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VOL. 42. TORONTO, JUNE 21, 1901. No. 12.

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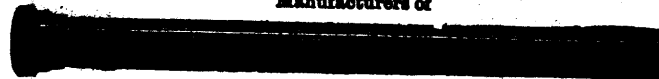
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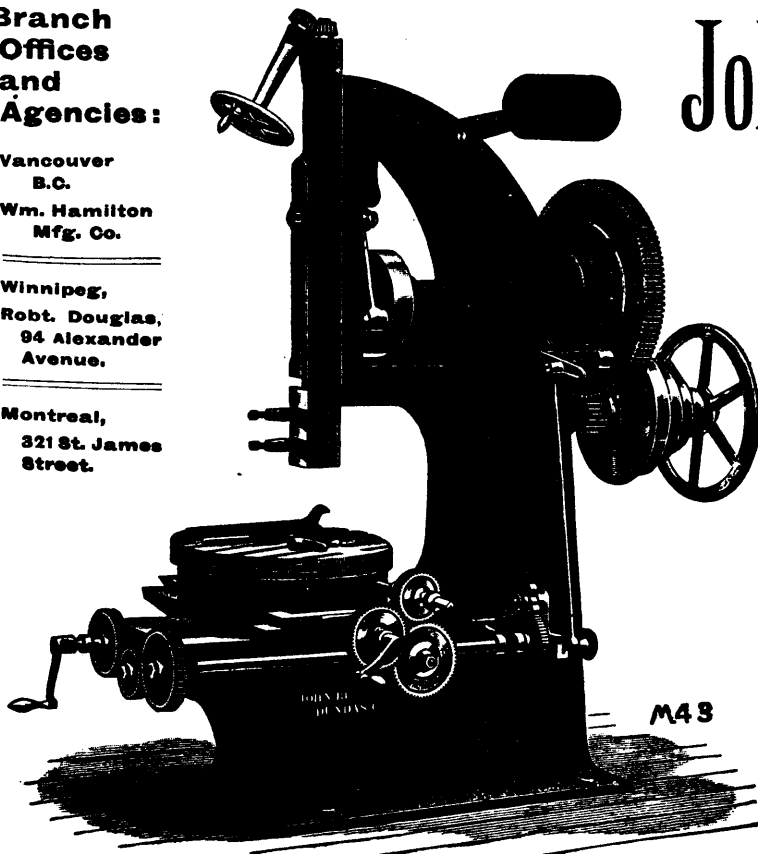
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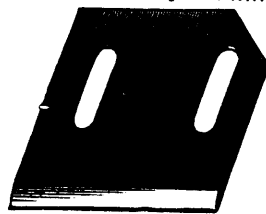
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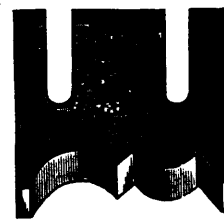
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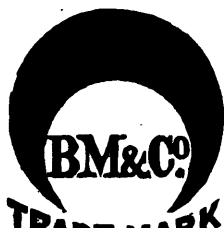
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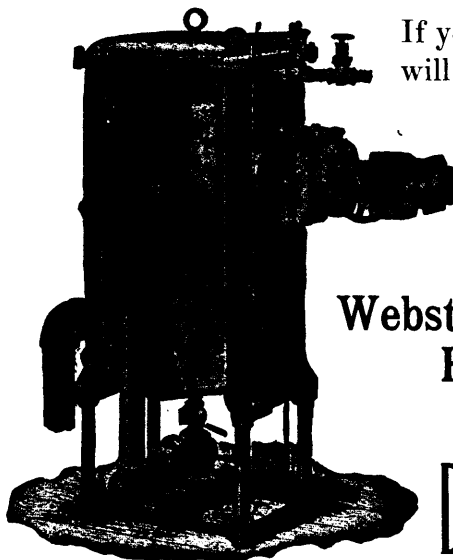
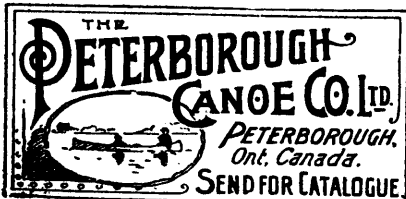
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WEBSTER SYSTEM OF STEAM HEATING

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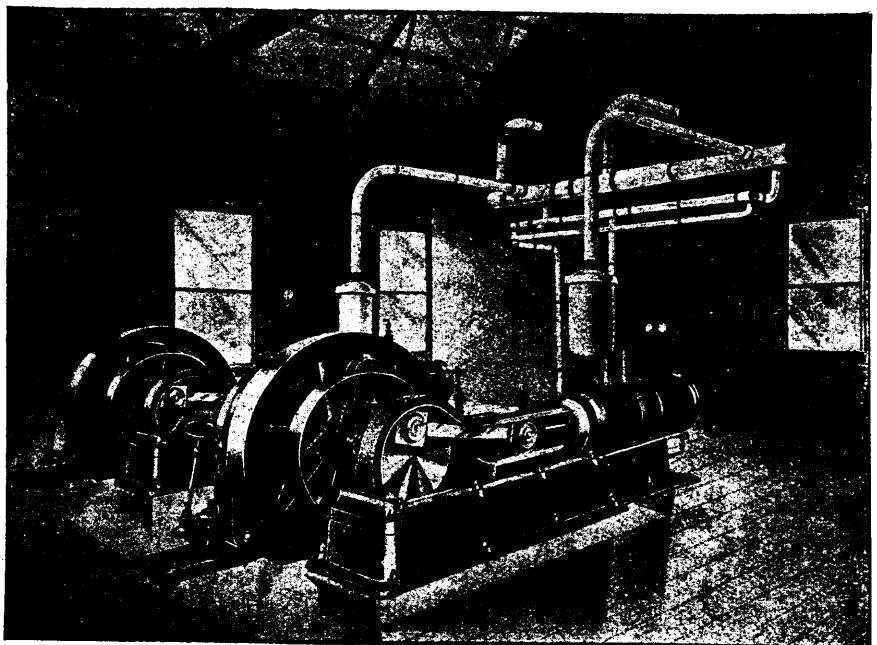
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Lighting, Heating and Motive Power

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GAS FROM WOOD—A rich permanent Gas almost equal to that of Coal Gas, can be made by using the

RICHE' GAS GENERATOR

at a mere nominal cost per thousand cubic feet.

The Generator is simple in construction, and does not require skilled labor to work it. **No Purifiers required. Products being a Rich Permanent Gas and Charcoal.**

These Generators are extensively used in Europe, and are on exhibit at the Paris Exposition. Particulars by applying to

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Air Pumps
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Canadian Manufacturers and Engineers will find it to their interest to refer to us when in need of anything in the shape of Pumping Machinery.

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ESTABLISHED 1883

Standard Steam Specialties

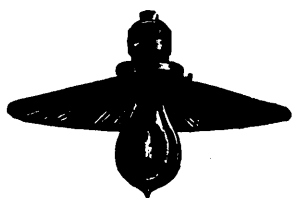
Reducing Valves, Damper Regulators, Pump Governors and Automatic Appliances of all Descriptions for the Regulation and Control of Steam, Water and Air Pressures.

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RODERICK J. PARKE, CONSULTING ENGINEER TO MANUFACTURERS—Competent and impartial advice on Industrial Electrical Systems of Lighting, Power Distribution, Heating and Welding, Etc. Plans, Specifications, Tests, Reports, Valuations.

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We Stock a Large Variety of SHADES and REFLECTORS in

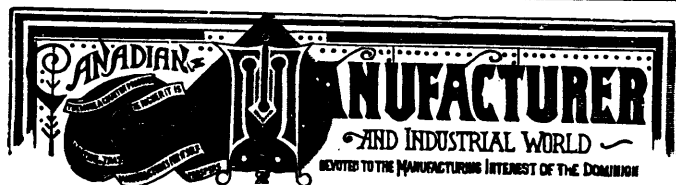
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FOR FACTORY AND OFFICE.

Imperial Lamps and Helios Upton Enclosed Arcs Give BEST LIGHT with LEAST CURRENT
ELBRIDGE Sparking Dynamos, SAMSON Batteries and IMPERIAL Salts, for Gas or Oil Engines.

Write us about Lighting
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164 Federal Street, - Boston, Mass.
AGENTS FOR UNITED STATES.

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J. J. CASSIDY, - - - Editor and Manager

THE BEET SUGAR INDUSTRY.

This journal has persistently for years advocated the establishment of the beet sugar industry in Canada. It has shown that the soil of most of the provinces was well adapted to the successful cultivation of the sugar beet, that the climatic influences were favorable, that the crops could be easily cultivated, that it would be more remunerative to the farmer that almost any other crop that he could grow, that it could be disposed of at home instead of having to send it abroad for sale, that the value of it would be paid for it cash upon delivery, that it would give occupation to thousands of Canadians instead of to unknown people in foreign lands, that it would keep money at home that is now being sent abroad, that it would afford profitable investment for capital, that it would give enlarged occupation to skilled workmen in the manufacture of machinery and in the production of sugar, and that our railroads would also reap large benefit in the transportation of both the raw and the finished products. Our people are now observing and acting upon these facts, and it is gratifying to know that already quite a number of companies have been formed, and enterprises put in motion, looking to the erection of factories and the production of beets with which to supply them.

What others have done and are doing we may, under similar circumstances, also do; nor need we go far afield for comparisons with which we should be fully satisfied. The production of beet sugar in the United States in 1880, was less than 500 tons; in 1885, only 600 tons; in 1890, 2,800 tons. From that time on the production increased at a marvelous rate, and was as follows: In 1893, 20,451 tons; in 1895, 30,000 tons; in 1897, 40,400 tons; and in 1899, 72,944 tons. In 1830, according to the Beet Growers' Manual, the United States consumed approximately 20 pounds of sugar per capita; in 1840, 25 pounds; in 1850, 30 pounds; in 1860, 35 pounds; in 1870, 40 pounds; in 1880, 45 pounds; in 1890, 53 pounds, and in 1895, 63 pounds.

The value of confectionery products in that country, of which sugar was such an important material, was:

In 1850	\$3,000,000
In 1860	5,000,000
In 1870	15,000,000
In 1880	25,000,000
In 1890	55,000,000
In 1900	75,000,000

The Canadian Manufacturer

Reaches all the Blast Furnaces, Iron and Steel Works, Rolling Mills, Manufacturers of Iron and Wood-Working Machinery, Steam Engines and Boilers, Pumping and Mining Machinery, Electric Machinery and Appliances, Machinery Dealers and Steam Fitters' Supplies, all Hardware Dealers, Cotton, Woolen, Knitting and Yarn Mills, Pulp and Paper Mills, etc., in Canada.

A glance at the map shows that as far as latitude, soil, climate and general conditions go, there is no difference between the Province of Ontario and the State of Michigan, and we therefore assume that whatever conditions exist in Michigan may also exist in Ontario. At this time there are thirty-one beet sugar factories in the United States, in which \$20,958,519 is invested, Michigan having nine factories in which is invested \$4,013,743. This Michigan investment is divided as follows:—Land, \$143,036; buildings, \$925,980; machinery, tools and implements, \$2,414,349; cash and sundries, \$530,378. The total capacity in tons of beets per day of these nine Michigan factories is 4,100 tons, the average daily capacity per factory being 456 tons. These factories have all been built within the last two or three years, and, with but one exception, they are all, we understand, of American construction and equipment.

The cost of materials, etc., used in these Michigan factories last year was divided as follows:—Sugar beets, \$902,592; fuel, \$90,969; mill supplies, \$2,840; freights, \$26,839; all other, \$86,663.

To supply these nine Michigan factories, 37,034 acres of land were required, which produced 205,925 net tons of beets at a cost of \$902,592. To convert these beets into sugar and prepare it for market, the quantities of other materials used were:—Limestone, 15,403 tons; coal, 47,979 tons; coke, 2,079 tons; sulphur, 40 tons; 79,468 barrels; and 76,796 sacks. The quantities and values of products were:—Granulated sugar, 32,738,098 pounds, value, \$1,561,100; raw sugar, 971,185 pounds, value, \$39,184; molasses, 321,100 gallons, value, \$1,225; pulp, \$241; lime, \$516; a grand total value of \$1,602,266.

The average price paid per ton of 2,000 pounds of beets was \$4.38.

These figures show that for every acre of land cultivated to beets in Michigan last year, nearly \$45 worth of sugar was produced, divided between the farmer, the mechanic and the capitalist.

Why not Canada do likewise?

AS TO INDUSTRIAL EXHIBITIONS.

Industrial Canada, the official organ of the Canadian Manufacturers' Association, speaking of the advantages to manufacturers of exhibiting at the forthcoming Toronto Exhibition,

says that the Exhibition Association had sent out circulars to the manufacturers asking them to make adequate displays of their products there, to which very gratifying replies had been received; and it adds that but few of the manufacturers had found it to their advantage to exhibit at the Pan-American Exhibition "owing to the very high tariff against goods entering the United States;" that "those purchasers who are interested in Canadian goods will also visit the Toronto Exhibition and there have an opportunity of seeing Canadian goods."

It has never to our knowledge been suggested that Canadian exhibits at the Pan-American would probably lead to an increase of sales of our products to the United States. The Buffalo Exhibition as its name indicates, was never intended for that purpose, but to bring American manufacturers in closer touch with Pan-American buyers; and any exhibits which Canada might make there would be likely to receive as much attention from South American visitors as those of the United States. If a South American visitor saw there an article which he desired, learned that it was a Canadian product, and that it was of equal merit and cost as a similar American product, he would not hesitate to purchase because it was Canadian.

Industrial Canada should know that no American duty whatever is imposed upon articles from Canada or any other country sent for exhibition at the Pan-American. If such articles were sold there, and went into consumption in the United States, the regular American duty would be imposed, of course, but not otherwise, therefore if the American duty were ten times as high as it is, it would be no bar to Canadian manufacturers to exhibit there if they desired to do so.

It is a queer idea for Industrial Canada to advance that visitors at the Pan-American who may be interested in Canadian goods will visit Toronto to see them. How could Pan-American visitors from South America become interested in Canadian products if there were none to be seen there? Why should they extend their journey to Toronto to see things of which they had no knowledge? No doubt it would be a delightful side trip, and a most instructive one to visit our own big Fair, but the delight and instruction would not necessarily be derived from observing Canadian exhibits here.

There seems to be a misapprehension of the circumstances. The Pan-American Exhibition was instituted particularly to display to all the countries on the continent south of the United States, the ability of American manufacturers to supply their wants, and Canada is invited to participate in this exhibition. If Canadian manufacturers who exhibit there can effect sales to purchasers in South America, the United States tariff could not in any manner affect the transaction. If Canadian manufacturers exhibit at the Pan-American it would be—not to effect sales to American purchasers—but to those of the Argentine Republic, Bolivia, Brazil, Chili, Colombia, Costa Rica, Cuba, Dominica, Ecuador, Guatemala, Hayti, Honduras, Mexico, Nicaragua, Paraguay, Peru, Puerto Rico, and Salvador. Is such trade worth striving for? If it is why discourage it by holding up an impossible American bugaboo?

CANADA'S IRON AND STEEL.

Commercial Intelligence, of London, Eng., has, for some time, had a special commissioner in Canada obtaining facts regarding the great industrial advancement being made here, and his reports, and the comments, made upon them, are exceedingly interesting. We make some extracts as follows:

At Sydney, C.B., a locality which bids fair to rival in fame

the Sydney that lies beneath the Southern Cross, an American, Mr. Whitney, is devoting his energies, with profit to Canadian industry and no less gain to himself, to the development of the rich mineral resources of Nova Scotia and Newfoundland. On the Canadian shores of Lake Superior it is again an American, Mr. Clergue, who is the head and front of the new iron and steel developments. In both cases these American industrial pioneers have been remarkably successful in gaining the ear of Canadian Governments. The benefits bestowed on the Dominion Coal Co., and the Dominion Iron & Steel Co., of Mr. Whitney, are paralleled in Ontario by the extraordinary favors granted to the newly-formed Clergue Iron & Nickel Steel Co., of Mr. Clergue. In April the Canadian Dominion Legislature learned with a gasp, that the Minister of Railways had made a bargain with Mr. Clergue for the supply of 25,000 tons of steel rails per annum for Canadian Government lines for a period of five years. Such proceedings are enough to make old-fashioned political economists stare. Some staunch free traders have been known to condone protection in a young community because of its assistance in establishing new industries which, when strong enough to walk alone, could be left to flourish unprotected. But the assistance given by modern "young communities" goes much further. Bounties are paid with a lavish hand and business guaranteed to concerns which have not yet in existence, save in the brains of a financier. The Clergue contract was not swallowed by the Dominion Parliament, however, with an easy grace. Long debates of an angry and personal character were waged over its conditions, but the contract remains, and Mr. Clergue has triumphed.

Speaking of the fiscal and industrial policies of the two political parties in Canada:—

Our readers will gather from these special articles that it is now next to impossible to discover any difference between Canadian Liberals and Canadian Conservatives on the question of the artificial fostering of Canadian industries, and it may be added that, after the speeches of members of the Laurier Government on the Clergue contract, that Canadian Liberals can no longer pretend to pose, as they did when out of office, as opponents of a high protective tariff and of bounties. The two parties still differ as to preferential trade with Great Britain. The Conservatives contend that we in the Old Country should have been pressed for some equivalent before the preferential tariff was arranged in 1897, and subsequently increased from 25 per cent. to 33½ per cent. But both Canadian political parties are now upholders of protection, and of liberal bounties in aid of industry, and the Laurier Government has indeed gone a step beyond the Conservatives themselves by initiating a new method of fostering new Canadian industrial enterprises.

Declaring that British industrial circles must recognize the fact that Canada is to be reckoned with hereafter in the iron and steel world, our contemporary says:—

The natural advantages which the United States possesses in waging war with our iron and steel industry are not greater than those of Canada, while the Dominion has instituted a policy of export bounties on iron and steel, to say nothing of other forms of Government assistance, which place the Canadian manufacturer on even a better footing than his confrere across the political boundary line. In Canada we have to face, in short, the enterprise and skill of Americans, the richest and cheapest mineral resources available in the world at the moment, combined with Government assistance in the form of a bounty on every ton of iron or steel landed on our shores. What do our manufacturers say to the prospect?

