leather and boots and shoes.

Fire at Merriekville, Ont., on January 10, caused the destruction of Kyle's malleable iron works, a small works for the manufacture of harness hames, and the power house of the electric plant used for lighting the town.

The Dominion Dyewood and Chemical Co., Toronto, have sent in a calendar for the current year. It includes a beautiful steel engraved view of the Nile, in Egypt, the palm trees and sub-tropical foliage being in strong contrast with the snows now covering nearly the whole of the United States.

The desirability of having radial electric roads run from Brantford, Ont., to neighboring towns and villages is forcing itself upon the citizens, and Messrs. Thomas Elliott, C.H. Waterous and others are applying for incorporation as a company to build such roads, reaching to Paris, Galt, Simcoe, Port Dover and other places.

Three ships are being built on False Creek, Vancouver. The schooner Queen City with capacity of 350 tons dead weight or 250,000 superficial feet of lumber, and a barkentine of 600 tons registered. Both ships are being built by Messrs. Nicholson Adams and B. Jerre of Victoria. A steamer of 130 tons is also being built by Messrs. Dan W. McKenzie.

The stockholders of the Ontario Natural Gas Company are jubilant. They have struck another gusher. For a month past they have been drilling in a new locality near Ruthven, Ont. At a depth of 1,000 feet a small pocket of gas was struck. After drilling through the rock the genuine article was found. The workmen heard a roaring sound away down in the deep hole and the next moment stones and earth were hurled into the air. Then the gas began to escape with a roar distinctly heard two miles distant. The flow is estimated to be 1,000,000 cubic feet daily, and the pressure is estimated at 400 pounds. This is equal to any of the wells as yet struck in Ontario. The Company is now prepared for any demand that may be made upon its gas supply. It will keep the new well as a reserve.

BRUNNER, MOND & CO., LTD., NORTHWICH, ENG.

Manufacturers of PURE ALKALI Guaranteed 38 Degrees.

The Strongest and Purest Form of SODA ASH in the Market, and the Most Economical Form of SODA for the Manufacture of



GLASS, PAPER, WOOD PULP, SOAP AND STARCH

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THE PAUL FRIND

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Dealers in and Manufacturers of

WOOLEN MACHINERY. MILL SUPPLIES.

Specialties:

English H & T Steel Card Clothing.

Williams' Heddles, Shuttles, Reeds, Heddle-frames, Loom Repairs.

DODGE WOOD SPLIT PULLEYS

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Manufacturers of

Sulphuric, Nitric and Muriatic Acids, Commercial and Chemically Pure. Mixed Acids for Explosives, Liquid Ammonia, Glauber Salts. Copperas, Muriate Tin, Tin Crystals, Acetic Acid, Nitrate Iron, Bisulphite Soda, Acid Phosphate for Baking Powders and General Chemicals. Fertilizers, Etc.

LONDON, - - - - - ONTARIO

The Fort Erie Ferry Railway Co., are applying for incorporation with a capital stock of \$150,000 and to extend and complete its railways, etc.

The Central Natural Gas Co., Dunnville, Ont., have been incorporated with a capital stock of \$3,000 for supplying electricity for light, etc.

The Savanne Lumber Co., Penetanguishene, Ont., are applying for incorporation with a capital stock of \$48,000 for the purpose of building and operating mills for the manufacture of lumber, etc.

The Western Wire & Nail Co. has been incorporated with a capital stock of \$50,000 and head office at London, Ont., to manufacture wire goods, plumbers' and painters' supplies, draw wire, etc. Messrs. Thomas S. Hobbs and William R. Hobbs, of London, Ont., and Andrew J. Summerville and others, of Toronto, are the incorporators.

The "Galt Foundry."

Messrs. Cowan & Co., proprietors of the Galt Foundry, Engine and Machine Works, Galt, Ont., are hustlers and have been from away back, and leaders among our Captains of Industry. Since the last allusion made to them in these pages some of their business transactions are as follows:

Messrs. Desnoyers & Aubin, St. Faustin, Que., have placed a heavy planer and matcher and a four side moulding machine in their factory which they purchased from Cowan & Co., Galt.

