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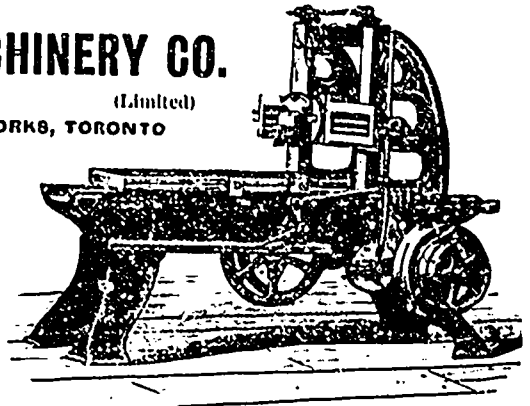
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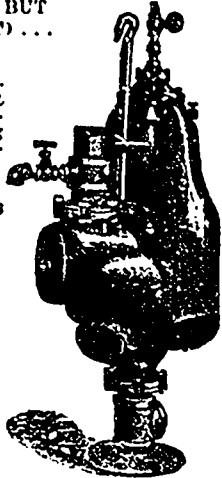
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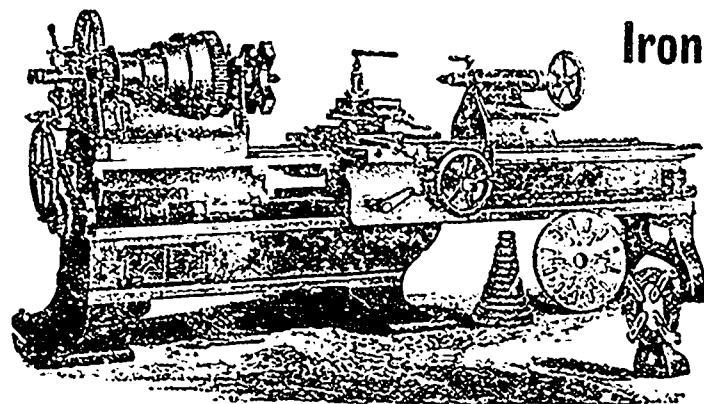
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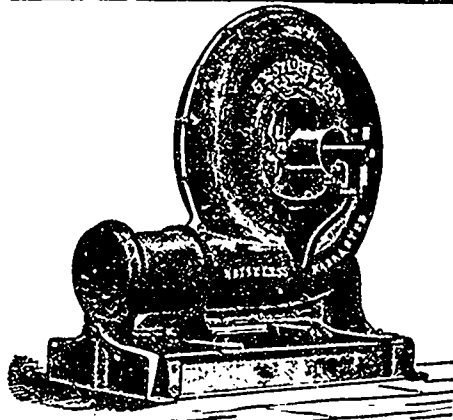


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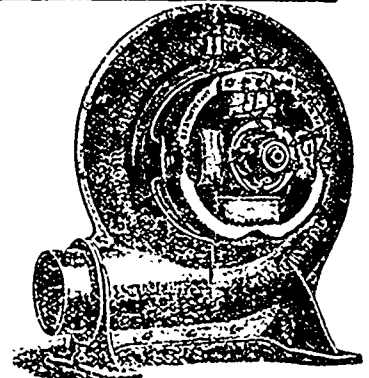


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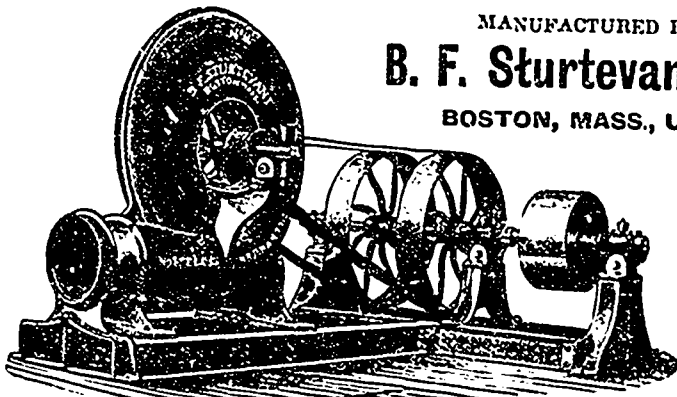
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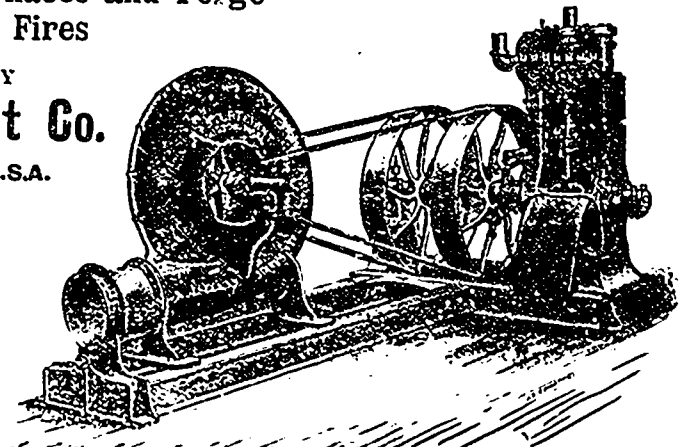


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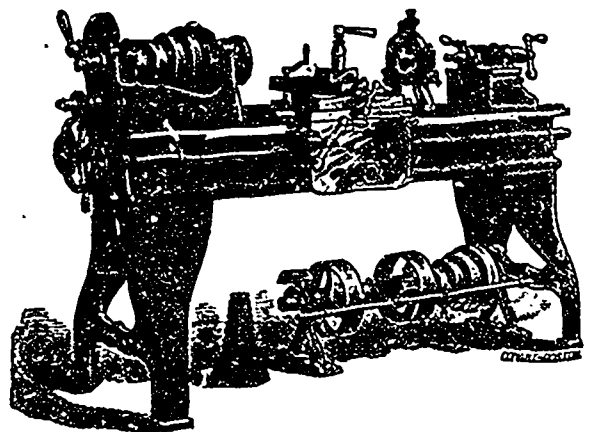
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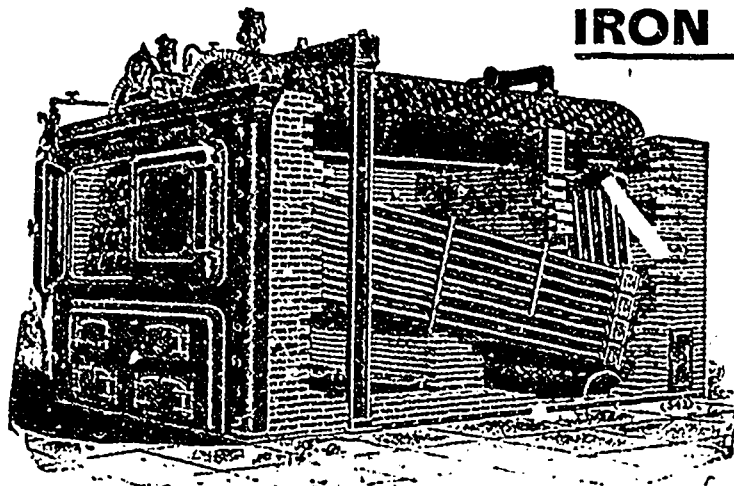


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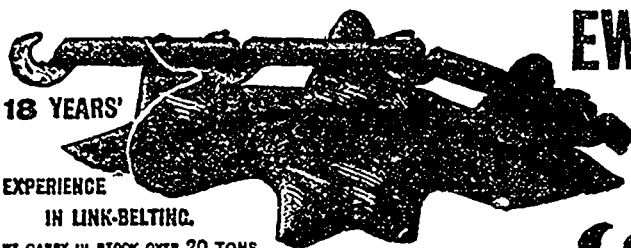
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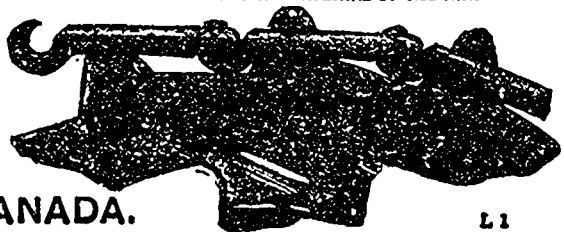
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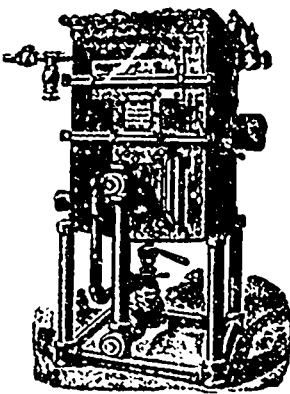
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 Manufacturers and Capitalists Patent Acts of 1872, and Amendments, Section 28.
 NOTICE is hereby given to all persons desirous of practicing the invention in the manufacture of Aluminum and Alloys thereof, for which certain letters patent of the Dominion of Canada were granted on June 7th, 1889, to Chas. Martin Hall, assignor to the Pittsburg Reduction Co., to wit, Nos. 31,512, 31,513, 31,514, 31,515, 31,516, 31,517; and also the invention in aluminum alloys and manufacture 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. 39,102, that the undersigned is prepared to grant licenses upon reasonable terms under each and all of same letters patent, and otherwise place the patent inventions in possession of the public in accordance with the provisions of the above recited act.
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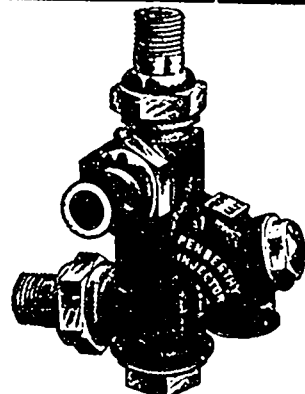
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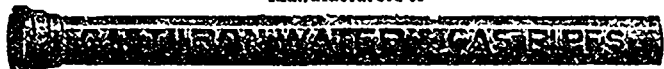
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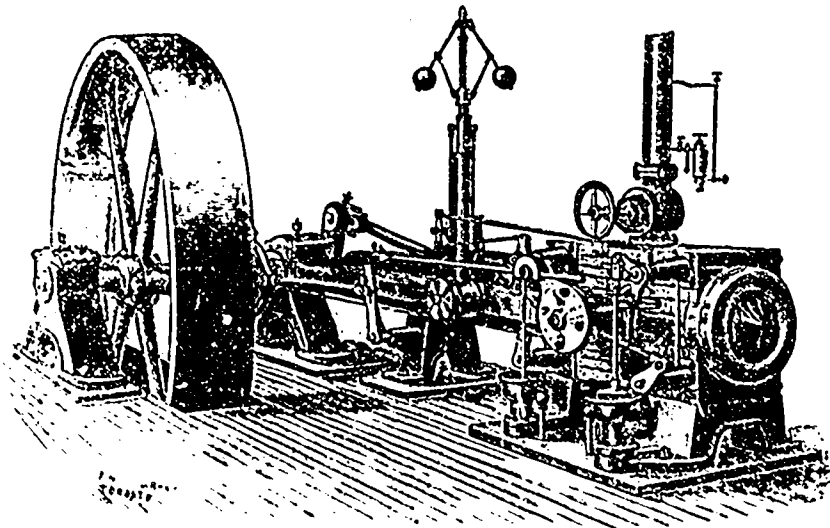
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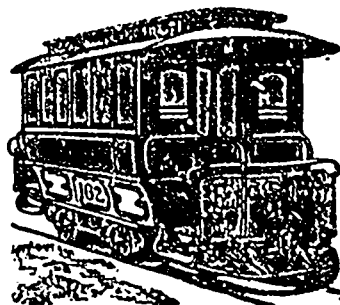
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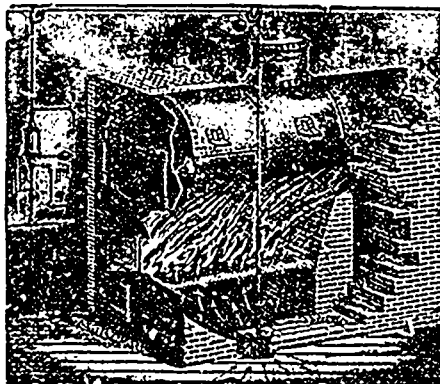
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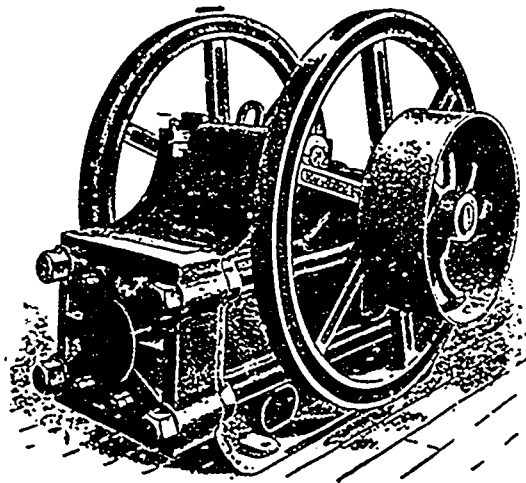
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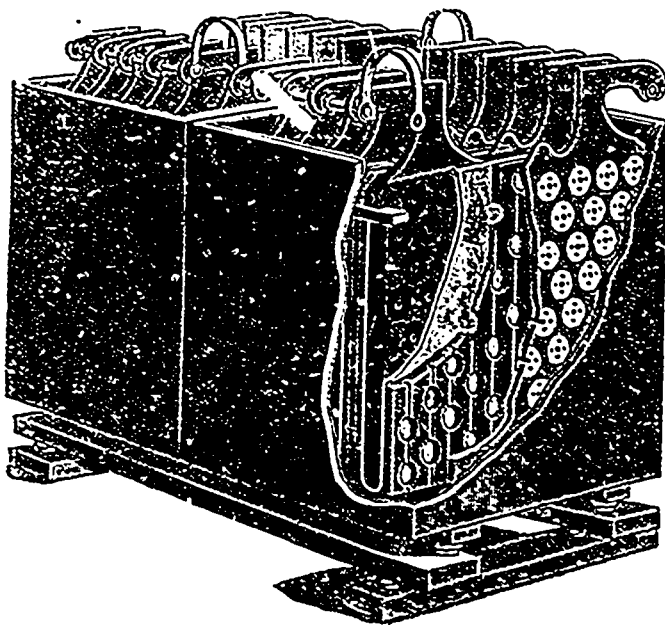
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MR. FOSTER'S "PERIOD OF SLAUGHTER PRICES."

Under the heading General City News, The Toronto Globe has an item to the effect that a certain prominent dry goods concern on King street had received letters from large New York manufacturing concerns, one of which stated that they had concluded to accept the exceedingly low Canadian offer for a lot of ladies' clothing, the sale being at away below regular prices; the letter from another manufacturer making an offer to sell certain goods at thirty-five cents per yard, the regular price being from eighty cents to \$2.25. And thus it is that Canada is being made a slaughter market for the over-production of United States factories. Of course it would be

ruinously demoralizing to the United States market to sell goods at thirty-five cents, the regular price of which ranges from eighty cents to \$2.25, but then thirty-five cents is better than nothing, even if it involves an actual loss on the cost of production; but Yankee factories must be kept in operation, and Canadian manufacturers and Canadian workers must suffer. The incident emphasizes our constant contention that in all cases wherever possible specific duties should prevail, and that the greatest vigilance should be observed by customs officers to prevent undervaluation. There are large numbers of factories in Toronto engaged in the production of the precise styles and qualities of ladies' clothing alluded to by The Globe, giving employment to thousands of men, women and children; but can The Globe say what is to become of them if they are to be deprived of their home market by the flooding of it with foreign goods sold at ruinous sacrifices. On January 31st the Minister of Finance announced with a great flourish of oratorical trumpets that the duty on this line of goods had been reduced five per cent., and that, too, as he told us, at a time when prices were lowering in every great manufacturing country—at a time when prices were being lowered—at a time when hard times had made it necessary for manufacturers to sell at less than cost.

Taking all these things into consideration, said Mr. Foster, the remarkable cut that was made in the tariff, going to the very verge of the extreme, shows that a great advantage was afforded to consumers in the cheapening of goods. If Mr. Foster had kept himself posted in current events he would have known that the greatest commercial curse under which this country is now bending is "cheapness." Large establishments have sprung up and are rapidly multiplying, appealing for patronage on the ground, as advanced by them, that they sell goods at less than cost of production. Mr. Foster says that consumers are benefited in the situation, but had he no bowels of compassion for the poor women and girls who are employed in the production of many of these goods, but whose bread is being taken from their mouths by this "going to the verge of the extreme" in his tariff reduction policy. There was no general demand for any such reduction, but widespread distress and dissatisfaction is the result.

THE SWEAT SHOPS COMMISSION.

Some months ago, at the request of a labor organization, the Dominion Government appointed Mr. A. W. Wright a commissioner to "enquire whether, and if so, to what extent the sweating system is practised in the Dominion, and at the same time to procure information respecting the kindred question of wages and other matters affecting the employment and conditions of life and labor among the industrial classes." Commissioner Wright has performed his duty and made his report.

In that report Mr. Wright says that, to guard against misapprehension, he has not attempted to give to the term "sweating system" any definite or arbitrary meaning, the differing definitions being as numerous as the men who give them—that there are no conditions found in all the cases in which the term is applied which are not also found in numerous other cases to which it is not applied. "As a matter of fact," Mr. Wright says, "there is not in any country, certainly not in Canada, any system co-extensive with the popular use of the

term. Therefore, and for this reason, wherever the commissioner uses the term in his report it is not to be understood as being intended to convey some particular meaning."

We do not understand why Mr. Wright should have gone to such pains in explaining that some ambiguity attached to the phrase "sweating system" rendering it difficult to be understood, and using it only from necessity, when, if he had referred to some standard dictionary he would have discovered a definition sufficiently accurate and descriptive of the matter committed to him for his investigation and consideration. For instance one dictionary gives the definition of "sweater" as "an employer who underpays and overworks his employees, especially a contractor for piece work in the tailoring trade," and of the verb "to sweat" as "to extort money or labor from, exact hard work from at insufficient wages, or extortionate interest, or in unsanitary conditions." We imagine that these definitions might have been very properly appropriated to the term "sweating system" by Mr. Wright, which would have cleared away the mental cobwebs that environed him, and not have led him into the absurdity of saying that as a matter of fact there is not in any country any system co-extensive with the popular use of the term. There are abundant evidences obtainable that sweating is practised in quite a number of countries, and we regret to say Canada included to a certain extent.

Because of the limited time at his disposal Commissioner Wright confined his investigations chiefly to the clothing trade, because the system is more prevalent in that trade than any other, and also because the conditions that prevail in that trade in Canada are very similar to those that obtain in the United States. His method of collecting information was by personally visiting factories, workshops and dwellings, making enquiries of both workers and employers; by addressing lists of questions to employers and others bearing upon the matter under investigation, and by inviting representatives of the several parties interested to a joint meeting in Toronto. A report of the proceedings of this meeting is appended to the report. He also put himself in communication with factory inspectors and other officials in the United States, and attended the annual convention of the American Federation of Labor.

After going very fully into the conditions which he finds in the clothing trade in Canada, and before addressing himself to the task of indicating the legislative remedies he would suggest, Mr. Wright gives a resume of the laws which have been enacted and proposed in the United States, for the purpose of checking the evil, and indicates how far and in what ways these or similar laws might be made effective for the same purposes here. He then proceeded to make his recommendations as to dealing with the system in Canada. Among other things he suggests that the provisions of the Factories Acts be extended to all places, whether shops or dwellings, "in which articles of any kind intended for sale, are being manufactured." In support of this proposition Mr. Wright says: "Whatever objections may be properly urged against interference of this nature in the case of families working in their own homes, none can, I think, be validly advanced, on the ground of improper invasion of the sanctity of the home, against subjecting to inspection and regulation houses in which by the employment of non members of the family, the privacy which makes homes sacred has been surrendered. Even in

those cases in which those employed are the children of the parents living in the house, it does not seem that, for that reason, there should be no inspection or supervision in the interest and for the protection of the general public. The right of parents to work their children is not so indisputable and indefeasible, nor of a nature so sacred, that society is bound to take the risk of illiteracy and moral and physical deterioration in deference to it." He urges that either by uniform factories' legislation in all the provinces by the enactment of a Dominion Factories' Act there should be one sort of factory legislation for the whole country. He also favors the plan of having one chief inspector, with a sufficient number of deputies, male and female, working under his direction.

In the body of the report it is pointed out that there is no such thing as an apprenticeship system in the ready-made clothing trade, but that instead of it there is a practice of taking in learners, who work for a time for low wages and sometimes without wages, in consideration of being taught a trade or branch of one. This system is sometimes taken advantage of by unscrupulous employers, who get women and girls to work for them for months for little or nothing, and neither teach them a trade nor any part of one by which they can earn a living. To meet this Mr. Wright recommends the enactment of a law which would require any employer who took in learners under conditions either expressed or implied, that they should be taught a trade or branch of trade in consideration of their working for low wages, to actually teach such learners the trade or branch, or afford them proper opportunities for learning it. He would make failure to do this a misdemeanor, and would have evidence that the employer did not himself know the trade he had agreed to teach and did not possess facilities for teaching it, taken as proof of guilt.