THE CANADIAN LEAD.

The Dominion Government having decided to grant a bounty in aid of the refining of lead in the Dominion, the bounty has been fixed at \$5 a ton for 1902, and decreasing at the rate of \$1 a year until it disappears altogether at the close of 1906. The total sum so paid is not to exceed \$100,000 in any year. The history of silver-lead mining in British Columbia has been a somewhat eventful one. The market for

lead in the Dominion is of no great extent, and the skilful framing of the United States tariff not only made it impossible at any time to compete with the Americans in the Chinese and Japanese markets, but recent changes have virtually prohibited the use of the United States refineries altogether. The lead trust, known as the American Smelting & Refining Co., soon after its formation began squeezing the British Columbia miners, and there being but one purchaser of the products of the latter, there was no help for it. This was practically the only way by which they could get their ore or bullion to market.

It operated in this way: the United States duty on lead ore is \$30 a ton. This is, of course, prohibitory, but provision is made for smelting and refining in bond. The smelter and refiner may also re-export the lead, receiving a rebate of ninety per cent. of the duties paid. This gives him such an advantage over the Canadian or Mexican miner that he has control of the whole lead market in the eastern countries on the other side of the Pacific Ocean. It is probable that a great proportion of this market was supplied from Canadian and Mexican mines. The trust, it is alleged, is now in a position to supply this trade wholly from Mexican and South American mines which it has acquired, and now refuses Canadian ores altogether. Some of the Canadian mines, with the richest class of ores, were forced to send their bullion to England, Germany and Italy to be refined, but the low price of lead in Europe has not made it a profitable venture. The case made out for Government aid is that if a refinery were established on the Canadian side of the border, Canada could compete not only in the home markets but in the Oriental markets as well.

It is also claimed that an increase in the smelting and refining of lead in British Columbia would react favorably on other branches of mining. Lead ores can be used with advantage as a flux for ores in which the proportion of copper is not so high as to make it profitable to smelt for that alone. A ton of lead would flux four or five tons of such ore, and it is confidently asserted that with greater inducements to the smelting and refining of lead there would follow a greater production of gold and copper in British Columbia from ores that are now absolutely worthless. It must be said that it would be a suicidal policy on our part if we allowed interests on the other side of the line to crush out Canadian industries by tariff or other machinations. Such attempts have been made in other cases, as we know. A familiar one is that where Ontario sawmills were being rapidly extirpated by a high American duty on sawn lumber while logs were free. A similar device was put in force on manufactured pulp and spruce logs. An even more high-handed proceeding is being attempted in regard to the production of lead, and if the Dominion Government can render that attempt abortive, as the Ontario Government has rendered the other two abortive, our neighbors may tire after a while of their attempts to put those of our industries which threaten to compete with them at a disadvantage.—The Globe.

A DEFUNCT TWENTIETH CENTURY FACTORY.

On a recent occasion Mr. A. Shanklin, a representative of the National Cash Register Co., of Dayton, Ohio, delivered an address in Toronto in which he explained the methods pursued by his company in their treatment of their employes. To the minds of many of his hearers it was a utopian dream which had never before been attempted upon such a scale, and did not commend itself to them with as much fervor as some of

the company's admirers had hoped for. The idea embodied in the Toronto address was of a double-barreled character—to advertise the Dayton concern and incidentally to show Canadian manufacturers how to manage their business. Since then what there was of the Utopia has dissolved and vanished into thin air. The curtains are down, the lights are out, the seats are vacant, and the house in darkness. It was too good to last. The Philadelphia Manufacturer explains the situation as follows:—

The strike at the National Cash Register Co's plant in Dayton, Ohio, is a matter of disappointment to a wide circle of interested observers of the methods of this concern.

It would be difficult to imagine employers attempting to do more for their employes than this concern has done, and the response to their efforts at co-operation between employer and employee has been a matter of gratification to all who advocate the "brotherhood of man." But it seems that even "brothers" have their troubles, and of late there have been ominous rumblings from the Dayton region. President Patterson says things have come to such a pass that there was not a day when he was not visited by some committee or walking delegate and annoyed with petty complaints. The latest trouble was more than he could bear, he says.

Four men were discharged from the moulding department. They complained to the union. A committee appeared for them. The head of the moulding department said the four men were trouble breeders, agitators and a menace to the welfare of the works. They had been discharged, and that was all there was to it. The committee demurred to the charges and demanded the four men be reinstated. The company refused to do this, but offered to arbitrate. Then the committee declined further consideration of the matter and ordered out all of the moulders.

The metal polishers struck in sympathy. It was seen that there was to be a general strike, so the company closed down.

Mr. Patterson said, in explanation of his action, that fully three-fourths of his employes do not believe in strikes, but that they are kept in a turmoil by agitators and walking delegates. Mr. Patterson will sail immediately for Europe. Frank J. Patterson is going to Canada to arrange with a factory there to fill his orders. He says he will keep his salesmen on the road. Not a wheel in his factory will turn, he says, until the union question is settled for years.

CANADIAN PIG IRON IN ENGLAND.

A notable event in the iron world, and of great interest otherwise, is the arrival in the Clyde this week of a cargo of 3,500 tons of pig iron from Canada. The quality corresponds with Cleveland iron, and is therefore suitable for foundry purposes. It comes across, we understand, at a freight of 10s. per ton, which is about the equivalent of half the bounty on export granted by the Dominion Government; and it incurs landing and other charges amounting to 5s. per ton, which closely approximates the cost of taking Cleveland iron to Scotland by sea. This Canadian product, then, enters into direct competition with Cleveland iron, which, again, displaces Scotch ordinary iron—at a price. The price at which the Canadian iron has been sold has not yet been disclosed, but Cleveland warrants are just now 8s. 6d. per ton under Scotch G.M.B., which is considerably more than the normal difference, so that the moment of arrival is not very opportune from the Canadian point of view.

The shipment marks a strange reversal in the current of trade, for Canada has been in the habit of taking about 10,000 tons of pig iron per annum from us, notwithstanding the contiguity of the United States. But it marks more than that. This iron comes from Cape Breton, Nova Scotia, where have just been completed four large blast furnaces for the smelting of iron ore conveyed at a low rate of freight, and on a short sea run of twenty-four hours or so, from the iron

mines of Newfoundland. These mines are near the seaboard and are cheaply worked, so that the ore is one of the cheapest ironstones in the world. It is conveyed to Sydney, Cape Breton, for a fraction of the cost of conveying ironstone from Lake Superior to Pittsburg, or from Bilbao to Middlesbro' or Glasgow, and the furnaces in which it is smelted are right on a rich and cheaply worked coalfield on the seaboard. Here are being erected a plant of some 400 coke ovens and works for the manufacture of steel on a great scale. At Cape Breton the cost of the materials for the manufacture of a ton of iron is said to be only 3s. 3d. per ton, as against 13s. per ton at Pittsburg. The peculiar advantages under which this new Nova Scotian enterprise is being started are well understood in the United States, and the knowing ones in the trade there have for some time been predicting that the cheapest iron and steel in the world will in the future be produced in Canada. As to this we know not, but it is very evident that the first cost of iron smelted on the seaboard, with coal requiring no transport, must be much lower than anything the United States can show under present conditions of working.

Whether it will pay Nova Scotia better to export pig iron than to turn it into steel is another question. The one disadvantage under which Cape Breton must suffer is in the matter of freight, for we do not know what cargoes large steamers can get to induce them to go there for return cargoes of iron, and to go there in ballast must be, of course, to enhance the outward freights. In the meanwhile, however, it must pay the smelters handsomely to export pigs, because of the bounty, which bounty has been extended to 1907.

Sydney, C.B., in two years has increased its population nearly fourfold and is already called the Pittsburg of Canada. —Iron Trade Review.

THE CONSOLIDATED LAKE SUPERIOR CO.

Mr. Theodore C. Search, president of the National Association of Manufacturers, gave out at the meeting in Detroit a few days ago, the early history of the Consolidated Lake Superior Co. at the Sault, in the development of which Mr. Clergue secured his interest and that of several other Philadelphia capitalists. Discussing the enterprises he said:

"We started on our power project at a time when no one cared to put money into anything. It was in the panic time of 1893, and we made up our minds that any development we should undertake would have to be paid for by our own money. The canals on the Canada side were shorter, and for that reason we undertook our first work on that side of the river. We developed 20,000 h.p. Then came the necessity of utilizing it, as there was then no individual demand for it. We accordingly built a pulp mill. Then came the panic and there was no demand for the pulp. This necessitated our storing it wet, and it spoiled on our hands. To add to this came the paper panic when no one knew from one day to another what the price of paper would be, and it went from bad to worse. We then hit upon a plan to manufacture our pulp dry and invented the machinery to do it with. The result is that we are now making our pulp dry, and are shipping it to all parts of the world in that condition, thereby saving the freight we paid on the fifty-five per cent. water formerly in the material.

"Times got better. We were able to interest other capital, and we decided to begin operations on the American side on the land we had taken the precaution to secure. The strip was 400 feet wide, running through the middle of the town of Sault Ste. Marie. Other parties had attempted to develop

water power, but had made a failure of it. The town then took it up; we came along and secured its co-operation, with the result that there is now a canal 12,000 feet long and 250 feet wide, except where it goes through the solid rock. Here it is 200 feet wide 21½ feet deep. The work there is about ninety per cent. finished and we expect that it will be completed by fall. The canal ends in a power house nearly 1,400 feet long, built of cement blocks, made on the spot and fitted with the pent stocks through which the water passes. There are eighty of these pent stocks, and to each pent stock there are four turbine wheels, making 320 turbine wheels that will be in operation when the work is complete.

"Then came the industries which are to use the power. The Calcium Carbide Co. will take 20,000 h.p., and the American Alkali Co., 15,000 h.p. We could sell the remainder of the power, but we will need it for running our own works. These will be a large paper mill and iron and steel mills. To the latter we will send our ore from the Canadian side, thus giving us access to the American markets, while from the Canadian side we have access to the markets of the world.

"What do I consider the future of the territory surrounding the Canadian Sault? I think it is a veritable storehouse of minerals which can be drawn on for many years to come. The steel mills now being built at the Canadian Sault will have a capacity of 2,600 tons a day. There is an unlimited supply of ore and it is of the finest quality. The ore from our first mine, to which we were compelled to build twelve miles of railroad, is a good Bessemer, and the ore from the second mine, to which we had to extend the railroad, is as good as any Bessemer ore now known to exist. It runs very light in phosphorous. The timber on the land north of the Canadian Sault is also of the best and very valuable. We will eventually utilize all the resources of the property."

IS BEET SUGAR POISONOUS?

At a recent meeting of the Canadian Manufacturers' Association, a discussion was had on "Chemistry in its Relation to the Arts and Manufactures," at which Prof. W. R. Lang, of Toronto University, alluding to the possibility of the production in Canada of sugar made from the sugar beet, said:

The chemistry of the sugars has now reached a high state of perfection, and much is known regarding the different kinds of sugars. Nevertheless, it is open to question whether cane and beet sugar are absolutely identical. One drawback to the latter kind is met with in the mother liquor, or molasses; it cannot be used for human consumption, owing to the small quantity of some poisonous substance or substances that it contains. The molasses from cane sugar, on the other hand, is familiar to all. Probably chemistry will find means to utilize the former variety for other purposes than at present. The crushed beets, after extraction, though containing only a small amount of sugar, could be utilized as fodder.

There were 233,115,902 pounds of raw sugars imported into Canada for home consumption in 1899, the sources of origin of some of it being Belgium 67,513,242 pounds, Germany 117,602,660 pounds, a total of 185,115,902 pounds, which was undoubtedly beet sugar, to be refined in Canada, against 47,898,075 pounds from all other countries, which was undoubtedly cane sugar. In the process of manufacturing raw sugar into refined, the mother liquor, or molasses Prof. Lang speaks of, is a by-product; and if it contains poison it is inevitable that some of it must remain in the refined sugar. The impression prevails among commercial men that no deleterious substance can be found in refined sugar, either beet or cane. Molasses, either beet or cane, is subject to numerous manipulations by which every particle of sugar contained

in it is recovered, the residue not only of beet but of cane molasses also, being unfit for human consumption, but is utilized in the manufacture of alcohol, blacking, vinegar and other articles. Chemistry has long since found means of utilizing both varieties of desaccharized molasses, whether Prof. Lang is aware of the fact or not.

The production of beet sugar in Canada will undoubtedly at an early day become one of our most important industries, giving rich returns to both the farmer and the manufacturer, as is now the case in the United States and many European countries; and it is regrettable that the impression should be promulgated that human beings are liable to become poisoned by eating beet sugar.

EDITORIAL NOTES.

A recent boiler explosion in Chicago disclosed the following facts, that the boiler was in bad shape, it had no injector—valves leaky and not fit for use—fuel wretched, of screened coal dust and manure, and the engineer in dread of his life. His assistant on one day in the week spent most of his time in soap making, and was also frequently called from his duties to do odd jobs here and there in other parts of the building. This statement made over an affidavit ought to be something of an eye-opener to those whose faith in the boiler inspection of the Windy City is charmingly trustful. Is there anything rotten in Denmark? and are there other boilers on the verge of cracking themselves and their surroundings, with Chicanos in blissful ignorance?—The Age of Steel.

There are hundreds of steel boilers under sidewalks and elsewhere in Toronto that are never inspected and which are liable to without notice to propel innocent passersby on a skyward journey. No harm is done to the public as long as the boilers behave themselves, but they are sometimes prone to perform strange freaks. They should all be properly and frequently inspected by competent officials.

Now, there was a manufacturer who received nineteen more orders on one day than he had ever received in one day before in all his life, and he mistook this for something real big. He should be pardoned, because he did not know that his competitor, located near him, had received sixty-seven more orders than he ever received before on the same day that he received nineteen more than usual. This big swelling of trade made this manufacturer feel that he was so well-known that he need not advertise any more, so, he dictated some letters to his stenographer to various trade papers saying, "Take my ad. out, I am rushed with work." And one day the next week this manufacturer received just nineteen less orders than he had ever received before, even when he was just starting, and before he built the L to his factory.

In the course of an article showing the power of education in production, Charles N. Dabney, in the *World's Work*, says:

Massachusetts spent in 1898-1899, \$12,261,525 more upon her public schools than Tennessee. But see what a return she gets. Each one of the 2,805,346 citizens of Massachusetts—men, women and infants—has, as we have said, a productive capacity of \$260 a year, against \$170 a year for the average inhabitant of the whole United States and \$116 a year for the average inhabitant of Tennessee. The inhabitant of Massachusetts has thus an excess of \$90 a year over the average inhabitant of the United States, and \$144 a year over the average inhabitant of Tennessee. This means that the people of Massachusetts earned in that year \$252,487,140 more than the same number of average people of the United States, and \$408,969,824 more than the same number of people in Tennes-

see. Twelve million dollars invested in superior education yield 400 millions a year.

We have secured the services of a young and aspiring genius as writer of spring poetry, of the sort that makes reference to the past and present manufacturing industries of Canada, interweaving, as it were, the good, the beautiful and the useful; and, judging from the first effusion which we here reproduce, we predict for him, if he firmly sets astride his Pegasus, a swift and glorious flight to the very highest heights of Parnassus. Our acquisition is Mr. R. W. Elliot, long and favorably known in Canadian literature, and his admixture of prose, poetry and history, which in some respect is suggestive of Longfellow, is as follows:

Gloves:—This Canadian industry, which is now carried on to such perfection by our old and well-known friends Messrs. W. H. Storey & Son, of Acton, Ont., was commenced on the American continent by a young aborigine gentleman named Hi A. Watha, whose method of glove making, in the early stages of this industry is here indicated:

He killed the noble Mudjokomis
With the skin he made him mittens,
Made them with the fur side inside,
Made them with the skinside outside.
He to get the warmside inside
Put the inside skin side outside,
He to get the cold side outside
Put the warm side fur side inside,
That's why he put the fur side inside
Why he turned them inside outside.

We clip the following items from the *Toronto Globe*, which sounds very much like some of the old time National Policy arguments vociferated by Sir John A. Macdonald:

With a subsidy of \$5 per ton during the coming year, continuing on a diminishing scale till 1906, lead-smelting should flourish in British Columbia. The Liberal Government is to be congratulated on its vigorous policy of development.

If lead mining, smelting and refining can, by the granting of a small bonus for a limited number of years, be established on a scale at all commensurate with the extensive deposits in British Columbia, such a measure will meet with general approval.

At a recent meeting of the Toronto Board of Trade, a veto was placed upon the suggestion made by Mr. McNaught, of the Canadian Manufacturers' Association, looking towards the application of the preferential tariff to goods imported only through Canadian ports. Such a measure was regarded as ill-advised in that it would seriously offset trade by forcing freight through irregular routes at additional cost of time and money, thus minimizing the benefit to the consumer of the tariff rebate. The special committee in their report pointed out that the preference clause of the tariff applies to the products of many of the colonies as well as to those of the Mother Land. Canada imports largely from India, Ceylon, the Straits Settlements, British West Indies, etc., and not only is New York the port of arrival for established steamship lines engaged in this trade, but it also provides a market for purchases made in excess of Canadian requirements. It is held that it would be inexpedient to legislate so as to reduce the transportation facilities between the seaboard and the West. The competition of the Canadian lines for the business of the American cities of the West is regarded as an important factor in the control of rates as affecting imports to the United States, and it is equally important to the Western Canadian cities that the element of protection afforded by the competition

of American railways should not be eliminated. It was also pointed out that such a measure might be regarded as unfriendly legislation by the United States, thereby leading to a restriction of the bonding privileges. In the opinion of the committee the measure would accomplish nothing beyond subsidizing a number of steamship companies, who are now in combination to maintain rates. The committee recommended that representation be made to Parliament of the pressing necessity of arranging such terminal facilities at some Canadian port as will provide conditions favorable to the establishment of an all-Canadian route, feeling that such a course would be more towards the end sought than would the proposed legislation. The report was adopted.