The Stratford Gas Co., Stratford, have recently placed a 25 h.p. boiler in their works which they bought of Cowan & Co., Galt.

Messrs. Cowan & Co., of Galt, have recently supplied Mr. Hugh Stewart, of Hagersville, Ont., with a large band saw re sawing machine and one of their latest improved 10-inch moulders.

Messrs. H. & F. Hoerr, piano manufacturers, Queen St., Toronto, have recently added to their plant the following machines which they purchased from Cowan & Co., Galt, Ont.: One improved rapid surfacer, patent pedestal buzz planer, band saw, pedestal sharper, combination saw bench and a double emery grinder.

Messrs. Newlands & Co., of Galt, have just added to their well equipped plant one of Moffat's patent improved feed water heaters and purifiers which they purchased from Cowan & Co., of that town.

Messrs. Cowan & Co., of Galt, have just shipped one of their 8-inch moulding machines to Wm. Gerry, London, Ont.

Messrs. Ratz Bros., Elmira, Ont., have bought one of Moffat's patent feed water heaters from Cowan & Co., Galt.

The Plessisville Foundry Co., Somerset, Que., have just added to

their plant one of Cowan & Co.'s large mortising machines with boring attachment.

Messrs. W. May & Son, Weston, Ont., have added to their plant a revolving bed surface planer manufactured by Cowan & Co., of Galt. Mr. John McDonald, Galt, has just received from Cowan & Co., one heavy double surface planer and matcher, one band saw re saw and a sash and door clamp.

The Knechtel Furniture Co., Hanover, Ont., who purchased one of Moffat's patent feed water heaters some two years ago, state that they are well pleased with it and have lately purchased from Cowan & Co., Galt, another of double the capacity, and have shipped the first one to their branch works at Southampton.

Mr. Wm. Good, Fredericton, N.B., has placed his order with Cowan & Co., Galt, Ont., for a 25 h.p. engine and boiler and saw mill.

Mr. Paul Lee, Moncton, N.B., has just added to his steam plant a 60 h.p. boiler which he bought of Cowan & Co. Galt.

Mr. C. J. Sillikner, Amherst, N.S., has just placed in his large and well equipped planing mill the following machinery which was purchased from Cowan & Co., Galt, Ont.:—One 10-inch revolving bed planer, one sash sticker, band saw, combination saw bench, sash and door clamp.

Messrs. Tanguay & Frechett, Actonville, Que., have recently added the following machinery manufactured by Cowan & Co., Galt: One 8-inch four side moulder, 12-inch buzz planer, 24-inch pony planer, bracket band saw, 16-inch wood lathe, and double emery grinder.

Dr. Thompson, of Cayuga, Ont., and R. A. Thompson, of Lynden, Ont., have lately put in Moffat's patent feed water heaters which they purchased from Cowan & Co., Galt.

L. A. Ross, of Cornwall, has placed his order with Cowan & Co., of Galt, for one heavy double surface planer and matcher.

The Cookshire Mill Co., Cookshire, Que. have purchased from Cowan & Co., Galt, one No. 2 planer and matcher and one rip sawing machine.

Mr. James J. Burgess, Grand Falls, N.B., has placed his order with Cowan & Co., Galt, for one of their No. 3 planer and matchers.

Messrs. George Bros., Stouffville, Ont., have just placed with Cowan & Co. their order for one of Moffat's patent feed water heaters.

Messrs. Cowan & Co., of Galt, have just shipped a heavy planer and matcher to H. C. Rees, South Woodslee, Ont.

Mr. Jesse Snyder, Hagersville, Ont., whose premises were recently destroyed by fire, has placed his order with Cowan & Co., Galt, Ont., for a new engine and a number of wood working machines.

