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THE CANADIAN MANUFACTURER

AND INDUSTRIAL WORLD

DEVOTED TO THE MANUFACTURING INTEREST OF THE DOMINION

Vol. 25. TORONTO, JULY 7, 1893. No. 1.

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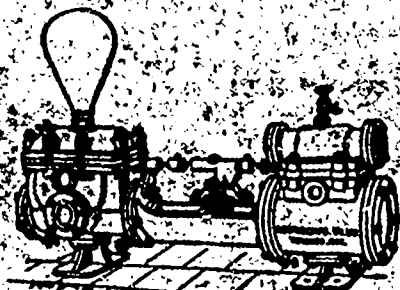
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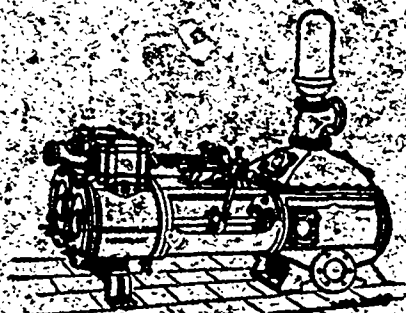
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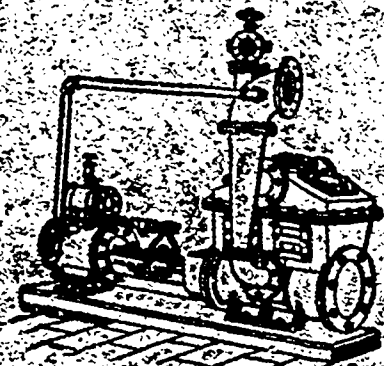


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CUSTOMS RULINGS AND REGULATIONS.

The attention of the Customs Department has been called to the fact that Brewers' pitch, which is used for the lining of barrels and casks, and which is dutiable at the rate of 20 per cent. ad valorem, is being brought in at some ports free of duty, being described as resin. Collectors are instructed to exercise all possible vigilance in order to prevent this evasion of duty on the article named.

It has been brought to the attention of the Customs Department that some officers of Customs are in the habit of sending duplicate copy, or Separate Car and Express Manifests by railway mail, or with the express goods, instead of by the Post Office mail as the regulations require, in which way it frequently happens that until the goods arrive at point of destination the Custom officers have no notice of

them having been shipped, and the landing in of the manifests is done promptly, or otherwise, as may suit the agents of the transportation companies. Collectors of Customs are instructed to take such steps as will ensure the discontinuance of this irregular practice.

O. C. June 13, 1893. —Whereas attention has been called to an error in the wording of the Order in Council of the 24th April, 1891, defining the meaning of the word gross when applied to papier mache shoe buttons commonly known as "Maggots," dutiable under item No. 24 of Section 10 of the Act 53 Victoria, Chapter 20, wherein Section 248 of the Customs Act is quoted as the authority under which it was made, instead of Section 9 of the said Act as amended by Section 5 of the Act 51 Victoria, Chapter 14. His Excellency the Governor-General by and with the advice of the Privy Council, is pleased to order that the said Order in Council be and the same is hereby amended by striking out the words "Section 248 of the Customs Act" and substituting in lieu thereof the words "Section 9 of the Customs Act as amended."

By order of Hon. M. Bowell, Minister of Trade and Commerce, a circular has been issued by his Department dated June 15, giving particulars of a Convention between Great Britain and Ecuador relative to trade marks, the ratifications of which were exchanged at Quito on the 3rd February last. Article 2 of that convention provides that the stipulations of the Convention shall be made applicable to the Dominion of Canada, provided that notice to that effect shall have been given within one year from the date of the exchange of the ratifications. Upon a report of a committee of the Privy Council, approved by His Excellency the Governor-General on June 12th, to the effect that the Government of the Dominion of Canada deems it advisable to take advantage of Article 2, the Secretary of State for the Colonies, at London, has been so advised in order that the requisite notice may be given within the time specified. Article 1 of the Convention is as follows:—"The subjects of each of the Contracting Parties shall have in the dominions and possessions of the other the same rights as are now granted, or may hereafter be granted, to native subjects or to subjects of the most favoured nation in all that relates to trade marks, industrial designs and patterns. In order that such rights may be obtained, the formalities required by the laws of the respective countries must be fulfilled."

O. C. June 25, 1893. At the last session of Parliament important amendments were made to the Petroleum Inspection Act, among others being one authorizing the importation in tank cars of petroleum for illuminating purposes at places designated by the Governor in Council. This Act went into effect on July 1, instant, and an Order in Council has been passed declaring the following as the ports at which tank cars with petroleum for illuminating purposes may be imported, subject to such regulations for the protection of the revenue as the Department of Customs may establish, namely:

Ontario—Toronto, Hamilton, St. Catharines, Whitby, Oshawa, Owen Sound, London, St. Thomas, Stratford, Brantford, Guelph, Galt, Berlin, Sarnia, Cornwall, Prescott, Smith's Falls, Perth, Ottawa, Pembroke, Kingston, Belleville, Port Hope, Peterborough, Brockville, Napamne, Fort Erie, Sault Ste. Marie, Port Stanley, Port Arthur.

Quebec—Montreal, Quebec, St. John's, St. Hyacinthe,

Sherbrooke, Sorel, Joliette, Three Rivers, St. Jerome, Coaticook, Stanstead, Fraserville, Rimouski.

New Brunswick—Sussex, St. John, Moncton, Fredericton, Chatham, St. Stephen, Edmundston, Woodstock

Nova Scotia—Halifax, Truro, Pictou, Yarmouth, Sydney, Lunenburg, Antigonish.

Manitoba and the North-west Territories—Winnipeg, Brandon, Calgary, Lethbridge, Regina.

British Columbia—Vancouver, Kamloops, New Westminster.

His Excellency is further pleased to order that petroleum in packages of 50 gallons or less may be entered at any duly established Custom port, and at all such ports when no excise officer is present or available. The duty of inspection shall be performed under the supervision of the Collector of Customs for such port.

The amending Act of last season makes important changes in the tariff of inspection fees. For both Canadian and imported oil the charges are made uniform, which is a large reduction on the American product. For instance, a package containing from 10 to 50 gallons will only cost 10 cents, instead of 30 cents; a package containing from 5 to 10 gallons, 5 cents instead of 10 cents, and less than 5 gallons 2½ cents in place of 5. Oils intended solely for use as lubricants and unfit from their properties for illuminating purposes, are exempt from inspection, but the packages in which such oil is contained must be conspicuously marked or branded "non-illuminating."

A NICKEL INDUSTRY—SHALL WE HAVE IT?

It is more than surprising that the Dominion Government have not yet imposed an export duty upon the nickel contained in the ore and matte which is being constantly exported from Canada, chiefly to the United States. The value of such exports to that country now amounts to millions of dollars annually, and the situation is such that the nickel cannot be had in sufficient quantities from any other source of supply than Canada. When the value of nickel as an essential in the manufacture of armor plates for war vessels was first discovered; when it was first demonstrated that the weight of armor plates might with advantage be reduced to from 40 to 60 per cent. of what is now otherwise required, the United States Government were quick to comprehend the value of nickel, and to thoroughly investigate the sources of supply from which what they might require might be drawn. This investigation showed that Canada, unlike any other country, as far as known, contained inexhaustible supplies of the article, and that it could be produced for practical purposes at about one-half the cost as compared with any of the supplies from any other country. At the time of this investigation and demonstration by the United States Government the McKinley Bill was just about being passed by the Congress, and it was therein stipulated that not only refined nickel, but also the nickel contained in ores, or in any other form, should, when imported, pay a tariff duty of fifteen cents per pound; and it was the report of the commission which had been sent out by the Secretary of the Navy, which showed the great value of the Canadian nickel deposits, that influenced the change in the tariff in this respect. That change placed nickel ore and matte on the free list, and made refined nickel dutiable at ten cents per pound.

As soon as these facts became known the Canadian Manufacturer took the position that if Canada desired to be benefited by our valuable nickel wealth an export duty should be immediately levied upon the nickel contained in such ore or matte as might be exported, more particularly to any country that imposed an import duty upon refined nickel. This journal has ever since contended for this export duty, but strange to say it has battled for it almost single handed and alone as far as Canadian newspapers were concerned.

It is well-known that the United States is building a large number of war vessels—have already built, equipped and put into commission quite a number of them—the armor of which is composed entirely of nickel steel, the nickel of which was and is being drawn from our Sudbury mines. Scarcely a day passes but what new and important demonstrations are made of the value of nickel for the most important purposes, particularly where great tenacity and strength are required. By the use of nickel steel not only the strength of armor plates is increased, but the weight of them greatly reduced; and in many other forms, such as propeller shafts for large and small steamers, the weight is lessened and the strength increased. It is evident that the day is passed when battle ships and all manner of war vessels will be armored with such heavy plates as are now in use on many of the ships of the different navies of the world. As in the case of the ill fated Victoria, which but a few days ago collided with the Camperdown, a similar ship, no doubt what was thought to be the most important and inpregnable feature of the vessel—her enormously heavy steel armour, was the direct and immediate cause of her destruction, accompanied with a most fearful and distressing loss of life. And we think it quite safe to say that that incident will be most fruitful in causing the abandonment of such heavy armor for such purpose.

But the abandonment of the practice of overloading war vessels with heavy steel armor plates does not imply that the use of armor plates is to be abandoned. If the armor of the Victoria had been of nickel steel, possessing infinitely greater power of resistance, and at the same time of only about one-half the weight of that with which she was encased, it is reasonable to suppose that the collision would not have sent her to the bottom of the sea, involving such a great loss of precious lives and valuable property. The incident demands, and common sense demands, that the armor of war vessels shall hereafter be composed of a material which possesses the maximum of resisting strength and the minimum of weight. That material is nickel steel. Hereafter no war vessel will be considered first class that is not encased in an armour of nickel steel, and as rapidly as the change can be made will the abandonment of heavy steel armor be made.

This work of armouring war vessels with nickel steel plates is now going on with much rapidity. No other material is being used for the United States navy, and our information is that the same company who are making the armor plates for American war vessels at Bethlehem, Penn., are also engaged in making similar plates for some of the ships of the Russian navy. And all of the nickel for these plates is being drawn from Canadian sources.

From what is known in the matter, we are led to conclude that if, when the United States Congress placed nickel ore and matte on the free list, retaining a duty of ten cents per pound upon refined nickel, Canada had promptly imposed an

export duty upon the nickel contained in the ore and matte exported to that country, the McKinley tariff would have been immediately amended by placing refined nickel in the free list. This would have given us a nickel refining industry in short order, and the capital that has since then been expended in refining plants in the United States, would have been invested in that business in Canada.

It is not too late yet to act in this matter, and it is to be most sincerely hoped that the Dominion Government will not longer neglect this golden opportunity. We have reason to believe that if an export duty was levied now, the United States Congress, which assembles in a month from this date, would very quickly respond by placing refined nickel in their free list; and not only that, but many other articles of which nickel forms an important constituent. Do the Government comprehend what this would mean for Canada? It would mean the immediate investment of millions of dollars of foreign capital in Canada in the establishment of nickel refineries and works for the manufacture of all descriptions of nickel steel. It would mean the manufacture in Canada of the armor plates now about being made in the United States for the Russian navy; and not only for that navy, but also for those of other countries, probably even of Great Britain and the United States. Suppose we try it. Impose the duty. Give us a nickel manufacturing industry.

CANADA'S GREAT FAIR—1893.

In connection with the interest felt to greater or less extent by the people of Canada in the World's Columbian Exhibition at Chicago, we should not lose sight of that which is of more importance to Toronto, to Ontario, and to Canada: we allude to Canada's Great Fair of the Toronto Industrial Exhibition Association, which will begin on September 4th next, and continue to the 16th of that month.

We have knowledge that the management of the coming fifteenth annual Toronto Fair are doing all in their power to make it bigger and more interesting than any of those that have yet been held, as successful as they have all uniformly been. Each and every of the officers and directors are business men, who know how to look after their own affairs and to conduct them successfully, and this knowledge they bring to bear in managing the affairs of this grand public undertaking; and with them this is a labor of love, cheerfully given, and with a zest that guarantees success. That this success is uniformly attained is seen in the unbounded denouement that crowns each annual recurring exhibition.

Canadian manufacturers generally are interested to a very large extent in the success of the Toronto Fair, and in no manner more pointedly than through the connection of the Canadian Manufacturers' Association with it. For many years some of the most prominent and active members of the Exhibition Board of Directors have held equally influential positions in the Manufacturers' Association; and when it is shown that such men as William Christie, R. W. Elliott, and W. K. McNaught, who have all been presidents of the Association, and George Booth, who for years has been its treasurer, are numbered among those who direct the affairs of the Exhibition Association, the bond of interest and of sympathy between these two important organizations is apparent. The

membership of the Exhibition Association include five members of the Manufacturers' Association, as such; and these with the other members of the latter organization who are otherwise connected with the former, are placed on all the committees whose duties are to look after the mechanical exhibits of the Fair. These exhibits include all agricultural implements and machinery; engines and machinery, such as steam engines, wood and iron-working machinery; mill machinery, fire and service pumps, railway appliances, fire escapes, diving apparatus, yachts, boats, etc.; miscellaneous manufactures, including safes and scales, hardware, tools and cutlery, gates and fencing, gas fixtures and wire work, metal work, gold and silver work and jewelry, house furnishings, leather and leather goods, engine hose and rubber goods, furniture, glass and earthenware, bookbinding, printing and stationery, pottery, knitting and sewing machines, and musical instruments; textile fabrics; chemical manufactures and pharmaceutical preparations; stoves, ranges, grates, furnaces, hollow ware, etc. In fact no important mechanical or scientific industry represented at the Toronto Fair but what is subjected to the critical official inspection of committees composed, to large extent, of members of the Canadian Manufacturers' Association.