Messrs. Mather & Platt, a well-known engineering concern of Manchester, Eng., have recently taken a very commendable step towards the popularizing of the metric system. They have announced that in all plans for any work they may have under consideration, or to be sent to customers, dimensions must be given in English measure and also in the equivalent metric measures. Measurements on new lithograph plans are to be similarly given in both measures. All plans to go out to countries in which the metric system is in general use must be dimensioned in metric measure only. Screw threads are to be indicated as heretofore according to the Whitworth standard. Technical information for countries using the metric system must be expressed in the centimetre-gramme-second; for example, pressure in kilogrammes per square centimetre, volumes in cubic metres. Calculations for dynamos made as heretofore in the test room on the metric system are to be continued in the drawing office on the same system. New scales obtained for the works are to be divided according to both English and metric measure. Messrs. Mather and Platt are certainly to be congratulated upon the practical measures they have adopted to bring about a better state of things in the matter of weights and measurements. We should like to see some more representative engineering firms follow this bold lead.

What advertisers are after is results, and the one best way to determine results is by the enquirers mentioning the publication in which the advertisement was noticed. When you mention the paper, then, you are doing both the paper and the advertiser a favor. But it is a special favor to the paper because it then gets credit for just what its value is as a medium for good advertising. We ask readers who answer advertisements to do us the personal favor to say that the ad. was seen in THE CANADIAN MANUFACTURER.

The trade returns for the eleven months of the fiscal year ending May 31, indicate that phenomenal as were the figures of 1900, those of 1901 will be still greater. The aggregate trade for 1899, including re-exports and coin and bullion, was \$321,661,213; for 1900, \$381,517,236. The aggregate for the first eleven months of 1900, excluding re-exports and coin and bullion, was \$308,548,034, while for the same period of 1901 the aggregate with the same exclusions was \$329,352,721, an increase of \$20,804,687. If the gain for the entire twelve months remains at that figure it will be deemed a notable increase, in view of the unprecedented figures of 1900. We will then show an aggregate trade of over \$400,000,000, and will start in 1902 towards the half billion mark. Between 1896 and 1901 the aggregate trade has increased by \$160,000,-

000, so that at anything like that rate of augmentation the country will not be much older before we will have reached an annual aggregate of \$500,000,000. What this means is best appreciated when it is said that the enormous foreign trade of the United States in 1888 was only three times greater; the still more enormous trade of the United Kingdom only seven times greater. It is almost equal to Austria-Hungary, Italy or Belgium. It is nearly double that of Spain, and vastly outclasses the trade of Denmark, Sweden, Norway, Turkey, Portugal, Switzerland or Greece. The figures used for these comparisons are those of 1888, to be found in Mulhall's tables. With the exception of the United States these countries have not materially increased their figures. In the list of the countries of the world Canada stands eleventh. At the present rate of progress she will certainly stand fifth or sixth within the next decade.

Lord Strathcona's annual report to the Trade and Commerce Department as High Commissioner for Canada has been made public. His Lordship states that both the import and export trade of Canada from and to the United Kingdom during last year seem to have expanded in a satisfactory manner. If the correspondence received at the High Commissioner's Office is any criterion, Canadian trade is attracting more attention than ever in Great Britain. Correspondence on trade matters is considerable and continually growing, and the personal inquiries are also exceedingly numerous. The number of callers at the office during the year was nearly 14,000, of which 2,700 represented travelling Canadians who registered their names. Lord Strathcona gave a list of orders which he induced the War Office and Indian Office to give for the supply from Canada of articles required by the Imperial troops in South Africa and China. The orders aggregated several millions of dollars in value, and included the following:—Hay, 53,700 tons; 1,073 tons of corned beef; 100 tons of oats; 1,600 tons of flour; 280,000 pounds (ten-pound tins) jam; 30,000 greatcoats; 50,000 serge suits; 1,000 cases containing two-pound cans of baked beans; 1,000 cases containing 12,000 ten-pound tins of boneless chicken; 37,000 tins (each twelve ounces) boneless chicken; also over 8,000 sets of saddlery. For the China expedition of 1900 the following orders were given:—Greatcoats, 33,670; 43,300 pairs thick stockings; 29,000 pairs moccasins; 1,500 pairs fur-lined gloves, and 2,320 fur caps.

A chart published by the Geological Survey gives a summary of the mineral products of the United States for the past ten years. The aggregate values have increased by more than one-half in that period, and the figures for 1899 are greater than in any previous year, footing up the enormous total of \$976,000,000. The value of the metallic products of the year is given at \$527,218,084 and of the non-metallic at \$447,790,862. The latter class includes, of course, the coals—\$168,000,000 in bituminous and \$88,000,000 in Pennsylvania anthracite—\$64,600,000 in petroleum, \$20,000,000 worth of natural gas and large value in stone, brick, clay and cement, with various other minerals. Of the metals, pig iron is worth almost as much as all others together, the value of the product in 1899 being given at \$245,000,000. Copper comes next with \$104,000,000, and the \$71,000,000 in gold is third. The market value of the silver produced in 1899 was about \$33,000,000 and the lead and zinc together were worth about as much. Quicksilver, aluminium, antimony, nickel and platinum are the other metals that figure in the table.

CAPTAINS OF INDUSTRY.

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

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

The starting of any such concern means a demand for some sort of machines, machinery, or supplies, such as steam engines and boilers, shafting, pulleys, belting, lubricants, machinery supplies, wood or iron working machinery, ventilating and drying apparatus; pumps, valves, packing, dynamos, motors, wire, arc and incandescent lamps, and an infinite variety of electrical supplies, chemicals, acids, 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.

The Toronto Electric Light Co., Toronto, has increased its capital stock from \$2,000,000 to \$3,000,000.

The Canadian Bent Chair Co., Listowel, Ont., has been incorporated with a capital stock of \$25,000, to manufacture furniture, etc. The provisional directors include Wm. Hess, J. M. Schinbein, and H. B. Morphy, all of Listowel.

The Hespeler Furniture Co., Hespeler, Ont., has been incorporated with a capital stock of \$50,000 to manufacture furniture. The provisional directors include W. H. Weaver, G. D. Forbes, and J. R. Phin, all of Hespeler.

The Taylor Copper Mines Co., Sault Ste. Marie, Ont., has been incorporated with a capital stock of \$2,000,000. The provisional directors include R. H. Taylor, and H. P. Taylor, both of Sault Ste. Marie, Mich., and Andrew Elliot, Sault Ste. Marie, Ont.

The Humber Power & Light Co., who will supply power to Lampton Mills, Toronto Junction, and nearby places, have a staff of thirty men at work on their new property.

The J. & J. Kerr Co., Petrolea, Ont., has been incorporated with a capital stock of \$40,000, to manufacture lumber, etc. The provisional directors include John Kerr, Allan McPherson and W. M. Hutchcroft, all of Petrolea.

The Midland Packing, Canning & Cold Storage Co., Midland, Ont., has been incorporated with a capital stock of \$40,000. The provisional directors in-

clude R. J. Soddan, C. L. Maltby and J. G. Marshall, all of Midland.

The Peat Machinery Supply Co., Toronto, has been incorporated with a capital stock of \$80,000, to manufacture peat and other machinery. The provisional directors include Alexander Dobson, Beaverton, Ont., J. A. Morrison and C. B. Watts, both of Toronto.

The Pakenham Pork Packing Co., Stouffville, Ont., has been incorporated with a capital stock of \$100,000. The provisional directors include James Pakenham, W. C. Renfrew, and H. J. Morden, all of Stouffville.

The Dowsley Spring & Axle Co., Chatham, Ont., has been incorporated with a capital stock of \$100,000, to manufacture springs, axles, etc. The provisional directors include T. B. Dowsley, F. J. Dowsley, both of Owen Sound, Ont., and Robert Gray, Chatham, Ont.

The Capital Sand & Brick Co., Ottawa, has been incorporated with a capital stock of \$50,000, to manufacture bricks, tiles, drain-pipes, etc. The provisional directors include A. T. Shillington, E. E. LaBere and W. C. McCarthy, all of Ottawa.

Fire started in the main shaft building of the Bruce Copper Mines, Bruce Mines, Ont. Loss about \$35,000.

The Hollywood Paint Co., Hamilton, Ont., has been incorporated with a capital stock of \$100,000, to manufacture paints, oils, varnishes, etc. The provisional directors include H. P. Coburn, C. T.

Grantham and J. O. Callaghan, all of Hamilton.

The Quebec Combination Rack Co., Montreal, has applied for incorporation with a capital stock of \$25,000, to manufacture racks. The applicants include Benjamin Spedding, Montreal; E. H. Gray, St. Paul, Que., and F. W. Fairman, Montreal.

The John Morrow Machine Screw Co., Ingersoll, Ont., has been incorporated with a capital stock of \$1,500,000, to manufacture machine screws, bolts, nuts, etc. The provisional directors include J. A. Coulter, Ingersoll, Ont.; W. H. Wortman, London, Ont.; and F. H. Deacon, Milton, Ont.

John Dick, Limited, Toronto, has been incorporated with a capital stock of \$500,000, to manufacture jute and cotton bags, canvas, ropes, etc., and to acquire business of Dick, Ridout & Co. The provisional directors include John Dick, J. B. Hallworth, and F. J. Kennedy, all of Toronto.

The Arthabaska Shoe Co., Victoriaville, Que., has been incorporated with a capital stock of \$25,000, to manufacture boots and shoes. The charter members include Achille Gagnon, J. N. Poirier and A. A. Tourigny, all of Victoriaville.

The Waterloo Knitting Mills Co., Waterloo, Que., has been incorporated with a capital stock of \$10,000, to manufacture all kinds of knitted goods. The charter members include W. R. Lefebvre, C. A. Nutting and H. E. Allan, all of Waterloo.

The British Columbia Electric Railway Co., have new boilers in their Vancouver power house, which will increase the steam producing capacity.

The Quebec Asbestos Co., Sherbrooke, Que., has applied for incorporation with a capital stock of \$100,000, to manufacture asbestos, etc. The applicants include H. W. Mulvena, J. H. Walsh and A. H. Anderson, all of Sherbrooke.

The Belleville Hardware Co., Belleville, Ont., has been incorporated with a capital stock of \$40,000, to manufacture light hardware, locks, cutlery, etc. The provisional directors include R. J. Graham, W. C. Springer, and W. W. Chown, all of Belleville.

The Fensom Elevator Works, Toronto, have been awarded the contracts for

INGERSOLL-SERGEANT Rock Drills

FOR MINES, TUNNELS AND QUARRIES

PISTON INLET Air Compressors

STRAIGHT LINE
DUPLICATE and
COMPOUND.

FOR ALL DUTIES.

... COMPLETE MINE EQUIPMENT ...

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

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

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for elevator plants for the Grand Trunk Railway offices, Canadian Pacific Railway telegraph buildings, and the Royal Insurance Co's new building in Montreal. The elevators are to be of the highest class and up-to-date in every particular.

The Toronto Street Railway Co's receipts for May were nearly \$11,000 greater than during May last year, and that despite the unfavorable holiday weather of the 24th. The return made to the City Treasurer, showing receipts and percentages for six Mays, is as follows:—

	Receipts.	Percentages.
Balance April		\$283.26
May, 1901	\$127,919.30	12,791.93
May, 1900	117,182.50	10,101.92
May, 1899	105,313.08	8,425.04
May, 1898	92,493.63	7,399.40
May, 1897	83,432.58	6,674.60
May, 1896	83,004.13	6,640.33

The contracts for most of the material for the new Palace hotel, Toronto, have been awarded as follows:—Plumbing, lighting and ventilating, Bennett & Wright Co., Toronto; steel work, Dominion Bridge Co., Lachine, Que.; terra cotta, Perth Amboy Terra Cotta Works, New Jersey; granite, McIntosh Marble Co., Toronto; dimension stone, A. Mc-

Pherson, of the Longford, Ont., quarries; pressed brick, Toronto Pressed Brick Co., Milton, Ont.; ordinary brick, A. M. Orpen, proprietor of the Simpson Brick Co., and the Don Valley Brick Works, Toronto; cement, Canadian Portland Cement Co., Gananoque, Ont.; pressed stone, Britnell & Co., Toronto. The contracts that are yet to be awarded are for the marble work, carpentering, roofing, cabinet work, galvanized iron and copper sheeting, ornamental iron, Mosaics and tiles.

Mr. James E. Wilder, of H. A. Wilder & Co., Montreal, says he is backed by New York capitalists, to carry out the project to supply Montreal with cheap power and pure water. Mr. Wilder, remarks: The water power at the Lachine Rapids between the Lachine Rapids Hydraulic & Land Co's plant and the Isle Heron, together with the Island, 160 acres, and a portion of the Penniston farm, have been secured by the company. The power, generated by compressed air process, will be about fifty thousand h.p. We have completed arrangements with the Taylor Hydraulic Air Compressing Co., whereby we will use their system. It is the intention of the company to instal an immense electric and compressed

air plant, part of the compressed air to be utilized in purifying the water and to elevate it on the spot to a height above the present reservoir which will enable us to supply the whole Island of Montreal, and to transmit electricity and compressed air and power through the city. The work will begin within three months and be completed within two years.

The rate-payers of Owen Sound, Ont., have voted favorably on a by-law to raise \$30,000, for the extension of a water works system.

The Durham Rubber Co., Bowmanville, Ont., will erect another storey to their two-storey brick building.

J. H. Latremouille and Alfred Bowman, Kamloops, B.C., will operate a saw mill plant at Savona, B.C.

F. Lloyd, Westholme, B.C., is putting in a plant for a large saw mill. The boiler will have 100 h.p.

Messrs. E. Cook Co., Anvil Island, Howe Sound, are making terra cotta for cornices, etc.

The Summerside Electric Co., Summerside, P.E.I., have ordered a 150 h.p. Mumford boiler from the Robb Engineering Co., Amherst, N.S.

Transfer Ornaments, AMERICAN MADE. Guaranteed Quality.

TRADE MARKS, DECORATIONS, NAME PLATES, ETC.

For HARDWARE, BICYCLES, VEHICLES, POTTERY, FURNITURE, etc.

Sketches and samples submitted free of charge. Being American manufacturers enables us to make prompt delivery. Write us.

THE MEYERCORD CO., Inc., CHAMBER OF COMMERCE, - CHICAGO,

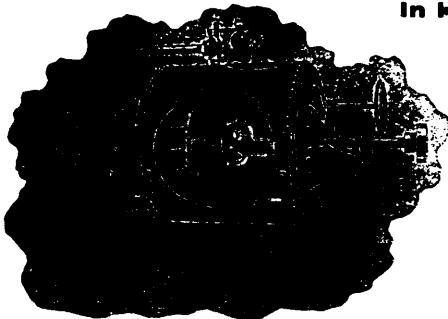
—MAIN OFFICE—

Canadian Travelling Representative,
CHAS. H. JAGGER, Hamilton, Ont.

Largest Makers in the World of Guaranteed Decalcomania Transfers.

THE Crocker Patent Turbine

In Horizontal Setting, with Quarter Turn Elbow.



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

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

WATER POWERS examined and
Reports made. Estimates
submitted for Complete Equip-
ments.

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

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The contract for the new twin screw steel steamer to replace the old Government steamship *Druid* has been awarded to Messrs Fleming & Ferguson, of Paisley, Scotland. The contract price is \$110,960. The dimensions of the new vessel will be:—Length, 160 feet; breadth, moulded, thirty feet; depth, thirteen feet. She is to have a speed of thirteen knots per hour, natural draught, and to be specially fitted for ice navigation. Six tenders were received four British and two Canadian, but Fleming & Ferguson's offer was \$60,000 lower than the lowest Canadian bid, so that there was no option but to award the contract to the Scotch firm. Sir Louis Davies will go to Paisley to settle the plans and specifications and sign the contracts, Fleming & Ferguson having previously been entrusted with the commission to build the new steamship to take the place of the wrecked *Newfields*. Sir Louis will be joined at Paisley by Capt. McElhenny, nautical adviser to the Marine Department.

The saw and planing mills of James Brown, Acton, Ont., were destroyed by fire June 6. Loss about \$6,000.

Fire in the lumber yard of the Conger Lumber Co., Parry Sound, Ont., June 5, caused a loss of about \$90,000.

The peat fuel factory of John S. Hogg & Co., Galt, Ont., was destroyed by fire June 7. Loss about \$3,000.

The city of Kamloops, B.C., has ordered from the Robb Engineering Co., Amherst, N.S., two 150 h.p. Mumford

boilers for their water works and electric lighting system.

One of the oldest landmarks of Brantford, Ont., the Kerby mill, in the Holmedale, is being torn down, it being the intention of the owners to use the lumber in repairing the headgates. The mill was erected in 1833, thirteen years after the time when the first settlers came to the district, and three years after the Indians granted the site of the present city to the Crown. It was built by the late Wm. Kerby, and it was the second grist-mill to be erected in Brantford. Since then it has passed through many hands, and was operated until about two years ago.

Messrs. Shackleton & Simpson, Nelson, B.C., have installed a water power, granite and marble cutting plant, and will manufacture monumental stone work and building stone.

The Ontario Wind Engine & Pump Co., Toronto, have purchased the entire business of the Ontario Grain & Seed Cleaner & Grader Mfg. Co., Toronto, and this line of business is now added to their extensive windmill lines. The large addition to their buildings now being completed enables them to handle these lines to advantage, and they will be enabled to sell this fanning mill to advantage in combination with their other goods.

The Machinery Market, London, England, speaking of some of the exhibits at the Glasgow Exhibition, says:—Much interest naturally centres round the exhibit made by Dr. Ludwig Mond, F.R.S.,

F.C.S., of 20 Avenue Road, Regents Park, London, N.W., in view of the bill now before Parliament to seek powers to erect large central stations to distribute the Mond Gas through a large manufacturing area in South Staffordshire. Dr. Mond shows photographs and models of his patent gas-producing plant, with and without provision for the recovery of the sulphate of ammonia. He also shows what will be of equal interest to many of our readers in the shape of samples of ore from his nickel mines in Ontario, Canada, and nickel refined by the Mond process.

The Nova Steel Co. is increasing the electric lighting plant at their works at New Glasgow, N.S. The extra power will be supplied by a 100 h.p. Robb-Armstrong engine with direct connected dynamo, supplied by the Robb Engineering Co., Amherst, N.S.