To ensure the payment of the employees of contractors the report recommends that the manufacturer originally going out the goods to be made up, be held legally responsible for the payment of wages. In support of this it is pointed out that the principle is already admitted by the mechanics lien law, and also that it would not entail any risk or hardship on manufacturers, beyond a little trouble, since they could either require their contractors to furnish evidence of the payment of wages or to put up security.

Mr. Wright strongly favors the adoption of a system of licensing all shops and places in which goods are manufactured for sale. The object he hopes to gain by this are better sanitary conditions, more efficient inspection, and protection against the spreading of infectious diseases. He also favors the adoption of a system of labelling or tagging all goods that may be made in tenement houses, and he would have "tenement houses" defined to mean "any house used, in whole or in part, as a dwelling and in which more than one family shall reside." As he explains, we have no tenement house workshops in Canada as yet, but as we have no guarantee of continued exemption from them, he favors this regulation as a preventive measure. As a further precautionary measure, the report advises the adoption of the English system of requiring manufacturers to keep and furnish to the Factories Inspectors lists of all persons employed by them and who work in any place outside the manufacturers own factory.

Mr. Wright refuses to endorse or recommend proposals having for their object the total suppression of home work. He gives the substance of a law, which is at present before the United

States Congress, which has for its object the entire suppression of the manufacture of clothing and some other kinds of goods either in private houses or in small contractors' shops. The title of this proposed law is "A bill to raise additional revenue for the support of the Government." This title, Mr. Wright calls pretextual, since the object is not the raising of revenue, but by the imposition of a prohibitive revenue tax to prevent the carrying on of a business. This bill proposes to levy a tax of \$300 per year for each person to whom a manufacturer gives out goods to be made up; a like tax on each person to whom the contractor may sublet the work, and so on, every time the work is sublet. Mr. Wright says that there can be no doubt that such a law if enforced would put an end to the "sweating system." He describes it as a "clumsy, if effectual method of curing the disease by killing the patient." "Viewed only from the standpoint of those employed in the shops and factories," he says, "it would be an advantage, doubtless, to have legislation enacted which would abolish the home work system. Possibly this might be an advantage to the trade as a whole, or at any rate to those who might ultimately be found to remain in it, but in the meantime it might not be easy to justify legislation which must inevitably result in depriving many worthy people of their only means of earning a livelihood."

Mr. Wright in his report has evidently done the best he could with a subject difficult to handle, some of his suggestions being practical and of a character that ought to be enacted into law, but in our opinion he lost a valuable opportunity to add much emphasis and value to his report in not directing attention to the fact that the working women and girls of Canada are suffering more, and that more distress is added to their hard and lowly condition by the competition of the sweating system as practised in other countries, particularly the United States, than from sweating done in Canada, and that much relief could be obtained from that evil by an increase of the tariff upon clothing and wearing apparel, and the strict administration of the customs laws, particularly those relating to undervaluation. On any day during the time the commissioner was prosecuting his enquiries he could have discovered pointers in the advertisements of dry goods and clothing concerns that indicated nothing less than an almost scandalous condition of things, for it is a notorious fact that garments are there offered for sale, all complete and ready for use, the price of which would not more than pay for the materials of which they are made, leaving nothing whatever in the way of profit to either the manufacturer or the labor that constructed them. It is very seldom, if ever, that such goods are described as being the product of any Canadian factory, made by Canadian labor, but they are declared to be of foreign make, which undoubtedly they are. Only a few days ago a large Toronto house advertised that they had just purchased a large stock of ladies' white goods which they offered at ruinously low prices. They stated that they would sell for thirty-five cents each, articles that previously commanded not less than five times that money. Mr. Foster, in presenting a statement to the House of Commons on January 31st, showing the many reductions that had been made in the tariff, stated that it had been done in a period of depression, of strong competition and of slaughter prices; that many a case occurred in which goods were held as collateral security by the banks, and the manufacturers, being unable otherwise to meet their obligations, allowed their

goods to be sold for whatever they would fetch; and these declarations of the Finance Minister, and the so called "bargains" offered by the dry goods stores, explains why the working women of Canada are in such a distressed condition, so much so that the Government found it necessary to appoint a Commissioner to enquire into the cause, and to, if possible, recommend a cure for it. Instead of extending his investigations in the matter over a period of ninety days, Mr. Wright could have given it full consideration and made his report in less than ninety minutes. His answer could have been made in these three words, "Increase the Duty."

ONTARIO ARCHITECTS.

The Mail and Empire appears to be very much in earnest in advocating the Architects' bill now before the Ontario Legislature. In a recent discussion of it in a committee of that body, Dr. Meacham opposed the measure, our contemporary assuming that his opposition was based upon insufficient grounds, and that he had misunderstood the provisions of it. It says:

It is not the intention of the proposed legislation to prevent anyone not an architect and a member of the architects' association from drawing plans for a house. It allows all men making money now by such work, and who may in the future perform such service, to go on precisely as they are going now. It would be instructive if Dr. Meacham would put his finger on the particular clause of the bill which is open to objection in this respect. It seems to us that this measure, which is, as a matter of course, not connected with the issues of party in any way, provides for an amount of public safety which is very desirable. If we consider the numerous accidents which take place through defective building design, we shall at once admit that it would be a good thing if the standard of architects' ability could be so raised as to considerably diminish the number of catastrophes, if not to prevent them entirely. The future tendency, as the value of city lands rises, will be towards tall buildings, and it is manifest that these require far greater knowledge on the part of their constructor than two or three-story houses. It does not seem to be an unreasonable demand that the state shall provide in some way that this extra and special knowledge shall be hall-marked in such a manner that when a capitalist is going to erect a large building he may be able to know for certain the manner of man he is employing to design and superintend it. Dr. Meacham will probably allow that it is a good thing for the public that quacks and insufficiently educated medical men are not allowed to practise any attempts at the healing art. Why then should the public run the risk of getting killed by buildings through the ignorance of those who planned them as to strains, stresses, and materials? There are also sanitary matters that architects ought to know all about, and it does not seem too great a hardship that they shall somewhere in the next century be called upon to prove that they know it before they are entrusted with any job of importance. For the bill as at present drawn does not prevent anybody now practising as an architect from registering, no matter how small a piece of a real architect he is. He may come under the aegis of the profession by paying a very moderate yearly fee. But the bill does aim at the gradual raising of the professional standard, and in this aim it should receive intelligent support.

There is much breeziness and freshness about this that commends itself to general admiration. We are told that any man whatever who may make any pretenses to be an architect, although he may have no knowledge of the rules of architecture, and may not be even a competent journeyman carpenter or brick mason, may come under the aegis of the

profession, and be recognized in law at least, as a thorough and competent architect, by the payment of a small fee. Having paid the fee he would be authorized to boldly announce himself as an architect and accept contracts for the designing of tall buildings. Of course this would as far as the law would go, place the incompetent man upon equal footing with the most celebrated architects in the land, which might be a very good thing for the incompetent man, but rather rough on the competent craftsmen, and even more than rough upon the unsuspecting public.

It does not seem to have occurred to the advocates of the bill that there might be some very worthy and competent architects who differ from them in the necessity for the proposed law, and who, in the event of its passage, might decline to come under the aegis of it. Suppose that among such should be found such competent and well-known architects as Mr. Darling, Mr. Dick, Mr. Burke, and Mr. Langton, would they be compelled by law to remodel their business signs and letter heads, obliterating the word "architect?" Would the alternative be forced upon them of subscribing to what they might consider an obnoxious requirement, or be driven out of their business?

In our opinion the proposed law goes too far in admitting incompetent men to registry as architects, if indeed there be any necessity whatever for such a law; and it falls very far short of where it ought to go in not providing pains, penalties and punishments upon architects, through whose blunderings and miscalculations so-called accidents happen, where property is destroyed and human life sacrificed. The promoters of the bill seem, very strangely indeed, to have entirely overlooked this matter; and it would have been entirely reasonable if the gentlemen had, in framing their bill, demanded that where the extra and special knowledge of the craft was accorded a hall-mark, so that when a building was to be erected under the auspices of the guild and the aegis, the owner thereof would be not only be able to know for certain the architect he was employing to design and superintend it, but also to know that if the building collapsed from faulty construction, he would have a good cause of action for damages against the architect; and it would be in this line that where maiming or loss of life occurred from such collapse, the architect might be held to trial in a court of justice on a charge of manslaughter. The public should be made to run as little risk as possible of getting killed by the collapsing of buildings through the ignorance of those who planned them.

A CANADIAN OPPORTUNITY, WHO BIDS?

An ore and reduction company now doing a large and lucrative business in a city in the United States, are looking up a suitable location, accessible to water and railroad shipping facilities, for the chemical reduction and refining of bauxite, copper, nickel, cobalt, silver, lead and gold ores, and the manufacture of aluminum, nickel alloys and chemical composites. They propose to erect a forty-ton daily capacity manufacturing works at any place where suitable arrangements may be effected for their doing so, where will be donated to them a five-acre building site, the title to be passed when steam is ready to be turned on at the works, and where one third of the necessary amount is subscribed to cover the expense of erecting the buildings and machinery, which, they say, will

cost not exceeding \$6,000. The money is not asked as a donation, but as a subscription to the treasury stock of the company—par value \$10 per share—said stock to be redeemed within one and two years by the company to holder of said stock paying six per cent. interest. This because there is no stock for sale, but to enable the subscribers to have the works located where they may live. The works will employ not less than twenty or twenty-five men per day directly at the works, and fifty or more men indirectly in connection therewith.

The aluminum nickel alloy manufactured by this concern, and of which they make a specialty, large quantities of which are being sold in Canada, is used in the manufacture of gun metal, projectiles, acid pans, propeller wheels, car wheels, steel castings of all descriptions, and general foundry castings in either gray or malleable iron and bronze and copper castings. It is also used very extensively in puddling furnaces, open hearths and reverberatory furnaces and in steel converters.

This is a first-class opportunity for some Canadian city to secure the first works of the kind in the country. Who bids?

UNDER WHICH BANNER?

Will free trade in Canada open a new factory or other manufacturing industry anywhere in the country, and if so where? Will The Globe say?

Will free trade enlarge any existing factory, or afford its employees more work? If so, how? Will The Globe say?

Will it increase the wages of any workman in any factory or industrial work in Canada? If so, in what line or lines of employment, and why? Will The Globe say?

Nowhere on earth does actual and literal free trade exist between two civilized nations, by virtue of which all custom houses, revenues and revenue officials, have been wholly abolished; nor has it ever existed in that form between two such nations. Will The Globe contradict this?

Will free trade put money in the purse of any laboring man, or of any one who has his wealth invested in any industrial establishment in Canada? If so, will The Globe say how?

Protection, purchasing at home, keeps labor in demand, enhances wages, encourages manufacture, and guarantees the largest possible prosperity. It also provides revenue for the expense of government, gathering the same largely from foreigners who wish to trade with us. Will The Globe contradict this?

Will free trade add a cent to the price of a bushel of wheat or of any other grain, or farm product? If so, how? Will The Globe say?

Will free trade increase the price of cheese or butter, or create a demand for a pound of either of them, or of any other farm product? If so, how? Will The Globe say?

With free trade absolutely nothing save a trifling cost of ocean freight would stand between laborers in Canada and laborers in India, China or Japan, where ten cents a day is considered good wages. Therefore to protect Canadian producers against the low wages current in other countries, competing merchandise from those countries seeking a market in our own is taxed at the frontier in the form of customs duties. Can The Globe successfully contradict this assertion?

Will not free trade permit the importation of the cheapest of foreign products, both of the factory, the farm and the workshop, and so lessen the consumption in Canada of Can-

dian goods to the extent of the importation? Will The Globe contradict this?

Will not free trade tend to decrease the price paid in Canada for Canadian made or raised articles and goods in general use, and of Canadian labor? Will the Globe answer this?

All candid minds must admit that our customs duties are largely paid (in many cases altogether) by the foreign producer, and not entirely by the Canadian producer. Therefore, to give up this revenue to the foreigner who seeks our markets, and collect all the taxes from our own people, would be unwise. There is not a commodity manufactured in Canada but what is cheaper now than it was in 1873, before the adoption of the N P. The decline of prices brought about by domestic competition and the increase in production has been most marked. There are but few manufactured articles but what are not less than 25 per cent. cheaper than they were before the protective system was established.

Protection fosters a spirit of national self-dependence, such as is indispensable to the highest standards of citizenship under a government of the people.

AMERICAN—BRITISH TRADE.

In response to a recent Senate resolution, the Secretary of the Treasury reported the gross amount of the imports into the United States from ports of Great Britain and her colonies and dependencies, together with the amount of the exports to such ports during the last five years.

United Kingdom—Imports, \$800,340,150, exports, \$2,184,048,634. Bermuda—Imports, \$2,222,463; exports, \$3,620,675. British Honduras—Imports, \$902,554, exports, \$2,065,769. Canada—Imports, \$179,184,682, exports, \$237,760,759. Newfoundland and Labrador—Imports, \$2,103,627; exports, \$7,492,483. British West Indies—Imports, \$67,492,483; exports, \$42,230,436. British Guiana—Imports, \$21,021,262, exports, \$9,913,067. British India and East Indies—Imports, \$179,184,682, exports, \$237,760,759. Hong Kong—Imports, \$3,873,663, exports, \$22,342,235. British Australasia—Imports, \$30,635,988, exports, \$4,471,244. British Africa—Imports, \$3,732,575; exports, \$19,482,824. All other British dependencies, including Aden, Falkland Islands, Malta, etc.—Imports, \$9,318,592, exports, \$2,804,060.

It will be seen from these figures that American exports to the United Kingdom are more than 150 per cent. greater than the imports therefrom, to Bermuda, 60 per cent. greater; to British Honduras, 130 per cent., to Canada, about 33 1-3 per cent., to Newfoundland and Labrador more than 250 per cent., to British India and East Indies, 33 1-3 per cent.; to Hong Kong, almost 500 per cent., to British Australasia, more than 60 per cent., and to British Africa, more than 400 per cent. From British West Indies American imports are 60 per cent. greater than the exports to them; from British Guiana, 115 per cent. greater; and from scattered British dependencies, 233 per cent. greater.

The total amount of American imports from Britain and her colonies for the last five years is \$1,300,078,768, as compared with \$2,819,092,944 of American exports to them in the same period, a balance in favor of the United States of \$1,519,014,176. As a rule, the nearer British dependencies are to the United States, the higher is the relative proportion of the imports from them to the exports to them.

CANADIAN WOOD PULP.

The London, Eng., Canadian Gazette, alluding to the delegation of Canadian wood pulp manufacturers who recently waited upon the Dominion Government requesting that an export duty be imposed upon pulp wood, shows that at present the United States tax on imported pulp is ten per cent., while pulp wood is free. A Canadian export duty would, it is claimed, induce the United States to remove their duty; this, the Canadian manufacturers think, would give them control of the trade. At present Canada exports about 500,000 cords of pulp wood yearly, so that the proposed export duty of \$2 per cord would, the deputation represented, yield a revenue of \$1,000,000 annually. The exporters of pulp wood, of course, object to such an impost. As it is, they have their hands full, they say, to compete with the pulp wood sellers of Virginia and Maine.

On the face of it, says the Gazette, Canada is wise to encourage her own manufactures. Her exports of the raw material—i.e., pulp wood, practically all of which goes to the United States—have been as follows:—

1890.....	\$108,998	1893.....	\$392,262
1891.....	219,458	1894.....	468,357
1892.....	386,092		

A constantly increased export of raw material. The pulp wood exported in 1894 would be capable of producing mechanical pulp to the value of £400,000 sterling, or about five times the value of the pulp wood now exported. If converted into chemical pulp the export value would be no less than £700,000 sterling.

As it is, Canada is doing an increasing export trade in pulp as well as in the wood. The exports of pulp stand thus:—

1890.....	\$162,180	1893.....	\$455,893
1891.....	280,619	1894.....	547,217
1892.....	355,303	1895.....	590,874

Again a steady annual increase is shown.

The British demand for wood pulp is largely on the increase. The imports for 1895, for example, were of the value of £1,574,400 (297,098 tons), an increase of £150,000 over 1894.

There is a further stage to which Canadian mills should carry this wood pulp business namely, to the stage of paper manufacture. The United Kingdom imported last year unprinted paper to the value of £2,046,106, and strawboards, millboards and wood pulp boards to the value of £548,254. The exports of paper from the United States were last year of the value of about £500,000 sterling. Canada, with her forest resources and unlimited water-power, should certainly take her place in the business. At present Great Britain looks chiefly to Germany, Holland, Sweden and Belgium for her imported unprinted paper.

THE CANADIAN PAPER-MAKING INDUSTRY.

Editor Phillips of the London Paper-Maker recently visited the United States and Canada, looking over the matters of interest to his industry in the two countries, and to a Canadian journalist unbosomed his impressions in this frank and instructive way:—

"I foresee for Canada a great future in the pulp and paper-making industry, so long as the fibre remains what it is now, namely, wood—and as for that I can conceive of no substitute

that would so well meet the requirements as to cost, supply and the processes of manufacture. There is absolutely a colossal mine of untold wealth in the forests and water power streams of Canada, from the point of view of the pulp and paper-maker. I know of no country in the world in which the raw material, as well as the natural facilities for utilizing it, are so abundantly and so conspicuously existent. I have travelled around the globe in a search of just such a field as Canada presents in this particular.

"I have come to this country to prospect," he went on. "In the States they would term it looking for pointers—in the interests principally of the paper-makers of Great Britain. You will perhaps know that England herself lacks in the requirements to carry on the industry of pulp-making. She has neither the water power nor the wood. She has to look to the outer world for the immense supplies of the material which enters into the composition of the enormous amount of paper which she uses. We get our supply chiefly from Norway and Sweden. Americans are our greatest competitors in the manufacture of 'news.' And, indeed, in the manufacture of the finer grades of paper they are now running us a race. To the States belongs the honor, if you may so term it, of having reduced the price of 'news' in England from three ha'pence to a penny a pound! This is a style of competition that fairly amazes us. How can such things be?"

"To solve this problem I have come across the ocean at this time, and am making a special inquiry into the extent and nature of the pulp and paper-making of the American continent. What do I find? Well, I find that our cousins in the States mean business, and that the paper industry in the old land is threatened unless we devise some means of meeting the ruinous competition from that quarter. It is now only by the most rigid economy that we can compete with the States. As I have said, our supplies come from Norway and Sweden, from whence I have recently returned. We must find another source, and that source, in my opinion, is Canada. So, at all events, I shall report on my return to England.

"I find that the industry of pulp-making is peculiar to this country. I say that Canada is destined to beat the States in it within a very short time, and finally to lead the whole world. In a few years I prophesy, not only will Canada be supplying the United States with pulp and its products, but supplying England also, and the rest of the civilized world. I say this advisedly and seriously, after personal inspection of the country's resources, and with a full knowledge of what my venture implies.

"What is the anomalous condition of this industry as now presented?" he continued. "The States import Canadian wood, make their own paper, and ship it into Canada, which country thus loses the benefit of the making of the article within its own borders. The Americans must come to Canada for their wood. Their own supply is exhausted, except, perhaps, in the State of Maine, but even that cannot last long. If I am rightly informed, the Canadian Government are seriously considering the imposition of an export duty, with the object of encouraging pulp making and paper-making, for which this country is so admirably suited. That would be the first great step toward checkmating our cousins across the lines. The rest would be easy. They must have your spruce.

"But what is of most concern to your Canadians is the fact that this great industry of pulp and paper-making promises

soon to be established in this country with British capital. Your own magnificent resources are comparatively unknown to you. I am very well acquainted with the United States and Canada, having in the course of various trips over there covered the territory from Hudson's Bay to the Mexican Gulf and from the Atlantic to the Pacific. As a matter of fact, the last three years of my education were spent over on this side of the Atlantic. This is the only way I see to meet an American competition which is now the death, not the life, of our paper trade. We in England, notwithstanding transportation, should compete with the Americans when we consider that they have to ship from mills inland over hundreds of miles of railway, and are under disabilities of other kinds from which we are free. The duty would be the same to both of us."

EDITORIAL NOTES.

The uses of mica are manifold. One of its latest developments is distinctly novel. An ingenious Australian has invented and introduced a mica cartridge for sporting and military guns. The filling inside the cartridge is visible and a further advantage is that instead of the usual wad of felt a mica wad is used. This substance, being a non-conductor unaffected by acids or fumes, acts as a lubricant. Where smokeless powders, such as cordite or other nitro-glycerine compounds are used, mica has a distinct advantage over every other material used in cartridge manufacture. Being transparent, any chemical change in the explosive can be at once detected. The peculiar property it has of withstanding intense heat is here utilized, the breach and barrel being kept constantly cool. The fouling of the rifle is also avoided, the wad actually cleaning the barrel. Canada is a great producer of mica.