Of course the Exhibition managers understand, that these committees must be composed of the best men to be obtained conversant with the industries, exhibits of which are to be submitted to their inspection; and it is gratifying to the Manufacturers' Association to be thus represented. This feature constitutes a bond of union between the two organizations which is exceedingly pleasant, and which is a guarantee of increasing usefulness to both.

Of course the success of the Toronto Fair lies to a very great extent in the hands of that most excellent and efficient executive officer, Secretary H. J. Hill. Mr. Hill has been most successful in the management of the affairs of the Association, and is without doubt one of the most experienced organizers and managers of such undertakings on this continent. He is the right man in the right place; and it is to his untiring labor, his quick perception of what may be required, and what would be most pleasing to the public, that his Association is so largely indebted for the unbounded success that uniformly attends Canada's Great Fair.

It is not supposed that the Chicago Fair, which is in full operation, and which will be in full swing in September—when our own Fair will be blooming and blossoming in all its glory—will in any manner detract from the Toronto attraction. The fame of our Fair is known to all America, and also across the water, and no doubt the immense crowds that always seek Toronto during our Fair season will be largely augmented by thousands of other pleasure-seekers who will extend their tours to this city.

It is simply nonsense to think of blast furnaces being built in Toronto on an inducement of a site in the Ashbridge Bay marsh, a bonus of \$75,000 in cash, and exemption from municipal taxation for ten years, if the promoters of the scheme purpose to draw their supplies of ore from the United States. No encouragement can be hoped for from the Ontario Government in any event, and even the bounty now offered by the Dominion Government can apply only where the iron is made of Canadian ores.

LET THE TRUTH BE TOLD.

A SO-CALLED International Reciprocity Convention has been holding sessions in St. Paul, Minnesota, with an intention to promote the cause of reciprocity with Canada. This cause has now better hope of success than it could ever have while the Republican party remained in power. The government of the United States is in the hands of persons who believe in free trade and who, desiring the removal of tariff-obstructions from our commerce with England, can hardly fail to approve the breaking down of the barriers between this country and Canada. It is of no interest to them that reciprocity with Canada must mean a far greater advantage to the Dominion than to the United States because of the vast difference in the population of the two countries. Nor do they care that, as Canada can never obtain much growth without free trade with us, the extension of such privilege to her must involve the promotion of the British purpose to build up along our Northern border a great empire hostile to our interests and our institutions. To play into the hands of the Englishman is the favorite engagement of American free traders of all classes. Reciprocity with Canada, therefore, is probably not far distant: but when it shall come, it will not come to stay unless the domination of this country by the Democratic party shall be permanent. The next Republican administration may be depended upon to repeal any reciprocity treaty that Mr. Cleveland may negotiate with the Dominion.—The Manufacturer, Philadelphia.

We recognize the fact that our Philadelphia contemporary is a most rabid and persistent twister of the tail of the British lion, and that it fears and dreads any competition that may come to the United States from that direction. But in other matters, particularly where the policy of tariff protection to home industries is concerned, it is always to be found fighting sturdily upon the right side. It is desirous that its country should extend its foreign commerce, and it is more than astonishing that it should endeavour to thwart this, one of its best aspirations, because of its hatred of the British flag. In its recovery from its hallucination that the American eagle must have possession of all the territory north of the St. Lawrence river and the great lakes, it must recognize the fact that Canada will never become states of the American union. When this cold fact has been thoroughly absorbed and assimilated by it, and that the great empire now being built up along the Northern border of its country is not and will not necessarily be hostile to the interest and institutions of the United States, it will be in a proper frame of mind to consider the true relations that now exist between that country and this, and the methods by which greater harmony and prosperity to all concerned may be brought about.

We have no faith in the proposition for reciprocity made by Hon Mr. Springer at the Minneapolis Convention, and we assure our Philadelphia contemporary that unless an infinitely better proposition than his is produced and agreed to by the American Government, it need not lay awake of nights fearing that Canada will consent to any such proposition. We would be perfectly willing to agree to a free interchange of the natural products of each country—we proposed that long ago, and the offer stands open for acceptance yet; but the free exchange of manufactured articles, the chief component parts of which are produced in the country from which the export is to be made, is an arrangement to which Canada will never accede. Both Canada and the United States are manufacturers of cotton goods; the United States is a producer of the chief component of such goods, but never a pound of cotton is grown

in Canada; and so, under such so-called reciprocity, American manufacturers would be free to export their cotton goods to Canada, but Canada would not be allowed to export cotton goods to the United States. Both countries manufacture stoves, steam engines, and a thousand other forms of iron—in the United States they are made up of materials produced in that country, while Canada not being a producer of iron, has to import the chief component, iron. Under Mr. Springer's proposition Canada would be an open market for the American manufacturers of iron goods, but the American market would be closed to Canadian manufacturers. But if Mr. Springer should modify his proposition and agree that Canadian cottons, Canadian iron goods, etc., might be admitted to the American market, there would still be a string attached to it which would require that such of the chief components of the merchandise as were not produced in Canada, but were in the United States, must be brought from that country. Of course that would shut us out from using Egyptian cotton or British iron, and to such an arrangement we would never consent.

The Manufacturer again reiterates what it has said a thousand times before, to the effect that any reciprocity between Canada and the United States would be unfair to the latter country because Canada has but a 5,000,000 market of people to offer in exchange for the 65,000,000 market of the other country. The ridiculousness of offering this fact as an argument in the question has been repeatedly shown, although our American friends, particularly those who are not friends of Canada, seem never inclined to acknowledge it. The fact that Canada is a very large consumer of American manufactured articles, and that the United States is a very small consumer of Canadian manufactured articles is not taken into the account, nor given the prominence to which it is entitled. And in this connection we take pleasure in reproducing a most excellent and conclusive article on this subject by Mr. R. H. Lawder, who says:

The statistics relative to the commerce between Canada and the United States, as published in the Trade and Navigation Returns of the Dominion, and in the annual reports of the government at Washington on "Commerce and Navigation," are very inaccurate and misleading. This mainly arises from the serious defects in the system under which returns of exports from both countries have been collected. To arrive at a fair comparison of the extent and character of this commerce, it is absolutely necessary to rely altogether upon the reports of the imports into either country in order to arrive at the exports from each. The following statements will illustrate a few of the inaccuracies and imperfections resulting from the defectiveness of the system of collecting and compiling statistics.

Statement showing the value of merchandise imported into the Dominion of Canada from the United States, and entered for consumption; also, showing the value of merchandise exported from the Dominion of Canada to the United States, during the years ending June 30, 1890, 1891, and 1892, per Trade and Navigation Returns for 1892, pages viii. and ix.

	Imports into Canada from United States.	Exports to United States from Canada.
1889-90.....	\$72,201,973	\$10,522,810
1890-91.....	53,685,057	11,138,095
1891-92.....	53,137,572	38,088,027
	\$159,115,202	\$21,040,532

For three years excess of imports into Canada, \$38,165,670.

There is no table in the Trade and Navigation returns which furnishes a comparison showing the gross imports and gross exports. The comparison given is very defective and

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misleading, as the exports to the United States include a large proportion of merchandise not taken for consumption there, but merely shipped through the United States for export to other countries, while the imports into Canada do not include that portion of them which was received for shipment to other countries.

The annual reports and statistical abstracts of commerce published by the United States Government are even more defective than the above, because their returns of exports to Canada do not include the produce or other merchandise shipped by rail. According to these annual reports, the exports to Canada during the year ending June 30, 1892, only amounted to \$35,930,456. The Chief of the Bureau of Statistics at Washington, in recognition of this defect, and in order to rectify it as far as possible, publishes every year, in his first quarterly report for quarter ending September 30th, statements in detail, showing the imports into the United States from Canada; and in order to show correctly the exports from the United States to Canada, he publishes also in detail, a statement of the imports into Canada from the United States, as appear in the Canadian Trade and Navigation returns. The quarterly report, No. 1, 1892-93, of the Bureau of Statistics at Washington, furnishes in its statements, Nos. 30 and 31, the following comparison:

	Imports into United States from Canada.	Imports into Canada from United States.
1880-90.....	\$30,042,977	\$50,253,054
1890-91.....	30,087,782	58,044,081
1891-92.....	34,954,203	62,599,439
	\$113,084,962	\$179,896,574

Excess of gross imports into Canada, for above three years, \$66,811,612.

This shows that the reports from the United States to Canada during the year ending June 30, 1892, amounted to \$62,599,439, instead of \$35,930,456 as represented in the Washington annual report and statistical abstract. As these two authorities are the only ones to which newspapers and politicians refer, or from which they quote, it is hardly a matter of surprise that there is so much general misapprehension in the United States as to the extent and importance of its trade with Canada. It is also seen that the balance of trade in favor of the United States for the above three years was \$66,811,612, instead of \$38,465,670, as appears in the defective comparison found in the Trade and Navigation returns.

The quarterly report alluded to shows not only the value of the merchandise imported into the United States from Canada, but the value actually taken there for consumption, and this enables a still more valuable comparison to be made, as follows:

	Imports into United States from Canada, taken for consumption.	Imports into Canada from the United States, taken for consumption.
1880-90.....	\$32,416,156	\$52,291,973
1890-91.....	35,079,402	53,685,657
1891-92.....	29,452,540	53,137,572
	\$96,948,098	\$159,115,202

Excess of imports taken for consumption in Canada, \$62,167,104.

In these three years, Canada purchased from the United States, 64 per cent. more merchandise than we sold to that country.

The imports into each country include several articles not strictly merchandise or products of the exporting country, such as household and personal effects of settlers, returned goods, and foreign merchandise. Deducting these in both cases, the imports of Canadian products taken for consumption in the United States amounted to, for year 1891-92, about \$24,000,000: the imports of United States products taken for consumption in Canada to about \$50,000,000. The imports into the United States consisted of about \$22,500,000 in raw products, and the small balance in manufactured and miscellaneous merchandise. The imports into Canada consisted of

about \$24,000,000 in raw products, and \$24,000,000 in manufactured goods.

The same Washington quarterly report shows the percentage of United States merchandise admitted into Canada, free of duty, was about 50 per cent. greater than the percentage of Canadian merchandise admitted into the United States, free of duty. The returns of both Governments show that the average rate of duty levied in Canada upon imports of raw products from the United States in 1891-2 was 8½ per cent.: while the average rate of duty on like imports from Canada was 15 per cent. in the United States. The tariffs of the two countries show that while the rates of duty levied in Canada upon manufactured goods from the United States were moderate and conducive to trade, the rates under the United States tariff on like goods from Canada were excessive and prohibitory.

The imports of raw products into the United States from Canada, taken for consumption, consisted as follows: timber, sawed lumber, logs and other manufactured woods, value \$10,500,000, or about 46 per cent. of the whole imports: produce of the farm, including animals and provisions, \$7,000,000, or about 31 per cent. of the whole imports; coal and ores, \$3,400,000, or about 15 per cent. of the whole imports: produce of the fisheries, \$1,700,000, or about 8 per cent. of the whole imports.

The imports of raw products into Canada from the United States, taken for consumption, amounted to nearly \$24,000,000, of which, coal amounted to \$9,500,000; produce of the field, \$12,500,000; produce of the forest, \$1,000,000; produce of the fisheries, \$500,000.

In the exchange of raw products, the trade was about equal. In manufactured goods, the trade is almost wholly in favor of the United States; Canada having purchased about \$24,000,000 from that country as against sales of less than \$1,500,000. Canada is the fourth largest foreign customer which the United States has for its manufactures, and its purchases amount to more than one-seventh part of all the foreign exports of manufactured goods from the United States.

The propositions for reciprocity in raw products, which were submitted by the Canadian Government to the late administration at Washington were eminently fair and reasonable, and in view of the actual position of the commerce between the two countries, the reason alleged by Secretary Blaine for rejecting them were untenable. The contention that reciprocity in raw products would be a one-sided arrangement in favor of Canada is contrary to the facts of the trade as now existing; the other contention as to the unfairness of the Canadian tariff towards American manufactures is disposed by the exhibit of the very large value of such articles imported into Canada. All the boastful talk about the superior advantages of a 65,000,000 people market over 5,000,000 is pure braggadocio, as investigation of the position shows that the 5,000,000 people have purchased during the last three years from the 65,000,000, about 64 per cent. more native products than they have sold to them. The extravagant estimate of the value of the privilege of free access to the American market appear very ridiculous when compared with the actual extent of the annual sales of United States products in Canadian markets. It is very evident that the rejection of the propositions submitted by the Canadian Government was not owing to commercial, but to political considerations. The ulterior motives which prompted this rejection were fostered and prompted by Canadian emissaries, who, by their misrepresentations, induced the authorities at Washington to believe that failure of the present Ministry at Ottawa would result in their defeat, and in the accession to office of a party which would accept reciprocity on any terms which the United States should be pleased to grant.

The Anglophobists of the United States should recognize the fact that Canada is here to stay. We occupy a large and valuable portion of the American continent, and we propose to be the arbiters of our own destiny. We occupy no mean

position in the affairs of the world, and we are rapidly approaching the time when we will be an immense empire. It is our desire as much as it lieth in us, to live at peace with all men. We desire to live on kindly and friendly terms with the United States; and we believe that if these sentiments are reciprocated, commercial arrangements between the two countries may be established which will be of great and equal advantage to both.

THE IMPERIAL INSTITUTE.

The recent opening of the Imperial Institute in London by H.R.H. The Prince of Wales, in the presence of Her Majesty the Queen, awakened and renewed much interest in the Institute, not only in Great Britain but throughout all British possessions.

The Imperial Institute of the United Kingdom, the Colonies and India, was founded and incorporated by Royal charter in 1887 as the national memorial of Queen Victoria's jubilee. The great interest throughout the British Empire by the display of the Colonial and Indian Exhibition of 1886, which illustrated the vast wealth in national products, and the commercial, industrial, artistic and educational achievements of the various colonies and India, led His Royal Highness the Prince of Wales to suggest that a permanent institution, designed to afford a thorough and living representation of the progress made in the development of their resources, and elaborated upon a scale commensurate with the importance of their relation to the prosperity of the empire, might constitute a fitting national memorial commemorative of the fiftieth year of the reign of Her Majesty, an epoch within which some of the most important and thriving British colonies passed from insignificance to exalted positions in the commercial and civilized world.