An error was made in the announcement in THE CANADIAN MANUFACTURER of June 7, relative to W. A. Fleming & Co., of Montreal, having the agency of the Garfield Paint Co. and of the Garfield Oil Co., in Quebec. W. A. Fleming & Co. are sole agents of the above-named companies in Eastern Ontario, Quebec and the Maritime Provinces, and carries a stock of goods in Montreal, Que., and St. Johns, N.B.

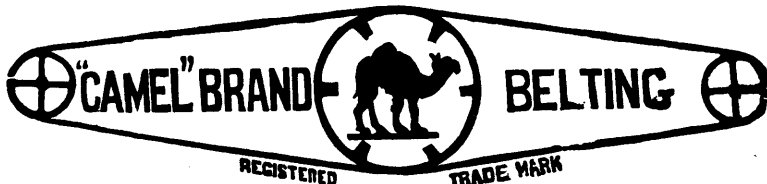
McDonald's cheese factory, Sunbury, Ont., was destroyed by fire June 12.

S. E. De la Ronde's confectionery works, Ottawa, Ont., were damaged by fire June 12, to the extent of about \$500.

W. A. FLEMING & CO.,

771 CRAIG STREET, - - MONTREAL.

THE STRONGEST AND MOST DURABLE



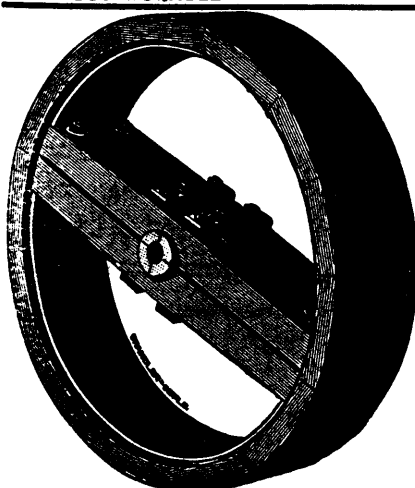
NOT AFFECTED BY DAMPNESS, HEAT OR STEAM
MOST DURABLE THE BEST FOR MAIN DRIVES

"REDDAWAY"

BALATA BELTING

STRONG, DURABLE AND NOT AFFECTED BY DAMPNESS.

WRITE FOR SAMPLES AND PRICES



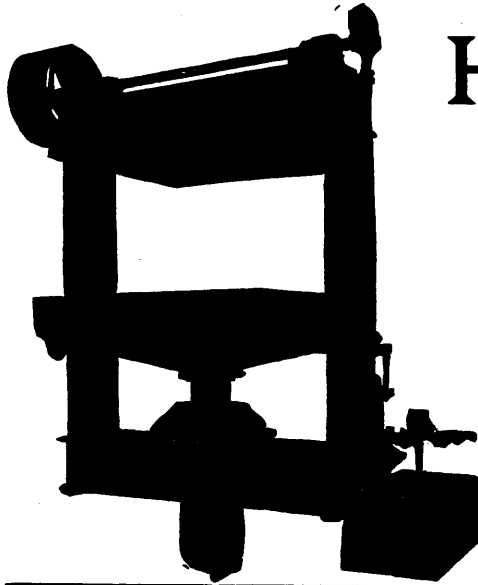
"The Reeves" A HIGH GRADE
 Wood-Split **PULLEY**
 BUILT HONESTLY
 BUILT RIGHT

It Does the Work. No Trouble. No Worry.

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REEVES PULLEY MANUFACTURING CO., Limited
 14 Pearl Street, - Toronto, Ont.

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Hydraulic PRESSES

We Build Presses
for...

**PRESSING VENEERS
TANNERS' USES
BALING, Etc.**

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CATALOGUE
AND PRICES

William R. Perrin & Company

TORONTO, - CANADA

IT PAYS TO READ THE TRADE PAPERS.

To keep in touch with all the interests of one's business, to know at all times the status of the industry of which one's business is a fraction, to be informed as to the wants of buyers and as to the goods of sellers, and to have a knowledge of one's competitors' progress, those are the guide-boards to success of the most elaborate nature. No hermit ever accomplished great deeds. No narrow-gauged business man ever became a leader in trade.

Some tradesmen urge the excuse that much that appears in trade journals is neither important nor pertinent, and that their time is so limited and their duties so exacting that they haven't the spare hour in which to read trade publications.

Let us grant, for the sake of argument, the unimportant and irreverent plea, and ask whether it is better to miss the knowledge of important and pertinent matters because this is so, or to secure the benefits to be obtained from important and pertinent items, even at the

expense of reading, in search for the useful, something that isn't so all important? There is no gold-mine without its full share of unprofitable dirt. There is no course of instruction without its full quota of dry and almost meaningless pages; and there is no road to success without its more than essential rocky steeps and thorny fringe. Just so, there is no trade journal that is all instruction and all rich advice. Were it so, trade journals would sell at a guinea a copy, and trade journal advertising space would be as costly per square inch as £100 bank-notes. Were it so, trade journal editors would rank as twentieth century Solomons, and trade journal publishers would be as unapproachable as the Czar of all the Russias.

As for the item of time, the excuse is no excuse. If you haven't time you should take time, just as you take time for every other business demand. And don't dodge duty by delegating to a clerk the reading of the trade journal. The head of affairs may delegate much labor to assistants, but he cannot delegate brains to any one, and it is brains that count. No two men place the same estimate on the value of

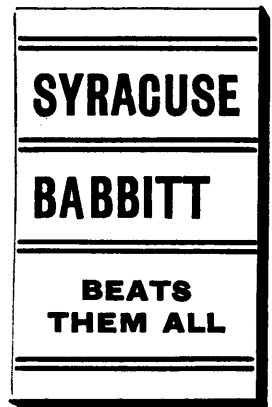
any idea, suggestion or item of news. A paragraph that is trivial to Brown may be a gold-mine to Smith, and vice versa. And so, if the head of affairs desires to keep in touch with this industry he can ill afford to trust to a clerk's idea of the worth of this or that idea in a trade publication, but instead must read and weigh for himself.

THE WORLD'S PRODUCTION OF TIN.

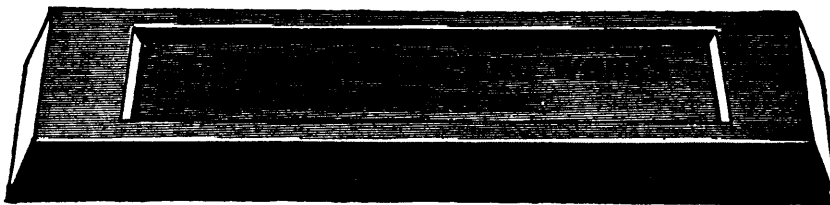
L'Economiste Francaise, of Paris, recently published a table showing the world's supply of tin to have been 76,022 tons in 1900, as against 73,741 tons in 1890. In this total Bolivia is credited with having exported to London 4,350 tons in 1900 and 4,700 tons during the previous year. This is more than the celebrated Cornwall mines produced in either of the years under comparison, their total product having been 3,910 tons in 1900 and 4,013 tons in 1899. The Straits Settlements exported 46,041 tons of tin in 1900, an increase of 169 tons over 1899.

THE BEST IS NONE TOO GOOD.

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



Importers and Dealers in
**PIG TIN, ANTIMONY
INGOT COPPER
ALUMINUM
NICKEL, BISMUTH
IRON AND STEEL
SCRAP**

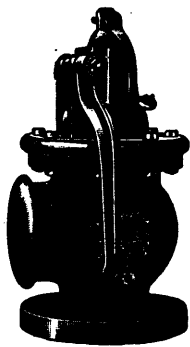


Manufacturers of
**BABBITT METALS, SOLDER
TYPE METALS
COLUMBIA PHOSPHOR TIN
AND
ALL OTHER WHITE METAL MIXTURES**

SYRACUSE SMELTING WORKS

WILLIAM AND ST. THOMAS STREETS, - - MONTREAL

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CROSBY STEAM APPLIANCES EXCEL

Steam Engine Indicators.
Recording Gages.
Revolution Counters.
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Lubricators, etc.

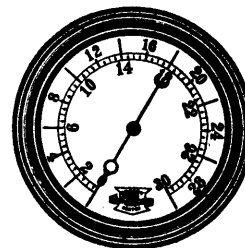


Stationary and Marine Valves.
Water Relief Valves.
Blow-off Valves.
Globe and Angle Valves.
Single Bell Chime Whistles.

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CROSBY STEAM GAGE and VALVE CO.
BOSTON, NEW YORK, CHICAGO, LONDON

A TRUTHFUL GAGE IS THE ONLY GOOD GAGE



CANADIAN LUMBERING OUTLOOK.

Mr. John Charlton, M.P., who was in Toronto last week, talked enthusiastically about the condition of the lumber trade this season, and quoted figures that certainly warrant his statement that the present will be a year of almost unprecedented activity. The building permits in twenty-one of the leading cities of the United States for the year up to a recent date totalled \$57,000,000, as compared with \$18,000,000 for the corresponding portion of last year. This great increase, Mr. Charlton thinks, is due in part to the fact that last season people contemplating building delayed operations in the expectation that the advance in the price of lumber and other materials was only of a temporary character, and that their buildings could be put up more cheaply

this year. Now they have come to the conclusion that the advance is a condition that will remain for some time, and are going to work on delayed building operations.

The entire cut of lumber this season will be sold. At Duluth and other leading American lake points there was very little left over last winter, and three-fifths of this season's output of logs was contracted for before a single mill began to saw. It will take the mills till August to saw the lumber ordered before they opened up.

On the Canadian side Mr. Charlton thinks the Georgian Bay mills, which are in touch with rail communication, will be kept busy with the requirements of the trade in the Province, and will have little or no surplus for export. The Ottawa valley operators find a market for their

deals—about half the product—in England, while their boards go to New England and New York. The trade conditions in the eastern States are excellent. The English market, however, is in a somewhat ticklish position, and is rather off in the demand and quotations for pine deals, which are so largely produced in the Ottawa valley and eastern Quebec and New Brunswick lumbering districts. An advantage that Canada has is its red or Norway pine supply, which comprises probably twenty per cent. of the output. The red pine exports from Norway are falling off, and this will be an opportunity for Quebec and the Ottawa valley to get the market, as Englishmen are very conservative and are not disposed to substitute Georgia pine for the Norway variety. There are great forests of red pine in Siberia on the upper reaches of

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MANUFACTURERS'

WILL MISS A

GRAND OPPORTUNITY

IF THEY FAIL TO EXHIBIT

This Year

AT.....

CANADA'S GREAT EXPOSITION, TORONTO
August 26th to Sept. 7th, 1901

Increased Accommodation

VISITORS FROM ALL PARTS of the WORLD

APPLICATIONS FOR SPACE

SHOULD BE MADE

AT ONCE

ENTRIES CLOSE AUGUST 3rd

FOR PRIZE LISTS, ENTRY FORMS, AND ALL PARTICULARS, ADDRESS

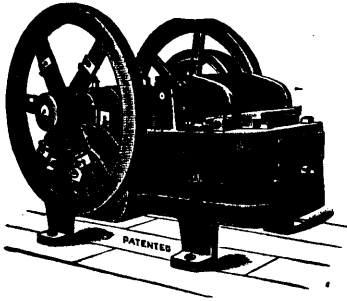
ANDREW SMITH, F.R.C.V.S.,
PRESIDENT.

W. K. McNAUGHT,
Chairman Manufacturers' Committee.

H. J. HILL,
MANAGER, TORONTO.

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ROLL JAW CRUSHER.



Crushes

Large Rock

to

4 inch.

Send for Circular.

STURTEVANT MILL CO.,

**104 Clayton St.
Boston, - Mass.**

the Obi, Lena and other rivers, but as yet they are not accessible, and Canada need not worry about them during our lifetime.

The only part of the Dominion where the lumber trade is in poor condition is the Pacific coast, where the Americans use the British Columbia market as an outlet for their culls and surplus stock.

OUR MINERAL PRODUCTION.

The annual report of the Canadian Geological Survey shows from year to year the growing importance of the Dominion among mineral producing countries. The report now gives corrected figures up to the close of the calendar year 1899, and they show a growth of the grand total of metallic and non-metallic products from \$10,221,255 in 1886, to \$49,584,027 in 1899. The latter figures have been surpassed by the incomplete returns available for the year 1900. The value of the metallic products increased from \$2,118,608 to \$29,282,823, and of non-metallic from \$7,852,647 to \$20,001,204. Gold now forms 42.88 per cent. of our mineral production, and coal and coke, 21.45 per cent. Next in importance come copper, 5.36 per cent.; bricks, 4.43 per cent.; nickel, 4.17 per cent.; silver, 4.10 per cent.; building stone, 3.03 per cent.; petroleum, 2.42 per cent.; lead, 1.97 per cent.; lime, 1.61 per cent.; and cement, 1.28 per cent. Among the minerals which fall below one per cent. are the following, their relative value diminishing in the order named:—Asbestos, natural gas, gypsum, salt and iron ore. This schedule of metallic and non-metallic minerals

arranged in the order of relative values may serve to remove many misconceptions. Some lines of mineral production may be brought prominently to the attention of the public through various causes, while others of vastly more importance receive but little consideration.

That bricks are a more important mineral product than nickel or silver, that building-stone comes ahead of petroleum or lead, and that iron ore is low on the list of the minerals which fall below 1 per cent. of the total output, are facts that must be considered in framing a policy for mineral development. The table giving the fluctuations, both in quantity and value, for the last year covered by the report, gives a clear indication of a decrease in the value of gold. Gold as coined in dollars, being the measure of values, the tables could not show any fluctuation, the increase in quantity being recorded as 54.34 per cent., and the increase in total value being exactly the same. The number of dollars must have increased exactly to the same extent as the number of ounces. In copper the decrease was 15.04 per cent. in quantity, but the money value increased 24.37 per cent. Iron ore increased 27.89 per cent. in quantity and 57.43 per cent. in value, and nickel 4.10 per cent. in quantity, and 13.56 in value. Lead decreased 31.50 per cent. in quantity, and 19 per cent. in value, and silver 23.37 per cent. in quantity, and 21.64 per cent. in value. In coal, coke, petroleum and cement also the increases in value have been greater than the increases in quantity. All these minerals have become relatively dearer; that is, the purchasing power of gold or the

dollar has decreased. The exceptions are asbestos, gypsum and salt, in which the increase in quantity has been greater than the increase in the value. The report gives the imports of pig iron, and iron and steel goods as nineteen and a half million dollars, which shows an extensive field for local enterprise in the future.—Globe.

PEAT FUEL.

Mr. Sontum, Canada's Commercial Agent in Norway, in forwarding a report on turf-moss to Ottawa, says truly that in these times of high-priced coal, it is natural that every possible way is tried to make useful the vast areas of turf-moss, of which the Scandinavian countries and Denmark are in possession, and a great many experiments with peat-making are steadily carried on.

An engineer by the name of Wassenius proposes to take advantage of the water pressed out of the turf-moss and thereby get the expenses connected with the drying to play a less important part. The turf-moss contains about fifty per cent. water, and as the combustion heat of the turf is so high that it can evaporate at least four times its own weight (in dry state) there ought to be no difficulty in this manner to dry it and still have three-quarters of the combustion heat left. This is also tried by several parties, but without success economically.

Mr. Wassenin's method will cause a large saving in the drying process by letting it go on in a closed chamber. This may be done in several ways. The most simple is in a boiler with a grate for peat, and will require a proportion-

A VALUABLE PATENT FOR SALE

The Invention for which a Canadian Patent has been granted, and which is hereby offered for sale, relates to **AXLES** and **BEARINGS** for Vehicles generally, and is especially applicable to Automobiles and similar vehicles where **Sensitiveness and Economy in the Motive Power, and great Strength and Durability** are desirable.

The principal object of this invention is to provide Bearings for vehicles which shall be practically Frictionless and Noiseless in Operation, yet Simple and Inexpensive in Construction, and Strong and Durable, and in which the parts may be readily assembled or replaced when worn without interference with the main portion. For further particulars apply to

**J. J. CASSIDEY, care The Canadian Manufacturer,
TORONTO, CANADA**

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ately large steam room to put in a drum through this, which drum in both ends is supplied with a close-fitting cover, which must be easy to open and close, and which can stand the pressure of some atmospheres. Into this drum the wet turf is put, and both covers closed, after which the heat condenses the water. After the condensation the temperature in the drum may be kept as high as outside of it. For certain reasons it is not desirable that the steam in the drum gets a higher pressure than three atmospheres, while the surrounding steam may have between ten to fifteen.

As much water as possible being transformed into steam, this is let off, and one has about dry peat left. One of the covers is opened, the peat taken out and carried direct to the firing place; new wet turf is again brought into the drum and the same process starts.

In this way two kinds of steam is obtained, one with high and the other with low pressure, the first in about four times the quantity of the latter. The high-pressure steam is made use of in the usual way, while the low-pressure steam, which is mixed with different gases, is used for other purposes, i.e., the heating of the buildings, water for the boiler, and as power for a steam turbine. In the latter case a combination of several drums is employed, which allows a continued production of steam with low pressure.

In this manner quite an important part of the heat can be made use of once more.

As will be seen, the peat, or at least part of it, must be used right on the place of production, which, however, is not of so great importance, as the power can be led long distances through high-tension current without any particular loss.

STEEL WORKS AT WELLAND, ONT.

Mr. E. A. C. Pew, President of the Canadian Steel Co., states that all the contracts for the erection of his works at Welland for the production of steel have been let and that the works will be completed and in operation by July, 1902. Employment, he says, will be given to 3,000 men at Welland, and 2,000 more will be engaged in connection with the mining and shipping operations. The works at Welland will occupy 192 acres, and through having natural gas as a fuel, the company will be able to turn out steel at a much cheaper rate than elsewhere. The raw material will be hematite ore from the Lake Superior district, and magnetic ore from the Baldwin mine in the neighborhood of Ottawa. These ores, he says, can be mined and delivered at the works at a cost of not more than \$2 a ton. The company is confident of being able to make pig iron for \$6.75 a ton and the expense of converting this into steel will not exceed \$5 a ton. It will, therefore, it claims, be able to put steel on the market for \$12 a ton as compared with \$14 to \$15 at Pittsburg and other places. The company will manufacture steel

rails, steel billets and slabs and structural, and the annual output will be 300,000 tons. Mr. Pew says that Canada has been well advertised by Mr. Tarte's exertions while in Paris, and by the subsidizing of a French line.