A successful manufacturer, when asked why he patronized trade papers so largely, to the neglect of other methods of advertising, replied: "Men who do not read their trade papers and keep posted in their business, are usually poor customers. If I sell them a good lot of machinery, they do not know how to use it, and report a failure, or we have to run after them, lose time and money to get them a-going, and make the sale stick. But those who read and are posted know how and succeed. Such men would not read circulars, if I were to mail circulars to them. They see my advertisement regularly in the trade paper, and know I have an established business, and when they want anything in my line, write me, don't whine about prices, or what time they can get from others, but buy, try, and have no trouble, and pay the bill. Give me such a class as I can get by such judicious advertising, all the time." His experience is that of successful merchants.

Interest in the beet sugar industry is taking active form in the middle states, and is keener than ever at the west. Representative Tupper of the second district, has introduced a bill in the New York legislature to pay a bounty of one cent per pound on all sugar produced within this state from beets grown in New York. If it becomes a law, Binghamton capitalists stand ready to equip a sugar factory at that place, provided farmers will contract to grow several thousand acres of beets. This crop has been grown in an experimental way upon the intervalle land in our central New York valley, with satisfac-

tory results in yield and sugar content. But to compete with foreign cane sugar, or with the government-aided beet sugar of Europe, the industry in our middle states can only be made profitable with a state bounty, unless the tariff is satisfactorily adjusted. In the latter event, the competition of the beet sugar industry in our own western states is to be reckoned upon. We would like to see the Tupper bill passed.—American Agriculturalist.

A carpet lining made entirely from wood and paper pulp is one of the newest articles to be produced from that seemingly unfailing source—paper, says an exchange. Carpet linings made from manilla paper, folded in flat rolls, or otherwise constructed, are common enough but the new type of lining is quite out of the ordinary. Anything that is between two layers, as a carpet lining (which is between the floor and the carpet), must be porous so as to allow the dirt that works through the texture of the carpet to sift through to the floor. Again the lining must be flexible and smooth. It must also be moth proof. These ends are obtained by running the pulp on the floor to an average depth of one-quarter inch which will furnish a good, smooth, elastic foundation for the carpet. The pulp fills every crack, bad place, depression, and forms a perfectly level surface. Exposure to the air dries the composition in a day or so. The carpet is laid directly upon this surface, which being absolutely smooth, and just elastic enough, makes the poorer grades of carpets seem like the softest and most costly of pile textures.

Since our last issue the three morning papers of this city have given considerable attention to the furniture business and the tariff. We were interested only in showing that the inference of *The Globe* was wrong that goods were being imported into Canada in spite of the tariff and sold side by side with similar goods made here. Our contemporary proceeds to put us "on the horn of another dilemma" by taking our statement as true and arguing that since there are more factories than are necessary, and goods are being sold for less than they cost, that this condition is another result of the dreadful tariff. The tariff is wrong, no matter which way you look at it, according to *The Globe*. Well, if we had no tariff, we would get what we were familiar with before the protective tariff was introduced. American manufacturers used to make this the dumping ground for all their obsolete and unsalable lines, and auction rooms did the business that retailers ought to have done. It is better for us to make the furniture with our own material and labor, even at a loss, than to send our money across the lines to support American institutions.—Canadian Furniture and Upholstery Journal.

The incorporation of steel wire gauze with sheets of papier mache, or unprepared wood pulp, has made it possible to utilize paper advantageously as a building material. Using the wire mesh as a body, the wood pulp is compressed, on both sides of the same, to any desired thickness as well as size of sheet. With steel wire gauze great strength of the sheet is obtained from very little substance, and the buckling tendency of the paper fully counteracted by the rigidity of the wire. Experiments proved that a thickness of one eighth of an inch of the material was sufficient for all roofing, an unsupported sheet of that thickness sustaining the weight of several

men. Among other qualities is a system of thorough water-proofing and a method of fastening with steel bands, the simplicity of which is such as to enable any pressure upon the sheet to be borne by the whole of the fastening nails at once. The material is said to be an effective non-conductor, and successfully resists heat, cold, and wet. It also lends itself well to artistic treatment, both in variety of tint and association with timber work, this being attributed to the terra cotta like effect produced by the mixing of fine sand of various colors with the paint.—Northeastern Lumberman.

The announcement has been made of the death of Mr. N. W. Pratt, president of the Babcock & Wilcox Company, at his home in Brooklyn, N.Y., on March 10th. Mr. Pratt was born in Baltimore in 1852, and entered the employ of the Babcock & Wilcox Company in 1870, where his energy, engineering ability, and remarkable business qualifications, won for him the confidence of his employers. When, in 1881, the concern was organized as a corporation, Mr. Pratt was made treasurer and manager, which position he retained until the death of Mr. George H. Babcock in 1893, when he was elected president. Combining engineering knowledge and inventive genius with his business qualifications, to his effort was largely due the great success achieved by the Babcock & Wilcox boiler. As illustrating his versatility, in 1884 he became consulting engineer to the Dynamite Gun Company, and under his designs and patents the first successful dynamite gun was built. It was with this gun, eight inches calibre and sixty feet long that the successful experiments in throwing aerial torpedoes were made at Fort Lafayette, N.Y.

It is highly desirable that the resources of Canada should be developed. But there are two ways in which these resources can be developed. Canadian timber can be cut down and carried in the form of sawlogs to Yankee mills, there to give employment to Americans. Canadian nickel ore can be dug up and carried to the United States to be smelted and to give employment to American workmen. Canadian iron ore mines can be similarly developed, leaving a few dollars in the hands of the Canadian mine owners, and a big hole in the ground to show that "development" has taken place. Canadian spruce can be cut down and carried across the boundary, there to be manufactured into pulp by American labor. It must be remembered that while the American developer may employ American labor in Canada to unearth or cut down his raw material, no Canadian is permitted to find work in smelting Canadian ores, sawing Canadian logs, or grinding up Canadian spruce in the American mills and furnaces. There is another way in which Canadian resources can be developed, and which will not only give the mine owner and the timber owner as much money as he gets under the other plan, but compels the smelting of ores, the sawing of logs and the grinding of spruce in Canada, thus giving employment to a large number of Canadians who live here and spend their money here. This can be done by the simple means of the export duty. To put a heavy export duty on spruce logs, or, what would be better, to entirely prohibit the export of spruce logs, would be to build up in Canada an enormous business in the manufacture of pulp—a most profitable business in an article that finds a ready market not only in the United States, but in the world at large.—Spectator.

We can hardly believe that the Canadian government will ever impose a \$3 export duty on a cord of spruce pulp wood. Certainly \$1 per cord would be a fairer rate, while even \$2 per cord would be a handicap to the business on both sides the line. We cannot see how Canada could determine to put an export duty on pulp wood without also imposing an export duty on spruce saw logs and spruce lumber as well. No doubt Canada has a large area of spruce forests, and chafes to see their product made the basis of immense and profitable pulp and paper industries in the United States. Canada has the spruce, the water power, the cheap labor and ample transportation facilities, all important attractions to the pulp industry. She now needs the brains and capital, the mills and machinery and the skilled labor to become the great producer of pulp and paper for local and foreign trade.—*Northeastern Lumberman.*

There is a general demand in Canada for the imposition of an export duty on pulp wood that will probably be acceded to, and which would no doubt vastly benefit the Canadian pulp and paper industry. As to the "brains and capital" necessary to successfully engage in the industry, we are quite well off in that respect, and point with pride to some recently established enterprises. When the export duty on pulp wood is imposed we will see American manufacturers tumbling over themselves in a scramble for timber limits and in the erection of pulp and paper mills.

"Cheapness" and the consequent "Low Standard of Life" is the subject of a letter written by Sir Edward Sullivan in the *Manchester, Eng., Courier*, in which he says:—

Cheapness, cheapness, cheapness, and competition! These have been the parrot-cries of free traders; and excellent cries they are for the million and a half lucky individuals with their fixed incomes. But how about the thirty-five millions without fixed incomes? How does it affect them? What does competition and cheapness mean in their case? It means this,—it means that when by home competition a starving needle-woman is found to stitch shirts at 4d. a dozen, straightway a starving foreign woman is found to stitch shirts at 3d. per dozen, and her work is brought over here to drive English women below starvation point. This is competition! This is cheapness! And does it benefit the community? The first condition of the vaunted cheapness, this panacea of the Cobden Club, is cheap labor; do not let the operatives forget this when they have dinned into their ears the virtues of mere cheapness. Is the low price of wheat that is secured by stimulating foreign production and discouraging home production a national blessing? Is it a national blessing when the English and Scotch laborers are deprived of their employment in favor of the ill-paid labor of Russians, Poles, Wallachians, or Coolies? Are shirts stitched by starving women at 4d. a dozen a blessing to the community, or the cheapness of bricks made by over-taxed children at nominal wages, or the cheapness of nails or cables made by overworked women and children, a blessing? Is the waste of human life, the misery and suffering and demoralization and immorality inseparable from cheap labor a benefit to the country? Is the cheapness that is caused by cheap foreign labor a blessing? No, it is not; and in spite of all the writings and preachings of the Cobden Club, I maintain that the more we examine the meaning of

more cheapness, the more distinctly we find that it means a "low standard of life."

The Tokio, Japan, correspondent of the *New York Herald*, speaking of the possible invasion of American markets by the cheap labor manufactured products of Japan, says:—

A few months ago an American with commercial instincts arrived at Yokohama with a collection of samples of American knick-knacks sufficient to stock a country fair. He announced that he had come to Japan to build up American trade. He did not remain long and now it is advertised that he has turned up in San Francisco with a stock of samples of manufactured Japanese goods prepared to knock the American market silly. He is able, he says, to lay down all sorts of goods in California, duty paid, at from 30 to 50 per cent. less than the same class of articles can be manufactured in America. He threatens to wipe out the button industry in the United States and smash the friction match makers in a jiffy. He proclaimed that he could place in San Francisco a Japan-made bicycle, as good as a Columbia, for \$12. He talked of skilled labor in Japan for \$3 a month and common labor at \$2 per month. Of course, the proclamation of this adventurous merchant created a mercantile earthquake in California. It is certainly true that within a short period Japan will disturb the markets of the world with her cheap manufacture, but she is not prepared to do it yet. The talk of skilled labor at \$3 a month is nonsense. An intelligent Japanese workman can command five times as much in his native currency. Wages are going up in Japan, and labor organizations are springing up. The American watch plant is in operation in Osaka, under Japanese auspices, but with the best of machinery it has not been demonstrated that a cheap watch can be made by Japanese labor. The cheap Japan-made bicycle is not durable, it is not new and is not comfortable. It cannot be sold in the United States. As for matches, the Japanese are doing wonders in that line, but their matches will not compare with the American article. But the commercial invasion of the United States by Japan is imminent. Her manufacturers are indomitable, and it seems that the Japanese are not disposed to buy anything abroad which they can make at home. The balance of trade between Japan and the United States seems fixedly against us.

Attention has of late been directed to a line of industry in which British capital and enterprise may find a profitable outlet in Ontario, and, for that matter, in other parts of Canada as well—an industry wherein the manufacture of the raw material could be done in Canada for shipment to the United Kingdom, and there made into useful and necessary goods so as not only to be profitable to the firms or corporations engaged in the enterprise, but to build up a large and important trade. The industry relates to veneer and cut-stock. There are in Ontario considerable areas of suitable timber for both "slicing" and "rotary-cut" veneering—such as maple (four varieties), birch (three varieties), oak (three varieties), elm (three varieties), beech, sycamore, basswood, ash, balm, and white-wood—adjacent to a line of railway, so as to be convenient for shipping. The most improved machinery for this class of work can be obtained in Canada; and the veneering or cut-stock, properly dried, cut to size and carefully bundled, can be shipped to Great Britain and made into furniture, house decoration, packing-boxes, nail kegs, barrels, butter-tubs, and an almost infinite number of lesser—though by no means small or unimportant—lines of goods. A great deal of attention and study has been given to this veneer industry, and its development and extension from one line of manufactured goods to another—such as pianos, organs, sewing-mach-

ines, etc.—have been such that at this present time large lines that were formerly manufactured of solid material, are now "built up," so as to be cheaper, more durable and substantial, and much lighter; and many other lines of industry are moving into the using of veneer for constructive material. A trade could, it is believed, be built up reaching into millions per annum; and as the industries provided for are increasing daily necessities, so the business would increase from year to year. The capital for the industry on a large scale, however, would have to come from England. The few large lumbering and timber firms that are in Canada are all concerned with pine, and so special provision for capital would have to be made. —Canadian Gazette, London.

Speaking of the proposed railway bridge over the Detroit river, the Cleveland, Ohio, Marine Record, in a recent issue, says:—

The Ottawa Parliament has declared in favor of the Detroit bridge bill by an overwhelming vote. This was to be expected, and the Canadian Parliament, in the expression of its views, has shown most sound sense. Its grant of permission should be one of the most potent arguments for an equally forcible refusal on the part of Congress, if that body is to show itself worthy of comparison to the Ontario Parliament on the line of patriotism. Canada has every reason to favor the bridge. The slight damage to her limited water commerce is a minor consideration, when compared with the benefits such a bridge would offer to Canadian railroads, which are in such active competition with the lines of the United States. An

American line would bear the burden of the expense of such a structure, and all Canadian roads would share in its benefits. Congressman Towne's statement that the erection of a bridge at Detroit would result in a canal from Lake St. Clair to Lake Erie, with an outlet east of Point Pelee, must be considered as a prediction rather than as a threat. The expense and delays of locking, etc., have been outlined and exaggerated, but it remains a fact that a company is already organized to construct such a canal and that the fall is so slight that not more than one lock will be necessary to control the water. The saving in time to vessels bound for lower Lake Erie and Lake Ontario points would be considerable, and the great factor of dangerous Detroit river navigation would be eliminated. For the city of Detroit the loss of business occasioned by this diversion of the route of so many vessels would amount to little, and would be more than offset by the benefits to be wrought by a bridge; but the advantage of such a route through Canadian territory would be immense, from both commercial and naval standpoints. As stated before, there is every reason why Canada would be benefited by a bridge, but every dollar gained in this matter is taken from the commerce of the United States. Canada is openly allied with her great railroad interests. Under existing conditions in the United States, the necessity of regulation has placed Congress in the light of an opposer of railroad encroachments, and as a patron of water commerce as a necessary means of regulating the railroads. By favorable action on the Detroit bridge bill Congress will stultify itself as unpatriotic and indifferent to the commercial interest of the great North west.

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The Engineering and Mining Journal, of New York, has a high appreciation of Canada and its resources and advantages judging by a recent editorial utterance, which says :

Many of our readers are well acquainted with the charm of Canada as a holiday resort in the summer for fishing, later in the year for large game shooting, and in passing through the Dominion its farming capabilities, well developed over a vast expanse of acreage, cannot have failed to attract attention. Its mineral and lumber resources have also frequently caught the eye of men of business, and not always without benefit to themselves when the opportunity offered.

The most valuable portion, perhaps, of the Dominion, however, is possibly least known to Americans, and that is British Columbia.

The question as to whether some of the richest gold-fields of the far North-west are on English or United States territory is likely to come up at an early date, and will form the subject of a boundary commission, or perhaps a dispute of far greater importance and more tangible than the extremely shadowy one in Venezuela that has created such a rumpus and inflicted such unnecessary loss on the country.

If such a matter were to become a "casus belli," which every sane man would deplore, and we were to acquire Canada, as we did Texas, Arizona and the greater part of California, by force of arms—in other words, land-grabbing, "a la John Bull"—we would gain a prize indeed. Just consider the importance of Vancouver Island to this country! This island, about 300 miles long, with a breadth of twenty to sixty miles,

has, in the first place, deep water inlets of sufficient capacity to shelter the fleets of the world. The arsenal and dry dock at Esquimaux are better equipped than anything we possess, the latter being 457 feet long, fifty-seven feet wide and twenty-seven feet deep. The possession of Vancouver Island with its fortifications and the aid of a hostile fleet, places Seattle, Tacoma, Portland, and most of the Pacific coast at the mercy of the holders. Last, but not least, so far as fighting power is concerned and intrinsic value goes, the island contains the only first-class coal-fields so far discovered on the Pacific Coast. The output for last year amounted to about 1,350,000 tons, all of which is at present required and paid for by the United States with the exception of about 200,000 tons.

FOR THE PREVENTION OF UNDERVALUATION.

The United States, when it abandoned the McKinley tariff, a most important feature of which was, as far as possible, the imposition of specific duties, and accepted the present mongrel tariff, with its ad valorem system of imposing duties, adopted a policy that is a most fruitful cause of trouble to the customs because of the persistent undervaluation of imported merchandise. In fact it would have been difficult to have devised a system more open to objection on that account. The unsatisfactory working of the administrative features of the American tariff, and the general complaint against it led to an investigation into the subject by the Congress which has resulted in the framing of a bill which amends the existing law in some important respects. This bill, upon which a favorable report was ordered by the House Ways and Means Committee, contains some provisions of importance intended to prevent undervaluations. One of these provisions requires exporters to satisfy consular officers of the true value of goods desired to be shipped. Consular officers are given author-

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ity to refuse to certify to invoices unless the required oath is given, and no merchandise exported from any country or consular district to the United States is to be delivered on entry until the required oath has been certified to by the consular officer. Another provision prohibits any person holding a license as a customs broker from administering oaths.

The regulations regarding the assessment of additional duty for fraudulent entries are amended by the bill so as to provide that if the appraised value of any article of merchandise subject to an ad valorem duty, or to a duty based upon or regulated in any manner by the value thereof, shall exceed the value declared in the entry, there shall be levied, in addition to the duties imposed by law on such merchandise, an additional duty of 1 per cent. of the total appraised value for each 1 per cent. that such appraised value exceeds the value declared in the entry, but the additional duties shall only apply to the particular article or articles in each invoice that are so undervalued, and shall be limited to 100 per cent. of the appraised value of such article or articles. Such additional duties are not to be construed to be penal, and not to be remitted nor payment thereof in any way avoided except in cases arising from a manifest clerical error, nor are they to be refunded in case of the exportation of the merchandise or subjected to the benefit of drawback; provided, that if such appraised value of any merchandise shall exceed the value declared in the entry by more than 50 per cent., except when arising from a manifest clerical error, such entry shall be held to be presumptively fraudulent, and the collector of customs shall seize such merchandise and proceed as in case of forfeiture for violations of the customs laws, and in any legal proceedings which may result from such seizure, such undervaluation, to be shown by the appraisement, shall be presumptive evidence of fraud, and the burden of proof shall be on the claimant to rebut the same, and forfeiture shall be adjudged unless he shall rebut such presumption of fraudulent intent by sufficient evidence.

Regarding the method of arriving at the value of merchandise, it is provided that it shall be lawful for appraising officers in determining dutiable value to take into consideration the wholesale price at which such or similar merchandise is sold or offered for sale in the United States, after deducting the estimated duties thereon, the cost of transportation, insurance, and other actual and necessary expenses from the place of shipment to the United States, and a reasonable commission, if any has been paid, not ex-

ceeding six per centum. The existing law is so amended as to prevent any general appraiser who acted originally in a case from being one of the board to decide it. With the view of reducing the number of protests and relieving the courts of cases, a protest fee of \$2 is charged for.

The amendments proposed are in main the outcome of the suggestions of officials and others specially acquainted with the administrative side of the question, whose experienced opinions entitle them to much weight.

THE CANADIAN PIG IRON INDUSTRY.

At the January meeting of the General Mining Association, held in Montreal, Mr. George E. Drummond delivered a most interesting address on "The Canadian Pig Iron Industry" that included many facts and figures that should be kept in memory. Among other things Mr. Drummond, in speaking of rival markets, said:—

The American iron masters especially must be reckoned with, for they have succeeded in displacing the iron and steel producers of Great Britain in the western, or most important portion of the Canadian market, and have now narrowed down the fight for supremacy in that section to a question of the product of American labor as against the product of Canadian labor. The British iron masters frankly admit that they are out of the fight in so far as the trade of Western Canada is concerned. The splendid equipment of the American furnaces, together with their close proximity to the Canadian market, puts the Scotch and English iron masters at a great disadvantage, and it is therefore an acknowledged fact that the competition for the iron trade of Canada must now and for the future be solely and alone between American and Canadian producers. It has been said that our neighbors to the south "want the earth," and if one is to judge from the opinion of so eminent an American authority as Mr. Andrew Carnegie, it would seem that in so far as the Canadian iron market is concerned, they imagine that they have it. Mr. Carnegie, in a glowing article recently contributed to the "40th Anniversary" number of the Iron Age, in writing of the iron producers in the United States, of which body he may well be termed "king," says they "have become the largest, best disciplined and most effective army of iron masters in the world. They have wrested their home market

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INCANDESCENT DYNAMOS AND MOTORS

from the grasp of the foreigner, they supply the Canadian market upon equal terms with him, and are beginning to conquer territory which never before was theirs."