Messrs. D. Morton & Co. Nicomekl, B.C., have just placed their

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order with Cowan & Co., of Galt, for a 60 h.p. engine and boiler, saw mill, heavy planer and matcher and a mortise machine.

Mr. John Shearer, Blair, Ont., who has the contract for supplying the villages of Hespeler and Preston with electric light, has placed his order with Cowan & Co., Galt, Ont., for a 75 h.p. Corliss engine and boiler.

Messrs. Milord & Lalonde, Winnipeg, Man., have ordered from Cowan & Co., Galt, a complete outfit for a planing mill.

Mr. G. A. Preval, Murilla, Ont., has just purchased from Cowan & Co., Galt, Ont., a 25 h.p. engine and boiler.

Besides the above Messrs. Cowan & Co. have shipped and have on order a number of small machines for all parts of the Dominion. Business with them has been very good. They have been running overtime for the past two months, in fact, they have been so pushed that they have found it necessary to put on a night staff, so that their works are now running day and night, and the prospects never were better for a good season's business. It speaks well for the class of machinery they turn out when they are compelled to run their works day and night.

The Dodge System of Rope Transmission.

We learn from an American exchange that amongst the recent large contracts secured by the Dodge Manufacturing Co., of Mishawaka, Ind., is one taken by their Boston branch office for the entire power transmission equipment for the five immense power buildings now being erected in South Boston, Mass., by Mr. S. P. Wormwood. The contract was given this company only after the very closest investigation by Mr. Wormwood of all the leading manufacturers and contractors of this line of work in the United States.

The Dodge patent American system of rope driving has been adopted for the main connections, which consists of six pairs of 400 h. p. compound condensing engines, each fitted with a twelve foot iron centre, wood rim fly wheel made by the Dodge Company. The engines are to operate on two lines of shafting. All receiving sheaves are mounted on quills and connected with the shafting with 400 h.p. Dodge split friction clutches. Chain oiling bearings will be used throughout the buildings on all shaftings.

The large electrical generating plant will be driven by two lines of shafting, connected with the two main lines by four 600 h. p. American rope drives, so arranged that any combination of generators may be operated by any combination of engines.

In each of the five buildings a rope drive of 200 h. p. capacity,

transmitting 50 h. p. to the jack-shaft on each floor, will be installed, all being connected with and driven direct from the main line shaft running from the engine room through the different buildings.

Mr. Wormwood adopted the Dodge American or continuous wind system of rope transmission only after carefully investigating the relative merits of the same in connection with belting and other styles of rope driving.

This important outfit of machinery is now being installed and will do much towards introducing the highest grade and most efficient power transmission specialties of the Dodge Manufacturing Co., to the New England manufacturers and engineers.

The Dodge Wood Split Pulley Co., Toronto, are the manufacturers in Canada of these pulleys and the Dodge system of rope transmission; and, as has been repeatedly shown in these pages, are meeting with unbounded and unqualified success in their business. There are hundreds of industrial establishments in Canada thus equipped.

St. Thomas Car Wheel Company.

The St. Thomas Car Wheel Company, in the year 1884, succeeded to the business which Messrs. Russell & Co. had successfully carried on for thirteen years. Speaking of this concern the St. Thomas, Ont., Journal says:—As the name of the company implies, the main product is chilled car wheels, and at the present time the capacity of the works is two hundred and forty wheels and ten tons of other castings per day. Car wheels may be generally divided into two classes—steel tired and chilled charcoal iron wheels. In Canada it is the opinion of many mechanical men that the latter are not suited for particular railroad service, but are better adapted for freight cars. To a considerable extent this is also the opinion in the United States. It is founded on the results obtained from the use of chilled wheels as made years ago, when the manufacture was not up to the present standard of skill and experience, and upon the results obtained from wheels made of late years by manufacturers who have little practical experience in this particular branch of foundry work, or who take no steps to improve and perfect their processes. To these causes is due the idea that chilled wheels are unsafe and unfit for passenger and locomotive service. The St. Thomas Car Wheel Co., realizing that professions of merit are of little account unless backed up by results, took steps, as soon as the new company was under way, to systematize and perfect the manufacture of chilled wheels, with a view to demonstrate their greatest capabilities. Their success in this direction is very gratifying, and is conclusively proved by records of the service obtained from their wheels. This company now stands in