This valuable suggestion became the germ of a proposal to establish an Imperial Institute, designed not only to illustrate the industrial and commercial resources of the colonies and India, and to diffuse a knowledge of their present condition and continued progress throughout the United Kingdom, but also to afford to all classes of Her Majesty's subjects opportunities of becoming acquainted with the development, during the Queen's reign, and with the further extension from time to time, of the resources of the United Kingdom itself, and, by actively promoting technical and higher commercial education, to advance the industrial and commercial prosperity of all the lands over which the Queen reigns.

With these objects in view the Prince of Wales first enlisted the sympathy and co-operation of the Lord Mayor of London, his next step being to appoint a Committee of Organization, which included many of the most intelligent and patriotic noblemen and gentlemen of Britain, a small working staff of which, named by the Prince, consisted of Sir Frederick Abel and Sir Somers Vine as organizing secretary and assistant secretary respectively. The first duty of this committee was to frame the scheme for an Imperial Institute, and a report was prepared and published by it on December 20th, 1886, setting forth the outline thereof, which included a representation of the colonies and India on the one hand, and of the United Kingdom on the other. The issue of this report was immediately followed by active measures for the collection of sub-

scriptions throughout the empire for the purpose indicated, whereby before the end of the year 1887 promises of contributions amounting to about £350,000 had been secured, and at the beginning of 1892 the full value of the subscription list amounted to £413,000. Of this amount the donations from Canada amounted to over £20,000, which was unequalled by any other country outside of the United Kingdom except India. The subscription lists sent in from different parts of the empire comprised individual donations varying from ten thousand pounds to one penny, the total number of subscribers amounting to several millions.

In the early part of 1887 the objects of the institute were publicly disseminated by the extensive distribution throughout the empire of brief summaries and of an address delivered by Sir Frederick Abel on "The Work of the Imperial Institute;" and the corner stone was laid by Her Majesty the Queen on the 4th of July, 1887. The stone is a huge block of granite from the quarries at Cape Colony, and stands on a pedestal of bricks made in India. The site of the Institute building is that whereon stood the exhibition building of 1851, and was donated by the commissioners of that exhibition for the Institute. At the ceremony of laying the corner stone of the Institute, the Prince of Wales read to Her Majesty an address in which he said. "More than thirty-six years ago under the counsel and wise guidance of your Majesty's illustrious and lamented Consort, my beloved father, the exhibition of 1851 gave a vast impulse to commercial activity, and set an example which has been often followed in the countries of both the old and the new worlds. The creation of an Imperial Institute would seem to be a fitting development and completion of the work thus wisely and usefully initiated;" and in her reply Her Majesty said: "I concur with you in thinking that the counsels and exertions of my beloved husband initiated a movement which gave increased vigor to commercial activity, and produced marked and lasting improvements in industrial efforts. One indirect result of that movement has been to bring more before the minds of men the vast and varied resources of the Empire over which Providence has willed that I should reign during fifty prosperous years. I believe and hope that the Imperial Institute will play a useful part in combining these resources for the common advantage of all my subjects, and in conducing towards the welding of the colonies, India, and the mother country, into one harmonious and united community."

In 1888 Lord Herschel, chairman of the governing body of the Institute, visited India and gave explanations of the objects of the Institute to members of the Indian Government, and to others interested, and conferred with them on the subjects of supply to the Institute of collections illustrating the natural and industrial resources of that country, and of arrangements for the regular transmission of reliable intelligence of commercial interest; and the Government of India has since taken active measures for securing the preparation and future maintenance of very complete collections of the natural products of their country, and the transmission of information regarding the extent and cost of available supplies, and on other matters of commercial and industrial importance.

In the years 1888, 1889 and 1890 Sir Somers Vine visited the principal colonies, including Canada, where the authorities and commercial bodies were made acquainted with the objects

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of the Institute, and where much interest was aroused in it, which was demonstrated by promises of practical co-operation. The extent of this interest in Canada was shown by a practical contribution of over \$100,000 to the Institute; and the Dominion of Canada is now represented on the Governing Board by our High Commissioner, Sir Charles Tupper, each of the provinces also being represented by governors of their choice. The concluding meeting of the Organizing Committee, and the first meeting of the new Governing Body, were held under the presidency of the Prince of Wales at Marlborough House on July 23rd, 1891; and the first meeting of the Executive Council of the Institute was held on the same day in the Council Chamber of the Institute buildings under the presidency of Lord Herschel, chairman of the Governing Body.

The internal organization of the Imperial Institute has for its guiding principles the broad plan laid down by the organizing committee in 1886. The contents of the galleries will constitute a living representation of the resources of the Empire, and of the conditions of its industries and commerce. Occasional special exhibitions of colonial and Indian produce and of particular industries will be arranged. At one time a particular colony or portion of the Empire may desire to show its progress; at another time a general representation of the existing conditions of one or more particular industries may be desirable. While the permanent collections will illustrate the natural and industrial products of the United Kingdom and of India and the several colonies, the occasional exhibitions are intended to stimulate and enlist the sympathies of producers, and promote active co-operation throughout the Empire.

The Institute, through the agency of such collections as may be made, will be a central source of information upon all matters relating to the resources and commerce of every part of the Empire, and afford facilities to all classes for acquiring practical knowledge regarding them. The manufacturer, the merchant and the tradesman will be able to obtain through its agency samples of the products of all parts of the Empire, with particulars regarding their occurrence and history. The hearty co-operation and important material support which Canada as well as other important possessions have given the Institute afford conclusive evidence of an earnest desire to be thoroughly represented in the Mother Country, and to take their places side by side with the representatives of commerce and industries in the United Kingdom as fellow laborers in the advancement of the prosperity of the Empire. The gradual establishment through the agency of the Institute in different parts of the Empire of specially commercial institutions, of which inquiry offices, museums and sample rooms, with their accessories, form leading features, will supply a want long since provided for by some other nations; and the great commercial centres of British commerce will doubtless speedily take steps to provide accommodation for such offshoots from the central collections of the Institute.

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THE

CANADIAN MANUFACTURER

THE IRON INDUSTRY.

WHEN a really goody-good paper like the Montreal Witness undertakes to criticise a contemporary from which it happens to differ, and to discuss a question that it evidently knows but very little about, it is apt to slop over and to make itself quite ridiculous. And this is what the Witness does in reviewing what was recently said in these pages anent the proposed iron blast furnace in Hamilton. We had suggested that in addition to the other encouragement offered for the establishment of a blast furnace, that the Ontario Government give a bonus of \$2 per ton upon the pig iron the concern might produce; that the Dominion Government allow the coke for fuel to come in duty free, and that a duty of not less than \$10 per ton be imposed upon all imported scrap iron, so as to create a market for the home-made pig iron. After threshing over the old straw for the thousandth time, and misrepresenting the situation as only such goody-good papers as the Witness can, it jabbars very foolishly about the inconsistency, from the protection standpoint, of desiring to induce American capitalists to invest money in Canadian iron furnaces, and to create a profitable investment for American capital at the expense of Canadian tax-payers; and it also urges against the proposition that these American beneficiaries would probably be absentees who would spend the profits thus extorted from Canadians in the United States.

It affords us some degree of pleasure to enlighten the Witness upon some features of the tariff, instruct it as to the ethics of protection, and to inform it as to the views protectionists entertain regarding the introduction into Canada of foreign capitalists and their capital.

As we have before remarked, the tariff, being the work of human hands, is not perfect. We think that the iron and steel schedules of it are very imperfect; and we desire to see the incongruities of them corrected. It was thought when the tariff was being formed that the duty that was to be imposed upon pig iron, together with the bounty that was offered for the production of the article in Canada, would be a stimulus sufficient to induce the investment of capital in the blast furnace industry to an extent sufficient to supply the demands of the country for pig iron. The fact that these inducements have not had the desired effect is quite conclusive evidence that they were not sufficient, and that the duty has been for revenue only. It is not worth while at this time to again tell why protectionists think it would be for the best interests of Canada that we should make our own pig iron. The reasons are most evident. If it is desirable then that we should make our own iron, it is evident that we must offer greater inducements for the investment of capital in the industry than what are now offered. The people of Hamilton are anxious to have a blast furnace established in their city, and they think that the good to result therefrom would be of greater benefit to them than the cost they are willing to incur to obtain it. Our opinion is that although Hamilton has done the correct thing in offering the inducements made, it is very necessary that something else must be done. If the Hamilton furnace was prepared to go into active operation to-day, it would not prove a financial success, and it would have to be shut down very soon unless some changes were made in the tariff. Such changes should include a rate of duty that would certainly induce the investment of capital in

blast furnaces. It costs large investments of capital to erect blast furnaces, and capitalists are not apt to make such investments unless the circumstances give a reasonable promise of success. We know that the imports of pig iron and bar iron into Canada are very large; and we also know that while our productions of pig iron is quite small, and entirely inadequate to the requirements of the country, such rolling mills as we have sufficient capacity to furnish all the bar iron we require of the particular quality which they produce. By which we mean to say that no puddled bar iron is manufactured in Canada. Bar iron is made of pig iron by the process of puddling, and without the puddling process we can have no bar iron. Pig iron is used for three primary purposes for manufacture into castings in foundries and pipe works, for puddling and manufacture into bar and similar iron, and for conversion into steel. It is inevitable that blast furnaces produce several qualities of pig iron, some adapted to the manufacture of castings, etc., and other grades are of no value except for the manufacture of puddled iron. A small proportion of such iron as is used for puddling can be used in foundry work.

An analysis of the situation discloses as follows: - The product of such charcoal blast furnaces as we have is utilized chiefly in the manufacture of car wheels, cylinders and fine castings, where the utmost strength is required. The product of other furnaces is used for the manufacture of water and gas pipes, and the product of yet other furnaces is used for general foundry purposes. We have no converter plants in Canada in which pig iron is made into steel, although at New Glasgow, N. S., there is an establishment for the manufacture of hammered and rolled steel, made by the Siemens-Martin process, which has a capacity to produce forgings weighing as much as 20,000 pounds.

It is evident then, that if we are to have a large blast furnace industry, with capacity to produce all the pig iron we require, it is of vital importance to its perpetuity and success that there be a demand for all the iron that may be produced. There is no difficulty whatever in finding purchasers for foundry irons, as is demonstrated in the fact that we import many thousand of tons of such irons annually. But if we had furnaces of aggregate capacity to produce iron enough to meet the demand, it would be inevitable that they would also produce large quantities of iron that could not be consumed in foundries, and which could only be utilized for manufacture into bar iron. What then, would be done with this quality of pig iron if we produced it? Naturally it should go into consumption in puddling mills, for that is the only use to which it could be put. But at this point we are confronted with the fact that owing to an incongruity of the tariff, puddled iron is not made in Canada, nor can it be on remunerative conditions. The duty of only \$2 per ton upon wrought scrap iron forbids and prevents it. There are several puddling plants in Canada, but they are not in operation owing to this cause. It costs money to puddle iron - more than \$2 per ton - and as long as rolling mills can obtain this article in other lands, they will not start up their puddling furnaces. Hence the necessity for a largely increased duty on scrap iron.

It should always be borne in mind that any sort of scrap iron is not the direct result of any iron manufacturing process. No works of any character whatever were ever erected

to manufacture scrap iron, and it is not to the credit of any country where it is possible to produce pig iron, that it encourages the import of scrap. In the ordinary course of business Canada produces considerable quantities of scrap, and the more inferior portions of this might be used for the manufacture of nail plate, etc., but it is not an evidence of prosperity that we should import scrap for the manufacture of finer qualities, where strength and reliability are essential. With a higher duty on scrap the rolling mills would be forced to make puddled iron. This would mean a strong demand for pig iron, and this would mean success to blast furnaces. Puddling furnaces would also mean the employment of large numbers of skilled Canadian workmen to the extent of probably four or five dollars per ton upon the finished iron produced. It would also mean the expenditure of money at home that now goes abroad to pay for puddled iron made by foreign labor. It may please our free trade contemporaries to sneer at the suggestion to increase the duty on scrap iron, but in our opinion it would be vastly to the benefit of Canada to do so.

According to the ethics of protection, this would be just the thing to do. It would not be creating a monopoly, but preventing monopoly. Under a proper system of protection, Canada should have blast furnaces enough to produce all the pig iron the country would require. Under it we would have puddling furnaces enough to produce all the rolled and hammered iron we require. Under it we would have no occasion to send abroad as we now do for large quantities of both pig and bar iron. Under it our iron mines would become developed, giving employment to thousands of Canadian workmen. Under it other thousands of workmen would find remunerative employment in connection therewith, all of which would call for the investment of vast capital in railroads and other enterprises. This would be according to the ethics of protection.

As to the views of protectionists regarding the introduction into Canada of foreign capitalists and their capital, this may be said, whenever a man comes to Canada to live and to contribute in any manner to the material success of the country, he may very properly be considered as a Canadian. His birthplace may be Europe, Asia, Africa, an isle of the sea, or even the land of the Yankee, and protectionists will be ready and willing to acknowledge him a Canadian. There would be no objection to him whatever because of the place of his nativity. And the same as regards his money. But we are not apt to have any great influx of desirable foreigners, either with or without capital, until we make some of our economic conditions more desirable than what they now are. And we suggest that it would be a strong inducement for such desirable immigration to amend the inducements for the establishment of iron industries along the lines here proposed.

GLOBE PESSIMISM.

THE Toronto Globe has a special commissioner traveling over the country with a view to discovering instances where Canadian farmers are injuriously affected by the operations of the National Policy. A letter from this peripatetic individual, published a few days ago, was dated at Albert, N.B., and in telling what he saw in his travels, said:

The farms along the road were not prosperous looking. There was an air of desertion and neglect about nearly all of them. Although it was seeding time the fields were not being worked upon; there was no cattle in the pasture lands nor any sign of life about many of the places. We passed two tiny school houses with shingled walls, and through the open doors saw the straw hats of the children hanging on the wall. There was such a quietness over the farms and settlements that but for the portable saw mill and the school houses the country for ten miles or more along the road might have been deserted. As Hillsborough was approached, however, there was a farm notable for its thrifty, well-tilled appearance. The farmer was working in a field, an unusual sight, and I was afterwards told he is making money by his industry and good farming.