The foreigner referred to so aggressively by Mr. Carnegie is the British iron master, for no other competitor of consequence, aside from the Canadian, ever fought for the iron trade of these British North American provinces. It is quite true that the British makers have been driven out of the greatest and most desirable portion of this market, and they have been driven out, to a large extent, by American makers. In that Mr. Carnegie is right. Our Canadian ocean steamship owners can bear testimony to this by the consequent loss of tonnage for their steamers plying between British and Canadian ports. The British iron master has passed away, probably never to be reinstated, in so far as the Western Canadian market (the greatest we possess), is concerned, but Mr. Carnegie is mistaken if he imagines that American iron masters are left in sole possession of the field. If he will glance at the statistics of the imports of pig iron into Canada versus the domestic production for the fiscal year ending 1893-4, he will be convinced that Canadian-made pig iron is making a steady and sure headway. Quoting from a late number of the CANADIAN MANUFACTURER, in which figures taken from official sources are given, the increase of output from Canadian furnaces for the fiscal year ending June, 30, 1894, was 200 per cent. over that of the fiscal year ending June, 30, 1891.

1893-4 marked an epoch in the history of the Canadian iron industry, because the domestic production for that year, 62,522 tons, meant that Canadian workmen were producing from purely Canadian material 58 per cent. of all the pig iron consumed in the country. The official statistical year-book gives the percentage of home-produced iron to the total consumed as 45.4 per cent., but this is incorrect, inasmuch as the imports group together the following material—pig iron, iron kentledge, scrap iron and steel, giving the total as 75,275 tons. The total quantity of pig iron imported for that year was 45,262 tons, the Canadian iron exceeding the importations by 17,240 tons. The statistics down to the close of the last fiscal year, June, 1895, will show (the "ebb and flow" of trade being allowed for), a proportionately steady advance, and this will be still more marked in the coming year, when it is probable that the output of the new coke furnace at Hamilton, Ont., will be sufficiently large to replace what is now imported from the

United States, and beyond what may seem desirable in mixtures, may be calculated upon to do so.

THE CANADIAN MANUFACTURER places the value of the pig iron production of 1893-4 at \$965,968.77, and when it is considered that almost nine-tenths of this has been paid out for labor to Canadian workmen, the value of the industry will perhaps be better appreciated. A continued encouragement of the industry will mean that Canadian pig iron will yet form a base for many articles of finished iron and steel not now produced in this country. It has been well said that the production of pig iron is one of the best tests of a country's metallurgical greatness. This has been particularly true of Great Britain and the United States. The statistics referred to above evidence the fact that Canada is on the "right track." The Dominion may rank low as yet in the scale of iron producing countries, but she is on record along with such nations as Great Britain, the United States, Germany, France, Sweden, Russia, Austria and Spain, and the Canadian percentage of the world's output, though small, is steadily increasing, and must increase if the industry is encouraged as the circumstances of the case demand.

As an evidence of the great fluctuation of prices of pig iron during 1895, Bessemer pig iron was quoted at \$10 at Pittsburgh, equal to \$9.35 at Valley furnace, in the early part of the year. Later on in the season this iron went up to \$17.50 at Pittsburgh, but receded again before the close of the year to \$11.00 per ton. On some lines of finished goods the prices advanced fully 100 per cent., but again receded. While the actual figures of the output of pig iron in the United States to the close of the year have not yet been compiled, it will aggregate almost, if not quite, 9,500,000 tons, and 1896 opens with the enormous output of almost 1,000,000 tons of pig iron a month, and with but a very light demand for steel and finished material. This would not seem to be an encouraging position of affairs, yet it is safe to say that the actual conditions are quite as favorable as they were along in the summer and autumn of last year, when buyers were "tumbling over" one another in their anxiety to get orders filled. The great railways and other large corporations have not by any means supplied their legitimate wants. Speculators have rushed the market during 1895, and many of them are carrying stocks to-day which were purchased at fairly high prices. The legitimate buyers, at least the larger ones, notably among the railways, have held back, but they must come into the market sooner or later, and there is good ground for believing

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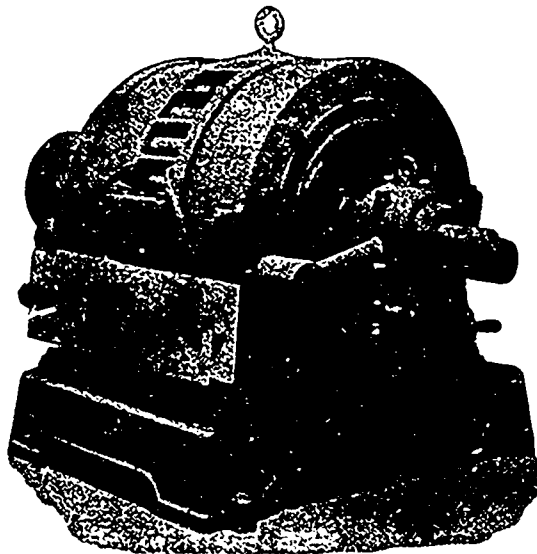
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that even the present immense output will not be, at least for some time to come, too great for the legitimate demands of the country, when the unsettling war scare, combined with the drawbacks of a presidential year, have permitted trade to settle down into ordinary grooves.

Natural conditions will all tend more or less to keep prices steady. With advanced prices on ore and coke, Bessemer pig cannot be made for \$10.00, or anything like it. Labor is thirty per cent. higher than it was a year ago, and it is now costing more to make iron than it did last season. It is therefore probable that the present low prices are more or less temporary.

Speaking of the British output of pig-iron for 1895 Mr. Drummond said that the production for the first half of 1895 was 3,721,870 tons which is at the rate of 7,443,740 gross tons, against a production in 1894 of 7,427,342 tons. It will be seen that the output in the United States shows a steady and marked increase over that of the rival market, Great Britain.

With regard to foreign iron imported into Canada, statistics show a great falling off in the imports of pig-iron from Great Britain as compared with the United States. The returns for the fiscal year ending June 30 1895, show importations of 33,944 net tons, of which only 6,346 tons came from Great Britain, while 27,550 tons are credited to the United States. 1894 was certainly a most exceptional year, as the iron market in the United States was at the very depths of its depression, and sales of American iron were made at prices very much below the average of previous years, and without doubt below the actual cost of production. Now that matters have been somewhat more equalized it is expected that the British iron master will be better able to compete for a portion of the Canadian trade, with their American rivals, than during the past year, and particularly in the Montreal and eastern seaboard markets. With the advent of the new Hamilton furnace the Canadian iron industry will make it more and more difficult for British and American producers to secure any portion of the Canadian trade, beyond what little iron may for a time seem desirable or necessary for mixtures. In due course even this moderate market may be lost to the foreign producers.

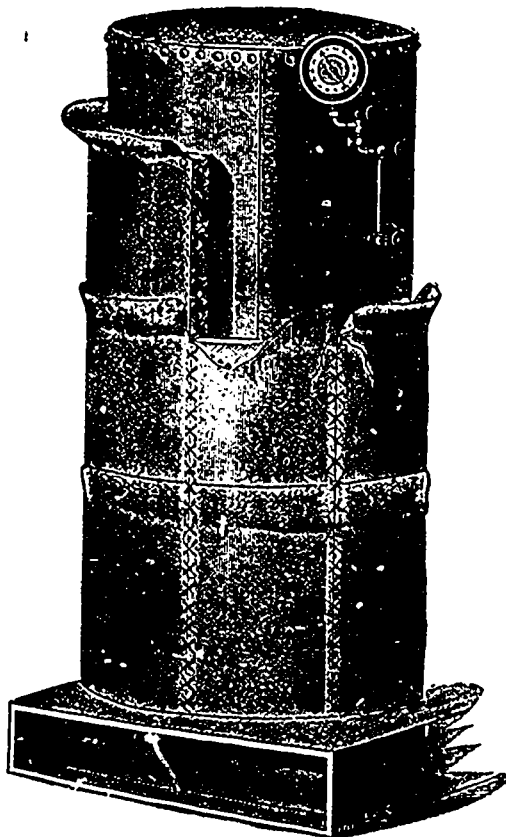
Making reference to the Hamilton, Ont., Iron & Steel Co., who have, since the date of Mr. Drummond's remarks, blown in their new furnace, which has a capacity of 100 tons per day, it is stated that at the start a large proportion of the company's ore will be the

product of American mines, but they look to the Act of the Legislature of Ontario, Session 1894, (which provided for the payment of \$1.00 per ton on the pig metal product of iron ore, raised or smelted in the Province of Ontario), to bring about an almost immediate development of the mines of the Province. In the meantime the Hamilton Iron & Steel Co. will naturally have to waive claim to the Dominion bounty of \$2.00 per ton, so that it is entirely in their interest to push forward the exploration and development of Ontario mines, and thus give the real benefit of the industry to Canadian labor. Under present circumstances, Ontario not possessing coal mines, and the question of the economical transportation and handling of Lower Province coal, being as yet unsolved, the Hamilton Iron and Steel Co. will have to use American fuel, which unfortunately means that one half of the labor benefit of the industry will go to a rival market. Under these circumstances the Dominion Government will probably restrict the Federal bounty to a sum proportionate to the amount of Canadian labor employed in the industry: this is a protection to the coal miners and charcoal burners of the other Provinces.

In concluding his remarks, reviewing the situation generally, Mr. Drummond said that the time, in his opinion, was very opportune to draw the attention of the leaders of the contending political parties of the country to the fact that the interests of the industrial enterprises of Canada should be as sacred to the one party as to the other. The workmen employed in the respective enterprises are just as deeply interested in the ultimate success of the operations as the capitalists who have risked, and must continue to risk their money in establishing the work.

The iron industry has perhaps greater claims to the good will and support of the statesmen and people of Canada than perhaps any other of the great industries of the country, because the raw material used is wholly Canadian, the product of Canadian labor. It is eminently an industry for which nature has fitted the country, and it is therefore well that it should be encouraged and developed, because it will afford a greater amount of employment to labor for the money invested than any other industry that the country is fitted to sustain.

The progress made should also now be sufficient to prove to capitalists and men of affairs generally, that the enterprise of iron making in Canada can be made a very decided success, affording a splendid field for safe investment. It is no longer in an experi-



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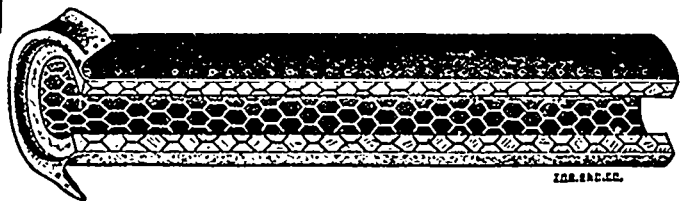
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mental stage, and if many of the investors, who are now putting their money into the silver mines of the west, not only of their own country, but of the adjoining republic, would turn their attention to the production of the most useful of all metals, iron, right here at home, and for the home market, building up every kindred provincial interest, the future of this Province and of Canada would be most promising. What is wanted now is sufficient capital invested in the various enterprises to enable the iron masters to keep abreast of the times in the matter of modern appliances and methods. Nature provides all the material, it remains for men to utilize them by the best and most economical methods.

The industry has naturally suffered from uncertainty with regard to the tariff question. Barred out, as Canadian manufacturers are, from the American market, by the customs tariff of that country, and handicapped as all iron industries are in infancy when a very heavy initial expenditure has to be made in construction of plant, prospecting, securing and developing of mines, wood lands, quarries, shipping docks, etc., it is imperative that the Government of the country should give stability to the protective tariff, and thus give confidence to capitalists. Statistics prove that the present protection and bounty granted by the Government of Canada, if well maintained, will result in the development of the Canadian iron industry, but the history of the work done in the United States, as well as the past history of England, proves that the encouragement granted is not by any means too much for the earlier years of the work. This has been well recognized by Sir Oliver Mowat, who, as the head of the Liberal Government in Ontario, recently carried through an Act by which his Government grants a special Provincial bonus of \$1.00 per ton for all pig-iron made in that Province, the product of Ontario ores.

Speaking of the treatment extended to the iron industry by both political parties in this country, neither are quite free from criticism. Special attention is drawn to the fact that the Order-in-Council passed at Ottawa, Nov. 2, 1894, entitled, "Re drawbacks on imported goods used in Canadian manufactured articles, and exported," still remains in force, despite the protests and explanations of numerous Canadian manufacturers, who are debarred from doing business with the western Canadian agricultural implement makers on account of this order. The order in question, as is well known, was passed with a view of encouraging the exportation of agricultural implements to foreign markets, and pro-

vided for a rebate of duty on the material used in machines so exported. It was so framed, however, that the effect has been to compel the Canadian agricultural implement makers to purchase foreign material before finishing it into the highest quality of agricultural implement steel for the home market. This is a striking illustration of the effect of the Dominion Act of 1894, which provided for the payment of a bounty of \$2 per ton on all steel billets manufactured in Canada from Canadian pig iron.

GAS ENGINES FOR MINING WORK.

When a mining property of any description passes beyond the stage of a claim or a prospect and the work of development begins one of the first, and often one of the most important, questions to be considered is that of power. Even in small mines there is need of some power for hoisting, pumping and other purposes. Though the exploitation may be on so limited a scale that the application of manual power may be the most economical for the time for underground work, an engine of some kind is usually one of the first requisites, while, as the workings extend, the demand for power increases in various directions.

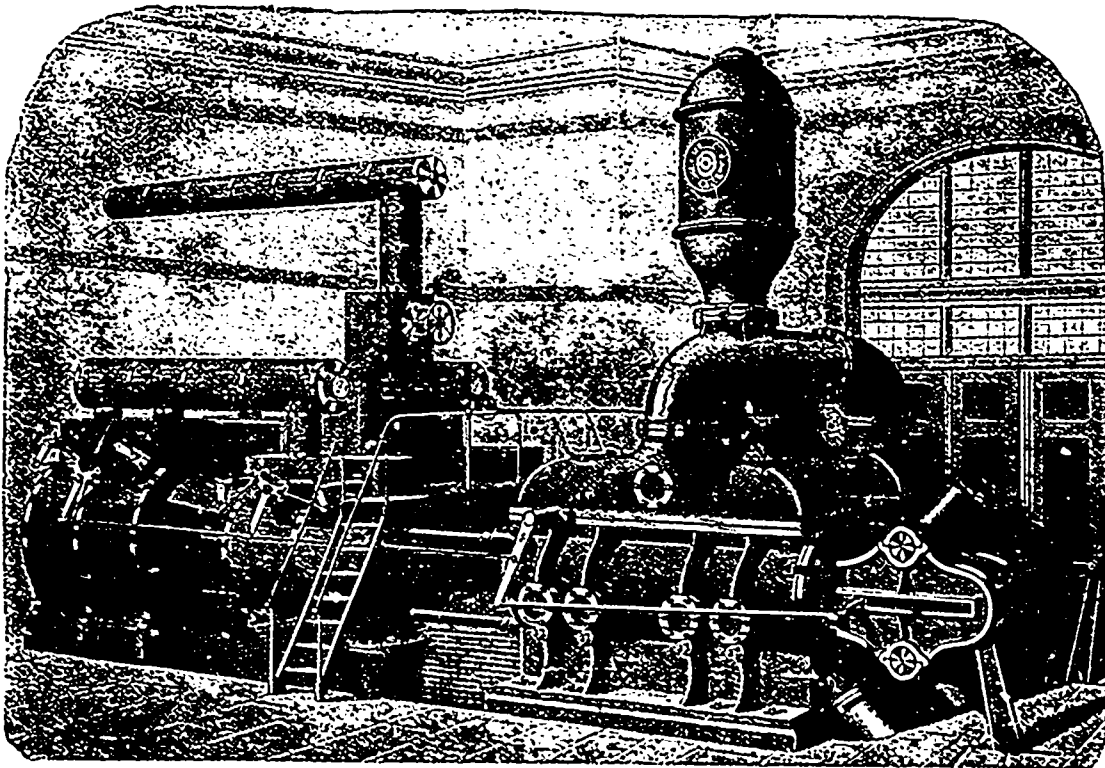
In some cases the way is clearly pointed out by local circumstances. Where a sufficient water-power exists, of course, there is no further question; and the radius of application of a water-power has been so much extended by modern improvements in methods of transmission, that water can now be used in many places where the location of the supply formerly prevented its successful utilization. We are not here, however, discussing the manner of transmitting and applying force, which is a very extensive subject by itself, but rather the source of the power and the manner of generating it. There are many mining operations where the margin of profits is so narrow that the selection of a motor may determine the question of success or failure, and in any case the choice of an engine not economical in its working, or not adapted to local conditions, may be a serious drawback to the possible returns.

Until recently the only possible choice, where no water-power existed, was some form of boiler and engine. The selection has now, however, been very much widened by the introduction of the impulse engine, or the gas engine, as it is generally called, employ-

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ing the explosive force of gas or of the lighter mineral oils directly in the cylinder, and not requiring the use of the boiler to make steam by the combustion of the fuel. First practically introduced on a large scale abroad, the gas engine is rapidly making its way in this country as is shown by the constant introduction of new forms of the engine on the market, the amount of sales reported by makers, and the numerous patents issued for new forms and improvements in details. We do not believe, with some enthusiasts, that the gas engine is going to supersede the steam engine entirely: there will always be many places where a well designed steam plant will have superior advantages. Nevertheless, it is certain that the gas engine even in its present form utilizes a higher percentage of the possible power to be developed from a given quantity of fuel than the best designed steam plants. Possibly the question of economy between the two may not be settled before both are superseded by the discovery of some method for the generation of electricity directly by combustion.

There can be no question as to the advantages presented by the gas engine for mining work. In many places where mining operations are carried on, fuel adapted for economical use in a steam boiler is scarce and costly. But the use of some of the different forms of gas producers permits us to employ almost any kind of fuel—coal of inferior quality, lignite, wood, saw-mill refuse, sage-brush and the like—which would give but a poor return in the boiler-furnace. Moreover, the use of water is required only for cooling the working cylinders, and the quality of the supply is of little moment. Mine water so impure that it could not be used in a boiler will answer all purposes with a gas engine; and where the quantity available is limited it can be economized by using it over and over again.

The gas engine as now constructed is usually a compact machine, requiring less adjustment and less care in its setting up and foundations than the average steam engine; points that may be of moment in a rough mining country. Moreover, there is not the same marked difference in economy between large and small engines as there is in a steam plant; and a small installation may be gradually enlarged as required by the addition of small units at a time, and still be economical in practice. Where it is convenient to distribute power at various points, it is entirely practicable to use several smaller engines and supply them with gas from a conveniently located producer.

There are other considerations that might be brought forward in favor of the gas engine, but enough has been said to show that it has substantial claims to favor. How much weight these have with practical men is proved by the fact that several of the largest engine builders in the country either have already added some form of gas engine to their lists, or are arranging to do so; appreciating, as they show by this action, the future importance of the motor. The habit here has been rather to look on the gas engine as of use chiefly where small power is needed; but in Europe engines of 300 and 350 horse power are in daily use, and larger ones are being introduced. Mills of the largest size are run by these engines coupled, and in most cases with notable economy in fuel consumption. There are no more limitations as to size, in fact, than those of convenience of construction and strength of materials, as in the steam engine, and they can be coupled and thus furnish any desired power with individual engines of moderate size.—Engineering and Mining Journal.

The town of McDonald, Pa., comes to the front with a proposed new industry in the shape of a paper shirt factory. J. S. Johnson is the projector, and the garment he proposes to make is to be worn between the under and outer shirts as a protection against the frosty winds of winter. He is now having paper manufactured especially for this purpose, and expects to be able to give employment to about twenty women.

There are all sorts of inventions on the market which are alleged to promote the comfort, welfare and happiness of the human race, but the one that has struck me with the most force as regards its usefulness is an article that was brought to my notice for the first time one day last week. I have no doubt that some one will say it is an old idea; that Moses, or Aaron, or King Solomon brought it into use; and all that sort of thing—but it is new to me. The invention is simply a pocket edition of soap. It consists of a small book that to all appearances contains the usual 100 or more sheets of cigarette paper. The paper is not intended for cigarettes, however. It is simply tissue paper heavily charged with the finest soap, and by simply tearing out a leaf, wetting it and rubbing it between the hands as you would a piece of soap, a delightful lather is furnished. Moreover, if one is particular, he may obtain almost any brand of soap that he wants in these books.—Brooklyn Union.

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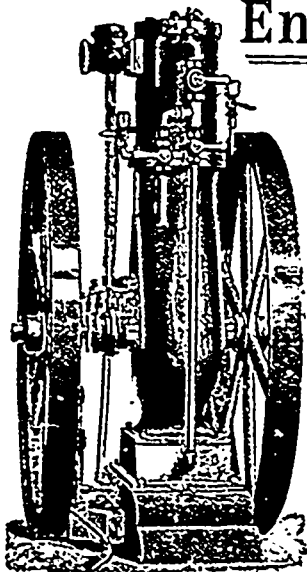
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The longest distance that a shot has been fired is a few yards over fifteen miles, which was the range of Krupp's well-known "monster" 130-ton steel gun, firing a shot weighing 2,600 pounds, says an exchange. The 111-ton Armstrong gun has an extreme range fourteen miles, firing a shot weighing 1,800 pounds, and requiring 960 pounds of powder. These guns, however, proved too expensive, being unable to stand firing a hundred times, and their manufacture has practically been abandoned. The 22-ton Armstrong gun hurls a solid shot for a distance of twelve miles, and the discharge of the gun cannot be heard at the place where the ball strikes. From twelve to thirteen miles is the computed range of the most powerful guns now made, and to obtain that range an elevation of nearly forty-five degrees is found to be necessary. Quick firing guns are more depended upon at the present day than extreme length of range, and in this respect what is considered the most wonderful of guns, perhaps, is one of the Maxims, which can fire as many as 600 shot a minute, and yet is so light that a soldier can carry it strapped to his back. Financially regarded, the immense sum of \$195,000 was expended in constructing the monster Krupp gun, and each projectile cost \$4,750.