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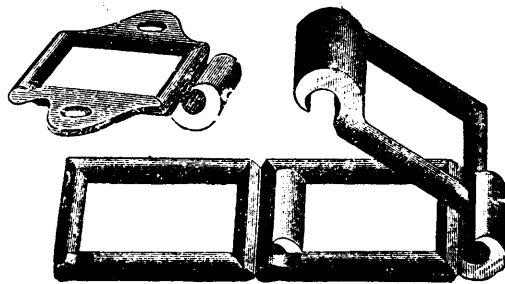
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the front rank of American wheel-makers, and in some respects it precedes all others. Space will not admit of a particular description of the work, but the publications of the company set it forth fully for the benefit of those interested. The first important step was to plan methods by which the quality of every individual wheel could be ascertained before delivery for service, so that safety and wearing capacity of the best order might be assured. It is sufficient to state in this respect that the records of tests made during the past ten years cover, in an individual manner, every single wheel turned out, and that the company can point to a series of distinguishing marks on every wheel made in that time, and produce records of seven distinct tests which cover the manufacture of each wheel and demonstrate its fitness for service before it is shipped from the works. The magnitude of a system like this can be appreciated, from the fact that to carry it out involved the making and recording of nearly three million tests during the period named. The result speaks for itself. Not one wheel has ever broken in service, and the wearing capacity is from two to four times greater than that of any type heretofore used. The company did not rest after perfecting these features of their wheels, but next took up a more important and difficult question. Chilled iron is from six to eight times harder than steel, and it had been practically impossible to treat it mechanically in any manner as steel wheels are finished—that is, to turn chilled wheels true, and to perfect their general mechanical conditions. Machinery for treating chilled iron had been constructed, but the processes were so difficult and slow that to attempt to finish an ordinary output would have involved a larger and more expensive plant than that required to produce the wheels in the first place; and yet, if the higher order of manufacture in chilled wheels were to be established, it was absolutely necessary to remove the mechanical imperfections found in castings as ordinarily delivered from the foundry. It may not be generally known, but it is nevertheless a fact, that with all other manufacturers chilled wheels are delivered for service as a simple foundry product, and the only mechanical preparation consists in boring the axle seat and pressing in the axle. In endeavoring to deal with chilled iron mechanically, the St. Thomas Car Wheel Company were, therefore, compelled to attempt an order of operations that have never before been conducted successfully. The outlay involved was very great, but not more than the benefits which accrued. Chilled wheels, instead of being put into service in an untrue, unbalanced and crude condition, are now brought to a perfect stage of mechanical finish, and when worn to some degree, instead of being consigned to the scrap iron pile, can be re-turned for further service. It is not in any measure extravagant to say that this adds over 100 per cent. to the mileage that may be obtained from chilled wheels of the best manufacture.