Of course the object of the writer, under the instructions of the Globe, was to depict the character of the country and of the people in as sombre and unfavorable light as possible, attributing the same to the financial policy of the government of the country. It may be that the farms along the route travelled by the writer were not prosperous looking, and that an air of neglect enshrouded them, but it is evident that they were not deserted from the fact that there were school houses to be seen and children in them. This forlorn country, as described in the Globe, is near a town where there is a thriving manufacturing industry, giving profitable employment to a large number of men, and a contiguous navigable stream where vessels may freely come from distant ports. It may be that the section through which the writer passed was an exception to what we have known to exist in New Brunswick. It may have been a region where no agricultural pursuits could be conducted with any degree of prosperity,

even as there are regions in Ontario, and in all parts of the world where such barren and unfruitful land exist. But why single out such a location as an illustration of the poverty and unthriftiness of Acadia? Why multiply and reiterate the words and phrases that tell of want and woe? Even in the short extract we have quoted from a two-column letter, observe the unctious with which disparaging things are said of the country. In his winding route along the banks of the Petiteodiac river, the writer observed that the tide was out, and that there were no green fields and orchards of trees bending with their maturing fruits. It was his opportunity to speak of desertion and desolation. Why should there not be beautiful residences and all the other evidences of a prosperous farming community on all the mud flats and clam bank of the Petiteodiac? Why should there be such a barren waste of mud and marsh? But that was just what he had been sent to see, and he saw it. He had no necessity to turn his head and look to the other side of the road along which he was travelling. If he had done so he might have seen the homes of the children whose straw hats he had observed in the school houses by which he passed, and he might have observed just such pictures as Longfellow painted of that country in his beautiful Evangeline. But as the hot and dusty traveller approached Hillsborough, seeking some relief for his weariness, he approached a farm where he hoped to obtain a draught of cool buttermilk from the spring house, and it is a redeeming trait in his character that he had the graciousness to say that the farm of his hospitable entertainer was thrifty and well tilled, and that he was making money by his industry and good farming. Alas, alas, but this gives

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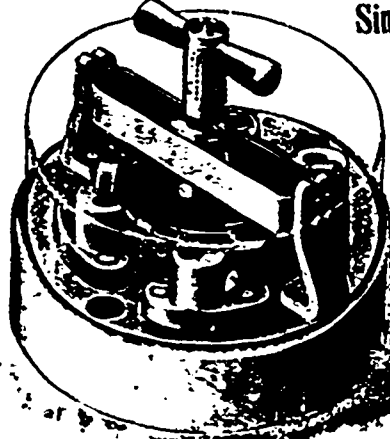
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away the snap. Thrift and prosperity is the rule with New Brunswick farmers, but that was not what the Globe's commissioner was sent to discover.

EDITORIAL NOTES.

Mr. FREDERIC NICHOLLS, managing director of the Canadian General Electric Company, has been invited and authorized to sit as a member of the forthcoming International Electrical Congress at Chicago. This is an honor most gracefully bestowed upon a gentleman who will appreciate it, and who will do much honor to Canada in any part he may take in the deliberations of the Congress. At the time of its organization by Mr. Nicholls a few years ago the Toronto Incandescent Electric Light Company was perhaps the largest and most important electrical concern in Canada; and the organization of it, and the entirely successful management of it ever since, is evidence that the management of such concern is entirely within his executive grasp, and it is also proof that he is a master of electrical science. And to this latter fact is due the prominence Mr. Nicholls has taken among his confreres in the United States and Canada in electrical matters. It was due to this fact that he was made manager of the Canadian General Electric Company, by far the most important electrical concern in the Dominion.

A NICKEL steel crank shaft, the first ever forged in the United States, has been made at the Bethlehem Iron Works

for the steamship Paris. It is intended for a spare shaft necessary to have on hand, in case of a break, when there is not time to make a new one. Some idea of the magnitude of the shaft may be gained from the fact that one of the crank pins weighs 3,000 pounds. The tensile strength was accurately determined at 90,000 pounds to the square inch, while the best German or English steel will break at a maximum test of 65,000 pounds. The shaft is hollow, a five-inch hole having been bored from end to end, so that had there been a defect in the centre the boring would have removed it. The shaft is now ready to be put on board any time it is needed.

According to the ethics of protection the National Policy was intended to apply to manufacturing industries where there was a probability that within a reasonable time those industries would become developed to an extent where the demands of the home market would be supplied by them, and at reasonably low prices. If experience showed that the prevailing duty was not sufficient to effect this, but that it might be accomplished under a higher duty, then the higher duty should be imposed. But it is found that the duty is sufficiently high, and the development from any cause is not probable or possible, then the duty is clearly not for protection, but for revenue only. If this is the case—if it is a fact that a high duty will not develop the industries, and that it is not desirable to obtain revenue in that particular manner, then it is clear that the duty should be modified or removed to meet the emergency. It might be unfortunate for the investors, but better for the whole country.

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RECENTLY, when the commissioner of the Toronto Globe was in New Brunswick seeking to find reasons why the farmers there should be dissatisfied with the existing Government of the country, he came across the manager of the Albert Manufacturing Company, a large concern engaged in the manufacture of calcined plaster at Hillsborough, that province, who gave him an insight into the general condition of the country near that town. Speaking of the restlessness of the people, and the desire of many of them to go to Boston, he said :

A good many go for the winter and are back for the summer, while others go for the summer and return for the winter. The farmers do not attend to their farms, and are shiftless and unthrifty. There are some vacant farms, but the poor results, he believed, were partly due to the farmers neglecting their land to go off and do a little lumbering or fishing. They depended too much upon the marsh lands and did not pay enough attention to their up-lands. Instead of feeding the hay from the marsh-lands, and enriching their up-lands, they sold it, and allowed their farms to run down. The farmers who are attending to their farms, he declared, are doing well.

Of course the several hundred men employed in and in connection with the plaster mills are not numbered with the dissatisfied class, and it is evident that if there were more manufacturing industries located there, there would be that diversity of occupation which the people need to satisfy their inclinations, which some of them now desire to go to Boston to find.

If American Congressmen had to take their salaries in silver dollars at 59 cents on the dollar, the Sherman Act would soon be repealed.—The Empire.

For all purposes to which American Congressmen usually

put their salaries silver dollars are as good, and buy as much as gold dollars.

THE mineral production of Canada has increased from \$12,000,000 in 1886 to \$19,500,000 in 1892. More "restriction" at work.—Empire.

This increase of \$7,500,000 was due to the development of our nickel mines. What does the Empire mean by "restriction"? The nickel ore is dug from the mines, subjected to a primary process, by which some of its valueless bulk is removed, and the matte hauled away, mostly to the United States, where it goes through the expensive process of refining by which it is made available for commercial uses. This refining process implies the investment of large capital, and the employment of skilled artizans in a foreign country, but nothing for Canada or Canadians. Our share of it is the holes in the ground from which the ore is taken. But has any one ever read in the Empire any demand that Canada and Canadians should receive a portion of the benefit of our immense nickel wealth by the imposition of an export duty on the nickel contained in the ore and matte we are constantly shipping to the United States? Impose the duty.

AN interesting decision was recently made by Judge Bissell of the Colorado Superior Court. A physician had brought in a bill of \$25 for expert testimony in a murder case, and Judge Bissell held that the regular witness fee of \$1.50 was all that he was entitled to. This decision will have the effect of lessening the amount of expert testimony, which is so voluminously and often unnecessarily dragged into so many trials.

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

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THE PUBLISHER

The Shipping Manufacturers' List

34 Confederation Life Building, Toronto

WHILE a large pine log was being worked up at the Brown & Hall sawmill at Acton, Ont., a few days ago, a wonderful discovery was made. After the outside slab had been cut off a large toad was seen to poke his head out of a hole, in which he was imbedded, and where he had barely escaped being cut in two by the saw. How the creature ever got there was a mystery, as he was perfectly incased in the wood with no possible means of ingress or egress. As the log was the fourth or fifth up from the butt of the tree, his position must have been at least 50 or 60 feet up from the ground. There is but one way of accounting for the fact that he was found in the situation mentioned. He had grown up with the tree from infancy, and was probably hundreds of years old when the saw awakened him from his long nap. Naturalists of Acton say that he is of an unknown species of reptilia, and that the cavity in which he was found was perfectly sound and as smooth as though chiselled out by a carpenter. He was surrounded on all sides by solid wood from four and a half inches to two feet thick.

THE beet sugar industry is evidently destined to be widely carried on in the United States, judging from the rapid increase in the number of beet-sugar factories there. During the past year the total production of the six factories at work was 27,083,322 pounds of sugar, against a total production last year of 12,004,838 pounds. The amounts produced by the different factories, as officially reported, are as follows; North Beet Sugar Co., Norfolk, Neb., 1,608,400; Oxford Beet Co., Grand Island, Neb., 2,110,100; Utah Beet Sugar Co., Lehigh, Utah, 1,473,500; Chino Valley Beet Sugar Co., Chino Valley, Cal., 7,903,541; Alameda Beet Sugar Co., Alvarado, Cal., 2,505,560; Western Beet Sugar Co., Watsonville, Cal., 11,390,921 - total for 1892, 27,083,322 pounds; previous season's production, 12,004,838; increase of 1892 over 1891, 15,078,484 pounds.

A GERMAN has discovered that Portland cement can be used as a substitute for rubber and asbestos preparations in the packing of steam joints. From extensive practical trials this cement packing is found to be as efficient as the others hitherto employed, and its cost is only one-tenth that of the others. The cement is made into a paste with water, and spread into a layer of one-fifth to half-inch in thickness over the surface of the metal. The plate or cover to be fixed is then placed in position, and the screws are simultaneously screwed down very slowly. After the layer has been compressed to about one-eighth inch in thickness the screwing is stopped, and the cement allowed to harden for a few hours. The screws are then turned further, and the edges plastered again with cement. The joint is completed in eight hours after the making of the cement.

THE Railway World puts in few words, as follows, one or two facts concerning capital and capitalists, which farmers and discontented workmen would do well to give some consideration to:

There was a time when this country was in urgent need of railways and factories. At present it is of more importance that the capital invested in railway securities and manufacturing industries should yield a fair return. There is a great deal said about the desirability of railways that will give remote points direct connection with large towns, and of the

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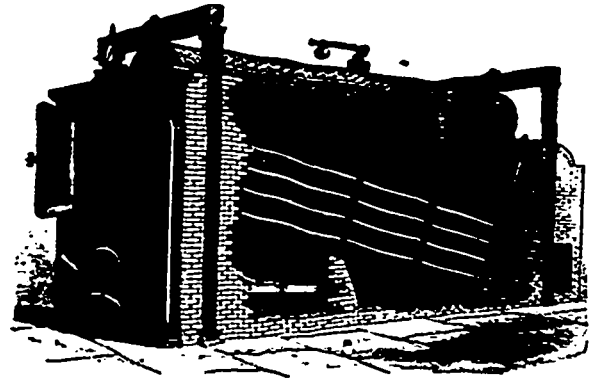
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importance of factories in providing employment. Granting all this, capitalists have often invested money to the welfare of others and the detriment of themselves. They raised the value of real estate, and enabled many people to make good wages, but their own investments proved unprofitable. Capital is growing more cautious, and will look carefully to the prospect for a return before spending money in new lines and new factories. Capital will retire to its strongholds if not rewarded. It can afford to lay idle; labor can not.

SEVERAL protection advocates complain because a vessel built in an American port on the upper lakes received an English register, which enabled its owners to engage with it in Canadian coasting trade. That vessel could not engage in the Canadian coasting trade unless the people of Canada wished to have goods carried from one port to another. When it was to their advantage to effect such transportation it was also to their advantage to effect it at the least expense. If an American vessel carried goods more cheaply than one of Canadian build, the people of Canada secured the advantage. Any governmental interference would divert labor and capital from a profitable to an unprofitable sphere of action. The fact is that shipbuilding is a natural industry both in Canada and the United States, and it can be affected injuriously only by tariff restraints. Any man having capital to invest in it will do so in a country where he will not be hampered by taxation in a score of ways.—Toronto Globe.

The great trouble with the Canadian coasting trade consists in the fact that the protection afforded to it by our laws amounts to just no protection whatever. Much of the materials that enter into the construction of vessels in this country are liable to duty, although they are not made here, and probably will not be for many years to come. This would be right enough if the Canadian ship building industry were

properly protected. But it is not. If a vessel is built, say at Cleveland, or Buffalo, for use in Canadian coasting trade, but owned entirely in Canada by Canadians, if brought directly to Canada, an import duty would be levied and collected. This would be right enough, but instead of a direct delivery in Canada, which would include the payment of the duty, the vessel is run out of Canada to the nearest British port, St. John, Newfoundland, for instance, where no duty is levied, and where the change of flag may be effected with no expense except for the necessary registry papers. These being obtained the vessel, then sailing under the British flag, may return to Canada and engage in our coasting trade on equal terms with Canadian-built vessels. And this is all wrong, although Canada is powerless to help herself, being bound by an obligation to Great Britain to admit any vessel sailing under the British flag to the full and equal maritime rights accorded Canadian vessels. The Globe says that the shipbuilding industry in Canada or the United States can be injuriously affected only by tariff restraints. We have shown that that which is not a tariff restraint has very injuriously affected our industry, while the tariff restraint of the United States has succeeded in building up a wonderfully large and important industry on the great lakes. The tonnage that passes through the Detroit river, almost exclusively American vessels, is much greater than that of Liverpool and London combined—this under tariff restraints which prevent foreign vessels from engaging in American coastwise trade. If Canada could impose such restraints we would see Canadian built vessels performing the service now being done for us by American and British built ships.