The French Institute of Science has had under discussion the chemistry of barks possessing an industrial value. It is shown that the gums and coments which hold together the filaments of fibre are

composed essentially of pectose, cutose and vasculose, while the fibre itself is composed of fibrose, cellulose and its derivatives—the theory, therefore, of degumming or retting being to dissolve and wash out the gums without attacking the cellulose; while, in order to eliminate the vasculose and cutose, alkaline olentes or caustic alkalis under pressure are found to be necessary, and even bisulphites and hydrochlorites. The gums being thus dissolved, the epidormis is detached and can be separated mechanically from the layer of fibre by washing. An important point involved is that upon the degree of cleanness of the fibre must depend the expense of this degumming operation. In the construction of the machines for this purpose it has been assumed that there is but little difference whether the ribbon to be operated upon is simply stripped bark or a well decorticated product, as the revolving agency, followed by a volume of water, may be depended upon to render the separation complete and to wash out all the extraneous matters, giving the pure fibre—the quantity that may be turned out in a given time, rather than quantity with quality, has been the main consideration. The waste matters in the bark of ramio stalks must be wholly eliminated before the fibre is fit for the spinner, and if the machine does not accomplish any part of this work, the degumming bath must do it all, but at a cost in direct ratio to the percentage of waste matters remaining in the ribbons after leaving the machine.

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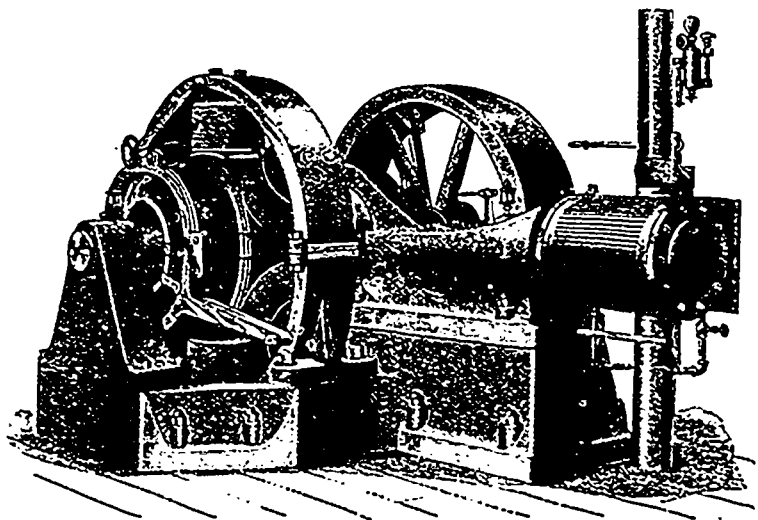
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The hardware trade in the Dominion has undergone considerable change since the "National Policy" came into operation. Formerly the retailers were supplied almost in toto by the jobbers, but year by year as the Canadian manufacturers increased in number the retail trade was more and more canvassed by them, until today that trade in cities and towns and general storekeepers in villages with a fair rating are buying the products of Canadian factories direct, and city and town retailers are also buying in considerable quantities from American manufacturers. Whether this is advantageous to manufacturers or not is a question in hardware political economy that would be most difficult to decide. - Iron Age.

Canada is waking up to the fact that enormous quantities of its pulp wood are being exported to the United States, but it is waking up the wrong way. Canadian manufacturers of pulp and paper have asked their Government to impose an export duty on pulp wood, and have argued that if such a duty be imposed, the result will be that the pulp industry will flourish as a green bay tree, north of the great lakes. They are not over modest in their request, for they have asked that the duty shall be \$3 per cord; something

over 100 per cent., which would be a prohibitory duty. Doubtless they thought they might as well ask enough, while they were about it. But the idea is wrong at the outset. No country ever made progress in any industry by virtue of restricting the use of its raw material, whether by its own citizens, or by people living beyond its borders. Moreover, the ultimate object which the Canadians wish to achieve, the securing of capital in America to develop the pulp and paper industry across the border, cannot be accomplished in that way. Capital may be attracted across the border, but it cannot be driven. However, it is hardly possible that the Canadian Government will take the step demanded. Consistency would require it to impose an export duty on lumber also, and that would arouse a very strong opposition on the part of the lumbermen. Moreover, it would invite retaliation on the part of the United States, in the way of an import duty on lumber, and an increase of duty on pulp and paper. There is a great field for the pulp and paper industry in Canada, and one that could be made very attractive to American capital and energy, as well as very profitable to Canada. But a game of obstruction is not the proper game to play. -The Paper Mill.

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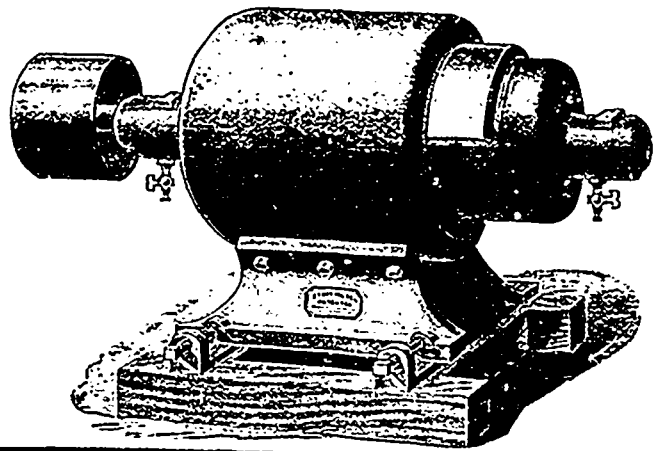
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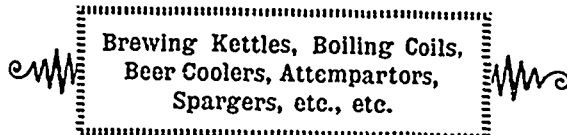
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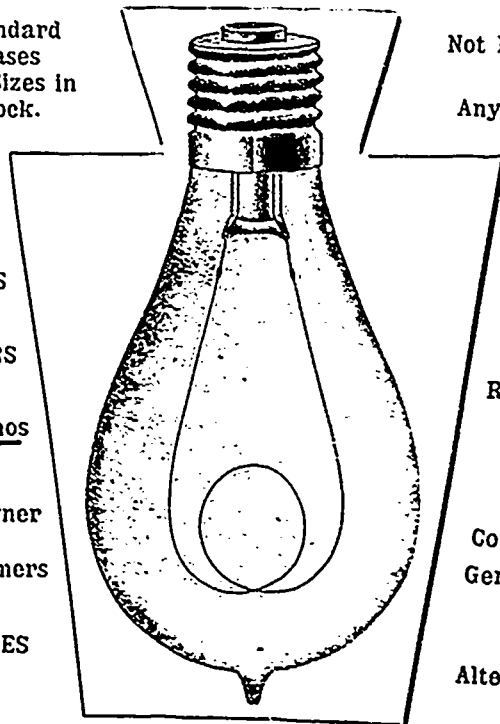
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Dominion Suspender Co., Niagara Falls, Ont.

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The April number of Scribner's Magazine contains an unusual number of articles of interest. The leading article is a review of the late Lord Leighton, P.R.A., by Cosmo Monkhouse. The illustrations are of interest and beauty. Another article of contemporary interest is "The Quarrel of English-Speaking Peoples," by Henry Norman. Mr. Norman's article is a clear exposition of the present temper of the British people, it points out with definiteness the line along which the peaceful solution of the Venezuelan question is to be expected. The first photograph by Cathode rays made in the United States was produced by Prof. John Trowbridge, of Harvard College. His article contains the first announcement of an original application of the new photography to surgery—that is, a method of locating the exact position and depth of bullet by triangulation.

Ex President Harrison's "This Country of Ours" article in the April Ladies' Home Journal discusses "The Enforcement of the Law," and shows with nice distinction the duties and jurisdiction of the President. Lillian Bell discusses "The Philosophy of Clothes," and Nancy Mann Waddle talks of the hly. Rev. Charles H. Parkhurst, D.D., in "The Young Man Entering Life," forcibly points to the difference between resolution and achievement. There are practical articles on dress, the household, gardening, Easter cards, and plans, with details, for building "A \$5,000 Dutch Colonial House," and the usual departments. A conspicuous fea-

ture is a musical composition, "The Colonial Dames Waltzes," by John Philip Sousa. The Curtis Publishing Company, Philadelphia. One dollar a year.

Outing for April is a beautiful number. Good fiction and seasonable sketches of sport, travel and adventure in many lands will please all tastes. The contents are as follows: "Gluck Auf," by Jean Porter Rudd; "A Pair of Glasses," by G. L. Bent; "Cycling in England," by E. R. Holmes; "A Good Old Fox Hunt," by Ed. W. Sandys; "Cycling in Mid-Atlantic," by Osbert Howarth; "Hunting with Boogles," by B. S. Turpin; "About the Balearics," by Charles Edwardes; "Lonz's World Tour Awheel;" "From Out the Ruins," by Mary B. Goodwin; "Model Yachts," by Franklyn Bassford; "Duck Shooting on the Ice," by Jno. D. Knapp; "Yachting on Frisco Bay," by Arthur Inkersley; "National Guard of Nevada," by Lieut. W. R. Hamilton, and the usual editorials, poems, records, etc.

Among the noteworthy articles in the April number of the Methodist Magazine and Review is one on "British Columbia and its Resources," with numerous engravings of the scenery of our Pacific province. "Costumes and Customs in Bible Lands," by the Editor, is also very handsomely illustrated. A life sketch is given, with portrait, of the career of Frederick Douglass, the slave who became a United States Marshal. "Cleg Kelly and his Father,"

LAURIE ENGINE CO., ST. CATHERINE STREET EAST, MONTREAL ENGINEERS AND CONTRACTORS

COMPLETE MOTIVE PLANTS, ETC.
IMPROVED **Corliss Engines**

High Pressure, Condensing and Compound

FEED-WATER HEATERS and PURIFIERS

Heavy Fly Wheels a Specialty.

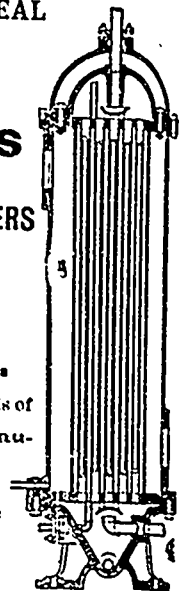
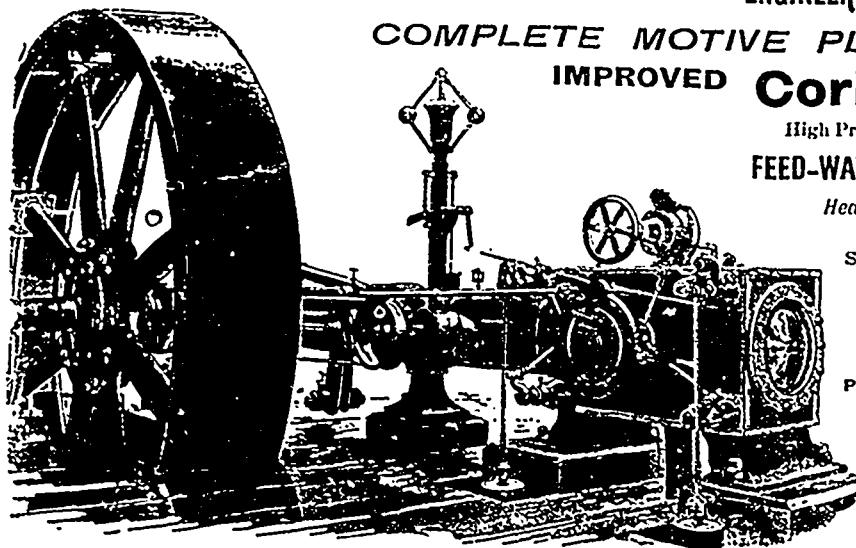
Sole Agents in Prov. of Quebec for

NORTHEY CO. Ltd.

Manufacturers of all kinds of
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Sole Agents in Canada for the

**HOLLY GRAVITY
RETURN SYSTEM**



Are You Looking

FOR ANY KIND
OF MACHINERY?

We call Special Attention to the following:

Upright Engine 6 h.p. and Boiler 8 h.p.
1 Horizontal Engine 8½ x 10".
1 Horizontal Boiler 10" x 42".
1 Northey Steam Pump 5" x 3" x 5".
1 National Heater, No. 4.
1 Rope Drive, Transmits 20 h.p.
Iron and Wood Pulleys, New and Old.
Shafting, Hangers and Belting, All Sizes

Full assortment of Iron and Wood Working Machinery always on hand.

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W. R. SCOTT
439 Church St.
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The Toronto Machinery Supply Co.
164 KING STREET WEST

A. J. LINDSAY, Manager.

We invite all parties intending putting in machinery of any kind, or exchanging old for new, to consult our prices and terms before going elsewhere.



We also have a general line of

Second-Hand Machinery

in good condition.

We are not undersold and guarantee satisfaction.

ECO MAGNETO

Watchman's Electric Clock

WITHOUT BATTERIES.

Write for descriptive circular to

**ECO
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MONTREAL ELECTRIC CO.'Y.

Agents for Province of Quebec

302 ST. JAMES STREET.

John Starr, Son & Co., (Ltd.)

HALIFAX, N.S.

Agents for the Maritime Provinces.

is a very strongly written sketch by S. R. Crockett, from his copy right work just issued. "A United Empire Loyalist" is a sketch of Governor Hutchinson, of Massachusetts, exiled for conscience sake at the time of the Revolution. A review of Sir William J. Dawson's latest scientific work, and other important reviews by Rev. Chancellor Burwash, Rev. Professor Badgley and others are given.

The American Iron and Steel Association, Philadelphia, has just completed a thorough revision of its directory to the iron and steel works of the United States, bringing down to January 1896 a description of these works. It also contains a complete Directory to other industries which are large consumers of iron and steel. This edition, which is the thirteenth that has been issued, embraces more complete details of all the iron and steel works of the United States, and of all industries which are large consumers of iron and steel, than any preceding edition. It retains all the old features of preceding editions and contains many new features. Complete lists of plate and sheet mills and of tinplate works form a valuable feature. The names and location of all the works are given in alphabetical order, followed by a description of their character, capacity and products. This edition makes a cloth-bound book of nearly 350 well-printed pages, many more than any previous edition. It contains also a list of the iron and steel works in Canada and Mexico. It is an invaluable book of reference for business men, as it contains not only an index to the names of firms and companies and to the names of works; but also an index to brands of pig iron. The book is now ready for distribution, and will be sent by mail. Price, \$6.00 (25s.) per copy.

Montreal—New Engine—The Standard Shirt Co., have placed a 100 h.p. Wheelock engine in their factory.

Somerset, Que.—Saw mill burned.—Francis Rousseau's saw mill March 3rd. Loss about \$3,000. He will rebuild immediately.

Toronto.—Electric works.—The Royal Electric Co. have rented the vacant store immediately south of their premises on York St., and by removing the partition wall have doubled their office and show-room accommodation, besides adding much to the attractiveness of their establishment.

MACHINERY AND SUPPLIES WANTED.

If any subscriber to THE CANADIAN MANUFACTURER who may desire to purchase any machinery or supplies whatever, and so informs us, we will publish the fact in a conspicuous manner, and will make no charge therefor. These wants will be stated similar to the following:—

BOILER. John Smith, Smithville, Ont., wants a 40 h.p. flue boiler for saw mill.

DYNAMO. William Jones, Jonesville, Que., wants new or second hand dynamo for woolen factory.

PUMPING MACHINERY. Thomas Brown, Brown-town, B.C., wants pumping outfit for coal mine about being opened.

GAS ENGINE. Samuel Williams, Williamston, N.S., wants 5 h.p. gas or gasoline engine for cheese and butter factory.

BELTING. Palestine (Man.). Electric Light Co. want dynamo belt.

Subscriptions to the Canadian Manufacturer \$1 per year.

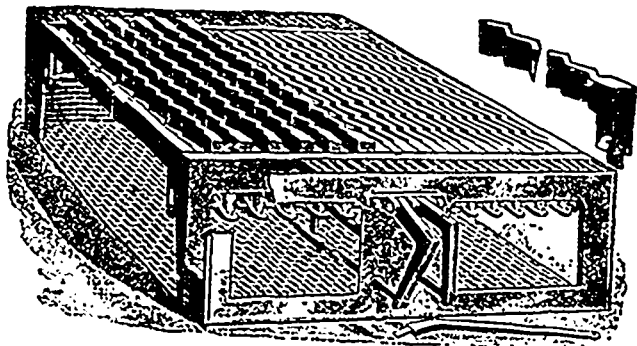
WANTED.

WANTED. A. Joyce, Calabogie, Ont., wants address of manufacturers of metal or rubber springs to be enclose in pen handle.

PARTNER WANTED in Electrical Manufacturing Business. From \$6,000 to \$8,000 required. For full particulars address S. M., care Canadian Manufacturer.

THE VOLCANIC PATENT SHAKING GRATE

MANUFACTURED BY THE GURNEY FOUNDRY CO., Ltd., Toronto.



TORONTO, June 17th, 1895.

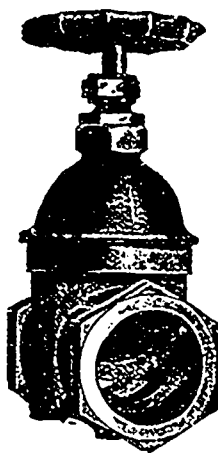
THE GURNEY FOUNDRY CO., LTD., Toronto.

GENTLEMEN,—With reference to the Volcanic Patent Shaking Grates—I am glad to say that I am well satisfied with the working of the grates and am convinced there is a very considerable saving of fuel by their use. Since putting in the "Volcanic" we have no clinkers at all, and use common uncleaned slack coal. We only clean out the fire once a week. When shutting down at night, the dampers are closed to shut off the fire and the next morning a few shavings thrown on top with a little fresh coal, is all that is needed to start the fire. This alone adds materially to economy in coal consumption.

My first impression that it was a first-class device and the best I had ever seen has been fully confirmed by the work the bars have done. I have no hesitation in recommending them as the best grate bars I have seen or used since I first entered the engine business eight years since.

F. W. BARRETT,
Late of the Polson Iron Works Co.

THE GURNEY FOUNDRY CO., Ltd., TORONTO.



**THE WEBBER PATENT
-STRAITWAY VALVE-**

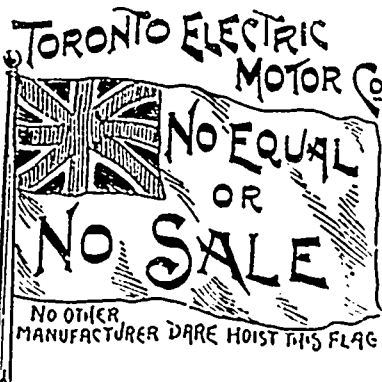
For Steam, Water or Gas.

EVERY VALVE TESTED.

The Kerr Engine Co. Ltd.

WALKERVILLE, ONT.

SOLE MANUFACTURERS FOR CANADA.
SEND FOR PRICE LIST



**BEWARE
of the
- - PIRATE**

A large and pretentious concern doing business in Canada, having no regard for the rights of others, are manufacturing a motor copied, as far as possible, from that made by us, but without the name of the Toronto Electric Motor Co., thereon. Pirates exist in all communities, and the one here alluded to is a big one, sailing under a high-sounding title. The public should be on their guard against the big pirate.

Toronto Electric Motor Co., 107-109 Adelaide St. W. TORONTO



WHY NOT MAKE

A LEADER

...OF...

“Blue Seal”

Cherry Phosphate

It's Great Strength, Superb Flavor, and Absolute Solubility make it a very profitable drink for you, while your customers will be delighted with it. It's sure to be one of the greatest sellers of the season.

Price, \$5.00 a gallon (3 ozs. to the gallon).

DON'T WAIT—ORDER SAMPLE GALLON TO-DAY.

McKEY & CO.

36 Hamilton Street, - - - BOSTON.

Send for Bottlers' Price-List.



CAPTAINS OF INDUSTRY.

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

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

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

Peterborough, Ont.—Flour mill. — The consolidated Milling Co. will put a new plant in their mill.

Quebec, Que.—Cartridge factory. — The Quebec Cartridge Factory will place new machinery in their works.

Midway, B.C.—Saw mill.—C. K. Simpson will erect a saw mill.

Winnipeg, Man.—Coal Co.—The Roche Perce Coal Co. are applying for incorporation with a capital stock of \$90,000 to carry on the business of coke manufacturers, etc.

Thorold, Ont. — Street railway. — The Thorold, Ont., street railway is to be practically rebuilt this spring. The trolley system will be put in and the line laid with T rails.