Evidence that the work of the St. Thomas Car Wheel Co. is duly appreciated, is afforded by the fact that their wheels are in use under the heaviest locomotives on limited trains, and also that they are used in as large diameters as forty and forty-two inches under passenger equipment on a number of Canadian railways, replacing the steel-tired wheels previously employed, and it is now admitted that they give better service than that given by even the most famous steel wheels. It is difficult for the railroad men, who believe in moving slowly to realize what all this means, but the certainty of their ultimate favorable opinion may be deduced from the fact that the relative expense of chilled wheels made under the system referred to compared with the expense of steel wheels, stands as one to seven or eight, on the most conservative estimate, and that no type of steel wheel has ever given the record made by the St. Thomas wheel, i.e., not one case of breakage in 300,000 to 400,000 wheels made in the past ten years and used in every kind of service passenger, locomotive, etc. That the St. Thomas Car Wheel Company has been able to create and sustain this magnificent record of absolute safety, and to further add to their wheels the feature of mechanical perfection, is a silent but far-reaching argument in favor of the continued prosperity of the company. The work has been accomplished under many difficulties and in the face of considerable unbelief as to the ultimate possibilities, but it now stands firmly planted as a fact, demonstrated on a scale sufficient to make it most convincing. The product of the company has found its way into every quarter of Canada, and is now entering other countries, with every prospect of a great future business abroad. Active canvass is being made throughout Europe and the colonies, and the company has arranged for representations in nearly all of the leading centres. The iron used by the company is largely obtained from the Canada Iron Furnace Company, operating furnaces at Radnor Forges, Quebec. The peculiar qualities of this iron give to chilled cast iron the conditions of strength and resistance to wear to an extreme degree; and the wheels made by the St. Thomas Car Wheel Co. in the past four years out of the iron named have given most extraordinary mileage results. The iron manufactured by the Canada Iron Furnace Co. is made exclusively from bog ores of the Laurentian mountain district, and is the only iron in the world made exclusively from bog ores. The earlier manufacture of Swedish iron was carried on with the use of bog ores to a considerable extent, and it was really at the time of their use that the reputation of Swedish iron was established. In consequence of the giving out of the bog ore deposits, the use of bog iron has been practically abandoned in Sweden for many years. The operations of the Canada Iron Furnace Co., therefore, promise to develop in Canada the manufacture of

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a special quality of iron that will possess the advantages found in Swedish iron in its best days. The St. Thomas Car Wheel Co. realized the importance of this condition in Canadian iron several years ago and has since been engaged in developing the possibilities and extending its use with the most satisfactory results. The very high conditions of strength and wear referred to have enabled the company to place the wheels made from this metal in successful competition with steel tired wheels used abroad and particularly on electric railroads where the use of the steel wheel has been found impracticable owing to the peculiar condition of service. It is a remarkable fact that thus far it has been absolutely impossible to use steel wheels on electric railroads, as the greater contact between the wheels and the rails wears away the flange of the former so quickly. Chilled wheels of a superior quality are therefore imperative for electric service, and in proportion as electricity displaces steam in railroad operations, the demand for such wheels will increase. The St. Thomas Car Wheel Company undoubtedly have before them a brilliant future.

CANADIAN PATENTS.

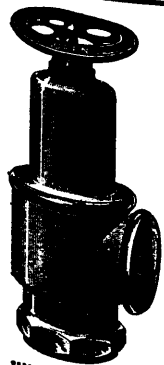
The following patents have been issued from the Canadian Patent Office, from October 11 to November 12, 1894, inclusive.

Information regarding any of these patents may be had on application as follows:—

- Fetherstonhaugh & Co., Bank of Commerce Building, Toronto.
- Ridout & Maybee, 103 Bay street, Toronto.
- A. Harvey, Central Chambers, Ottawa.
- J. A. Grenier, Imperial Building, Montreal.

Copies of American patents corresponding to Canadian patents can be procured from either of these attorneys for the sum of twenty-cents each.