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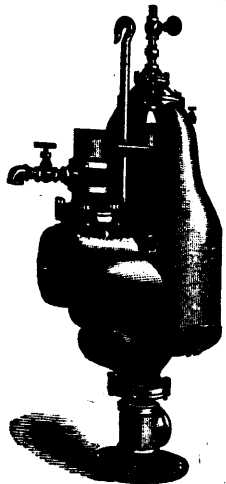
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The President's Proclamation, Washington, June 30, 1893.

—Whereas the distrust and apprehension concerning the industrial and financial situation which pervades all business circles of the United States, have already caused great loss and damage to our people, and threaten to cripple our merchants, stop the wheels of our manufacturing enterprises, bring distress and privation to our farmers, and withhold from our working men and women the wages of labor: and whereas large numbers of our banks and financial institutions have already been forced to close their doors, and to entirely suspend their ordinary business transactions: and whereas the present perilous condition is largely the result of the recent election in the United States, which declared that it was the desire of the people to abandon the policy of the Government, whereby tariff protection was extended to, and over all American manufacturing enterprises, giving to them the possession of the home market as against the products of manufacturing enterprises in foreign countries, produced by the labor of similar producers in these countries, and declaring that the walls of our tariff protection should be thrown down and destroyed, to the end that free trade with all the world might prevail. Now therefore, I, Groveling Cleveland, President of the United States, in performance of my constitutional duty, do by this proclamation declare that an extraordinary occasion requires the convening of both houses of the Congress of the United States at the capital, in the city of Washington, on the 7th day of August next, to the end that the people may be relieved from the present dread and impending danger and distress caused through apprehension of the abandonment of the policy of tariff protection to our manufacturing industries, and the dire results that would inevitably result from the adoption of free trade or of a tariff for revenue only. And may a safe deliverance be granted our beloved country.

SCRIBNER'S MAGAZINE for July contains a striking article on "The Life of the Merchant Sailor," giving a graphic account of fore-castle life in a modern sailing vessel. W. Hamilton Gibson contributes the first of a group of Artists' Impressions of the Fair—brief articles by men who are accustomed to look at things from the picturesque side, with many illustrations from the note-books of the artists who write the papers. Particularly appropriate to the season are two out-of-door papers, "Trout Fishing in the Traum" (a river of picturesque Austria), by Henry van Dyke, and "Aspects of Nature in the West Indies," which is the account of a summer school of natural history at Jamaica. The series on "The Poor in Great Cities" is concluded with a very thoughtful paper by Oscar Craig, President of the New York

State Board of Charities, summarizing the results of the most approved methods for "The Prevention of Pauperism."

OUTING for July is an ideal summer number. Naturally sailing and fishing are prominent topics, but there is plenty variety for readers of all tastes. The fiction is good, and the illustrations fully up to the high standard of this deservedly popular magazine. The contents are: "Pastelle," a complete story, by Clara Sprague Ross; "Sails and Sailor craft," by Chas. L. Norton; "A Day in the Grand Canon," by Mary Wager Fisher; "The Champion Pacers," part III of the turf and track series; "By Canal through the Empire State," by L. J. Sanderson; "Practical Lessons in Swimming," by W. A. Varian; "Down Miller's River," by Joseph Lee; "Canadian Militia in Action," by Capt. Hy. T. Woodside; "Salmon-fishing on the Newfoundland Coast," by E. J. Myers; "The Frog for Pan and Pastime," by Jennie Taylor Wandle; "Lenz's World Tour A-Wheel"; "Through Erin A-Wheel," by Grace E. Denison; "Black Bass fishing in Maine," by Arthur Pierre, and the usual poems, editorials, records, etc.

GODEY'S MAGAZINE for July is a most delightful summer number. Its water color portraits are of Mrs. H. C. Chatfield-Taylor and Miss Florence Pullman. Its illustrated articles include "A Fact in Fiction"; "Some Paris Stage Beauties"; "A Visit to Madame Besnard's Studio"; "An Affair of the Heart"; "A Midwinter July"; "The Lather of India," and "Mr. Singleton's Wrath." The illustrations and descriptions of latest summer fashions, and "Shopping News" commend themselves especially to the ladies. 25 cents per number, \$1 per year. For sale at all newsstands. The Godey Publishing Company, 21 Park Row, New York.

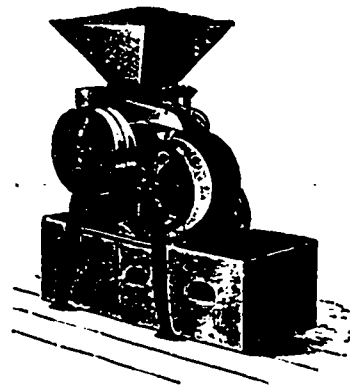
The Popular Science Monthly, in its July number opens with an account by Henry C. Lea of the treatment formerly given in Spain to insane offenders against the church, under the title "The Spanish Inquisition as an Alienist." The views of Herbert Spencer on "Private Relief of the Poor" are given in his well-known, clear and incisive manner. Prof. S. E. Tillman describes with illustrations the strange "Fossil Forests of the Yellowstone." Under the title "Are there Evidences of Man in the Glacial Gravels?" the Director of the Geological Survey, Major J. W. Powell, defends

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the action of his assistants in attacking Prof. Wright's book on the Glacial period, and the controversy receives attention also in the Editor's Table. The terrors of the belief in "Evil Spirits" and especially in witches, earnestly fostered by the Church during the middle ages and later, are vividly set forth by J. H. Long. An account of the "Structural Plan of the human brain" (illustrated) is contributed by Prof. C. S. Minot, of the Harvard Medical School. Kropotkin sketches the progress of "Recent Science," and there is a suggestive short article under the title "Is Crime Increasing?" New York: D. Appleton & Company. Fifty cents a copy, \$5 a year.

GOOD HOUSEKEEPING for July is a valuable number. It opens with a paper by Miss Parloa on marketing, especially with reference to the hot weather, and incidentally touching the question of precaution against choleraic diseases in the way of food. There are a large number of papers devoted to recipes and instructions for the household; the making of the home attractive, the use of flowers and fruits, and the enjoyment of nature's bounties in all their forms. There are numerous bits of choice original verse, stories, suggestions in house furnishing and fitting, etiquette lessons, music, puzzles, and all the host of things which go to make a publication prized and scanned by every member of the family. Published at \$2 a year by Clark W. Bryan Company, Springfield, Mass.

How a marriage proposal is made and how it is worded always arouses the interest of girls, and to them the charming revelation made in "The Story of Five Proposals," which is told with delightful frankness by a Western society girl, in the July *Ladies Home Journal*, will have an unusual attractiveness. A. B. Wenzell, the artist, adds to the article with five of his exquisite illustrations. A page of illustrations from original designs entitled "Dressing Without the Corset," by May Root Kern, will be read with profit, as will Mrs. Mallon's "The Ideal Summer Blouse" and "Odds and Ends of a Wardrobe." Palmer Cox has his inimitable "Brownies" this month climbing the pyramids of Egypt, while John Kendrick Bangs contributes one of his delightful poems. The editors all have something bright to say in this July number, which, with its attractive summer cover, and its admirable table of contents, is worth many times its price. Published by The Curtis Publishing Company, Philadelphia, for Ten Cents per number and One Dollar per year.

THE L. P. D. POWER TRANSMITTER

ATTENTION is directed to the business card of Messrs Darling Bros., proprietors of the Reliance Works, Montreal, to be found in page 22 of this issue, in which is illustrated the L. P. D. power transmitter, manufactured by them.

Regarding the practical operation of this transmitter, we are in receipt of a letter from Messrs. Darling in which they describe it as follows:

"Re our L. P. D. transmitter for driving dynamos, we take the liberty of sending you a description of a plant which we have recently put into successful operation in this city. This plant was supplied to Mr. W. W. Ogilvy, for the Balmoral Hotel, and consists of the following: Two 10 inch x 10 inch Robb-Armstrong high speed engines which make 280 revolutions per minute, and two Edison dynamos, each capable of supplying energy for 370 incandescent lights. These two dynamos are driven direct from the engines by two of our class B adjustable L. P. D. transmitters. The dynamos are situated close to the engines there being a space of only two feet from driving pulleys to transmitters, and the total length of belting required to drive each machine is 15 feet of 9 inch belting, thereby effecting a saving of some \$70 on belting alone.

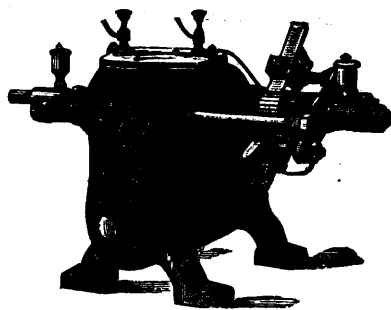
The floor space occupied by engines, dynamos and transmitters is 12x26 feet, which was quite an object as floor space was an important consideration. Owing to the simplicity in construction and directness of action of these machines, there being no counter-shafts and pulleys, there is less liability of delay. The above machines were guaranteed to transmit 32 horse power each, without any slipping of the belts, and in the test they transmitted easily 40 horse power. We are arranging to have this system used at the Toronto Fair in September.

THE machine, woodworking and tinshops, comprising the principal buildings of the North American Mill Building Company's Works at Stratford, Ont., were destroyed by fire July 4; loss about \$30,000.

THE Ophir Mining Company, Bruce Mines, Ont., have given a contract to The John Doty Engine Works, Toronto, for a 100 h.p. Corless engine and boilers.

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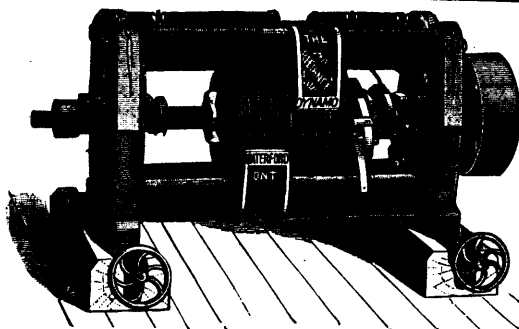
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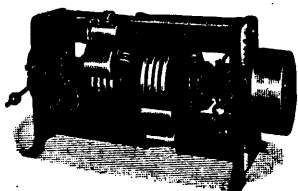
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CANADIAN PATENTS.

The following patents have been issued from the Canadian Patent Offices from June 2 to June 23, 1893, inclusive.

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

MECHANICAL.

- 43,115 Can W. Pratt, June 2nd.
 43,116 Chemical fire engine, C. Patton, June 2nd.
 43,117 Fruit car heating apparatus, Consolidated Car Heating Co. June 3rd.
 43,119 Non-heat conducting covering, W. H. Norris and T. P. Hornsby, June 3rd.
 43,120 Valve, The Pneumatic Tyre and Booth's Cycle agency, (Ltd.), June 3rd.
 43,122 Vending apparatus, Hess Postal Facility and Supply Co. June 3rd.
 43,123 Combined axle nut wrench and wheel lifter, for the lubrication of axles, J. Robertson et al., June 3rd.
 43,124 Brick kiln, H. J. Kinzel, June 3rd.
 43,125 Neck yoke and pole connection, J. S. Brown and H. A. Marks, June 5th.
 43,127 Upright steam boiler, The Kootenay and Columbia Prospecting and Mining Co. (Ltd.), June 5th.
 43,128 Faucet, S. J. Merrill, June 5th.
 43,130 Small arms, The International (Giffard) Gun and Ordnance Co. (Ltd.), June 5th.
 43,131 Appliance to be used in connection with sewers, whereby the same are more effectively ventilated and the noxious gases and diseased germs contained therein destroyed, R. McKenzie, June 5th.
 43,132 Two-wheeled delivery vehicle, M. B. Boone, June 5th.
 43,133 Wheels for velocipedes and other vehicles, The Pneumatic Tyre and Booth's Cycle Agency (Ltd.), June 5th.

- 43,134 Making glass bottles, T. W. Symmott, June 5th.
 43,135 Disk harrow and pole attachment, E.A. Ovenshire, June 6th
 43,137 Axle lubricator, C. W. Brewer, June 6th.
 43,138 Cash recorder, C. H. Coles.
 43,139 Pulverizing and disintegrating grain and other dry substances, The Central Cyclone Co. (Ltd.), June 6th.
 43,140 Car truck and equalizing device, J. A. Brill, June 6th.
 43,141 Actuating device for car brakes, etc., J. A. Brill, June 6th.
 43,142 Vaporizing oil, R. H. Laird, June 6th.
 43,143 Wood working machine, J. H. Reek, June 7th.
 43,144 Chair, F. A. Dennett, June 7th.
 42,145 Chair, F. A. Dennett, June 7th.
 43,146 Chair, F. A. Dennett, June 7th.
 43,147 Smoke funnel, H. W. Goodridge and C. Jonsson, June 7th,
 43,148 Pneumatic tire, J. F. Palmer, June 7th.
 43,149 Dynamometer, E. J. Wood, June 7th.
 43,150 Coal conveyer, T. H. Lewis, June 7th.
 43,151 Gas burner, J. W. Hayward, June 7th.
 43,152 Book support, A. H. Ward and J. A. Moyer, June 7th.
 43,153 Making fish and other nets, H. W. Thurston, June 7th.
 43,155 Forming and hooping barrels, J. Pleukharp, June 8th.
 43,156 Oil burning apparatus, A. H. Calkins, June 8th.
 43,157 Rotary scalper, W. A. Meldrum and H. R. Shaw, June 8th.
 43,158 Air pump attachment to wheels, D. G. McBean, June 8th.
 43,159 Car wheel and axle, W.R. Kirk and J. P. Jackson June 8th.
 43,160 Self binding reaping machine, J. Ford, June 8th.
 43,161 Emulsifier, G. W. Towar, Jr., June 8th.
 43,162 Boiler cleaner, J. L. Cook and H. M. Williams, June 8th.
 43,163 Fire escape, L. Durocher, June 8th.
 43,165 Vacuum pump, W. E. Nickerson, June 8th.
 43,166 Vacuum pump, W. E. Nickerson, June 8th.
 43,167 Manufacture of paper-links for driving belt, E. Boekmuhl and N. Karlhana, June 8th.
 43,168 Umbrella, H. S. Whitcomb, June 8th.
 43,169 Floor for stable, cattle shed and the like, A. Buchmann, Jr., June 8th.
 43,170 Ice cream freezer, T. H. Besse, June 8th.
 43,171 Syphon cistern, D. L. Dwinell, June 8th.
 43,172 Holder for lids of vessels, M. Murray, June 8th.