Campbellton, Ont.—Waterworks.—Tenders are invited from contractors for supplying the town of Campbellton with a system of waterworks. Address the Mayor.

The Dominion Dyewood & Chemical Co., Toronto, have lately fitted up a laboratory specially for analyzing soaps, oils, etc., in connection with their laboratory for dyeing and testing colors.

The J. G. Brill Car Building Co. of Philadelphia, Pa., is looking for a location for a branch factory in Canada. It supplies street cars for several Canadian cities, and its object for seeking a location here is to hold this trade and save the duty of 30 per cent. Evidently the National Policy has lost none of its power to increase and strengthen our manufacturing interests.

Petrolia, Ont.—Torpedo works destroyed.—Messrs. H. Corey & Sons, torpedo works were destroyed by an explosion March 22nd.

Halifax, N.S.—Chrome Mfg Co.—The Halifax Chrome Co. have been incorporated with a capital stock of \$60,000 to manufacture chrome, etc.

Berlin, Ont.—Factory burned. — Wm. Cosgrove's baby carriage factory was burned March 24th. Loss about \$5,000.

Waterville, Que.—Iron foundry.—Messrs. Gale & Co. are erecting a new foundry. They will now make their own iron bedsteads instead of importing them from Great Britain.

Montreal.—Cigar machine.—The Jean Rouse Cigar Making Machine Co. are applying for incorporation with a capital stock of \$225,000 to manufacture machines for making cigars, etc.

Ottawa.—Electric Co.—Messrs. Ahearn & Soper, of Ottawa, inform us that they have recently been made exclusive Canadian representatives of the Westinghouse Electric and Manufacturing Co.

The Canadian Mineral Wool Co., Toronto, have removed their offices from Scott street to their factory at 340 Front street east.

Trail, B.C.—Iron works.—The British Columbia Iron Works, Vancouver, B.C., contemplate opening a branch at Trail.

Mr. E. W. Gilman, who for a number of years was connected with the Canadian business of the Ingersoll Rock Drill Co. has accepted the position of manager of the Canadian Rock Drill Co., his head office being in the Board of Trade Building, Montreal. Mr. Gilman's company have recently occupied their large and finely appointed new works at Sherbrooke, Que.

DRY KILNS and HEATERS

CHEAP

One Second-hand Sturtevant Heater, 1,000 feet one-inch Pipe and Fan to match, has been used only about four months.

One Sturtevant Heater, 5,500 feet one-inch Pipe and Fan to match; in first-class order.

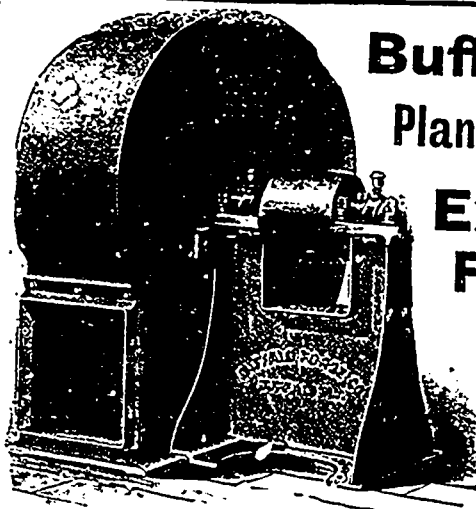
The above have been used in lumber dry kilns, but are also applicable to heating buildings, etc.

For Prices and full particulars, address

McEACHREN

Heating and Ventilating Company

GALT, - ONTARIO



Buffalo Planing Mill Exhaust Fans

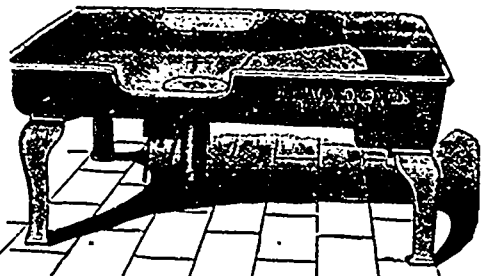
EFFICIENCY UNEQUALLED
DURABILITY UNSURPASSED
SMOOTH RUNNING
INCOMPARABLE

THE LARGEST

Forge

IN THE WORLD

Thirty-Eight other Designs of Portable and Stationary Types.



BUFFALO LUMBER DRY KILNS

Blowers, Blacksmiths' Tools, etc.

—SOLD IN—

Toronto, Ont., by H. W. Petrie.

Brantford, Ont., by Canadian Machinery & Supply Co.

Montreal, Que., by Canadian Machinery Agency.

Chicago Store, 22 and 24 West Randolph Street.

Asbestos, Que.—Iron foundry.—The Asbestos Mining Co. will build an iron foundry.

Hamilton, Ont.—Pipe and Foundry Co.—The Gartshore Thomson Pipe and Foundry Co. have been incorporated with a capital stock of \$50,000, to carry on the business of iron foundry, etc.

Paris, Ont.—Hammock Mufg Co.—The Canadian Hammock Mufg Co. have been incorporated with a capital stock of \$6,000.

Westmeath, Ont.—Saw mill burned.—Tucker & Hodges' saw mill was burned March 17th. Loss about \$2,000.

Hamilton, Ont.—Furniture factory burned.—Alex. Thompson's furniture factory was damaged by fire March 18th. Loss about \$2,500.

Chantry, Ont.—Butter factory.—Messrs. Wm. Smith & Bros. will erect a butter factory.

Kemptville, Ont.—Grist mill.—Mr. Bowen will erect a grist mill.

Ottawa.—Woolen mill burned.—Geo. Dalgleish's woolen mill was burned March 26th. Loss about \$10,000.

Toronto.—Capital stock increased.—The Prismatic Glass Co., of Toronto, have increased their capital stock from \$5,000 to \$25,000.

St. Catharines, Ont.—Electric Co.—The Citizens' Light, Heat and Power Co. are applying for incorporation with a capital stock of \$40,000 to supply light, heat and power by electricity in that city and vicinity.

Whitney, Ont.—Saw mills.—The new saw mills at Whitney, on the Parry Sound Railway, will be opened up about the middle of this month. They will have a capacity of 200,000 feet per ton hours, and will employ about 600 men steady throughout the season.

Drummondville, Que.—Electric Co.—The Drummondville Electric Co. have been incorporated with a capital stock of \$10,000 to operate works for the production of electricity for light, heat and power.

Hastings, Ont.—Factory burned.—The Hastings Shingle Mfg. Co.'s plant was burned March 6th. Loss about \$8,000.

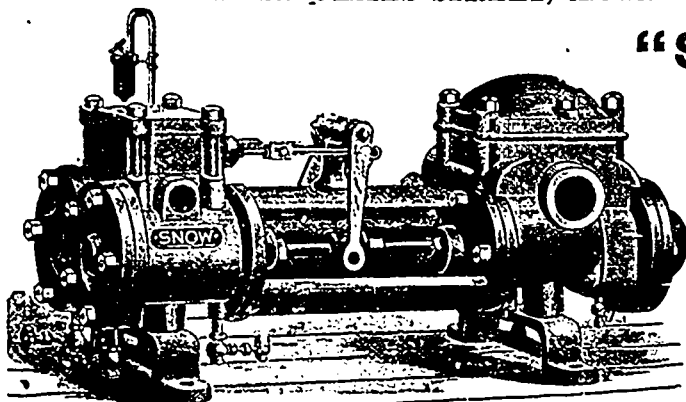
Port Arthur, Ont.—Pulp and Manufacturing Co.—The Port Arthur Pulp and Manufacturing Co. are applying for incorporation with a capital stock of \$200,000 to manufacture woodpulp, etc.

Irondale, Ont.—Saw mill.—Messrs. Davey & Son will rebuild their saw mill which was destroyed by fire a few months ago.

Montreal.—Refrigeration Company.—The Linde British Refrigeration Co. are applying for incorporation with a capital stock of \$100,000 to manufacture refrigerators, etc.

CANADA MACHINERY AGENCY

321 ST. JAMES STREET, MONTREAL



**"SNOW"
DUPLEX
STEAM
PUMPS**

..FOR..
EVERY SERVICE

*Iron Tools, Wood-
Working
Machinery*

STEAM ENGINES, BOILERS OF EVERY TYPE, SAW
MILL MACHINERY, ETC.

CANADA MACHINERY AGENCY, **W. H. NOLAN, Manager**
321 St. James Street, Montreal

SPECIALTIES.

Machinery Brushes for woollen and flour mills, jewellers, shoes, breweries, dairies, printers, foundries, and all machinery work; old rollers refiled.

Frank Wehrle & Co.,
Brush Manufacturers,
435 King St. W., Toronto.

Hodson & Holt Mfg. Co., successors to the Abel Machinery Co., Laconia, N.H. Builders of winders, steam presses, fulling mills, seamers and loopers; also latch needle flat and circular knitting machines of all kinds for hosiery and underwear. Ribb top machines, ribb leggers with loose course welt and with reinforcing thread at heel and knee. The only French looter built in this country is Carter's patent, owned and built exclusively by us. General agents for the "Acme" feed-water heater and furmace mouth protector. Send for complete catalogue.

George White Fraser

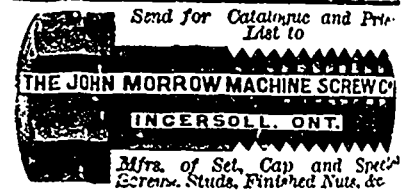
C.E., D.T.S., A.Am. Inst. Elec., Eng.

**CONSULTING
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Electric Railways and Electric Light
Construction Superintended.

**18 IMPERIAL LOAN BUILDING
TORONTO**

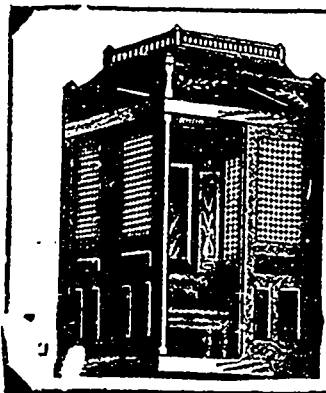
F. H. MASON, F.C.S., Consulting Chemist and Metallurgist
Analytical Chemist and Assayer, may be consulted on all matters pertaining to Chemical Technology and Metallurgy. Analyses of Alloys, Metals and Pigments. Mineral Water, Waters for economic and boiler purposes, and all kinds of chemical products and by-products. Assays of all kinds of ores. The treatment of refractory gold ores and concentrates a specialty. Laboratory, Queen's Building, HOLLIS STREET, HALIFAX, N.S.



Hackney Power Hammers

Are superior in many respects to most in the market. Made by

STEVENS, HAMILTON & CO.
Manufacturers of Iron Working Machinery
GALT, - ONTARIO.



ELEVATORS

**FENSON ELEVATOR
WORKS
52-54-56 DUKE ST
TORONTO.**

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

New Toronto, Ont.—Manufacturing.—The New Toronto Wool Stock Co. are placing a lot of new machinery in their works, and will add new lines to their manufactures.

Lauzon, Que.—Knitting Co.—The Levis Knitting Co. have been incorporated with a capital stock of \$5,000 to manufacture knitted woolen goods, etc.

Hamilton, Ont.—Boilers.—Messrs. John Inglis & Son, Toronto, will put in two 60 h.p. boilers in the Collegiate Institute, Hamilton, Ont.

Toronto, Ont.—Engines.—Messrs. John Inglis & Son, Toronto, have nearly completed a 1,000 h.p. upright high pressure, condensing engine for the Toronto Electric Light Co., and last week received an order from the same company for another engine of same size.

Hamilton, Ont.—Company incorporated.—The Doherty Process Co. have been incorporated with a capital stock of \$120,000 for the purpose of acquiring and working patents of invention for melting iron and with the application of such processes to iron-founding.

Vankleek Hill, Ont.—Mining Co.—The Temiscamingue Lithographic Mining Co. have been incorporated with a capital stock of \$100,000 to mine and manufacture lithographic stone, etc.

Gananoque, Ont.—Iron works.—The Parmenter & Bulloch Co. are applying for incorporation with a capital stock of \$100,000 to manufacture iron, brass, copper, etc.

Hamilton, Ont.—Business sold.—J. M. Ellicott and W. W. Goddard have purchased the business of the Dominion Metallic Packing Co.

Vancouver, B.C.—Capital stock increased.—The North Star Mining Co. have been authorized to increase their capital stock from \$100,000 to \$130,000.

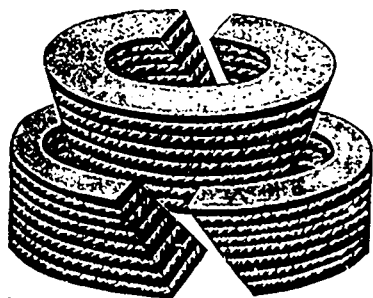
Portneuf, Que.—Electric light.—Portneuf is to have an electric light plant, and probably Roberval, Que., also.

St. John, N.B.—New building.—St. John is to have a new High School building to cost about \$40,000. Plans are invited by the Board of School Trustees.

St. John, N.B.—Cold storage.—The New Brunswick Cold Storage Co. are applying for incorporation with a capital stock of \$125,000.

Brandon, Man.—Machine works.—T. S. Mathewson has purchased the business and plant of the Brandon Machine Works Co.

.. Engineers' Favorite Ring Packing ..



Rainbow Sheet and Gasket, Plumbago, Sheet Rubber, Square Flax, Hard Hydraulic, Soapstone, Asbestos and Metallic Packings.

Magnabestos Pipe Covering, Asbestos Cement, Sheet and Millboard, Finest Lubricating Oils and Grease in the market.

STEAMBOAT, RAILROAD AND MILL SUPPLIES

WILLIAM C. WILSON

24 FRONT ST. EAST, - - TORONTO

WRITE TO THE
PATON MANUFACTURING COMPANY

OF SHERBROOKE, QUE.,

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FINGERING YARN.

Montreal Office:—409 Board of Trade Building.

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HAMILTON, ONTARIO.

**Yarn Manufacturers
Dyers and Bleachers**

Warp Yarns of all descriptions, in Skein, Chain, or on Beams.

Hosiery Yarns in Single or Double; in Cop, Skein or Cone.

Yarns of all kinds for Manufacturers' use.

Twines, Lampwicks, Webbing, Etc.

Dyeing of all colors, including **GENUINE FAST BLACK.**

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BOARD BOARD BOARD
Manufactured by **DOMINION LEATHER BOARD CO., MONTREAL**

Proprietors Sault Au Recollet Paper Mills.

ROOFING, SHEATHING AND FLOORING FELT.

AUBURN WOOLEN COMPANY

PETERBOROUGH, ONT.

Manufacturers of Fancy Tweeds, Etc.

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

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PARIS, ONTARIO.

Manufacturers of

**HOSIERY, SHIRTS, DRAWERS,
GLOVE LININGS AND YARNS**

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ESTABLISHED 20 YEARS.

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122 PEARL ST., - - NEW YORK.

**ANILINES, DYESTUFFS, AND
CHEMICALS**

Of every variety, of the best quality and at the lowest prices.

Delivery made at New York, Montreal or Hamilton

**WRIGHT & DALLYN, Agents,
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ROSAMOND WOOLEN COMPANY

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**FINE TWEEDS, CASSIMERES, AND FANCY
WORSTED SUITINGS AND TROUSERINGS.**

FERGUSON & PATTINSON

PRESTON, - - ONTARIO.

MANUFACTURERS OF

FINE AND MEDIUM TWEEDS

Guelph Woolen Mill Co., Ltd.

GUÉLPH, - - ONTARIO

Manufacturers of

**Underwear, Hosiery, Wheeling, Fingering and Worsted Yarns
EIDERDOWN FLANNEL, ETC.**

Selling Agents: Donald Fraser, Montreal E. H. Walsh & Co., Toronto.

Brantford, Ont.—Carpet factory.—A carpet factory will be built. The Mayor will give information.

Toronto.—Glue factory burned.—Messrs. W. Harris & Co.'s factory burned March 14th. Loss about \$2,500.

Bowmanville, Ont., is negotiating for a Rubber Manufacturing Co., which will employ fifty hands. Enquire of the Mayor.

The Dodge Wood Split Pulley Co. inform us that they are putting in a large rope drive for the Sherbrooke Gas and Water Co., Sherbrooke, Que., some large rope drives for John Breakey's saw mill at Chaudiere Junction, Que., and that they have lately equipped the new works of Jenckes Machine Co., Sherbrooke, with pulleys throughout and a large rope drive. The Royal Paper and Pulp Mills have also fitted up their new mill with Dodge pulleys throughout.

Messrs. McGill & Battle, Thorold, Ont., having obtained letters patent thereon in both Canada and the United States, are offering their device which they call a connector for the prevention of open circuits on arc lines. Regarding it they say that all managers know the trouble and inconvenience experienced by the loop wires to lamps breaking, thus opening the circuit. This connector does away with all such trouble, and also does away with the old fashioned cut out now in use.

Midland, Ont.—Pulp factory.—Mr. H. H. Cook, of the Ontario Lumber Co., Toronto, is one of the promoters of a woodenware and pulp factory to be built at Midland, Ont.

Galt, Ont.—New industry.—Galt is to have a bicycle factory. Messrs. H. Tolton, G. L. McKay and A. Cameron are interested.

The Dodge Wood Split Pulley Co. have agencies in nearly every city and town in Canada, where users of pulleys can get what they require at once.

Hensall, Ont.—Planing mill.—Robt. Paterson has rebuilt his planing mill which was destroyed by fire some months ago. The Hensall Engine & Machine Works, of which Mr. Robt. Bell, Jr., is proprietor, reconstructed most of the machinery. The new building is larger and more convenient than the old one.

A spruce timber limit, nine miles square, situated on the River Assumption, Lower Ottawa agency, Que., has been sold to Messrs Edward Fish and J. A. Renaud, of Joliette, Que., at the exceptionally high figure of \$456 per square mile.

Kingsville, Ont.—Oil well discovered.—The Kingsville Pelee Oil & Gas Co. have struck a flowing oil well at a depth of 800 feet on Pelee Island. The oil tests forty per cent. specific gravity.

FOR SALE
One 15 K.W., 220 Volt

EDISON MOTOR

With spare armature for same. This machine is in thorough working order and is offered for sale on account of more power being required.

For particulars apply to

C. W. Taylor,
Business Manager, The Globe, Toronto

Ferroline

The best material for coating structural iron work & iron machinery.

The only sure preventive of rust.

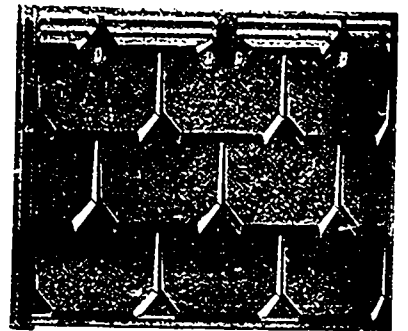
Has the highest recommendations.

For Pamphlets and Particulars apply to the Agents,

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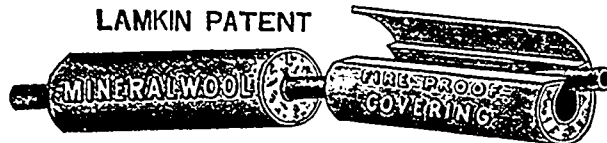
Pulp and Paper Mill and Mining Machinery

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Mineral Wool Covering

For Steam Pipes, Boilers, etc.,

A Large Saving in Fuel is made.

Radiation and Condensation Prevented.

Steam Carried Long Distances Without Loss of Power.

We manufacture our own Mineral Wool and can put you on the ground floor in regard to prices. Beware of imitations and infringements.

CANADIAN MINERAL WOOL CO., 24 Scott Street, Toronto. TELEPHONE.....
2376.

Hensall, Ont.—Machino works.—Mr. Robt. Bell, Jr., has found it necessary for the second time in eighteen months to move into larger premises owing to the increasing demand for saw mill machinery, etc. Among recent shipments from his establishment are the following:—A saw mill outfit to Geo. Brown, Tupperville, Ont.; another to G. C. Abbott, Coldwater, Ont.; a heavy saw mill water wheel and full line of mill machinery to McKay Bros., Port Finlay, Algoma; a light mill to Mr. Ainsworth, Brighton, Ont.; a lath trimmer to S. Paquette, Scotstown, Que.; an eight h.p. engine to Toronto; a large, heavy saw mill carriage to L. McDonald & Co., Walton, Ont.; and a twenty-five h.p. engine to McKay Bros. & McEwen, Port Finlay, Ont.

Messrs. Darling Bros., Montreal, Que., have sent us an illustrated pamphlet having reference to the Webster vacuum system of steam heating. In carrying out this system automatic valves are introduced in the returns or in the outlets from the heaters to the return, which permit the air and water to be drawn out of the heaters, but prevent discharge of steam, so that the waste of steam through the returns, and the possible short circuiting of the circulation is effective-

ly prevented. With an ordinary system of piping such as is usually employed in factories, some of the lines leading from the supply pipe to the main return are necessarily shorter than others, and for a given amount of vacuum which may be necessary to induce a proper circulation through the lines of greater length, there will be an excessive suction on the shorter lines, which, unless proper precautions are taken to prevent, will be liable to produce short circuiting or the circulation of an excess of steam through shorter lines, with a deficiency through the longer. This, if permitted, would cause a waste of steam, and a more or less defective circulation. For further information inquire of Messrs. Darling Bros.