ADVANTAGES OF MECHANICAL DRAFT.

In the Engineering Record, of May 18, Mr. Henry C. Meyer, Jr., states that draft produced by fans possess many advantages over chimneys ordinarily proportioned. Probably the greatest of these is its flexibility, it being possible to regulate the speed of the fan so that the proper rate of combustion for the amount of steam required is maintained entirely independent of the weather conditions; another important advantage is the ability of the fans to create a much greater draft than is possible with a chimney. Steam engines for driving fans are frequently fitted with valves arranged to govern the speed of the engine according as the boiler pressure varies, increasing it as the pressure falls and reducing it as it rises above the normal. Mechanical draft enables economizers to be placed in the flue and reduce the temperature of the escaping gases by heating the feed-water far below the temperature that is necessary in a chimney to create a draft. The reduction in draft due to the use of economizers is a much greater percentage of the available draft with a chimney

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PERSISTENCE IN ADVERTISING..

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The Canadian Manufacturer.

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than it is of the draft where fans are employed. Again, the greater draft of fans enables cheap low-grade fuels to be burned that could not easily be used with chimney draft, and the saving that these fuels brings about in some localities is a very considerable sum of money. Still another point in favor of mechanical draft lies in the portability of the fans in case a change of location is desired.

STUDY IN ARC LAMPS.

In the Electricity Building of the Pan-American Exposition there is to be seen a most novel and interesting display of arc lamps. It surpasses everything of the kind ever seen at an Exposition, comprising, as it does, a group of interchangeable type of arc lamps. These are arranged with glass casings surrounding the mechanism and very dense inner globes which permit a full examination of the arc of the powerful lamps without any strain or injury to the eyes.

By the arrangement of the installation, the lamp may be turned on or off and the entire working of the lamp mechanism observed under the various conditions of the arc. The lamps form a thoroughly interesting group in themselves, and the general public is afforded an opportunity of learning just to what extent the interchangeable idea has been adopted in arc lamp manufacture.

In the group are shown three multiple lamps for 110 volts alternating and direct current, and 220 volts direct current, and

three others for series alternating, series direct, constant current of 500 volts railway work. The average visitor who looks upon them will get the impression that they are all alike, as all use the same outer and inner globes, and as a matter of fact they are alike with the exception of three or four parts which are interchangeable.

READING THE PROCEEDINGS.

While I was born with a keen enjoyment for a good story, the capacity to remember and relate such was somehow left out of my composition; and of all the stories in Mr. Miller's ample repertoire I am ashamed to confess that I can recall but one. This was about an old darky who left his master after the war because the latter could no longer afford to keep him. The darky revered his master above all things, and thought him the very essence of wisdom; consequently, when he came to join a church he joined the Episcopal church because his master had been a member of that church. The master kney of Elijah's action, and when he happened to meet him in a year or two later, he said:

"Well, Elijah, I suppose you are a good Episcopalian by this time?"

"No, massa, I can't 'zactly say I is."

"Why, don't you belong to the Episcopal church any more?"

"No, massa."

"What's the matter," exclaimed Elijah's former master in surprise, "Didn't they treat you well?"

"Yes, massa, they treated me well 'nough, but you see, massa, I went to dat yere church for two or three Sundays, and dey spend half dey time readin' de proceedin's of de las' meetin'. I couldn't stan' it no mo', massa, and so I jined de Mefodis' church, whah dey gits right down to business de bery first thing!"

R. W. E.

TEXAS OIL AS FUEL.

The recent discoveries of oil in Texas in rich and unexpected quantities, has aroused public interest in an unusual degree, not only in the Lone Star State, but in the country at large. Such a discovery bids fair to be pregnant with industrial possibilities. With oil in abundance that can be used for fuel purposes in an effective and economical way, it follows, that various industrial enterprises will respond to what seems to be their golden opportunity. Such chances are not winked at as a rule. Modern enterprise is alert and nimble footed, and business sets its face to any point of the compass where special advantages are available. Texas will be no exception to the rule, other conditions being equal. What has been done elsewhere can be repeated there, and it may be that Texas is on the threshold of a new industrial era in which recent oil discoveries will be potential factors. In the newness of things, however, there is always the point of interrogation where the question precedes the conclusion. The use of Texas oil for fuel purposes could only be determined by experiment.

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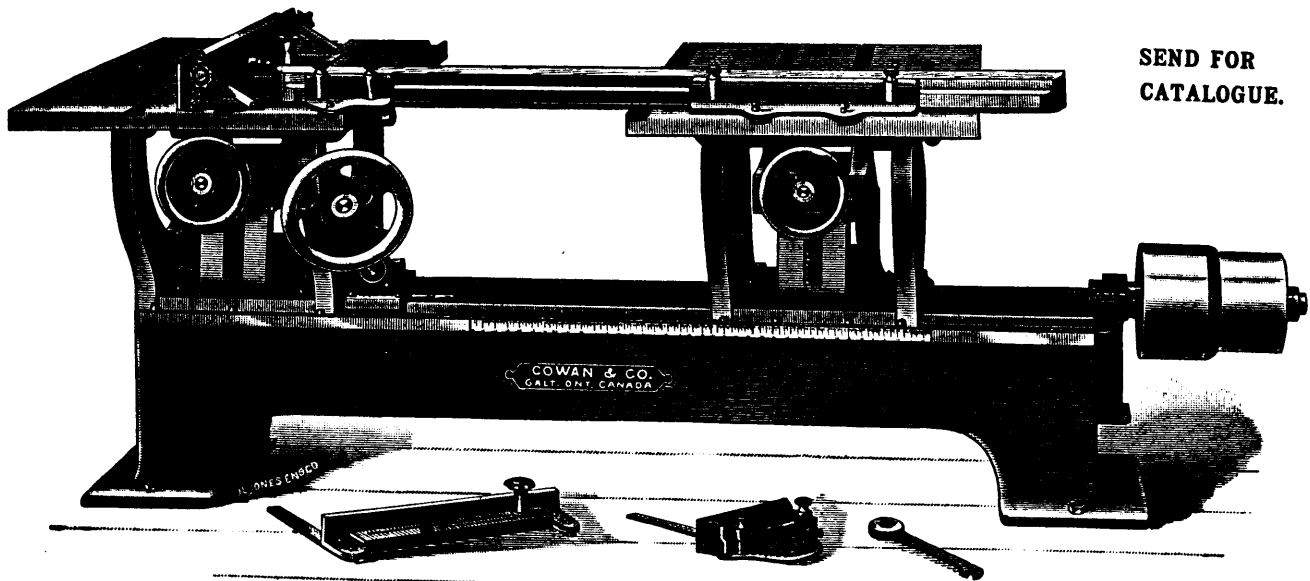
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NEW IMPROVED PATENT RIP AND CROSS-CUT SAW.

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This test has been made by the American Brewing Association at Houston. It is pronounced a success both in the matter of economy and efficiency. The heat obtained is intense and regular, the economy of service is shown by one man in the boiler rooms doing the work of twelve, while the saving in cost of fuel is a heavy percentage in favor of oil. It is also claimed that a greater efficiency is found in boiler power, two 200 horse-power boilers using oil being equivalent to that of two 350 horse-power boilers using other fuel. Should the results of this experiment be as reported and their practical demonstration determined, it will have a strong emphasized effect on the commercial value of Texas oil, and its potency in developing the industries of the State.—Age of Steel.

MOND NICKEL COMPANY.

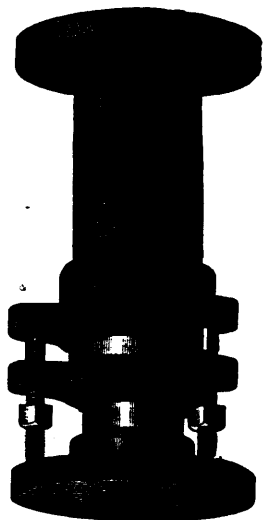
This company proposes to utilize the invention of Dr. Mond for refining nickel and copper ores. By his process a volatile compound is formed with carbonic oxide. He has protected the process by patents taken out in every country of industrial importance. An intimate knowledge of the details is required, it is said, for successful working, so that a practical protection is thereby afforded independently of patents. For the carrying out of the process, which is said to be an entirely new departure in metallurgy and likely to secure the command of the nickel trade, Dr. Mond has taken the precaution of

securing some twenty-two mining locations, covering between four and five thousand acres, in the Sudbury District of Ontario, which at present produces nearly half the world's supply of nickel. On the locations a mine, known as the Victoria Mine, has been opened, and it is now in complete working order, and since February some 10,000 tons of ore have been raised, assaying 3½ per cent. of nickel, and 3¼ per cent. of copper. Plant of the most modern type for roasting, smelting and Bessemerizing this ore has been erected there, and is practically ready to start. The matte so produced, and containing some 40 per cent. of nickel and 40 per cent. of copper, it is proposed to transport to Clydach, near Swansea, in Wales, where extensive works, having a frontage to the Swansea Valley Canal, are in course of construction. It is calculated to produce some 1,000 to 1,500 tons of nickel and 4,000 to 6,000 tons of copper sulphate per year. The present consumption of nickel is about 9,000 tons a year, and is increasing rapidly. It is used in ship-building, especially for warships and armour plates, and for purposes where strength and comparative lightness are important, as in ordnance rifle barrels, propeller shafts, locomotive axles, bicycles, etc. The process appears to have already been worked out in all details on a manufacturing scale and fifty tons of nickel manufactured and delivered to consumers. The sulphate of copper is obtained as a bye-product, and its use for the prevention of disease in the vine is consider-

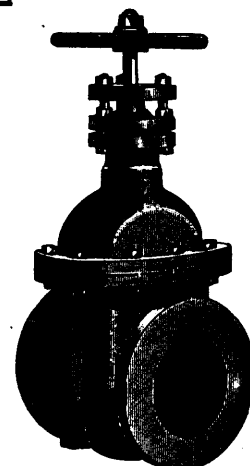
able and increasing. It is estimated that the value of the sulphate of copper alone will cover the total expense of mining, smelting and refining the ore, leaving the value of the nickel as profit. If this is so, then substantial dividends should be shown, since nickel is quoted at £165 and sulphate of copper at £23 per ton. Dr. Mond, the vendor, takes a purchase price of £325,000. As to 50,000 in deferred shares, 99,165 in ordinary shares and the balance in cash. The amount is large, but seems reasonable, even moderate, since, with the exception of the £50,000 in deferred shares, it represents approximately the sum the vendor himself has expended in business up to January 1 last. Since then he has expended a further £30,000, which the Company will refund to him. Of the 50,000 in deferred shares the vendor gives 10,000 to Dr. Carl Langer for his assistance in the past in working out the refining process. Dr. Langer becomes a director, and his services are secured for ten years, together with all patents he may obtain in relation to the extraction of nickel. Dr. Mond, of Brunner, Mond & Co., becomes chairman of the directorate, which is undoubtedly a strong one, and ought to tell for success if any directorate should. Among its members we notice the name of Sir Andrew Noble, the chairman of Messrs. Armstrong, Whitworth & Co. After payment of the purchase price, £115,000 of the present issue of £472,496, part of a total nominal capital of £600,000, will be left to provide for the completion of the

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 Steam Traps. Wrought Iron Pipe.
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works, mining developments and working capital, and this sum is believed by the directorate to be amply sufficient. Those who can will secure an allotment in this company.—Mining Review.

THE HELEN IRON MINE.

Dr. Robert Bell, Acting Director of the Geological Survey, gives some interesting particulars of the now famous Helen Iron Mine at Michipicoten being extensively worked by the Clergue Syndicate:

The existence of iron ore at what is now the Helen Mine is said to have been known for two or three years to certain trappers and explorers, one of whom, Benjamin Boyer, brought it to the notice of Mr. H. F. Clergue in 1899. The latter purchased the location and immediately proceeded to develop it as a mine. The occurrence lies at the east end of a deep pond, about a quarter of a mile long, called Boyer Lake.

The ore is a hard but somewhat porous or spongy red hematite, with a specific gravity of about five. The ore-body, from which a layer of muck or peaty moss has been removed, forms a point dividing the head of the lake into two small bays. It has a lumpy surface with a dark blueish gray color. Small quantities of brown hematite (limonite) and yellow ochre appear in joints and cavities, but they do not form any appreciable portion of the mass.

The horizontal dimensions of the exposed ore are about 500 feet in every direction and its greatest height above

the lake is 100 feet. The ground rises steeply all around the head of the lake, so that the ore lies at the bottom of the amphitheatre, open to the west or lake side. A drift has been run at the level of the general surface of the ore, southward into the hill, and this penetrates similar hematite for 250 feet, thus giving a known breadth of 750 feet from north to south. During the winter of 1899-1900, by taking advantage of the ice on the lake, a number of holes were bored in the bottom along a north and south line, which passed the extremity of the point of the ore at a distance of 250 feet to the westward. On this line and abreast of the point the lake had a depth of 100 feet, including ten feet of soft mud, and at 150 feet below the bottom, where the boring ceased, the drill was still in hematite like that on the dry land. A bore-hole from the surface of the exposed ore was sunk to a depth of 188 feet below the level of the lake without reaching the bottom of the hematite. The ore-mass has thus been proven to have a continuous depth of 300 feet, and as this follows the plane of the bedding, which is vertical, the probability is that the depth is very much greater. The general strike is parallel to the axis of the pond, which is about east and west. The railway approaches the mine from the west along the foot of the hill on the south side of the lake.

The Moyie Lumber Co., Moyie, B.C., is erecting a saw mill at that place.

A VALUABLE PATENT.

Attention is directed to an advertisement in another page in which a valuable Canadian patent is offered for sale. The invention relates to axles and bearings for vehicles generally, but is especially applicable to automobiles and other vehicles when sensitiveness and economy in the motive power, and great strength and durability are desirable.

The principle object of this invention is to provide bearings for vehicles which shall be almost frictionless and noiseless in operation, yet simple and inexpensive in construction, strong and durable, and in which the parts may be readily assembled, or replaced when worn, without interference with the main portions.

It is a roller-bearing, so designed that it may be applied to any and all journals or axles, and is peculiarly adapted to automobile wheels and armatures, or any journals. It constitutes a perfect bearing for ordinary carriages, and can be manufactured at a price sufficiently low to substitute it in the place of oil bearings on ordinary carts, drags, lorries, trucks, farm wagons, etc.

Some of the advantages in its use are: It is practically and absolutely anti-friction; lubricants are dispensed with; the lateral thrust is taken at the pivotal centre of the hub; the parts are interchangeable; there is no wear on the axle; a saving of fifty per cent. in motive power; it can be manufactured cheaper than other bearings.

This device has received the endorse-

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ment of a large number of the most expert engineers and machinists in the United States, and is in use on the trolley line between Camden and Trenton, N.J.; the Portsmouth, Va., trolley line; on trucks built by The Fairbanks Co.; in mine cars of the Mitchell, Pa., Coal Co.; the Glenwood, Pa., Coal Co.; the Columbia Vehicle Co., for use in automobiles built by them; the International Power Co.; the Pressed Steel Car Co.; the Thomas Iron Co., and other equally reliable concerns.

Any interested in this valuable service may obtain further information by application to J. J. Cassidey, care THE CANADIAN MANUFACTURER, and through him can be placed in communication with the patentee.

ARTIFICIAL IVORY.

An extensive and increasing industry has become established in France to furnish an artificial substitute for natural ivory in view of the growing insufficiency of the latter to meet the demand of art and industry in their various applications.

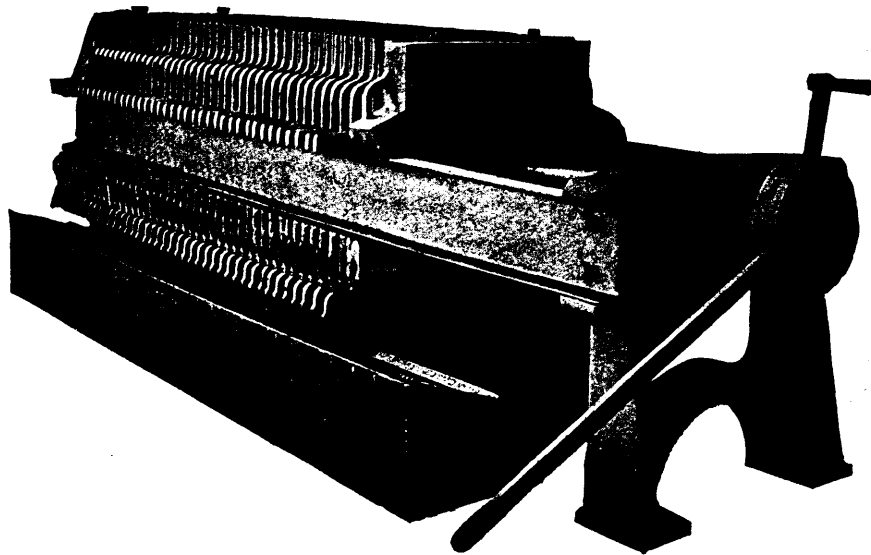
The greater number of products formerly employed in this line were obtained by injecting whitewood with chloride of lime under very strong pressure. At the Amsterdam exhibition, however, almost all the products which attracted so much attention had been prepared with the bones of sheep and the waste pieces of deer and kid skin. The bones are for this purpose macerated and bleached for a period of two weeks in chloride of lime, then heated by steam along with the skin, so as to form a fluid mass, and to this latter are added a few hundredths of alum. After having been subjected to these processes, the subsequent treatment consists in filtering the mass, drying it in the air, and allowing it to harden in a bath of alum, the result being white, tough plates, which are more easily worked for various objects than is the natural ivory.—The Manufacturer's Gazette.

The Dominion Organ & Piano Co., Bowmanville, Ont., are asking for tenders for the erection of an addition to their factory, 160x40 feet.

GOOD ADVERTISING AN IMPORTANT MATTER.

There is advertising and good advertising. In other words, it is possible to spend large sums of money on advertising and to reap no benefits therefrom, and it is also possible to build up a large business by means of a gradual and properly developed system of advertising. Many kinds of advertising are open to manufacturers, but the advantages of using trade journals as advertising mediums are so obvious that we can allude to the subject without fear of being accused of self-interest. To reach the trade the trade paper must be employed, and to reach the cream of the trade the best journal and one which has attained a high degree of popularity should be selected. It is of little use to advertise the manufacturers' name and address, and with a brevity—not commendable—state that the advertiser "makes tools or implements." What is wanted is to impress readers with some special qualities of production, remind them of seasonable lines, lead them to ask for

Beet Sugar Filters



Send for our Catalogue of Presses.