- 47,315 Dental chair, The S. S. White Dental Mfg. Co., Philadelphia, Pa.
- 47,316 Dumping apparatus for railway cars, The Long Mfg. Co., Cleveland, O.
- 47,317 Method of and apparatus for melting snow drifts, J. B. Brand, Henry Schackell and C. L. Franklyn, all of Milwaukee, Wis.
- 47,318 Car coupler, Herman Gay and Fidelio Finke, Baltimore, Md.
- 47,319 School seat and desk, John R. Strand, Pierpoint, S. D.
- 47,320 Lamp, The Safety Heating and Lighting Co., New York, N. Y.
- 47,321 Hand car, Adrian Hitt, Jersey City, N. J., H. G. Simon, and Israel J. Cobin, New York, N. Y.
- 47,322 Roller bearing, J. C. Bradley, Wilson, N. Y.
- 47,323 Female abdominal support, Barbara Gregg, Uxbridge, Ont.
- 47,324 Blotting paper, Mercel Beguede, Bordeaux, France.
- 47,325 Process of and apparatus for manufacturing artificial marble, Hugo A. Majewski, Berlin, Germany.
- 47,326 Primary battery, Chas. Jones Hubbell, New York, N. Y.
- 47,327 Velocipede, Samuel Young and Michael A. Powers, Ontonagon, Mich.
- 47,328 Shaft holder, Wm. McKone, Neepawa, and Samuel McKone, Rosedale, both in Man.
- 47,329 Open grate heater, Jno. Lawlor, Brooklynn, and Mary R. Geis, New York, N. Y.
- 47,330 Process of preparing fodder for shipment, Jno. Crown and Antoine Leonidas Hurtubise, Montreal, Que.
- 47,331 Washing machine, D. D. McDougall, Alexandria, Ont.
- 47,332 Hame hook, W. W. Miller, Memphis, Tenn.
- 47,333 Wooden pulley, M. W. Smith, Lynhurst Norwood, London, Eng.
- 47,334 Drip troughs for refrigerators, C. W. Heinrichs, St. Louis, Mo.
- 47,335 Heating stove, James Wilson, St. Louis, Mo.
- 47,336 Broadcast seed sower, Warren E. Pratt, Corruna, Mich.
- 47,337 Dental chair, The Archer Mngf. Co., Rochester, N. Y.
- 47,338 Steam vacuum pump, The Mining and Dredging Power Co., New York, N. Y.
- 47,339 Sash lock, Eliza Alice Abrams, Los Angeles, Cal.
- 47,340 Boot and shoe, John Maw, Alexandria, Oat.
- 47,341 Fire back, J. G. Sheldon, Cleveland, O.
- 47,342 Life saving guard for cars, Edward S. Piper, Toronto, Ont.
- 47,343 Bicycle, A. C. Ferguson, Saratoga Springs, N. Y.
- 47,344 Car coupler, Wm. Dunlay, San Diego, Cal.