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OFFICES AT 131 DEVONSHIRE STREET, BOSTON, MASS.

- 43,173 Railway sleeper block, R. D. Culver, June 9th.
- 43,174 Car coupler, W. F. Richards, June 9th.
- 43,175 Air brake coupling, L. Semett, June 9th.
- 43,176 Hand truck, E. S. Bayburn and L. A. Bell, June 9th.
- 43,177 Vehicle brake, M. J. Bobo, June 9th.
- 43,178 Drain or stall floor, G. L. Ludwig, June 9th.
- 43,179 Car buffer, T. A. Bissell, June 9th.
- 43,180 Lace fastener for shoes and other articles, A. Klinger, June 8th.
- 43,181 Thrill coupling, N. I. Woolsey, June 9th.
- 43,182 Lamp heater, H. I. Lorry, June 9th.
- 43,183 Clothes drier, J. McKinnon, June 9th.
- 43,184 Diaphragm for locomotive and steam boilers, W. King, June 9th.
- 43,185 Lid strainer, H. S. Drack, June 9th.
- 43,186 Twisted metal bands for box straps, etc., J. A. Bowler, June 9th.
- 43,187 Boom chain, A. Mutchenbaker, June 9th.
- 43,188 Bit for bridle, S. E. Clifford, June 9th.
- 43,189 Car coupling, P. Brown, June 9th.
- 43,190 Cash register, J. A. Treat, June 9th.
- 43,191 Carpenters' and builders' socks, J. Callahan, June 9th.
- 43,192 Graining wood, M. W. Grier, June 9th.
- 43,193 Bottle, H. J. Leith, June 9th.
- 43,194 Automatic car coupler, R. K. Doisey, June 9th.
- 43,195 Universal drafting patterns for dress cutting, B. Vian, June 9th.
- 43,196 Cornice brake, J. H. Crocker, June 9th.
- 43,197 Spring hook, J. C. Newey, June 9th.
- 43,199 Running water motor, J. E. Belt, June 10th.
- 43,200 Wrench, J. A. Barker, June 10th.
- 43,201 Tree felling saw, G. E. Desmon, June 10th.
- 43,202 Letter press, E. Feige, June 10th.
- 43,203 Making wire fences, P. Trick, June 10th.
- 43,204 Vacuum pump, H. S. Kaliske, June 10th.
- 43,205 Manufacturing cigars, P. Jones, June 10th.
- 43,206 Nut screw clamp, C. Banovits, June 10th.
- 43,207 Sewing machine attachment, R. A. Shelland, June 12th.
- 43,208 Voting machine, J. H. Myers, June 12th.
- 43,209 Projectile, P. H. Holmes, June 12th.
- 43,210 Carving machine, H. H. Adams, June 12th.
- 43,211 Car coupling, G. Jenkins & S. W. Russell, June 12th.
- 43,212 Pad and pencil holder for telephone tables, J. E. McEachern, June 12th.
- 43,213 Car coupling, F. M. Ryan and W. P. Smith, June 12th.
- 43,214 Car coupling, J. D. Ripson et al., June 12th.
- 43,215 Moulding plastic material, H. A. Penrose, June 12th.
- 43,216 Locomotive and other engines, J. Richards et al., June 12th.
- 43,217 Vacuum automatic brake apparatus, The Vacuum Brake Co., Ltd., June 12th.
- 43,218 Railway gate, A. J. McDonald, June 12th.
- 43,219 Attachment for brooch, A. E. Phouret and W. J. Martin, June 12th.

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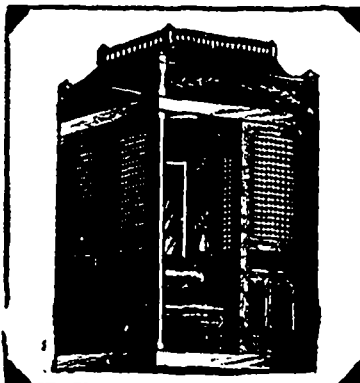
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- 43,220 Spring hinge, J. S. Levis, June 14th.
 43,221 Generating steam and evaporating liquids, H. McPhail et al., June 14th.
 43,222 Cash register and indicator, Boston Cash Register Co., June 14th.
 43,223 Socket mouth mirror, R. F. Philips, June 14th.
 43,224 Bank note, W. W. Wood, June 14th.
 43,225 Rotary engine, M. J. Bretherton and R. Roive, June 14th.
 43,227 Type setting machine, J. W. Chadwick, June 14th.
 43,228 Stop for augur and brace bits, J. W. Wilks and C. Whitters, June 14th.
 43,229 Loom picking bands and apparatus used therein, F. Clarke, June 14th.
 43,230 Securing together the ends of travelling bands for use in sheaf binders, straw trussers and other like implements, R. Timmis, June 14th.
 43,231 Folding camp stool, L. D. Mason, June 14th.
 43,232 Ditch gate, G. Meloche, June 14th.
 43,233 Cow milker, J. Hoover and A. W. Jay, June 14th.
 43,234 Forming the fillers of bunches for cigars, A. C. Schultz and H. Boigfeldt, June 14th.
 43,236 Folding bed, H. Stevenson, June 14th.
 43,237 Steam cultivator, R. Stone, June 14th.
 43,238 Bridge floor, J. R. Worcester, June 14th.
 43,239 Bottles, packing vessels or jars, R. S. Wiesenfeld, June 14th.
 43,240 Baking pan, L. T. Hebert, June 14th.
 43,241 Elevated railway system, A. E. Hotchkiss, June 14th.
 43,242 Vehicle tire, W. Langmuir, June 15th.
 43,243 Relating to type writers, E. S. Higgins & H. C. Jenkins, June 15th.
 43,244 Game apparatus, A. W. and J. B. McArthur, June 15th.

- 43,245 Propelling boats, W. H. Thompson and G. Morris, June 15th.
 43,246 Self-closing cut off for gas burners, The International Self Closing Gas burner Co., June 15th.
 43,247 Cush or package carrier for stores, etc., T. J. Carroll, June 15th.
 43,248 Steam turbine, G. J. Atham, June 15th.
 43,249 Wind wheel, E. Bregier, June 15th.
 43,250 Spring coupling, O. Elster and R. Lerche, June 15th.
 43,251 Bag for containing moneys or other valuables for transmission from one place to another, J. A. Carlaw.
 43,252 Bag and lock therefor, W. F. Beasley, June 15th.
 43,253 Bifurcated rivets, or two pronged U shaped fasteners of leather or other substances and apparatus therefor, S. C. Davidson, June 15th.
 43,254 Separating the stems from tobacco leaves, G. W. Cable, June 15th.
 43,255 Water wheel, C. A. Chase, June 15th.
 43,256 Hand or foot power grinding machine, J. T. Barnard, et al, June 15th.
 43,257 Stop motion attachment for knitting machines, C. Cooper, June 15th.
 43,258 Composition for self-lubricating bearing, A. F. Newele, and G. E. Share, June 15th.
 43,260 Transmission of power, D. W. Carter, et al, June 15th.
 43,261 Window washer, D. Mendelson, June 17th.
 43,262 Cooking stove, E. Gurney, June 17th.
 43,263 Self-acting street car coupler, H. Bewker and J. H. McKeggie, June 17th.
 43,264 Hay and grain unloaded, C. Winhold, June 17th.
 43,266 Railway car coupler, C. H. Brindle and A. E. Lewie, June 17th.

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- 43,267 Head tramway, J. Duncan & Co., June 17th.
- 43,268 Can. H. S. Wallace, June 17th.
- 43,269 Milking machine, L. K. Dollerer, June 17th.
- 43,270 Treating clay for pottery ware, W. M. Brewer and F. R. Musser, June 17th.
- 43,271 Cultivator, P. H. Moxon, June 17th.
- 43,272 Vehicle gear, M. Harcourt, June 17th.
- 43,273 Cash indicator, W. H. Thompson, June 20th.
- 43,275 Equalizing links, T. Murphy, June 20th.
- 43,276 Dust collector and catcher, G. Walter, June 20th.
- 43,277 Automatic train brake, W. B. Guernsey, June 20th.
- 43,278 Railway switch or track turn-out, D. MacPherson, June 20th.
- 43,279 Rotary engine, R. Colliard, June 20th.
- 43,280 Fork and hack, W. E. Bishop, June 20th.
- 43,281 Ventilating apparatus for grain bins, F. Morton, June 20th.
- 43,282 Egg cup, E. M. Orth, June 20th.
- 43,283 Ornamenting glass, porcelain and other vitreous wares, Photo-Litho Transfer Co., June 20th.
- 43,284 Ornamentation process, Photo-Litho Transfer Co., June 20th.
- 43,285 Raising and loading lumber, E. W. Gurney, June 20th.
- 43,286 Roller bearings, Copeland Roller Bearing Co., June 20th.
- 43,287 Shafting, J. L. Gregor and L. R. Reifschneider, June 20th.
- 43,288 Boutomirere, H. W. Fishel, June 20th.
- 43,289 Boutomirere, H. W. Fishel, June 20th.
- 43,290 Boutomirere, H. W. Fishel, June 20th.
- 43,291 Oil stove and burner, E. G. Mummery, Detroit, June 20th.
- 43,292 Sectional mould, G. M. Grahana, June 20th.
- 43,293 Stone crusher, G. Toury, June 21st.
- 43,294 Coupling, J. S. Goldman, June 21st.
- 43,295 Draft equalizer, W. Lewis, June 21st.

- 43,296 Corn popper, W. D. Munfield, June 21st.
- 43,297 Drilling machinery, W. Beal, June 21st.
- 43,298 Steam radiator, E. E. Gold, June 21st.
- 43,299 Ice cream freezer, C. D. Proden and H. A. McCormick, June 21st.
- 43,300 Centrifugal machine for separating liquids, R. A. Lister and M. Pedersen, June 21st.
- 43,301 Medical compound, C. Nellore, June 21st.
- 43,302 Measuring and drafting device for garments, C. Mameback, June 21st.
- 43,304 Deep well drilling apparatus, W. Webber, June 21st.
- 43,305 Disc fan, J. D. McEachren, June 21st.
- 43,306 Scale beam, M. N. Sevier, June 21st.
- 43,307 Wrecking apparatus, M. Brabaw, Detroit, June 21st.
- 43,308 Grain binding harvester, A. Garden, June 21st.
- 43,309 Elevating and packing mechanism for harvester, A. Gardner, June 21st.
- 43,310 Planter, D. J. Bowser, June 22nd.
- 43,311 Workmen's time recorder, W. L. Bundy, June 22nd.
- 43,312 Rotary engine or motor, F. A. Cathcart, June 22nd.
- 43,313 Locking device, R. Thiel, June 22nd.
- 43,314 Gate, M. Ashman, June 22nd.
- 43,315 Water cooler, L. D. Saddline, June 22nd.
- 43,316 Vehicle for elevated railway system, A. E. Hotchkiss, June 22nd.
- 43,317 Grain polishing and cleaning apparatus, H. Schneider, June 22nd.
- 43,318 Cultivator, Massey Harris Co., Ltd., June 22nd.
- 43,319 Wheel tire, F. Schratler et al, June 22nd.
- 43,320 Grain weigher, C. J. Hartley et al, June 22nd.
- 43,321 Bicycle, Gendron Manufacturing Co., June 22nd.
- 43,322 Cutting bones, J. E. Wilson, June 23rd.

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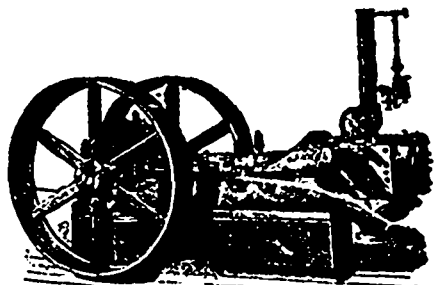
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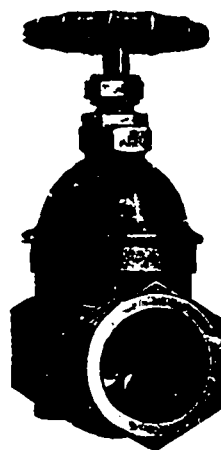
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- 43,223 Fence machine, J. H. Morris, June 23rd.
- 43,224 Leather washer, L. M. Cabana, June 23rd.
- 43,225 Milk and cream heater and cooler, J. de L. Tache, June 23rd.
- 43,226 Life-guard for street cars, T. Barnes, June 23rd.
- 43,227 Sulky, H. H. Garard, June 23rd.
- 43,228 Car fender, A. J. Houghton, June 23rd.
- 43,229 Dust guard for car windows, E. B. Loomis, June 23rd.
- 43,330 Rail joint fastening, J. B. Futvove and J. Mott, June 23rd.
- 43,331 Treating cork, J. T. Smith, June 23rd.
- 43,332 Single cylinder compound engine, E. J. Woolf, June 23rd.
- 43,333 Door locking device, J. Cathrien, June 23rd.
- 43,334 Log turner, H. O'Lange, June 23rd.
- 43,335 Detachable tire and guard, A. C. Gillette, June 23rd.

ELECTRIC.

- 43,118 Lighting cars by electricity, Consolidated Car Heating Co., June 3rd.