Amherst, N.S. Robb Engineering Co. are supplying a 250 h.p. cross compound Robb-Armstrong engine and 125 h.p. mon-arch economic boiler for the Cornwall, Ont., Street Railway, by order of Messrs. Hooper & Starr, the contractors.

Pembroke, Ont.—Lumbering tools.—Mr. Thomas Pink, manufacturer of lumbering and driving tools, etc., informs us his works are being driven night and day in order to fill orders.

Menzie, Turner & Co., Toronto, have added a lot of new machinery to their window shade factory, built for them by the Diamond Machine and Tool Co., Toronto.

Montreal.—Watch Case Co.—The Canadian Watch Case Co. are applying for incorporation with a capital stock of \$10,000 to manufacture watch cases, etc.

Mr. S. R. Earle, manufacturer of air and steam injectors, etc., Belleville, Ont., who has been confined to his bed for a number of weeks past, is, we are pleased to state, now rapidly convalescing, and in a fair way to completely restored health.

Brockville, Ont.—New bridge.—A meeting of the shareholders of the Brockville & New York Bridge Company, which holds the charter from the Dominion Government for the erection of an international bridge across the St. Lawrence, was held at Brockville a few days ago, when the agreement of amalgamation with the St. Lawrence Railway Company of New York, which holds the international bridge charter from Congress, was ratified. The capital stock of the two companies in all is \$2,600,000. They intend pushing the construction of the bridge during the approaching summer.

FOR SALE

Two Shaker Willow Dusters

SIZE NO. 2.

Forty-three inch working surface. Made in 1892, but in use less than one month. Address,

Canada Colored Cotton Mills Co., Cornwall, Ont.



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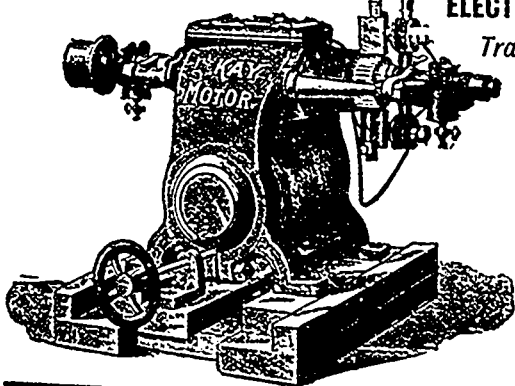
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BRASS, BRONZE, PHOSPHOR BRONZE, ALUMINUM BRONZE, COPPER, ZINC and ALUMINUM CASTINGS TO ORDER. Large or Small.

Write for Prices... **DEAN BROS., 184 Richmond St. West, Toronto**

Trenton, Ont.—Saw mill.—Messrs. Gil-mour & Co. are erecting a large saw mill at their timber limits in Algonquin Park. They will employ from 500 to 800 men. The mill will have a capacity to cut 20,000 feet per day.

St. Catharines, Ont.—Saw factory.—The old White mill, St. Catharines, Ont., is being fitted up as a saw factory by the Wel-land Vale Manufacturing Co., of that place.

Eel River Crossing, N.B.—Shingle mill.—Mr. W. McWair, Eel River Crossing, N.B., will erect a shingle mill.

Westville, N.S.—Machine shops.—A com-pany is being formed to erect a machine shop for the purpose of making shingle mills, etc. Enquire of the mayor.

Jardinoville, N.B.—Saw mill.—Messrs. J. and T. Jardine, Richibucto, N.B., will erect a large mill at Jardineville, N.B.

Eel River Crossing, N.B.—New machin-ery.—The Robb Engineering Co., Amherst, N.S., are putting in a boiler and engine in the mill that is being erected for Messrs. Wm. Currie & Co., Eel River Crossing, N.B.

The people of Port Arthur, Ont., have de-cided to let a contract to the Port Arthur Light and Power Company for putting in waterworks, new electric lighting plant, the building of a pulp mill and furnishing power for the electric street railway during a period of twenty years.

A boiler in William Curtis' saw mill, Waterdown, Ont., exploded on March 18th. The building was badly wrecked.

Hull, Que. —Saw mill.—Mr. J. R. Booth is constructing a new mill on the site of the structure which was burned two years ago.

The Thompson Electric Co., Waterford, Ont., have sent us illustrated circulars con-cerning their new constant current automatic dynamo for series arc lighting; and of their advanced types of arc lamps for direct cur-rents and other circuits. The dynamos, we are told, are made for 4, 6, 8 and 10 amperes current, and in sizes ranging from 15 to 65 lights capacity, and larger sizes up to 125 2,000 c.p. lights capacity. The arc lamps are specially adapted for street, railway and power circuits, etc. The circular shows a long list of parties using these arc light plants in Canada.

Elmwood, Ont.—A boiler in H. B. Palm-erston's mill exploded on March 18th.

Fonelon Falls, Ont. — Lumber mill. — Messrs. J. W. Howry & Sons, are erecting an addition to their lumber mill, 100x20 feet.

Montreal and Toronto—Dynamo belts.— Messrs. Robin, Sadler & Haworth, the leather belt makers of Montreal and To-ronto, realized a few years ago the impor-tance of having a steady current from a dy-namo, and made the subject of dynamo belts a special study, and thus have all their belts for this use as near perfection as possible. In selecting the stock the greatest care is taken to have it uniform in thickness, the object being to make a belt that would give steady power to the machine and not stretch. Great care is also taken in having the belts put together in a thorough manner, the cement made and used being of such strength that no rivets, staples or fastening of any other kind are required. Enquiry from any of the many electric light stations who use this belting will result in satisfying any-one that this old and reliable firm thorough-ly understand what is required for this class of work.

BALL CHECK VALVES.
BALL GLOBE VALVES.
BLOW-OFF VALVES FOR
BOILERS A SPECIALTY
OIL AND SALT WELL SUPPLIES.

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Perfectly True Brass Balls
For all purposes—Hollow or Solid.
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Reproductions Made for Eight Cents per Square Inch



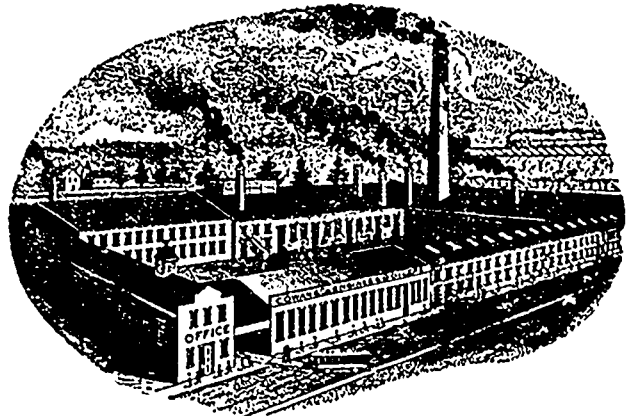
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ENGINES.
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Patent
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Old Wood Tools, Engines and Boilers, taken as part pay on new. We have on hand a number of . . . Rebuilt Wood Tools Engines and Boilers which we offer at low prices and most favorable terms. WRITE FOR Terms, Prices and Catalogue.

WM. T. BONNER

415 Board of Trade Building, Montreal, Quebec

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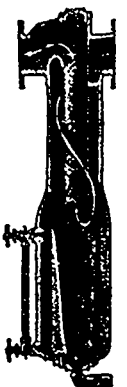
Heats Feedwater to nearly the boiling point by exhaust steam.

ECONOMICAL, EFFICIENT, DURABLE AND SIMPLE.

All Sizes—50 to 5,000 h.p.

Stratton Separators

Separates entrained water from steam and ensures delivery of DRY STEAM to Engine. Doing away with that fruitful cause of accidents— WATER IN THE CYLINDER.



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Duplicating Machine

FOR

Printing Circulars, Notices, Reports,
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Manuoguel. Ont.
Oct 29/96
 Canadian Manufacturer Pub Co.
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Dear Sir:-

I would like to say that I am more than pleased with the very satisfactory way in which you are doing my advertising. Inquiries are coming in at a good rate already.

Very truly yours.

Geo H Burleigh.

The above letter was written five days after the first insertion of Mr. Burleigh's advertisement.

Ottawa.—Electric engine.—The C.P.R.'s Ottawa-Aylmer branch has been leased for a period of thirty-five years, to the Hull Electric Co. An electric engine, the first to be used in Canada will be put on.

Forest, Ont.—Flax mill.—Duncan Weir, of Theford, Ont., will build a flax mill at Forest.

The large new mill of the Masterman Pulp Mill Company, located at Mill Cove, on the Miramichi river, N.B., which is being built at an expenditure of \$100,000, is composed of seven large buildings. The digester building is 84 by 32 feet and 90 feet high; the storeroom is 100 by 50, and the paper mill rooms adjoining are 50 by 150.

Ottawa.—Saw mill.—Mr. Gilmour will erect a large saw mill during the coming summer at the end of the first ten mile section of the unconstructed portion of the Ottawa, Arnprior and Parry Sound Railway. It will employ about 700 or 800 men, will have seven bands in operation, with a cutting capacity of about 200,000 feet of lumber per day.

Hull, Que.—Saw mill.—Ex-Mayor Aubrey will build a saw mill

St. Thomas, Ont. Electric light.—A by-law will be submitted to the ratepayers for the issue of debentures to build a street lighting and commercial electric light plant, at a cost of \$50,000.

Cleaning leather belts.—Most all dynamo belts are subject to damage from machine oil which causes the leather to rot and the belt to slip on the pulleys. Messrs. Robin, Sadler & Haworth, the leather belt makers of Montreal and Toronto, have experimented considerably to ascertain what would be the most effective process to restore belts of this kind, and to place them in condition so that they could be made again serviceable and after many practical tests they have proved that the oil can be extracted and the belts made useful again without injuring either the leather or cement; and it is for this reason that they term themselves cleaners and repairers of old oily leather belts. They will be pleased to give further information to any who are troubled with belts of this kind.

Nowmarket, Ont.—Electric light.—The town council has decided to install an electric light plant. Estimated cost, \$8,000.

Two pulp mills, and possibly a paper mill, are to be constructed during the coming summer on the Rouge river, close to where it empties into the Ottawa. The promoter of the enterprise is Eugene Swan, of New York City. Mr. Swan arrived in Ottawa, recently, and stated that the preliminaries for the construction of the mills were complete, a survey of the water power and adjoining properties having been made recently. The business, said Mr. Swan, will be controlled by American capital, and conducted under a charter from the Dominion Government. The capital to be invested is about \$1,000,000, which will provide machinery for the manufacture of 200 tons of pulp daily. As to a paper mill, that will be decided upon on the return of one of the principal capitalists interested in the enterprise, who is now in England. The property on which it is proposed to erect the mills is a portion of the J. K. Ward limit, which was acquired by Mr. Swan last fall for between \$150,000 and \$200,000.

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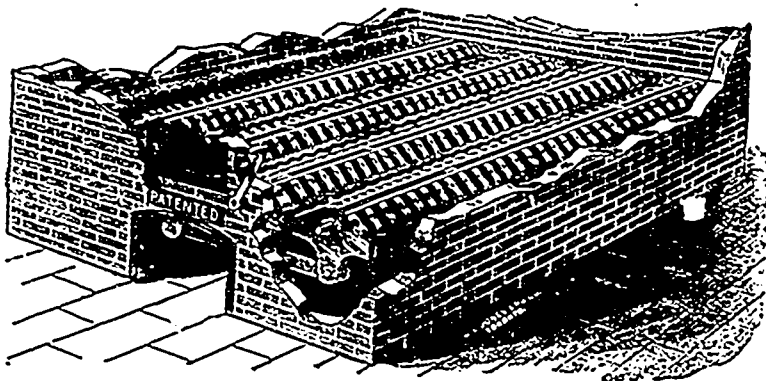
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NEW TESTIMONY EVERY ISSUE



From Dalton Bros., Soap Manufacturers, Toronto:

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THE HEESON ROCKING GRATE BARS

Will be placed on trial under any boiler in the Dominion for thirty days, at the end of which time, if they are not satisfactory, we will remove them and return the old bars to their place free of expense

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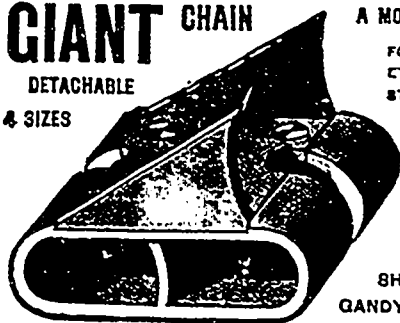
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GIANT CHAIN

DETACHABLE

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LOG TOOTH,
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A MOST SATISFACTORY AND DURABLE CHAIN

FOR LOG JACKS, REFUSE CONVEYERS, ETC., ETC. LARGE QUANTITY OF THIS AND OTHER STYLES IN STOCK FOR

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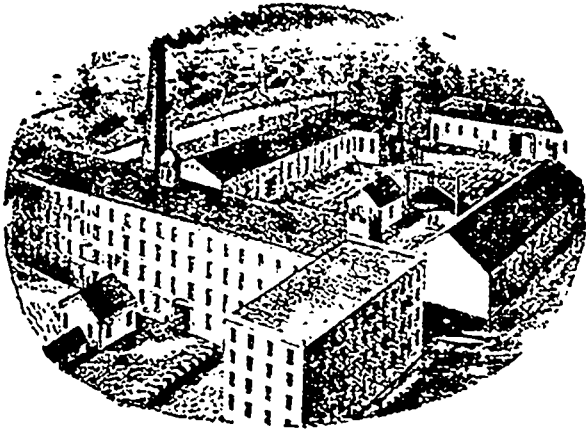
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Weston Woolen Mills

This valuable Seven Set Mill, including 25 acres of Land, with 10 dwellings, etc., is now offered **FOR SALE**. It contains seven sets of 60 inch manufacturing Cards, 2,500 Spindles (Tatham Mules), 45 Broad Looms, and all other machinery to match. It is advantageously situated on the banks of the Humber River, and has an excellent water power.



Weston is a Suburb of Toronto, on the Main Lines of the Grand Trunk and Canadian Pacific Railways, having also an electric car service direct to Toronto.

As this fine property is offered at very reduced figures an eminently favorable opportunity is afforded to intending purchasers.

I also have for sale, one set of 48 inch Cards, 2 sets of 60 inch Cards, 4 Tatham Mules, 10 Broad Looms, 2

English Gigs, 2 Chinchilla Machines, Eight 60 inch Shoddy Cards, 2 Fulling Machines, 3 Shoddy Pickers, 1 Rag Duster, Etc., Etc.

GEORGE REID, - - 118 Duke St., Toronto.

CANADIAN PATENTS.

The following patents have been issued from the Canadian Patent Office, from January 18th to January 28th, 1896.

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.

C H Riches, Canada Life Building, Toronto.

A. Harvey, Central Chambers, Ottawa.

Copies of any American patents can be procured from either of these attorneys for the sum of twenty-five cents each.

- 51,057 Umbrella, Gustavo J. Jaccard, Bayonne, N.J.
- 51,058 Process of manufacturing carbonic acid, etc., Erick W. Encquist, Flushing, N.Y.
- 51,059 Manufacture of aluminate, etc., D. A. Penickoff, Petersburg, Russia.
- 51,060 Rubber dam clamp, Henry F. Libby, Boston, Mass.

CONSUMERS GAS METERS Any Size

We make an O. K. METER. You should own one, it will pay you.

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The Manufacturers' List Co.

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DEAR SIRS,—The first edition of the **Buyers' and Sellers' Guide of Canada** being all sold, we offer you, for a limited time, the same work, in manilla paper cover, at the low price of \$1.50 (the price of first edition, cloth bound, was \$5.00). We print from the plates and now give you the benefit of the difference in cost.

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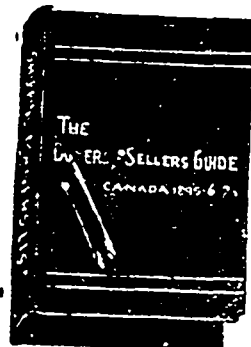
It contains a list of any articles you may want that are manufactured in Canada, and the address of manufacturers of such articles.

It contains the best Classified and General list of Lumber Manufacturers and the kinds of lumber they have for sale that was ever published for this country.

It contains a list of 500 merchants in Ontario and other points, who handle for shipment such grain as is grown in their locality.

It contains a list of Flour and Feed Merchants in Quebec and the Maritime Provinces who purchase in Car Lots or receive on Commission. A large number of these are General Merchants who have been personally canvassed for the information.

It contains a list of 1,200 Hardware Merchants, alphabetically arranged and by Provinces.



A general list under sub-headings of Flour Manufactures, Grist and Chop Mills, Iron Working Manufactures, Machinists, Leather Manufactures, Woolen Mills, Breweries and Distilleries, Carriage Makers, Cigar Manufacturers, etc.

Wood Working Manufactures which includes Furniture Factories, Planing Mills, Piano and Organ Factories, etc., etc.

The Canadian Manufacturer will receive and fill orders for the book at the above price.

- | | | |
|--|---|--|
| <p>51,061 Dress stay, Allen Bagle, Ipsilanti, Mich.</p> <p>51,062 Steel barrel, John McDonald, Petrolen, Ont.</p> <p>51,063 Machine for sprinkling paris green on potatoes, Allison Redden and Levi Redden, Kentville, N.S.</p> <p>51,064 Flushing tank, Chas. M. Cookson and Hunter Plows, Victoria, B.C.</p> <p>51,065 Implement for driving tacks, Wm. T. Hooknagle, Baltimore, Md.</p> <p>51,066 Billiard table apparatus, Arthur A. Leaker, Montreal.</p> <p>51,067 Wreck raising appliance, Jas. Bell, West Derby, Eng., Wm. Chas. Melville, Liverpool, Eng., and Jas. W. Foster, Seacombe, Eng.</p> | <p>51,068 Food compound, Firman Delangle, Lyon, Franco.</p> <p>51,069 Faucet, Elijah U. Scoville, Manlius, N.Y.</p> <p>51,070 Machine for cutting and grinding cork, Hakon S. Larsen, Christiania, Norway.</p> <p>51,071 Apparatus for feeding sheets of paper to printing machines, Geo. Duncan, Liverpool, Eng.</p> <p>51,072 Dyeing machine, Tom. B. Bowers, Chester, Pa.</p> <p>51,073 Oil filter, Wm. J. Bailey, Evansville, Ind.</p> <p>51,074 Device and apparatus for tanning hides, Eugene Worms, Paris, France.</p> | <p>51,075 Fastener for neckties, Wm. C. McDougall, Cheboggan, Mich.</p> <p>51,076 Pneumatic tire, David W. Alexander, Toronto.</p> <p>51,077 Sand-band, Harry W. Russell, Dr. agiac, Mich.</p> <p>51,078 Hinge, Oliver H. P. G. Spencer, Mount Carmel, Ill.</p> <p>51,079 Rotary engine, Oscar E. Morse, Dillon, Montana.</p> <p>51,080 Apparatus for distilling water, Henry Pattison, Windsor, N.S.</p> <p>51,081 Attachment for bicycle seats, Christopher H. Watson, Riverside, Cal.</p> <p>51,082 Machine for sharpening calks for horse shoes, Leonard F. Tarkenton, Wesley, N.Y.</p> <p>51,083 Handle bar for bicycles, Chas. H. Gatchell, Boston, Mass.</p> <p>51,084 Heating and ventilating stove-drum, Geo. Bellamy, Shoal Lake, Man.</p> <p>51,085 Lubricating axle, John T. Richard, Gardiner, Me.</p> <p>51,086 Food for birds, Bartholomew Cottam, London, Ont.</p> <p>51,087 Transmitting mechanism for cycle, Gerard Beckman, New York, N.Y.</p> <p>51,088 Communion cup, Edward W. Hryn, Ypsilanti, Mich.</p> <p>51,089 Ornamental sign letter, Albro S. and Jas. H. Lennon, Lindsay, Ont.</p> <p>51,090 Confectionery pail cover, Wm. F. King and Arthur S. King, assignees of Florence P. McGovern, Ottawa.</p> <p>51,091 Vehicle shaft, etc., Wm. A. Brewlich, London West, Eng., assignee of Chas. A. Floyd, London, Eng.</p> <p>51,092 Process of manufacturing vanillin, the firm of Haarmann and Reimer, Holzminden, Germany, assignee of W. Haarmann, Hoxter, Germany.</p> <p>51,093 Machine for cutting stone, Frances Z. Landry, Sherbrooke, Que., and Jean Baptiste Biron, Stoke, Que.</p> <p>51,094 Wattmeter, the Whitney Electrical Instrument Co., Saco, Me., assignee of Adrian H. Hoyt, Penacook, N.H.</p> <p>51,095 Kiln, F. D. T. Lehmann and Pez N. Kohlsaat, Chicago, Ill.</p> <p>51,096 Advertising puzzle, Jos. W. Horsfield, Jos. Kaye and Herr Va Chas. Deornly, Densbury, Eng.</p> <p>51,097 Music leaf holder, Alpheus A. Leary and Chas. H. Moyer, Fenwick, Ont.</p> <p>51,098 Device for teaching vocal music, Mary M. Vogt, Rochester, N.Y.</p> <p>51,099 Electrical quarter saver and stopping device for knitting machines, Herbert T. Ballard, Toronto.</p> <p>51,100 Composition for covering roofs, Daniel Allen, Galt, Ont.</p> <p>51,101 Paper box, the Elliott Paper Box Co., assignee of David Elliot, Toronto.</p> <p>51,102 Rock drill, Wm. H. Dixon, John E. Gartmann and Frank A. Feltz, Denver, Col.</p> <p>51,103 Jacketed can, the Utility Mfg. Co., assignee of Henry Lewis Gata and Myron Whiting Clark, Milwaukee, Wis.</p> <p>51,104 Marino conveyance, John Deas and Chas. R. Carpenter, Racine, Wis.</p> |
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Our experience of 33 YEARS building Water Wheels enables us to suit every requirement of Water Power Plants. We guarantee satisfaction.