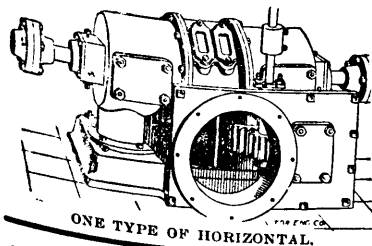


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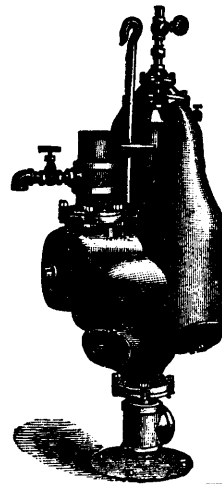
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 47,354 Letter and bill file, The Eclipse Office Furniture Co., Ottawa, Ont.
 47,355 Apparatus for affixing adhesive stamps, The Stamp and Label Affixing Machine Co., Glasgow, Scotland.
 47,356 Bed spring, The St. Thomas Mfg. Co., St. Thomas, Ont.
 47,357 Syringe, W. F. Ware, Cambden, N. J.
 47,358 Switch and signal for Railways, J. G. Dixon, Norman Rd. Birkley, York Cy, Eng.
 47,359 Car fender, Bichnell Hall, and E. P. Coleman, Lambton, Mass.
 47,360 Device for beating eggs, etc., A. J. Saltsman and Robert Bryce, Albany, N. Y.
 47,361 Steam radiator, E. E. Gold, New York, N. Y.
 47,362 Thermostatic steam traps, E. E. Gold, New York, N. Y.
 47,363 Clothes washer, W. H. Patterson, Hooper, Neb.
 47,364 Curling iron and heater, R. H. Brown, Detroit, Mich.
 47,365 Temperature regulator, I. O. Perry, Chicago, Ill.
 47,366 Temperature regulator, T. O. Perry, Chicago, Ill.
 47,367 Wire fence stretcher, Telephore Laverdiere, Village de Beaupre, Montmorency, P. Q.
 47,368 Street sweeping machine, C. M. Kimball, Toledo, O.
 47,369 Tape for laundry machines, Allen Conkling, Chicago, Ill.
 47,370 Method of mounting chair bottoms, table tops, etc., Wilhelm Droeser, London, Eng.
 47,371 Horse shoe, T. N. Jones, Greeley, Colorado.
 47,372 Conveying apparatus, J. L. Board, Chicago, Ill.
 47,373 Cutter bar for mowing machines.
 47,374 Boiler flue cleaner, C. S. Dean and John W. Dean, Fort Erie Ont.
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 47,376 Lock and key combined, A. B. Buckland, Rochester, N. Y.
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 47,378 Temperature regulator, T. O. Perry, Chicago, Ill.
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 47,380 Method of making dental suction plates, Joseph Spyer, Mexico, Mexico.
 47,381 Method of and apparatus for sales checking, A. N. Southwick Boston, and J. L. Hall, Kingston, Mass.
 47,382 Frame for window sashes, etc., Peter McKenzie, Ottawa, Ont.
 47,383 Car coupler, Ed. Byers, Jacob Byers, Thos. Huser, Cameron, Mo., and W. V. Hannum, Brookfield, Mo.
 47,384 Piston-rod packing, W. J. Hennessy, Palmrya, N. Y.
 47,385 Grate, Ed. Scanlan, Frederick Keifel, jr., Louisville, Ky.
 47,386 Pistol attachment for gun barrels, Mandal Whipple, Fairbanks, Cal.
- 47,387 Neck band clamp, Allen Conkling and Edward Buell, Chicago, Ill.
 47,388 Wrench, G. A. Hosmer, Buffalo, N. Y.
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 47,395 Non-interfering device for horses, Wm. Temple, Windsor, N. Y.
 47,396 Mechanism for converting pedal motion, Osborne Baker, Osborne, Ont.
 47,397 Car fender, The Darrach Car Fender Co., Newark, N. J.
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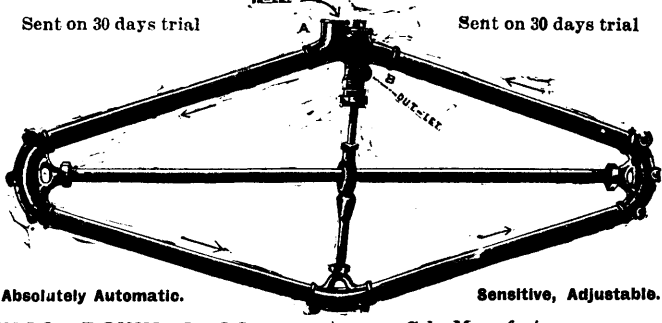
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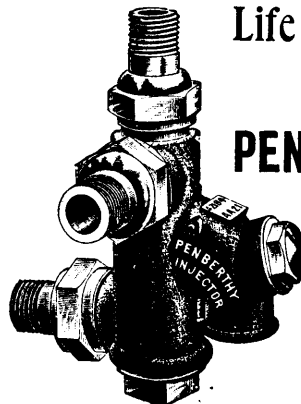
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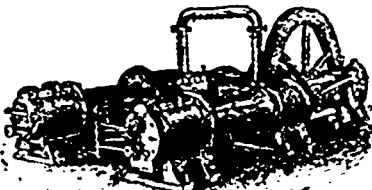