- 43,121 Incandescent electric lamp, H. S. Kaliske, June 3rd.
- 43,126 Heating street cars, Consolidated Car Heating Co.
- 43,129 Automatic electric fire alarm, L. G. Woolley, June 5th.
- 43,154 Electric water heater, M. W. Dewey, June 7th.
- 43,164 Underground Conduit for electric railways, C. P. Tatro, June 8th.
- 43,198 Automatic circuit breaker, D. Irish et al., June 10th.
- 43,235 Connection and terminal for electric and other wire and cable, H. Sauche, June 14th.
- 43,303 Acoustic telephone, A. L. Simpson, June 21st.

SCIENTIFIC PROCESS.

- 43,136 Obtaining metals and metalloids, H. Nieweth, June 6th.
- 43,226 Treating ores, Dominion Reduction Co., June 14th.
- 43,259 Solvents for separating precious metals from their ores, W. A. G. Birkin, June 15th.
- 43,265 Manufacturing white lead, The Amorphous White Lead Co., June 17th.
- 43,274 Reducing metallic ores, T. S. Blair, jr., June 20th.

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

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

BASEMENT Window Guards

- Factory and Mill Window Guards
- School and Church Guards
- Store Front Guards
- Office Counter Railings
- Inside Fine Woven Wire Blinds
- Lettered or Plain

Write for Catalogue and Price List

MANUFACTURED BY
The B. Greening Wire Co.
 LIMITED
HAMILTON, ONT.



ASK FOR THE GRAHAM NAILS

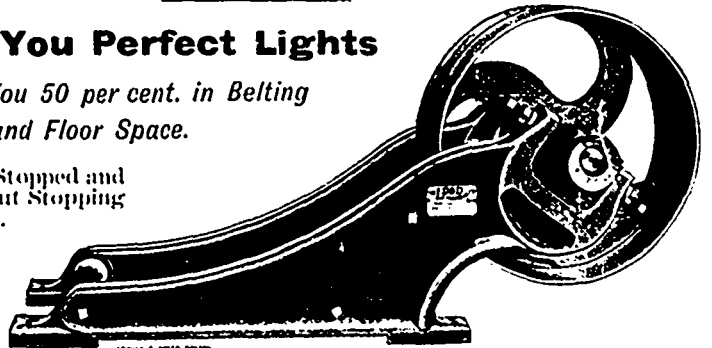
L. P. D. TRANSMITTER
FOR DRIVING DYNAMOS

Will Give You Perfect Lights

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

Dynamo can be Stopped and Started without Stopping Engine.

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



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

WE MANUFACTURE
FANS FOR NOTHING

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

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

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

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

Captains of Industry.

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

THE saw and shingle-mill of Mr. C. P. Holten, at Belleville, Ont., was destroyed by fire June 11; loss, about \$8,000.

MESSRS. J. BRIDGMAN & Co. are starting up a brush factory at Berlin, Ont.

THE alterations and improvements now being made in the Cornwall mills of the Canada Colored Cotton Mills Company will cost about \$200,000.

THE Central Bridge & Engineering Company, Peterborough, Ont., of which Mr. W. H. Law is manager, have secured the contract for the erection of the new Union Railway Station at Toronto.

THE Montreal Board of Trade have recently ordered three Robb-Armstrong automatic engines from the Robb Engineering Co., Amherst, N.S., through their Montreal agents, the Canada Machinery Agency.

THE Reliance Electric Manufacturing Company, Waterford, Ont., are now building alternating dynamos. They have just turned out a 1,000-light machine of this description.

WINNIPEG, Man., will place a new pumping plant in their water-works system.

THE Toronto Electric Light Company have put in another 500-volt Reliance generator.

MESSRS. McBRIDGEMAN BROTHERS, Washburn, Ont., are building a new flour mill, and Messrs. John Inglis & Sons, Toronto, are supplying the machinery.

WM. LAKING, Hamilton, Ont., is remodelling his flour mill in Flamboro township, and has given the contract for the machinery to John Inglis & Sons, Toronto.

IMPROVEMENTS recently effected in the flour mill of the Ogilvie Milling Company, at Winnipeg, Man., increase its capacity 1,800 barrels per day.

THE Reliance Electric Manufacturing Co., Waterford, Ont., have placed a 150 h. p. generator in the power house of the Toronto Electric Light Co., with which to produce energy to operate the Scarborough Electric Street Railway.

MR. H. B. DOWNER, leather dealer and commission merchant, 44 Front Street, East, Toronto, notify the trade that he constantly carries in stock all the best makes of sole, black and fancy colored leathers.

THE Gill-Smart Manufacturing Company have bought the foundry and stove plant of the Messrs. Chown & Cunningham, at Kingston, Ont. It has not yet been decided whether the plant will be operated at Kingston or removed to Brockville, Ont.

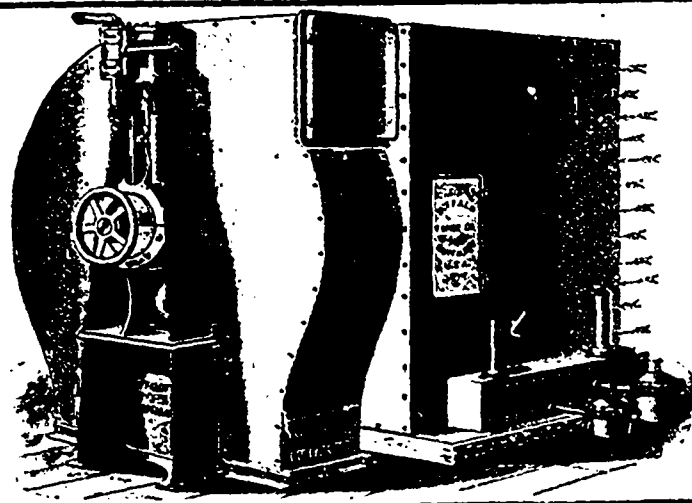
MESSRS. JOHN M. FRENCH & COMPANY, paint manufacturers, Toronto, inform us they are now manufacturing a regular line of mixed paints and a special line of enamel paint. It is claimed for the enamel paint that it is fully equal to the English article, which has heretofore had such a large sale in this country.

THE B. R. Sturtevant Co., Boston, Mass., have printed a third edition of 10,000 copies of their 200-page general catalogue, No. 61, which describes the uses of their blowers, exhausters, engines, forges, and heating and ventilating apparatus; and they desire to place a copy in the office of every superintendent, purchasing agent, engineer or manufacturer using such machinery. Any such, who may not have received a copy, will be supplied by applying to above address. It will be mailed free of charge.

THE Burrell-Johnson Iron Co., of Yarmouth, have just completed a large air circulating and feed pump for a new steamer now building for Messrs. James Fleming & Son, St. John, N.B. The steamer is to be used in towing coal barges at sea. The size of the pump's cylinders are as follows: steam, 12 inch; air, 14 inch; circulating, 12 inch, and the two feed pumps, 3 inch, by 8 inch stroke. The pump is capable of discharging a million and a half gallons in twenty four hours. It is of the tandem pattern, and is operated by Patten's valve motion.

THE buildings included in the new plant of Messrs. Rhodes, Curry & Co., at Amherst, N.B., consist of an erecting shop for setting up the cars, 80 x 140, a blacksmith shop 60 x 70, a machine shop 70 x 70, a wheel foundry, 80 x 76, general foundry 90 x 76, flask or pattern room 20 x 70, dry house for drying lumber for cars 30 x 60, wood working shop 160 x 60, pattern shop 30 x 60, sewer house, 20 x 40, and brick engine house 33 x 42. The erecting shop has four tracks, and sixteen flat or box cars may be set up in it at the same time. The wood-working shop will be a fine building, two storeys high, and connected with the erecting shop by a track.

MESSRS. R. & J. WATSON, Toronto, have enlarged their factory by taking in the warehouse east of their present works.



LAMKIN'S PATENT



BUFFALO HOT BLAST APPARATUS

For Lumber Dry Kilns, Brick Driers,
Heating and Ventilation of Factories and
Mills of all Types, also for Public
Buildings.

SEND FOR B 92. - 158 PAGE CATALOGUE

BUFFALO FORGE CO.

BUFFALO, O., N.Y., U.S.A.

A GREAT LOSS!

If you have any Pipes or Boilers, uncovered you are losing on same at the rate of \$100.00 every year on each square foot of surface exposed. By having them covered with our Mineral Wool Sectional Covering you will save 85 per cent. of this loss. The saving thus effected in fuel will in one year more than pay the cost of covering, which we guarantee to last as long as the pipes.

Our covering is the best fuel saver on the market.

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

The Canadian Colored Cotton Mills Company are about placing three new boilers in their works at Hamilton, Ont.

The James Smart Manufacturing Company, Brockville, Ont., have sent us a circular having reference to the Empire window screen made by them. This is the season for flies, and during the season we are never free from their presence unless they are kept out by screens. Regarding this made by the Smart Manufacturing Company, we are told that it is the only window screen that will keep a house free from that summer pest—the common house fly. Ordinary screens will keep flies out, but will not relieve the house of any that come in through doors and in other ways. The Empire screen does this effectually, in the following manner: It has openings at the top, leading up and out. The flies light on the screen and follow these openings up and out, acting the same as in the well-known Balloon fly trap. Flies do not go down through small openings, and will, therefore, not return by the way they went out. It is made in three sizes, 27 inches high, and in width varying from 24 inches to 41 inches, hardwood, oil finish, with extra strong springs to hold screen in place outside of lower sash.

The Royal Electric Company, Montreal and Toronto, have, within the last six weeks, sold the following plants:

Dominion Cotton Mills, Halifax.....	6000 lights.
St. John's Electric Light Company, Newfoundland.....	1,200 "
The Joggins' Mines, Halifax, N.S.....	15 (arc).
Price Bros.' Mills, St. Thomas, Que.....	16 lights.
Dominion Cotton Mills, Magog, Que.....	300 "
Richelieu & Ontario Navigation Company's Steamer "Quebec".....	300 "
Price Bros., Cap. St. Ignace, Que.....	60 "
Municipality of Puerto Principe, two....	750 "
The Montreal Post Office, two electric elevators complete.	

The Moffatt Manufacturing Company, Markdale, Ont., are building a new factory at Weston, Ont. The building will be of brick, 300 x 80 feet. They expect to be in operation by October, and will manufacture stoves, furnaces, etc.

The Robb Engineering Co., Amherst, N.B., have just moved into a new and handsome brick building intended for moulding shop, mounting shop, boiler house and testing room. An object

of great interest at present to be seen here is a large compound engine of the Robb-Armstrong type, 150 horse-power, which, driven by three Monarch economic boilers, will furnish electric light for the Windsor, Ont., Electric Light Co. The Robb Engineering Co. state that their style of engine and boiler is fully meeting their expectations and those of their customers. The fact that they receive the patronage not only of the Maritime Provinces, but also of Ontario, Quebec and the Northwest, sufficiently endorses the excellence of their machinery and the promptness and despatch of their business transactions. In Montreal city alone eight Robb-Armstrong engines have already been placed. This firm are also contractors for the Fuller-Warren heating and ventilating system, which has been adopted in the new Amherst academy and at several buildings at Yarmouth and Wolfville. Their iron and brass foundries are also well worth a careful inspection, exhibiting in all their parts good facilities and careful attention to business. All these departments, combined with a well-equipped drawing office, make the establishment exceedingly creditable to the Messrs. Robb, especially in memory of the fact that it has risen phoenix-like in so short a time from the disastrous fires of 1890-91. The business is under the personal management of D. W. Robb, president and consulting engineer, and F. B. Robb, secretary-treasurer and manager. Associated with them is Mr. A. G. Robb, who has charge of the drawing office. From 90 to 100 men are now employed in this prosperous and ever-increasing business. — Critic.

The planing mill of Messrs. J. R. Landy & Co., at Niagara Falls, Ont., was destroyed by fire June 18; loss, about \$7,000.

The Rathbun Company, Deseronto, Ont., who are manufacturers of porous terra cotta and fire proofing materials, whose business card appears in another page, inform us that their goods are endorsed by all the leading architects in the country, and that they have proved by actual and thorough tests to be the best fire proofing materials in use. The finest buildings in Canada and in the United States are made fire proof by the use of porous terra cotta. It is unequalled for partitions and for lining outside walls of private residences and cottages. It excludes heat and cold, it deadens noise, and is as durable and as cheap as brick. Those who may be interested should send to the company for catalogue and particulars.

Dodge ^{PATENT} Wood Split Pulleys

33¹/₃ Per Cent. More Power with Same Belt Over Iron or Steel Pulleys



50 to 75 Per Cent. Lighter Than Iron Pulleys and Much Cheaper

Remember that every Pulley is fully guaranteed by us. Rim of our Pulley is **Thoroughly Nailed**, as well as being glued and pressed up, making it the only perfect Wood Pulley made. We fill all orders on day received. We solicit your orders knowing we have the best Wood Split Pulley in the World. Send for Catalogue.

DODGE WOOD SPLIT PULLEY CO., Toronto

The Toronto Radiator Manufacturing Company, who manufacture the "Safford" patent radiators, are kept running night and day to fill the many large orders that they have on hand for these goods. This firm are preparing a very large shipment for Tientsin, North China. They export very largely to Great Britain, France, and Germany. Another matter that may be of interest to our readers about this firm, is that they also ship to the United States. In certain cities these goods are preferred to those manufactured there, and the consumers are satisfied to pay the additional 45 per cent. duty and use the goods manufactured in Canada, which speaks well for this Canadian industry.

The Jencks Machine Co., Sherbrooke, Que., inform us that they have just placed boilers, machinery, etc., as follows, through their Montreal agency: Two 40 h. p. steel boilers for the new planing mill of Robert Beckham, Montreal; one 35 h. p. boiler and engine-shafting, etc., for the new furniture factory of Leger & Co., Montreal; one 35 h. p. boiler and engine for B. J. Pettener's boot and shoe factory, Montreal; one 35 h. p. boiler and engine in the new saw works of John Wood, Montreal; steam drills and other machinery in the quarries of P. A. Lauviere, Cote St. Louis, Que.