William R. Perrin & Company

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E. HOWARD & CO., Watchman's Clocks.

THEY WILL SAVE YOU 10 ON YOUR INSURANCE

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quotations, and either by judicious wording or pictorial illustration induce them to associate that firm and that firm alone as the best maker of those particular goods. The makers of novelties and specialties may go further, and stamp upon the minds of their readers the real sterling merit of the goods they offer, and above all, by illustration and description, leave a clear impression on the minds of all who study the advertisement of what the article is like, and to what extent it is likely to become popular. Goods should sell because of their merits, and a true living advertisement should be like a clearly explained description. Indeed, those who "live by advertising" say a properly drawn advertisement is equal to a verbal description given by an eloquent salesman.—Ironmonger's Chronicle.

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SOLID Belt Dressing. **AND DOES THEM THOROUGHLY**

STOPS THE BELT FROM SLIPPING.

PLEASES THE MAN WHO USES IT.

NOTHING EQUALS IT.

SAMPLE SENT FREE. SEND FOR ONE.

Joseph Dixon Crucible Co., Jersey City, N. J. U.S.A.

The Diamond Machine and Screw Co., Limited

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For Roofs of all kinds, Bridges, Iron Work.

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IN BRITISH COLUMBIA.

Mr. Robert Jaffray, president of The Globe Printing Co., recently returned to Toronto, from an extended visit to British Columbia, and of course told the reporter of some of his observations while there. Speaking of Fernie, Mr. Jaffray said that he visited the Crow's Nest Pass Coal Co's mines there, and was greatly pleased with the progress which had been made in the direction of preparing the mines for an extensive output. Upon this point he laid stress, for the management of the company look to deriving their profit from the volume of their business rather than from high rates for their output. The work of preparing the mines for a large future development was progressing satisfactorily, and in this connection he remarked that he found the management well pleased with the facilities given them by the railway, in the way of sidings, car service, etc., for dealing with their output, which is now from seventy to eighty cars of coal and

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pansion of compressed air, often to such an extent as to freeze any moisture in the air or immediate neighborhood, will often prevent the use of high pressure air expansively unless the air be reheated. This reheating of compressed air can be done at a very small fuel cost for the benefits attained, and is used in many places.

THE FUEL OF THE FUTURE.

It is not generally realized to what a considerable extent petroleum and its various products are already in use as fuel. The increased price of coal and the various drawbacks to its use which have during recent times been so clearly demonstrated have caused a deeper inquiry to be made into the possibilities of petroleum and its more general use as fuel. The petroleum industry is of course of comparatively recent date, and there as yet but few fields fully developed, and the extent of supply is far from known. Until quite recently only the finer oil was thought to be of any use, some two-thirds being thrown away as waste product. It has now been proved that this residue forms the finest liquid fuel, and contains an immense heating power. Among the advantages claimed for it is the lesser space and more convenient form of storage on board ship or locomotive. Many vessels are now being propelled by mineral oil, and several of the great railway companies are using it, although perhaps largely in an experimental way. In Russia oil is generally

used, and competes successfully with steam. Stoves for heating and cooking purposes in which the heat is obtained by burning petroleum oil are in daily use in every part of the country. Ironmongers are handling these goods, placing them in close competition with gas stoves and cookers, the profitable character of the sale of which is of a somewhat doubtful character. In selling oil stoves there is always the satisfaction or knowing that their sale carries the sale of petroleum also, and that is a continuous item. Every stove sold should be closely followed and regarded as a constant source of revenue.—Ironmongers' Chronical.

BY-PRODUCTS OF COAL.

A pound of cannel coal is a lump about the size of a man's fist, says London Answers. Out of this dyes can be distilled sufficient to color the following lengths of flannel, three-quarters of a yard wide: Five feet of yellow, three and one-half feet of scarlet, two feet of violet, two inches of orange, four inches of turkey red and eight inches of magenta. By judicious blendings you can obtain sixteen distinct yellow colors, twelve orange, thirty red, fifteen blue, seven green and nine violet; in all, eighty-nine separate tints. These colors are made from the waste left over after the gas has been extracted.

Take a ton of good cannel coal and distill it in a gas retort. It will give 10,000 cubic feet of gas, twenty-five

gallons of ammoniacal liquor, thirty pounds of ammonium sulphate, thirteen hundredweight of coke and twelve gallons of coal tar. It is this liquid, which forty years ago was burned in the furnaces or sold as cheap wagon grease at 5s. a ton, that now yields not only these lovely colors, but medicines and scents enough to stock a chemist's and perfumer's shop.

The first man who, 160 years ago, tried to experiment with coal tar—a German called Stauf—very nearly died from suffocation. It was 120 years before chemists learned to deal with coal tar and first obtained the beautiful aniline purple or mauve dye. Two million and a half of money was spent in 1899 on coal-tar dyes in British factories.

So great was the excitement when the purple aniline dye was first discovered that a Parisian manufacturer made the city authorities an offer of £8,000 if he might be permitted to take up the asphalt in one of the principal streets in order to distill it for use in his dye works. Purple became the fashion, and remained so for four successive seasons.

The newer coal-tar dyes owe their discovery to the quinine famine of 1880. In that year quinine became so expensive that Professor Dewar and other scientists began experimenting to find a substitute which would do equally well to cool the blood in fever. The first results of their experiments were the delicate yellows and browns obtained from benzine. Then quinoline was hit upon—a drug with just the same bitter taste as quinine, equally

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Galvanized Steel or Wood, all
Sizes, 4 to 26 feet in
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PUMPING MILLS

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WITH OR WITHOUT TANK
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GALVANIZED Steel Towers

Any height, either
Three or four post, with
substantial ladder.

TANKS
Any Capacity, Any Purpose
Made in
Pine, Cypress, Fir or
Galvanized Steel.

Our windmills are self-regulating and self-governing, and with our Hoosier Automatic Anti-Freezing Force Pump the windmill outfit takes care of itself, night or day, in calm or storm.

"Hoosier" **IRON**
—AND—
"Fast Mail" **PUMPS.**

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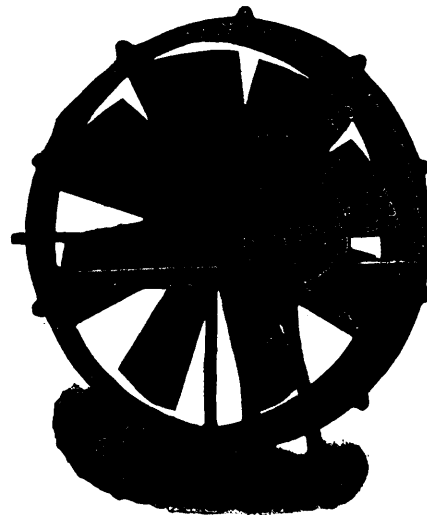
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powerful in fighting fever, and leaving none of quinine's evil effect. Quinoline, also, costs less than half as much as quinine.

Antipyrin, even stronger and more lasting in its effects, and without any bitterness at all, was the next development. Hundreds of pounds of this drug have been shipped lately to South Africa, to help the doctors in their fight against enteric fever.

Still another boom from coal tar is the drug called thallin, which is much the best medicine known to cure a patient of the dreaded yellow fever. In all, seventeen new medicines owe their origin to coal tar.

Extract of new-mown hay and other similar delicate perfumes are obtained from a substance called cumarin, which, up to a few years ago, was extracted from sweet woodruff and other scented grasses. Dr. Perkin discovered that cumarin could be obtained by distillation of one of the volatile oils of coal tar. White heliotrope is also made almost entirely from coal tar, together with seven other scents, generally known by the names of the flowers they used to be extracted from. The island of Mauritius lost most of its scent industry through the rivalry of coal-tar scent.

Vanillin, one of the most delicate products of coal, is used by the gallon in making the extract of vanilla for flavoring custards and puddings.

Besides these dyes and scents, coal tar gives us that greatest boon of the man

whose doctor won't let him take sugar—namely, saccharine. Of this substance, one pound is equal to two hundredweight of sugar, as far as sweetening power goes. It is quite wholesome, and is, into the bargain, a capital disinfectant. Jam made with saccharine ought to keep forever.

Coal-tar dyes and scents are by no means cheap and nasty substitutes. They are all harmless—sometimes more harmless than the original preparations they have superseded. And, in spite of the evil odor of coal tar, not one workman has ever been made ill by dealing with it.

MISTAKES vs. CARELESSNESS.

Manufacturers, jobbers and wholesale concerns generally, who employ salesmen and clerks, very soon begin to size-up the worth of a man or boy by the nature of his errors.

There is a marked difference, which many overlook, between an error due to the act of taking something to be other than it is, or due to ignorance, miscalculation or misconception; and an error due to carelessness, neglectfulness of responsibility or duty. Errors due to carelessness are traceable to unconcern and indifference—to inattention to what one is about, and general heedlessness.

The successful and careful business man can find no excuses for errors due to carelessness.

The salesman or clerk who is careless, heedless and indifferent, and his work

shows it whether he is aware of it or not, and does not mend his ways early in life, will never rise above commonplace ability or condition.—Graphite.

HORSESHOES, NAILS, AND HATCHETS.

Among the many curious ceremonies still carried out by the Corporation of the City of London, few are more interesting than the quit-rent service annually paid to the Crown in respect of two tenements respectively known as the "Forge" and the "Moors." Some seven or eight hundred years ago, Henry III. granted to Walter le Brun, a blacksmith, a piece of land in the Strand with permission to build a forge upon it, the annual quit-rent of which was fixed at six horseshoes and sixty-one nails. The Moors was a little holding in Salop for which the woodman to whom it was granted paid two hatchets annually. In course of time both these holdings passed into the hands of the Corporation of the City of London. The site of them cannot be located, as both appear to have been lost or incorporated with other property. The Corporation, with a commendable love of antiquity, still perform their share of the bargain, and the ceremony of handing the quit-rent equivalent to the nominee of the Crown is held every year at the Law Courts. According to usage, the hatchets vary in quality, one being a bright Sheffield chopper of superior make, the other a mere billhook. With proper judicial solemnity the King's

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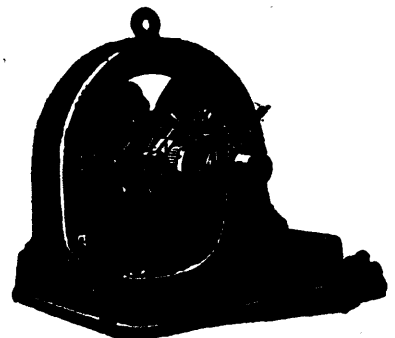
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Remembrancer officiates, and watches the fiction of the trial of the hatchets. Two tiny faggots of wood are placed upon a table, and the City Solicitor severs the faggots with a blow. The massive horse-shoes are critically examined, and the nails counted with the gravity due to such a momentous occasion.

A SHRINKAGE OF EXPORTS.

The export trade of the United States for the month of April of this year has fallen below the figures of the same month in 1900. Much concern shown in this decline is premature and unwarranted. Conditions favorable to trade are not stereotyped in any country, as buyers are not run on schedule time, nor is consumption a matter of dates. There are a thousand and one of mutable factors in the complex system of modern trade that have a way of their own of zig-zagging the shuttle in the loom. In fact, variations in the totals of trade are often but incidents and seldom determining potentials. Merchants purchase as they see the opportunities of selling, and these are limited to the buying power of the public. Foreign as well as home markets move on these lines, and the practice holds good with a cargo of

machinery as with a sack of potatoes. The clock keeps time as swings the pendulum. There is no need of pessimistic forebodings so far as the export trade of the United States is concerned.

There is a serious side, however, to the question and that is the fact that as Europe wakes up and duplicates American tools and methods, it will be less dependent on outside sources, and the better equipped for contesting the control of foreign markets. Europe is learning to help itself and sooner or later will do so, though it cannot evade the law, that insists on the best and the cheapest deciding the fortunes of competition. No one country has or can have an exclusive monopoly of foreign trade, be its resources or abilities what they may. There is always a second horse in the race to test its mettle. At the same time no sane man can question the industrial and commercial destiny of the United States, its broadening scope, and the impelling forces behind it. It has to grow or decay, spread its wings or smother in its own nest. The hour has come for this expansion. Countries that hitherto have been outside the zone of development are getting in the magic circle. A new world is being born. New ideas, new aspirations and new types of civilization, are springing up. The seed has been under the crust of centuries and as the old shell of dormancy cracks up,

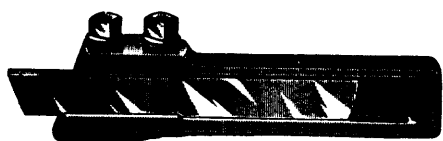
out of the acorn comes the oak. It is thus that the horizon of trade expands, and it is in response to these conditions that competition is spurring the steed to its new domains. Nor is Europe short-sighted or blind-folded in this matter, and it will surrender no market without a strenuous effort to retain it. It is becoming a contest of hemispheres rather than that of rival nations, and the rapid gain made by the United States can only be retained by vigilance and energy.

These are considerations that ought to enter into any forecast of the export trade of the United States.

From figures given in the advance sheets of the Bureau of Statistics, the total value of exports for the ten months ending April of this year was \$1,238,554,261, while that of the ten months ending April, 1900, was \$1,152,961,812. It is not easy to find reasons for this shrinkage apart from those given above, but a pause in a race is no evidence of a slow or lame horse.—The Age of Steel.

The Montmagny Light & Pulp Co., Montmagny, Que., who are now running their works by water power, are installing a steam plant for use during dry seasons. It will consist of a 200 h.p. Robb-Armstrong engine, and two 100 h.p. Mumford boilers, to be supplied by the Robb Engineering Co., Amherst, N.S.

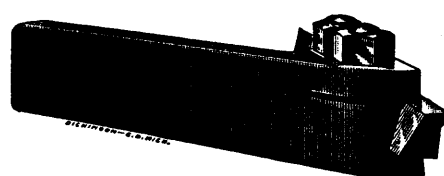
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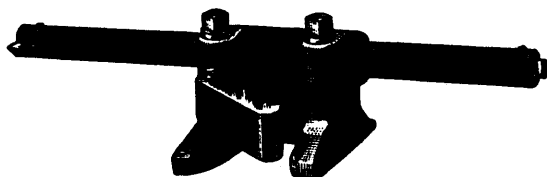
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OPPORTUNITIES FOR TRADE.

The following enquiries have been received at the offices of the High Commissioner of Canada in London, and of the Canadian Section of the Imperial Institute, London, England.

NOTE.—Those who may wish to correspond with any of these enquirers can obtain the names and addresses by applying to THE CANADIAN MANUFACTURER Toronto. No charge for giving information. When writing refer to the numeral opposite the enquiries.

499. The exclusive representation of some large exporters of cheese from Canada is desired for the English and South African markets, by a gentleman with experience of both.

500. Enquiry is made for the name of a Canadian firm supplying a form of rubber cloth prepared for taking blue prints.

501. A Manchester firm asks for addresses of printers of cotton goods in Canada.

502. A firm in the Midlands enquire for names of Canadian lumber people who export small wood boxes for packing purposes, the goods to be shipped flat, ready to be put together by the buyers.

503. Enquiry is made respecting the demand in Canada for Davy safety lamps for miners, and the openings for the sale of such goods.

MEXICO.—The Bulletin of the Bureau of American Republics states that a number of mining concerns in Mexico will shortly be in the market for mining machinery. One of the principal buyers is the Durazno group of mines, near Santiago Papasquiaro, in the State of Durango, which will erect a thirty-ton smelter during the summer. The McLean Mine at El Saba, San Louis Potosi, is also about to instal considerable new machinery adapted to handling lower grade ores. It is reported that Eddy Bros., of El Paso, Tex., have purchased the Descubrida mine near Conejolos, in the State of Sonora, and are planning to purchase new machinery to the value of \$100,000. This is one of the largest copper mines in Mexico.

The proposed sewerage system of the city of Merida, Yucatan, is shortly to be begun. There will be an iron pipe line between Merida and Progreso, about twenty-eight miles in length. Artesian wells are being sunk in great numbers, and the Merida Well Co. has secured a contract for building a pipe line and erecting hydrants to supply the city with water. About 100 miles of pipe will be required. Particulars may be obtained of Mr. Agnew, Manager of the Merida Gas Co.

The Mexico City Light, Heat & Power Co. will require about 17,000 tons of pipe for fifty miles of main. Particulars of Mr. W. S. Block, 40 Wall Street, New York. The Mexican Mining & Development Co., of Mexico City, has secured the contract for the construction of a large market building at Toluca, to cost not less than \$350,000.

There is reported to be a demand in Mexico for agricultural machinery and implements, mining machinery and tools, pumps, building tools, cutlery, hardware,

504. A correspondent asks for addresses of cotton, wool, hemp, tow, jute and silk manufacturers in Canada who may utilize steel pins in the first stages of manufacture.

505. A person in Glasgow having experience in the iron and steel trade is open to take up the agency for Canadian firms exporting iron ore, pig iron, steel in blooms, billets, etc.

506. A commission agent in London desires to correspond with a Canadian firm requiring some one to look after their interests, and to push the sale of goods on this market.

507. Enquiry has been received from Canada respecting the market in Great Britain for pure cedar oil.

508. A Canadian shipper of potash asks for the address of a reliable house in London who would be prepared to receive consignments.

surgical instruments, paints and varnishes, glass, porcelain and fancy articles of leather, such as pocket-books, card-cases, etc.