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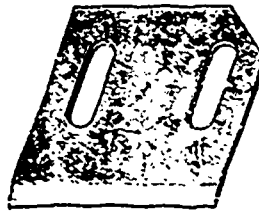
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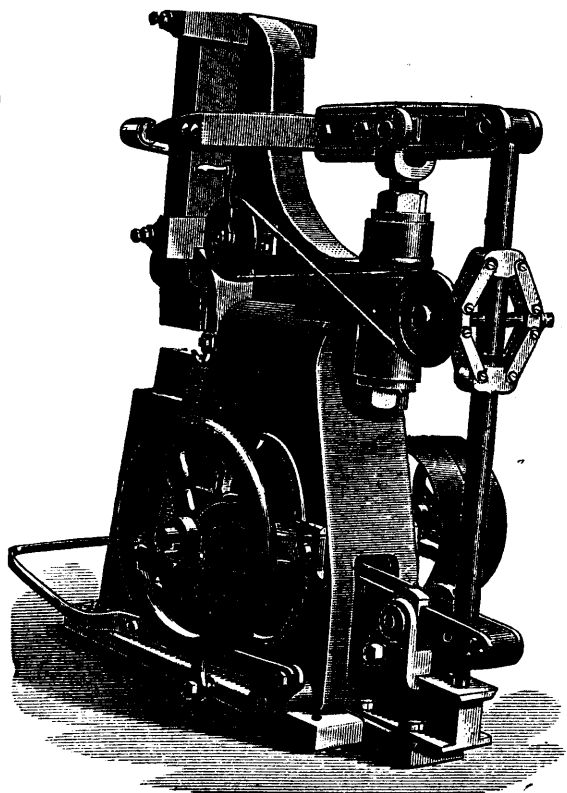
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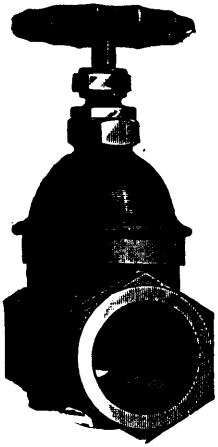
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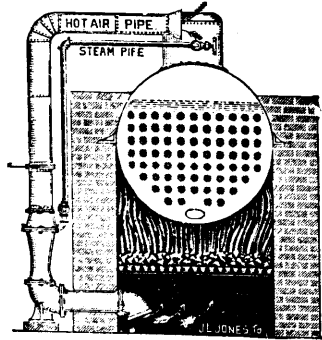
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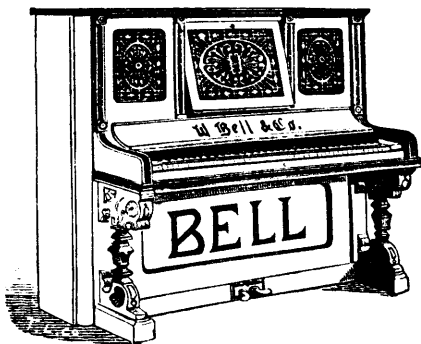
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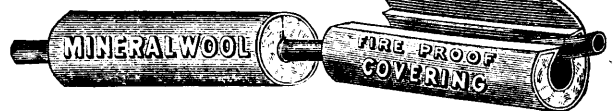
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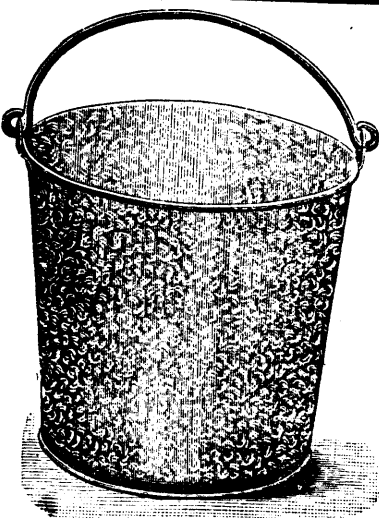
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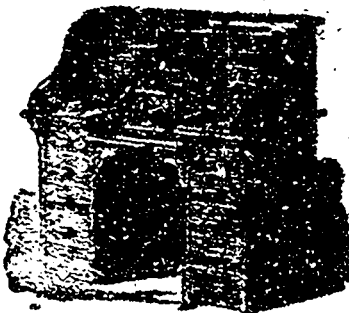
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