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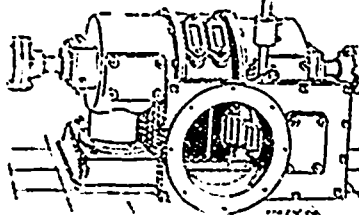
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One Type of Horizontal.

Built in 17 Standard Sizes and 27 Special Sizes, making a range of 44 different wheels in vertical and horizontal cases.

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- 51,103 Jacketed can, the Utility Mfg. Co., assignee of Henry Lewis Gata and Myron Whiting Clark, Milwaukee, Wis.
- 51,104 Marino conveyance, John Deas and Chas. R. Carpenter, Racine, Wis.

51,105 Rodkin, A. W. Lozier, New York, N.Y., assignee of F. D. Arthur, Scarborough, N.Y.	51,110 Music holder, etc., Wm. Molton, Hamilton, Ont.	51,116 Medicinal compound, Samuel Irwin, and Oliver Lingwood, Waterloo, Ont.
51,106 Device to prevent re-filling of bottles, Jas. O'Donnel, Hamilton, Ont.	51,111 Valve for surgical syringes, Horace D. Taggart, Akron, O.	51,117 Mechanical toy, Whiting J. Wilcox, Cornwall, Conn.
51,107 Linotype machine, the National Typographic Co., New York, N.Y., assignee of Philip T. Dodge, Washington, D.C.	51,112 Dice box, Eugene Gregory, Ann Arbor, Mich.	51,118 Fishing reel, Thos. J. Sutton, New York, N.Y.
51,108 Axle cooler, the Cook Cooler Co., assignee of Miles P. Cook, Flint, Mich.	51,113 Knitting machine, Louis N. Devon, William and Harry Swinglehurst, Philadelphia, Pa.	51,119 Process of obtaining a flavoring and coloring extract, Joshua Tennant and Geo. A. Thayer, Carson City, Mich.
51,109 Poll book, Samuel E. St. Onge Chap-leau, Ottawa.	51,114 Protective guard for paper rolls, Chas. L. Duval, Bayonne, N.J.	51,120 Apparatus for and manufacture of Mosaic floor cloth, Wm. Mather, Manchester, Eng.
	51,115 Ink stand, etc., John B. Thomas, Lakewood, N.J.	51,121 Cattle stall, Merrill J. Drown, Lester E. Hoyt and Joel W. Davis, Baraboo, Wis.
		51,122 Cattle stall, Merrill J. Drown, Lester E. Hoyt and Joel W. Davis, Baraboo, Wis.
		51,123 Process of purifying oil, the Cleveland Linsed Oil Co., assignee of Hermann Frasch, Cleveland, O.
		51,124 Apparatus for propelling vessels, Carl A. G. Storz, Frankfort-on-Main, Germany.
		51,125 Process of photographing in colors, John Joly, Dublin, Ireland.
		51,126 Art of treating mineral fibre, David H. Ferguson, Montreal.
		51,127 Piano desk, Albert Nordheimer and Samuel Nordheimer, assignee of O. Martin, Toronto.
		51,128 Musical instrument, Daniel Mayer, assignee of Wm. Robinson, London, Eng.

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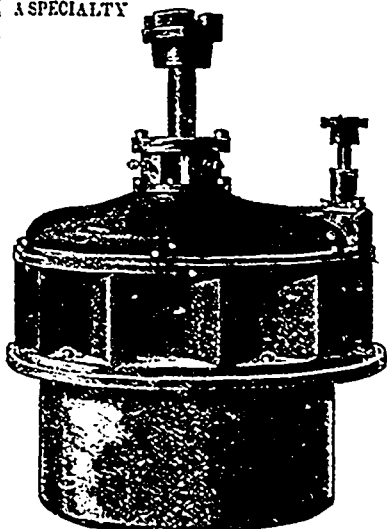
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- 51,133 Portable shower bath apparatus, Wm. Emmert Dobbins, Ashburne, Pa.
- 51,134 Fruit ladder, Wm. H. Wilson, Belmont, N.S.
- 51,129 Smokeless gun powder, The American Smokeless Powder Co., New York, N. Y., assignee of G. N. Whistler, Fort Wadsworth, N.Y., and H. C. Aspinwall, West New Brighton, N.Y.
- 51,130 Bicycle support, John Winick Currier, Los Angeles, Cal.
- 51,131 Process of treating furniture polish, Carl F. Bratsch, Berlin, Germany.

- 51,132 Toe-calk machine, Franklin W. Pitcher, assignee of Eugene Childs and Wm. Sangster, Boston, Mass.
- 51,135 Machine for pointing butchers' skewers, Frederick Harrison, Owen Sound, Ont.
- 51,136 Laundry case, Thos. Paterson, Peterborough, Ont.
- 51,137 Wrench, Jas. Fatkin, Aspin, Col.
- 51,138 Fastening for knives, etc., Edward Q. Norton, Daphne, Ala.
- 51,139 Trap, Silas P. Burgess, Springfield, Mass.

- 51,140 Hat pouncing machine, John B. Howe, Danbury, Conn.
- 51,141 Prism pointer for typewriters, Walter B. Dyer, Pottsville, Pa.
- 51,142 Autograph register, Geo. A. Norcross, Geo. R. Sullivan and Jas. O. Sullivan, San Antonio, Tex.
- 51,143 Electric switch, Ernest Blasser and Chas. E. Perkins, Boston, Mass.
- 51,144 Button hole attachment for sewing machines, John Davis, Brooklyn, N.Y.
- 51,145 Electric head light, Wm. Dibb, Frank C. Roraback, and Albert C. Fisher, Syracuse, N.Y.
- 51,146 Marking stamp, Wilber B. Smith, assignee of Frank M. Bulkley, Bridgeport, Conn.
- 51,147 Electric railway system, The Electro-Magnetic Traction Co., assignee of Malone Wheelless, Washington, D.C.
- 51,148 Machine for washing cereals, Walter A. Scott, and Chas. F. Shirk, Duluth, Minn.
- 51,149 Manufacture of moulded articles, The Publishing, Advertising and Trading Syndicate, assignee of Frederick W. Oliver, London, Eng.
- 51,150 Device for handling books, Herman Pfund, Madison, Wis., assignee of August C. Jacobi, Middleton, Wis.
- 51,151 Globe for lamps, John L. Spink and T. W. Horn, assignees of Jas. G. Pennycuik, Toronto.
- 51,152 Vault light, John L. Spink and T. W. Horn, assignees of Jas. G. Pennycuik, Toronto.
- 51,153 Leather strap for handles, etc., F. J. Bringham, Chicago, Ill.

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Wishing you the compliments of the season, I remain, yours truly,
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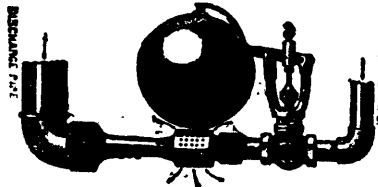
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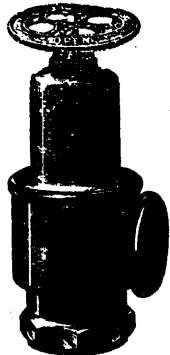
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- 51,154 Art of and apparatus for converting into work, A. B. Wellington, New York, N.Y., executrix of Arthur Mellen, New York, N.Y.
- 51,155 Thermodynamic process and apparatus, A. B. Wellington, New York, N.Y., executrix of Arthur Mellen, New York, N.Y.
- 51,156 Step-series engine process and apparatus, A. B. Wellington, New York, N.Y., executrix of Arthur Mellen, New York, N.Y.
- 51,157 Combined traction engine, thresher feeder and gang plow, Wm. Stephenson, Morris, Man.
- 51,158 Water heater, Alfred H. Humphrey, Fred J. Humphrey, and Herbert S. Humphrey, Kalamazoo, Mich.
- 51,159 Device to prevent the refilling of bottles, Chas. Booker, Toronto.
- 50,160 Method of testing gas mains, Adolphe Bowvier, Lyons, France.
- 51,161 Apparatus for cooling or condensing fluids, Geo. A. Barnard, New York, N.Y.
- 51,162 Oil filter, Edward H. Downing, Vancouver, B.C.

- 51,163 Automatic safety attachment for gas burners, Henry H. Cummings, Malden, Mass.
- 51,164 Automatically operated vacuum brake, Robt. A. Kiskadden, Pittsburg, Pa.
- 51,165 Hydrocarbon burner, The Welsbach Incandescent Gas Light Co., assignee of A. O. Granger, Montreal, assignee of Chas. E. White, Kansas City, Mo.
- 51,166 Method of and machine for cleaning the wire gauze cylinder of safety lamps, Gottfried Gossmann, Dortmund, Germany.
- 51,167 Gas, etc., motor engine, Peter Burt and Geo. McGhee, Glasgow, Scotland.
- 51,168 Machine for bending links, George P. Simpson, Montreal.
- 51,169 Weighing machine, Francis H. Richards, Hartford, Conn.

Wolfville, N.S.—Lumber mill.—Messrs. S. P. Benjamin & Sons are applying for incorporation with a capital stock of \$100,000 to manufacture lumber.

United States Patents to Canadian Inventors.

Since our last issue, United States patents to Canadian inventors were issued as follows :

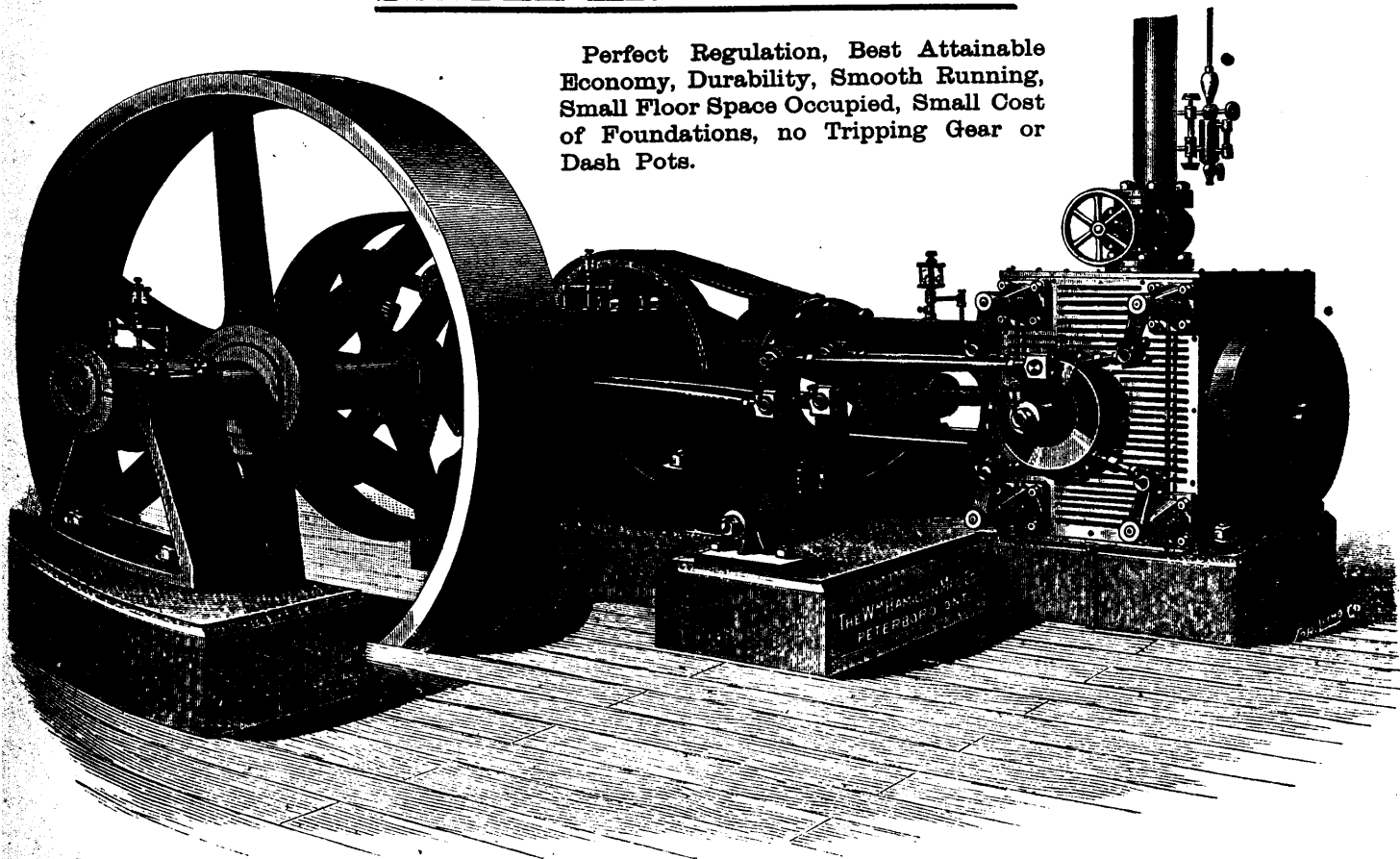
- 556,338 Apparatus for cleaning gutters, etc., F. L. Decarie, Montreal.
- 556,362 Electrical connector for arc lights, J. J. McGill, Thorold, Ont.
- 556,719 Amount finding table, Chas. E. Stewart, Woodstock, Ont.
- 556,825 Ventilated boot, J. S. King, Toronto.
- 556,951 Child's seat for bicycles, J. H. Elliott, Windsor, Ont.
- 557,040 Clock resonator, S. Willcock, Toronto.

Mr. Thomas Pink, manufacturer of lumbering tools, Pembroke, Ont., has sent us a very beautiful calendar worthy of a conspicuous place in any office. It calls to memory the celebrated Pink lumbering tools such as duck or chisel bill cant hooks, cant hook handles, peavies, peavie handles, skidding tongs, etc.

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1 $\frac{3}{4}$	1 $\frac{3}{4}$	5.01	"	3	2 $\frac{1}{2}$	22.50	"
1 $\frac{1}{2}$	1 $\frac{1}{2}$	5.94	"	3 $\frac{1}{2}$	3 $\frac{1}{8}$	26.60	"
1 $\frac{3}{4}$	1 $\frac{3}{4}$	7.46	"	3 $\frac{1}{2}$	3 $\frac{1}{8}$	30.91	"
2	1 $\frac{15}{16}$	9.83	0 04	4	4	42.33	0 05
2 $\frac{1}{2}$	2 $\frac{1}{8}$	12.53	"	4 $\frac{1}{2}$	4 $\frac{1}{2}$	53.57	"
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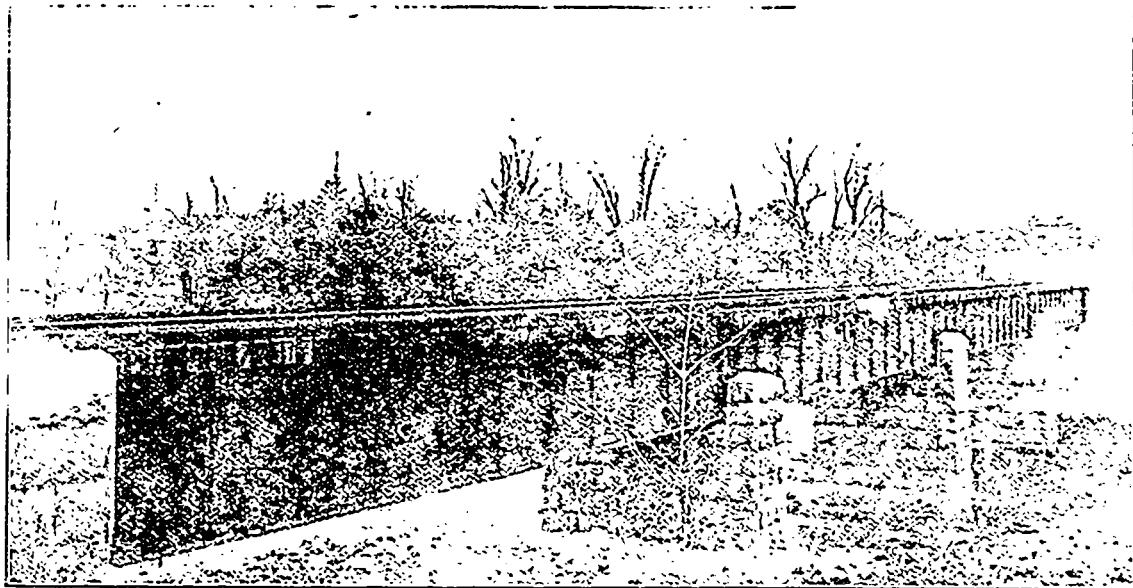
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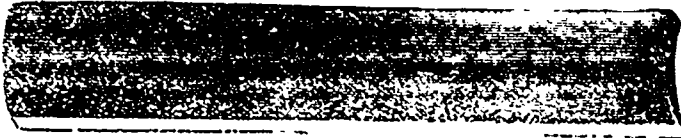
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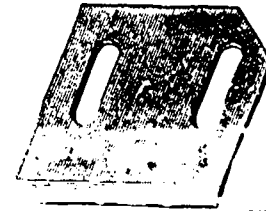
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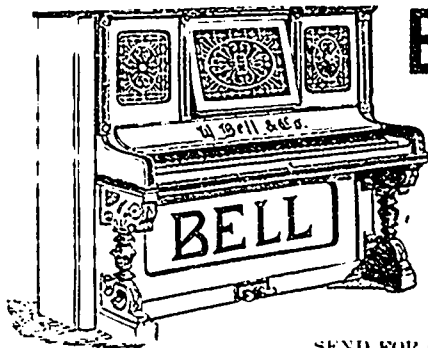
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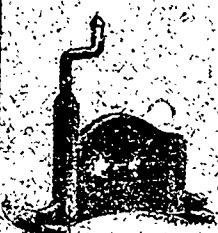
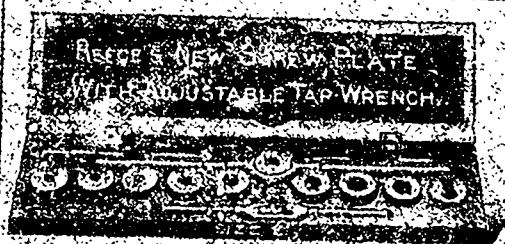
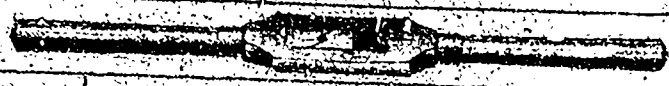
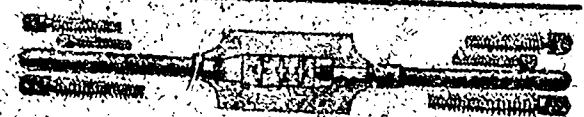
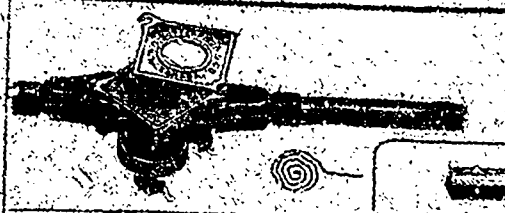
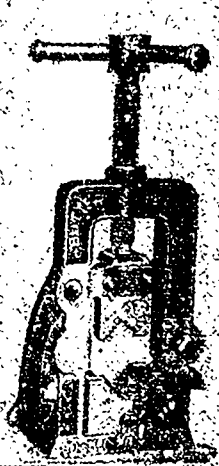


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To secure by all legitimate means the aid of both Public Opinion and Governmental Policy in favor of the development of home industry and the promotion of Canadian manufacturing enterprise.
 To enable those in all branches of manufacturing enterprises to act in concert, as a united body, when for action in behalf of any particular industry, or of the whole body, is necessary.
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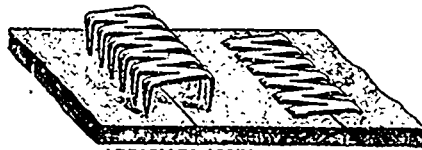
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