VENEZUELA.—A recent issue of the Venezuelan Herald contains the decree issued by the Minister of Encouragement, Department of Agriculture and Cattle Raising, relative to the sinking of artesian wells by private companies. The decree says that: In view of the distressing condition in which certain regions of the national territory are placed through the want of water for agricultural, industrial and domestic purposes, etc., the National Executive has resolved to authorize one or more foreign or native companies to make scientific investigations for the construction of artesian wells, and will contribute a portion of the expenses of such investigations and agree to purchase the wells when completed, provided the volume of water obtained is not less than 500,000 liters every twenty-four hours. All machinery, apparatus, pipes, instruments and tools and other accessories will be admitted free of national, state and municipal duties. The following districts are indicated as those requiring water most urgently: The islands Margarita, Coche, Los Roques and Providencia, the peninsula of Araya, the State of Maracaibo, and the plains of Guarico. Americans interested in this proposition may secure a copy of the complete text of the decree by addressing this paper. No doubt if the experimental boring proved successful a most excellent opening would at once be made for extensive shipment of this class of machinery to Venezuela. At the same time the Herald advises caution in signing contracts with towns and municipalities.

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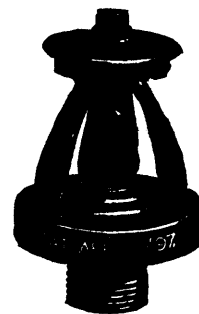
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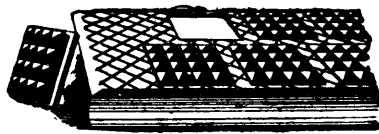
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SUGAR INDUSTRY IN EUROPE.

United States Consul Dowzelmaun, at Prague:—

In the beginning of the year 1900, there was a general fear on the part of the sugar dealers in Austria-Hungary of an over-production, but this proved unfounded on account of an unexpected failure of the crop in nearly all the colonies. The sugar trade is generally able to estimate very closely the amount of raw sugar produced in Europe, but the colonies are an uncertain quantity, and nearly every year furnish a surprise. The general calculations of the trade have been that the sugar crop in the colonies would increase from year to year; but in the place of this increase, there has been yearly a decrease. It is said that the United States imported in 1900 only 1,558,266 tons of sugar, against 2,219,847 tons in 1899, although the consumption of sugar in the United States rose from 2,078,068 tons in 1899 to 2,219,847 tons in 1900; and the whole stock at the end of last year amounted to only 69,000 tons as against 208,472 tons in the previous year. This shows that our production of sugar is increasing gradually, and indeed the syndicates who manipulate the market in Europe believe that the time is not very far off when the United States will produce all the sugar it needs, and they are seeking other markets and considering the possibility of a greater consumption of sugar by the different nations. Statistics for the year 1900 show that Russia consumed about 20,000 tons more than in 1899; Germany, 91,243 tons more; France, 29,250 tons more; and England, 46,100 tons more; while Austria-Hungary, it is claimed, on account of the increase in the consumption tax, consumed 27,692 tons less in 1900 than in 1899.

The statistics further show that Spain, Italy, and the Balkan States have not only produced all the sugar needed for their home markets, but that they have also begun to export to a small extent; that Egypt, which up to a few years ago used to import annually 50,000 tons from Austria, is now exporting large quantities to the United States and India, so that the best outlets for sugar are those in the Far East.

The export of sugar from Austria-Hungary to East India and Japan in 1900 showed an increase over the previous years; but Japan passed a law, which went into effect on April 1, of this year, providing for a consumption tax, which will reduce the demand for sugar and eventually lead to the establishment of sugar refineries there.

The only consolation, it appears, that Austrian dealers in sugar have is that there is no prospect of abolishing the export premiums paid by Germany, Austria and France. Austria is opposed to the abolition of this tax, because France is its main competitor, especially in refined sugar in England.

It is surprising that the United States, with its millions of acres of virgin soil and with its improved machinery, has as yet such a comparatively small acreage planted in sugar beets and so few sugar factories.

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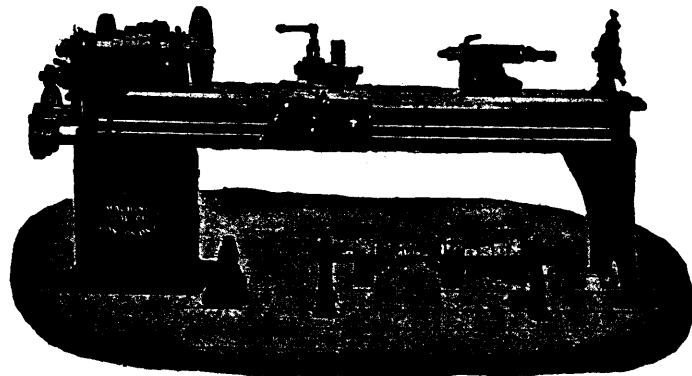
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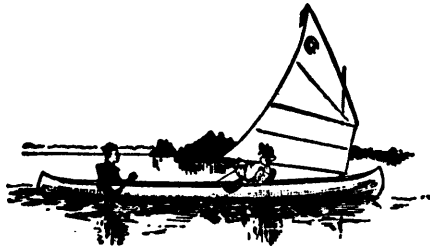
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BUSINESS CONDITIONS.

A NEW PROCESS IN COPPER.

The New York Herald publishes the following from its London correspondent: Senator Clark's visit to Europe is likely to confirm his claim to the title of "Copper King" in a way that he did not anticipate when he set out to round up the Rio Tinto mine into the new amalgamation. When he returns to America, not only will he be in a position to disregard the opposition of the Calumet and Hecla mines, but he will be able to dictate terms to every copper foundry in the United States, if a deal which I heard of yesterday goes through.

This deal means the acquisition by the Montana Senator of a newly-discovered process by which bars, sheets and tubes can be manufactured from the crude material almost at the pit's mouth. This will mean a saving of something like \$100 per ton on the finished material.

The process is electrolytic and is closely analogous to the electrolytic refining method by which two hundred thousand tons of copper were refined in the United States last year. The new process uses the same amount of electrical energy per ton of metal as the old, but is worked at a rate ten times greater, and in making bar copper for subsequent melting, a rate twenty times greater is said to have been successfully used.

The manufacture of copper articles direct from the crude metal has long engaged the attention of inventors, in view of the enormous profits accruing. Many attempts have been made, but hitherto all alike have been unsuccessful, or only partially successfully. The new process is said not only to overcome the known difficulties, but, by an ingenious contrivance, automatic in its action, to have effected a marvelous improvement over all methods heretofore known.

Mr. David Cook, an electrical engineer, who carried out the lighting of the City of London, gave me some important data regarding the process, which, he says, will revolutionize the copper industry. I had some tubes made by this process, he said, which stood a test up to 3000 lbs. per square inch, without showing a sign of weakness, the ordinary test being 600 lbs. To show how it would work, say in the Anaconda mine, where ten tons of copper are electrolytically refined daily in 1,400 vats, covering something like sixty-five acres of ground, only 100 vats would be required by the new process.

Where, under present conditions, the product requires to go subsequently through the processes of smelting, drawing, forging and rolling before the finished article is produced, the new process will produce the finished article direct from the vat. This means the saving of from \$100 to \$500 per ton compared with the present method. In fact the new process practically abolishes copper manufacturing as at present understood.

Messrs. Stanger and Blount, Government analysts have been making tests of the new process in their laboratory at

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Westminster. The results of their test were given me yesterday.

These show that copper can be deposited as a coherent sheet at a current density ten times greater than that employed in ordinary electro-deposition. The copper so deposited is almost chemically pure, and in consequence of this purity its electrical conductivity approaches the theoretical limit. The metal is also free from lamination.

Stripped of scientific verbiage, the new process amounts simply to this: Where formerly, or, rather, at present, it requires many days to convert the raw material into sheet copper, which has to be subsequently put through an expensive process to produce the finished article, the new process will turn out the finished article by a single operation.

British and Canadian rights have already been secured by syndicates, and I understand that Senator Clark has the option on the American rights, the purchase price running into six figures.

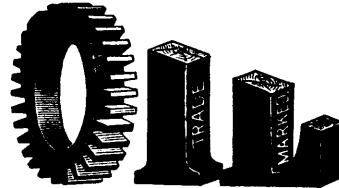
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CEMENT IN CANADA.

The United States Bureau of Foreign Industries recently gave instructions to consuls in Canada to obtain information relative to the cement trade and some of the answers are as follows:—

Consul Sewell writes from Toronto: For the past two years, there has been very little Portland cement imported into this part of Canada, Canadian factories having supplied the demand. There are four new factories for the manufacture of cement in course of construction in Ontario. Their product will be on the market this spring, and the result will undoubtedly be a large overproduction of this article.

There are three grades of Portland cement sold here, ranging from \$2 to \$2.60 per barrel, in carload lots. The retail price is from \$2.50 to \$3 per barrel.

Consul-General Turner writes from Ottawa: The total imports of Portland cement into the Dominion of Canada for the fiscal year ended June 30, 1900, were 1,312,170 cwts., and for the four months from July 1 to October 31, 1900, 832,364 cwts. This importation was divided as follows: From Great Britain, 398,265 cwts.; United States, 55,668 cwts.; Germany, 140,569 cwts.; Belgium, 233,902 cwts.; all other countries, 3,960 cwts. I am informed by the customs authorities that a large amount of the cement imported from Great Britain is of German or Belgian manufacture.

The preferential duty in favor of England is 33½ per cent.; but, notwithstanding this fact, very little strictly English cement is consumed in Canada. From all information, I should say that more Belgian cement is sold than any other.

The wholesale price per barrel of 400 pounds is about \$2.35; the retail price, about \$3.

The largest importers are Bellhouse, Dillon & Co., of Montreal.

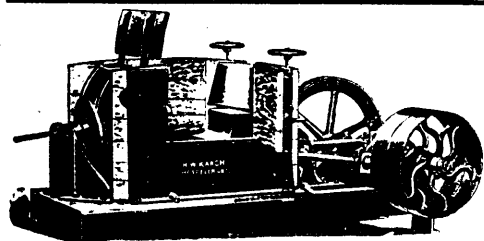
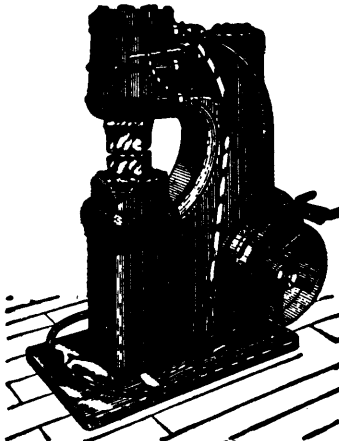
It is said that greater quantities of Portland cement would be purchased from the United States were it not for the high railway rates. Foreign cement is brought entirely by vessels, and the

The Yeakley Vacuum Hammer.

Canadian Patent November 9, 1897.

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rates are much cheaper. It can be landed in Ottawa for about one-third less than cement brought from the United States.

The long duration of winter is a great drawback to a larger consumption of Portland cement in Canada. For five or six months of each year cement cannot be used for outdoor work.

Consul Myers writes from St. John, N. B.: The amount of Portland cement imported annually at this port is about 10,000 barrels of 350 pounds each.

The wholesale price is \$1.75 to \$2.25 per barrel, duty included, and the retail price, \$2.25 to \$2.75 per barrel.

Shipping facilities: Either by vessels from European ports and New York, Boston, or Philadelphia, or by rail from the latter cities and points on the Canadian Pacific and the Maine Central railroads.

The rate of duty is 12½ cents per 100 pounds, weight of bag, barrel, or cask being included in the charge.

Belgium and England supply the greater part of the Portland cement used here. Cement imported in barrels finds the readiest sale. That from the United States is packed generally in sacks, and for this reason is not so favorably regarded.

Consul Smith of Victoria, B.C., writes: The imports of Portland cement into this district have increased largely during the past few years, having risen since 1897 from 1,000 barrels to 10,000 barrels. During the present year the receipts were somewhat over the latter amount. In addition, there have been about 2,500 barrels brought here by British naval vessels, for use at the Esquimalt naval station, which do not appear in the custom house returns. The value of the registered imports of Portland cement into this district during the year ended June 30, 1900, was \$14,718.

The cement used here is almost exclusively of English manufacture. It is brought around Cape Horn in sailing vessels as ballast at nominal rates of freight, largely by ships which have carried salmon from this port to England and would otherwise return to Victoria without cargoes. For this reason much of the cement used in Seattle and other nearby American cities is supplied from Victoria.

The lowest price at which Portland cement has been sold here during the present year is \$3.30 per barrel of 400 pounds, in large quantities, the average being \$3.35 per barrel; in small quantities \$3.50 to \$3.65 per barrel is the market price.

The matter of introducing Portland cement into Vancouver Island is largely one of freights, which are nearly prohibitive. The rate from St. Paul to Victoria is 80 cents per 100 pounds, which would be \$3.20 per barrel. To this must be added the cost of transportation to St. Paul from any interior point in the United States and the Canadian duty of 12½ cents per 100 pounds.

An American syndicate, composed largely of owners of cement works in Chicago and New York, has recently bought land in the vicinity of Sidney, on

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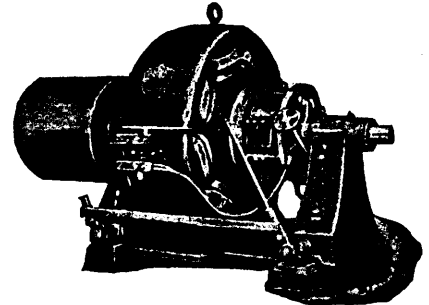
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Vancouver Island, where arrangements are being made to start a large Portland cement factory. It is said that an abundance of clay, containing the necessary properties for the manufacture of this article, has been discovered at that point. These works are expected to be in operation next year. The output at first will be 300 barrels per day, but this will be gradually increased until a maximum of 2,000 barrels per day is reached.

In view of contemplated city improvements, the use of Portland cement will, no doubt, be largely increased during the coming year. It is believed the consumption in 1901 will reach nearly 20,000 barrels.

I regret to say that until reduced freight rates are obtained, the prospect is not favorable for building up a trade in this district for cement manufactured in the United States.

A NEW QUEBEC ENTERPRISE.

Mr. Parent, Commissioner of Crown Lands, Quebec, went to New York in the latter part of last month for the purpose of meeting certain capitalists who are applying for water powers and pulp wood limits. One proposition relates to the immense water power on the St. Maurice known as La Tuque. Mr. Parent met the applicants, but nothing has been given out as to the result. The parties propose to build great pulp and paper mills, the output of which will be shipped largely through Quebec City by means of a branch railway, which the syndicate projects and which will connect with either the Great Northern at St. Thecle, or the Lake St. John near Lake Edward. Between \$4,000,000 and \$5,000,000 is the amount the syndicate is said to be prepared to expend.

TRADE EXPANSION.

The opening up of a number of new avenues of trade has resulted in a considerable expansion in business over previous years, and it is gratifying to be able to note that the Canadian manufacturers are not only holding their own, but are making handsome increases in sales of staple Canadian goods. The development of new fields of enterprise and the extension of business operations in sections of the country where various enterprises had already been successfully exploited have caused an increased demand for many lines of goods in the way of supplies. Canadian exports have also increased materially the past year. Considering the conditions under which the export trade has grown, it is somewhat remarkable that the shipments of manufactured goods are as large as the returns prove them to be. Canada is not a particularly cheap country in which to manufacture, in comparison with European centres of trade. The labor markets here are not congested, and wages paid are comparatively high. In many cases the raw material has to be imported. Canada has the advantage, during a portion of the year, of water shipments to the seaboard, but for about half the year manufactured goods for export have to be shipped long distances by rail.

Since the Canadian manufacturers have worked up whatever export trade they have wholly on the merits of their goods, they are to be congratulated on the position they have secured for their products.—The Globe.

BONDED GOODS IN TRANSIT.

The Department of Customs has had submitted to it for its approval by the Treasury Department at Washington a new regulation governing the transmission by rail of bonded goods from one part of the United States to another, passing through Canadian territory. Heretofore it has been the custom to send such goods in closed cars, which were sealed, for transit through Canada, by the United States Customs officials at the point of shipment, and on entering Canada these cars were likewise sealed by the Canadian Customs officials. Many of the railway companies in the United States have represented that it is not always convenient to get carload lots, and it is now proposed to allow the transit of part car-lots through Canada, provided the packages are properly sealed before entering the Dominion. The Department of Customs has intimated that it sees no objection to this regulation.

PINE TIMBER IN INDIAN RESERVES.

The Dominion government has issued an order-in-council providing that all licenses to cut pine timber on Indian reserves, issued on and after April 30, 1901, shall contain a condition that all such pine shall be manufactured in Canada. The regulations go farther than the Ontario act, inasmuch as they impose a condition that all licenses to cut pulp timber, issued after April 30, shall contain a provision that such wood shall be manufactured into merchantable pulp or paper, or into sawn lumber, woodenware, utensils or other articles of commerce or merchandise, as distinguished from the said spruce or other timber in its raw or unmanufactured state, and to ensure prohibition of the export of pulp wood, it is declared that the cutting of spruce or other soft wood trees, or timber suitable for pulp or paper, into cordwood or other lengths, is not manufacturing the same within the meaning of this regulation.

CANADIAN PIG IRON.

The arrival in the Clyde, at Glasgow in fact, of a cargo of 3,500 tons of Canadian pig iron has aroused much interest in the iron trade of Great Britain. Following so closely as it does upon the veritable flood of crude and finished material from the United States, it has been the cause of much discussion as to the future of the iron trade not only of Great Britain, but of this country as well. The facts seem to be that this iron, which was made at Sydney, C.B., paid a freight of 10s. per ton, and incurred other charges of 5s. per ton, mainly because of payment by the Canadian government a bounty of 20s. per ton, and the profit in the transaction even with this bounty is, owing to

present prices of iron in Scotland, a very small one. What is of chief interest to the British trade, however, is that the shipment marks a reversal of the usual current of trade, in that Canada usually takes about 10,000 tons of British iron in addition to that imported from the United States.—Bradstreets.

J. E. Molleur's underwear factory, St. John's Que., was destroyed by fire June 12. Loss about \$40,000. Mr. E. Morin, who occupied a portion of the building as a stocking-knitting factory, sustained a loss of about \$2,000.

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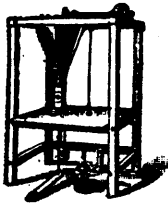
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A NEW ONTARIO RAILROAD.

The work of exploring the Ontario Government railway to Lake Temiscamingue from North Bay is to be begun at once. W. R. Russell, of Pembroke, a graduate of the School of Practical Science, in Toronto, who was recently employed in locating and constructing a section of the Algoma Central Railway, has been appointed surveyor in charge. He is now looking over the ground and will soon return and take with him a surveying staff of seventeen men. This party will work northward, while later on another party may go north and work toward the south, so as to finish in time to report at the next session of the Legislature. It is estimated that it would take one party ten months to do the work. The surveyors will report on the location, cost, structures, best grades, best country and other points. The road will open up a spruce country, richly timbered and of great extent.

MONEY ORDERS.

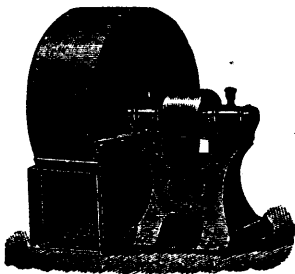
The new rates adopted by the Canadian Post Office Department for the sale of money orders, payable either in Canada or the United States, are as follows: Up to \$5, 3c.; \$10, 6c.; \$30, 10c.; \$50, 15c.; \$75, 25c.; and \$100, 30c. This change has been made to compete with the express companies.

BRITISH COLUMBIA TIMBER.

British Columbia has followed the example of Ontario and Quebec in restricting the exportation of timber. An amendment to the Land Act passed in the session just closed, provides that all timber cut from Provincial lands must be manufactured within the confines of the Province of British Columbia. Thus British Columbia has adopted Ontario's idea of the manufacturing condition. But it follows Quebec rather than Ontario in this respect: that it requires the timber to be manufactured, not anywhere in Canada, but within the Province. It is provided that every person endeavoring to convey out of British Columbia any timber cut from the Crown Land shall be liable to a penalty not exceeding \$500. Still another provision makes liable to seizure steamships, tow boats or railway trains taking such timber out of the Province. It is stated that some bonus of lop intended for export have been stopped by officials acting under authority of this statute.

GROWTH OF TORONTO.

City Treasurer Coady, in presenting his budget to the City Council a few days ago, speaking of the substantial progress of the city, drew attention to the fact that in the last ten years it has recovered from a land boom and is again on the crest of the onward wave. The population has increased 50,000, the street railway has been transformed from a horse car to an electric service, while the city's revenue from it has grown from \$120,373 to \$209,000, the basis of a radical system has been laid, the technical school has



PLANING MILL STEEL PLATE EXHAUST FANS

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Made of Galvanized Steel. All Sizes for Fans from 30 inches and up.

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been established, the City Hall built and the city government has been remodelled by the redistribution of the wards and establishment of the Board of Control.

NEW LINE OF COAL CARRIERS.

One of the direct results of the deepening of Canada's system of inland waterways to fourteen feet is the announcement that a new corporation has been formed, composed of leading Canadian and American commercial men, amongst the latter being Mr. W. F. Havemeyer, the New York sugar king, for the purpose of developing the coal-carrying trade between the American ports on Lake Ontario and the city of Montreal. The Montreal Coal & Towing Co., having secured a charter from the State of West Virginia, will not only be able to bring coal to Montreal, but do a coasting trade as well between the American lake ports. An interesting feature in the new enterprise is the peculiar kind of boat or barge selected for the work. They are designed from the old pin-plat of the French-Canadian voyageur, will carry 800 tons, and cost \$8,000, against \$25,000 paid for similar boats built at the American ports. They are good carriers, and as tugs do the hauling, they carry no sails. The capital of the company, which starts with a well-equipped fleet, is \$250,000, and the directors are Messrs. John Torrance, Henry Miles, W. F. Torrance, S. O. Shorey and G. Ernest Muir, Mr.

W. F. Torrance, being president of the company, and Mr. Muir secretary-treasurer.

THE SUGAR BEET INDUSTRY.

In a recent speech Premier Ross, speaking of the cultivation of the sugar beet in Ontario, and the manufacturing of beet sugar, said:—

We imported last year 251,000,000 pounds of sugar. We believe a great deal of this may be produced in this country. Germany produces all her own sugar and exports millions of pounds in the bargain. I think a reasonable and proper encouragement of the beet-root sugar industry would lead to an industry that would yield a large profit to the farmers and give employment to our own people. It would have three effects. It would improve the agriculture, the average profit on an acre of beets is twenty dollars, which is more than the average profit on wheat, oats or barley. This will give improved agriculture, and employ a great many people, and the factory will employ a great many more. Then it will bring capital into the country and will make us self-sustaining so far as the consumption of sugar is concerned. We have made various tests; we have been inquiring into this matter. We have been for the last three years making tests as to the soil, and we find the soil of York, Welland, Elgin and Kent grows beet root containing saccharine matter a good deal above the average of the beets

in the States of the Union, and better than the average in Germany, where the industry has prospered so well—another illustration of the great wealth which a beneficent Creator has given us, and which we may enjoy if we will utilize to the best advantage. Now, if we can with a very small assistance establish a few beet root sugar factories in this Province we will have gone a good way to supply ourselves with that essential article of domestic use; we will have given employment to a large number of people, and will have made our Canadian soil that much more productive than it was.

When Mr. Ross was made Premier of Ontario he outlined a bold policy looking toward the development of the resources of the Province; and it is evident that he has not become weary in well-doing, but is constantly devising new plans for fostering the great industries of Ontario.

THE WOOD PULP TRADE.

There is a temporary depression in the pulp business at present and prices have dropped somewhat. As a result of this and for other reasons not assigned, the Clergue syndicate's big mill at Sault Ste. Marie has been shut down for a time. No hardship is caused in this case, however, as all the men are employed in one or another of Mr. Clergue's various enterprises in and about the Soo. A curious reason given for the depression in the trade is that the bountiful rains of the last few months have so swollen the

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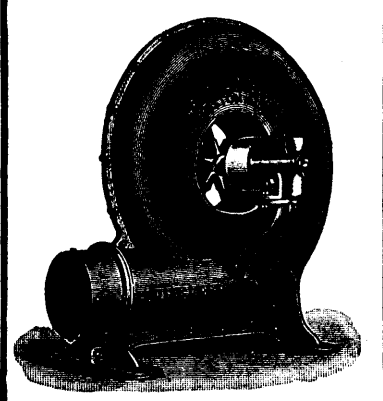
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 Adelaide St. W. **TORONTO.**

streams of the United States that many pulp mills, which ordinarily run only two or three months in the year owing to low water, have been able to keep going the greater part of the time. This has stocked the home market thoroughly and caused a large export business as well, which has cut into the trade of the Canadian exporting mills in Europe.—The Globe.

NORTHWEST TRADE.

Local wholesale men who have been doing business in Manitoba and the North-west since 1885 are greatly pleased with the improved prospects for the grain crops, as shown by the reports this week. The rains early in the week came at a moment when they were greatly needed, and have very much improved the prospects for those who are doing business with merchants in that part of the country. A 40,000,000 bushel wheat crop in Manitoba this year will be a great advantage to eastern firms. A leading Toronto house has stood by Manitoba merchants through seasons of bad crops and depression for sixteen years, and they are now reaping the advantage from the faith they manifested in that way in the great west. Whenever the crops warrant large purchases, as they did in 1899, and as is likely to be the case this year, the North-west travellers of this firm reap a big harvest of orders, and this house is able to steadily extend its business in that part of the country with no difficulty. A large wheat crop in Manitoba this season will mean much to eastern dry-goods firms, not only in the way of getting old scores straightened out, but in the increase of purchases for the current year.

THE MARCONI SYSTEM.

The Dominion Government has taken up and are considering the question of establishing the Marconi system of wireless telegraphy. Mr. A. Gobeil, Deputy Minister of Public Works, and Mr. D. H. Keeley, Superintendent of Government Telegraphs, recently made a thorough inspection of the Marconi system, as established on the Elder-Dempster steamship, Lake Champlain. So impressed were the officials with the practicability of the system that it was resolved to immediately order a pair of instruments, in order that they may be tested in the Gulf of St. Lawrence. Two instruments were, therefore, cabled for, and, upon their receipt, the work of putting them to a practical test will be begun. One instrument will be placed at Belle Isle, while the other will be located on one of the Government ships. Montreal shipping men are of the opinion that, should the instruments realize all that is claimed for them, and there is every reason to think that they will, the dangers of the St. Lawrence route would be reduced at least 75 per cent.

Messrs. T. H. Churchill, Truro, N.S., and Fred Talbot, Sherbrooke, Que., intend establishing a furniture factory at Megantic, Que., under the name of Megantic Mfg. Co., with a capital stock of \$50,000.

BUSINESS CHANGES.

FROM BRADSTREETS.

ONTARIO.

ACTON.—James Brown, sawmill, burnt out.
 ALVINGTON.—Jaynes & Co., general store, sold to A. S. Harkness & Son.
 BELLEVILLE.—Belleville Hardware Co., obtained charter.
 BRECHIN.—Wm. Orr, general store, advertised business for sale.
 CAMPBELLFORD.—Brown Bros. (W. G. H. Brown only)—tinware and fancy goods, meeting of creditors.
 CRYSLER.—John B. Lafrance, general store, meeting of creditors.
 CULLODEN.—H. A. Bigham, general store, offering to compromise.
 GALETTA.—J. G. Whyte, flour mill, burnt out.
 HARROW.—Joseph Morrison, harness, loss by fire.
 HAMILTON.—John Calder & Co. (estate of)—w. clothing, sold to Coppley, Noyes & Randall.
 Hollywood Paint Co., of Hamilton, obtained charter.
 INGERSOLL.—John Morrow Machine Screw Co., obtained charter.
 LISTOWEL.—Samuel Bricker (estate of)—hardware, stock advertised to be sold.
 LONDON.—Wilfred C. Schreiber, oil producer, assigned.
 OTTAWA.—Capital Sand & Brick Co., obtained charter.
 PERTH.—J. H. Charles Co., obtained charter.
 PENETANGUISHENE.—Thompson & Lahey, general store, stock advertised for sale.
 RIDGETOWN.—John R. Owen, planing mill, advertised for sale.
 STRATFORD.—A. Brandenburger, stoves and tinware, sold to J. Read & Co.
 SARNIA.—Sarnia Bay Towing & Salvage Co., obtained charter.
 TORONTO.—M. C. Pink & Co., junk, meeting of creditors held.
 Consolidated Pulp & Paper Co., E. R. C. Clarkson appointed permanent liquidator.
 Taylor Bros., mfrs. paper and brick, assigned.
 Canadian Cereal Co., obtained charter.
 John Dick, obtained charter.
 F. T. James & Co., obtained charter.
 Toronto Grain & Seed Cleaner & Grader Mfg. Co., sold out to the Ontario Wind Engine & Pump Co.
 York Laundry Machinery & Supply Co., in liquidation.
 WHITBY.—Gross & Granger, w. & r. hardware, etc., burnt out.

QUEBEC.

ARTHABASKAVILLE.—Arthabaskaville Shoe Co., obtained charter.
 MAGOG.—American Clothing Hall, Moses Genser registered.
 MONTREAL.—L. E. Morin, Jr. & Co., chemical products, registered.
 Morton, Phillips & Co., mfg. stationers, registered.
 Pineault & Chabot, mfrs. agents, registered.
 Safety Portable & Adjustable Balcony, registered.
 Terreault Steel & Malleable Iron Co., applied for charter.
 Constantine & O'Brien, mfrs. shoe machinery, registered.
 Timmis, Noble & Co., mfg. stationers, etc., registered.
 Canada Linseed Oil Co., registered.
 W. H. Creed & Co., plumbers, Wm. H. Creed registered.

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We are prepared to attend to all orders Promptly and Economically.

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Fine Grey Iron Castings a Specialty.

Nickel, Copper and Brass Electro Plating.
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BUSINESS CHANGES—Continued.

Adelstein Bros., boots and shoes, dissolved.
 A. Beauchamp & Frere, wood and coal, registered.
 Beaver Suspender Co., registered.
 City Steam Carpet Beating Co., registered.
 Desbarats Advertising Agency, obtained charter.
 Dominion Hay Co., applied for charter.
 F. Lapointe & Co., mfrs. furniture, applied for charter.
 Magnan Freres, hardware, etc., dissolved.
QUEBEC.—Bedard, Bertrand & Gauvin, dry goods, offering to compromise.
 Gourdeau, Felix & Cie, tanners, Mrs. Gourdeau registered proprietress.
RIMOUSKI.—F. Perreault & Cie., general store, assets to be sold.
ROBERVAL.—Z. Paquet, general store, stock sold.
ST. COEUR DE MARIE.—D. Jobin, general store, offering to compromise.
ST. CYRILLE DE WENDOVER.—Pierre Dauplaise, sash and door mfr., assets to be sold.
ST. RAYMOND.—N. Piche & Fils, general store registered.
ST. JOHN'S.—Dominion Sanitary Pottery, Wesley, Knight registered.
 J. E. Molleur, mfr. straw hats and underwear, underwear factory burnt.
ST. SYLVERE.—Lamothe & Lemay, saw mill, dissolved.
STE. ANNE DE BEAUPRE.—E. Forrest & Co., general store, partially burned out.
ST. STANISLAS.—J. B. Douville & Co., general store, meeting of creditors.
ST. TITE.—J. H. Frignon, general store, assets sold.
SABREVOIS.—Howard S. Jones & Co., general store, registered.
SHAWENEGAN FALLS.—Shawenegan Lumber & Woodworking Co., applied for charter.
THREE RIVERS.—International Iron & Metal Co., Abraham Silverman registered.
TROIS PISTOLES.—G. Rioux, general store, assigned.
WATERLOO.—Savage & Ashton, mfrs. aerated waters, etc., registered.
 Waterloo Knitting Mills Co., obtained charter.

NEW BRUNSWICK.

CHATHAM.—Chatham Electric Light Co., sold out.
 COAL BRANCH.—Canadian Coal & Manganese Co., incorporated.
 ST. CHARLES.—Kent Milling Co., incorporated.
 SACKVILLE.—Sackville Freestone Co., mfrs., incorporated.

NOVA SCOTIA.

BEAR RIVER.—H. P. Reed, general store, given up business.
 HALIFAX.—Graham & Pickles, electricians, sold to John A. Dunn.
 H. H. Fuller & Co., w. hardware, W. C. Brine registered sole prop.
 KENTVILLE.—B. R. Bishop, grocer and hardware, sold grocery business to Spurgeon L. Cross.
 MIDDLE EAST PUBNICO.—George D. D'Entremont, general store, meeting of creditors held.
 VALLEY.—Thomas Higgins, saw and grist mill, removed to Brookfield.
 YARMOUTH.—Prosperare Shipping Co., applied for charter.

BRITISH COLUMBIA.

VANCOUVER.—Andrew Lowen, pianomaker, given up business.
 VICTORIA.—Henry Short & Sons, sporting goods, dissolved.
 Thomas Watson, electrical supplies, etc., sold electrical department to C. C. Mackenzie.

NORTH-WEST TERRITORIES.

ROSTHERN.—Estate of J. J. Boese, general store, stock, etc., adv. for sale.
 STRATHCONA.—J. Daly, general store, assigned.

MANITOBA.

BRANDON.—Hughes & Long, sold saw mill at Beaver Mills, Ont., to the Rat Portage Lumber Co.
 Manitoba Farmers' Hedge & Wire Fence Co., incorporated.
 OAK BANK.—Springfield Milling Co., applying for incorporation.
 PLUMAS.—Alick E. Chandler, general store, assigned.

SITUATION WANTED

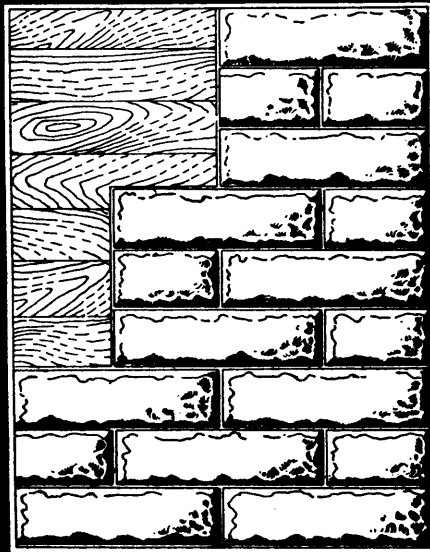
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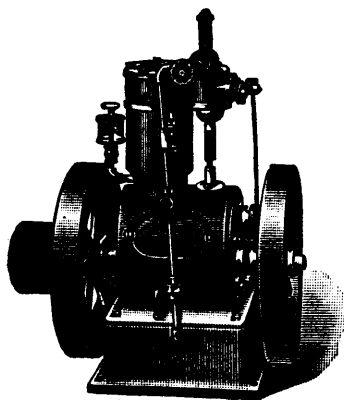
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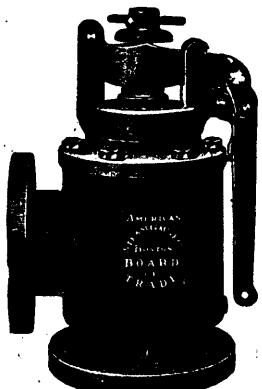
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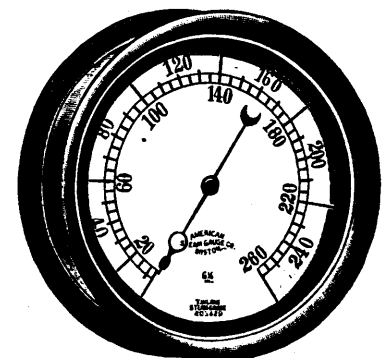
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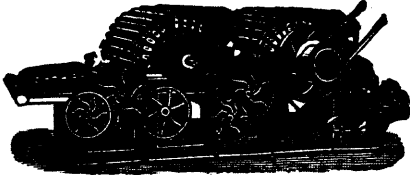
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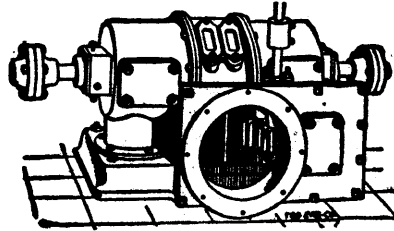
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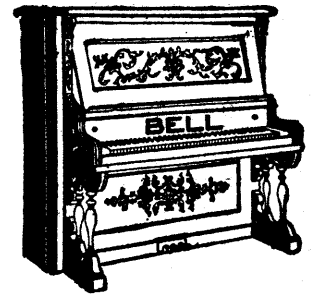
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