The H. F. Taintor Manufacturing Company, 281 Pearl Street, New York, request the attention of Canadian manufacturers to the English cliffstone Paris white, and whiting made by them. They pay especial attention to the preparation of a very fine dry bolted whiting for use of rubber, oil cloth and other manufacturers who require an article of uniform quality and condition.

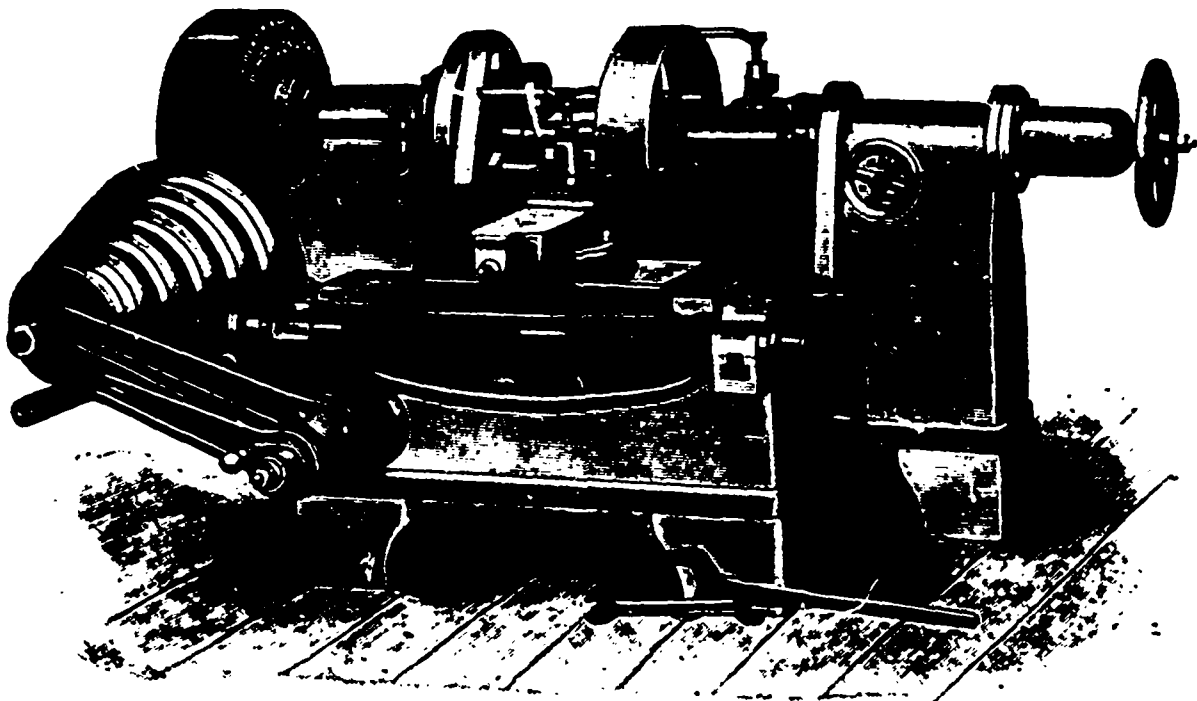
The Toronto Radiator Manufacturing Company, Toronto, have just received the contract to supply the radiation for the Huron County Buildings in Goderich, Ont., and also for all the radiators for the Waterloo County Buildings in Berlin, Ont. These are the two largest contracts for heating apparatus that have been let in Ontario this year. The Radiator Company have also just booked the order for the radiators for the Toronto Athletic Club's new building on College Street in this city. This is another very elaborate addition to Toronto's architecture, and the Toronto Radiator Company are to be congratulated on being able to consider these buildings amongst their already very long list.

The American Bit-Brace and Tool Co., Buffalo, N. Y., have ad-

ressed the trade in a neat catalogue, in which they describe and illustrate the goods which they are making and marketing with such success. Among the articles shown are their ratchet mechanism, Noship ratchet ring, jaws and sockets, and braces in an endless variety and number. In an introductory note the company say: "We submit this catalogue to the trade, trusting that a careful study of its pages will portray to the eye of every person the true idea of the bit-brace as it is manufactured by us. We use only malleable iron, steel and wood of the best grades. We employ only skilled workmen. Our capacity for the manufacture of bit-braces is unlimited, and we can furnish special styles to order. Our bit-braces are all packed in anti-rust paper, half a dozen of each in a pasteboard box, and five dozen in a case, excepting the cheaper styles, which are packed half a dozen of each in a paper package, and six dozen in a case. We make no charge for packing, and deliver f.o.b. in Buffalo, N. Y. Our braces we guarantee to be mechanically perfect, and they are giving entire satisfaction to the trade and mechanics. We are provided to make any special changes in our goods which the trade may desire. We can pack in paper boxes, wooden boxes or otherwise; affix special stamps or labels; pack in tar paper, in iron-bound packages for export, or ship these goods in any way desired; but for these specialties we are obliged to charge a small addition to the regular price list, to pay us for the actual expense of so doing. Any information on this point will be gladly given to the trade at any time, and prices quoted for the actual expense, which we figure only at cost."

The Owl whose eyes are never closed, informs us that the Toronto Radiator Manufacturing Company have now in the printer's hands a most elaborate piece of work in the shape of a catalogue, and if we can believe our friend the owl, it will be the most expensive production in printer's art that has been executed in Toronto for a number of years. The volume is to contain some 200 steel plate views of Canada's best buildings, in addition to the usual illustrations of the Safford patent radiators, and last but not least, a carefully prepared work on Hot Water and Steam Heating. The Toronto Radiator Company are given credit for being first in the field in a work of this kind, and if they stick to their work as closely as they have since the inception of their Company, we bespeak for them unprecedented success.

John Bertram & Sons, Dundas, Ont.



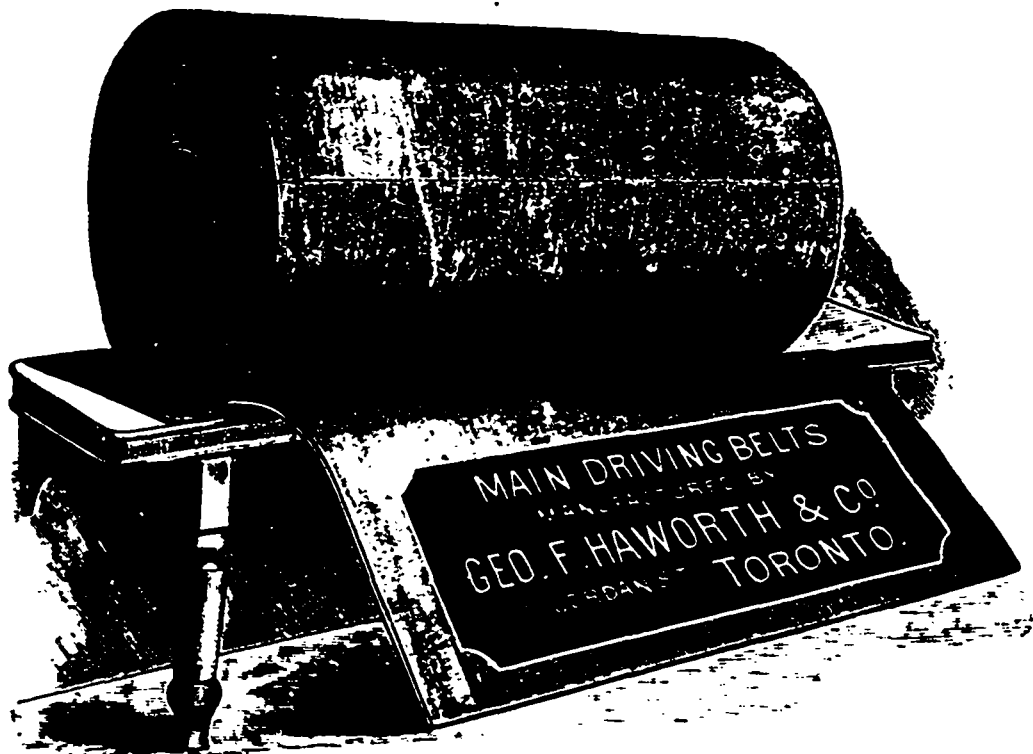
50-inch. Pulley Turning Machine

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

FAC-SIMILE OF SOME OF THE WIDE

DOUBLE LEATHER MAIN DRIVING BELTS

MANUFACTURED BY US



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

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

Belts Made for Every Kind of Work

The Haworth Belting Co.

9 Jordan Street, - TORONTO.

The Safety Barb Wire Company, with headquarters at Toronto, has been incorporated with a capital stock of \$75,000, to draw wire, manufacture barb wire, wire nails, etc.

The Katrine Lumber Company are seeking incorporation with a capital stock of \$55,000, to manufacture lumber, laths, shingles, etc. in the Parry Sound district, with headquarters at Hamilton, Ont.

The Paris Tool Manufacturing Company of Paris, Ont., are applying for incorporation with a capital stock of \$20,000, to manufacture wrenches, and other tools, etc. Messrs. Henry Stroud, Wm. Hington, and Arthur Qua are promoters.

MR. ALEX. P. MENDE, 14 Water Street, New York, is offering to the trade his new one dip fulling blue for wool, manufactured by him, and intended to replace alizarine and indigo, and by the use of which, he informs us, a large saving of time and money may be effected. Send to him for samples.

The Canada Paper Company, 15 Front Street, West, Toronto, in their advertisement in another page, request the attention of those interested to the press papers manufactured by them. They carry in stock press boards 31 x 21 inches, and can make on short notice any size or thickness to order. Pulley board is always in stock.

The Pulsometer Steam Pump Company, New York, announce in their business card which appears elsewhere in these pages, that the steam pump manufactured by them is the handiest, simplest, and most efficient machine for general mining, quarrying, and contractor's purposes made. It handles muddy and gritty liquids without wear. Descriptive catalogues, with prices, furnished on application as above.

MESSRS. SINGER, NIMICK & Co, Pittsburgh, Penn., for whom Mr. Hugh Russel, 185 St. James' Street, Montreal, is their representative, make special mention in their business card in another page, of the crucible cast, solid cast, and open hearth plow steel manufactured by them. Those interested should communicate with Mr. Russel.

The B. Greening Wire Company, Hamilton, Ont., in their business card make mention of some of the seasonable goods manufactured by them, including basement window guards, factory and mill window guards, school and church guards, store front guards, office counter railing, inside fine woven wire blinds, lettered and plain, etc. They invite correspondence. Catalogues and price lists sent on application.

MESSRS. BELLHOUSE, DILLON & Co, 30 St. Francois Xavier Street, Montreal, dealers in chemicals, dye stuffs and acids, and supplies for manufacturers of textile fabrics, inform us that they have recently been appointed agents in Canada for the celebrated Calcutta house of Messrs. Ralli Bros, and are thereby in a position to supply the trade with indigo and other East Indian products, such as cutch, gambier, etc., to great advantage. It is well known that Messrs. Ralli Bros. are one of the most wealthy and extensive concerns in the world, and that their name is a familiar household word among all dealers in dye goods.

MESSRS. SPON & CHAMBERLAIN, 12 Cortlandt Street, New York, are publishers of "The Handy Sketching Book" for the use of engineers and draughtsmen for rough sketching, in which is contained some essential tables. The paper is square lined to exact eighths of an inch, in blue ink, and bound in stiff boards. This paper is printed from specially prepared plates and is not ruled; and this has enabled the manufacturers to make it as nearly mathematically correct as is possible. Size of book 8 x 5 inches. Messrs. Spon & Chamberlain are publishers of industrial and scientific books; and all books sold by them are mailed postage paid to any address in the world on receipt of the published price.

The Aerated Fuel Company of Springfield, Mass., of which Mr. Chilion Jones, Gananoque, Ont., is agent for the Dominion of Canada, in our advertising pages direct the attention of manufacturers to the fact that by the use of their system a saving of 40 per cent. may be effected in the cost of fuel. This system, we are informed, uses crude oil with a high pressure of atmospheric air, and is adapted for all kinds of iron and steel forging, tempering, welding, annealing, etc.; also in glass works for furnaces and glory holes; for generating steam; for burning lime, cement, sewer pipe, terra cotta, and brick; for heating chemicals and asphalt; for japanning; for oxidizing lead, drying sand and salt; for singeing cloth, etc. Its advantages over coal and wood fuel are, a perfectly even fire at all times, and under complete control, free from gas and dust, and ready for use in a minute after turning the valve; and there is no increase in insurance rates. Some of the concerns now using this system in Canada, are the Massey-Harris Company, Toronto; Wilkinson Plow Company, Toronto Junction; D. F. Jones' Manufacturing Company, Gananoque, and the Dominion Bridge Company, Lachine, Que.

Crescent



Brand

Brunner, Mond & Co., Ltd.

NORTHWICH, ENG.

PURE ALKALI

Guaranteed 58 Degrees.

Equal to 98 per cent. Carbonate of Soda. The Strongest and Purest form of Soda Ash in the Market

And therefore the most economical for the use of

**Printers, Bleachers, Wool Scourers, Dyers,
Glass, Paper and Soap Makers**

CONCENTRATED CRYSTAL SODA

Purest and Cheapest Form of

WASHING SODA

WINN & HOLLAND, Montreal

Sole Agents for the Dominion of Canada

General Agents
for Dominion
A. R. WILLIAMS,
Toronto, Ont.

**The London
Machine Tool Co.**

LONDON, ONT., CAN.

Manufacturers of

**Machine Shop Equipments, Lathes, Planers,
Drills, Column, Radial and Suspension
Shapers, Slotters, Bolt Cutters, Mil-
ling Machines, Turret Lathes,**

**Automatic Gear Cutters and Cutting-Off Machines,
Boring and Turning Mills, up to 20 Feet Swing,
Driving Wheel Lathes, Tire Boring and Turn-
ing Mills, Cylinder Boring Machines,
Frame Slotters, Slab Millers**

BOILER EQUIPMENTS

**Punches and Shears, Binding Rolls, Straightening
Rolls, Plate Planers, Multiple Drills,**

BRASS FINISHERS' EQUIPMENTS

**Fox Monitor Lathes, Plain Turret Lathes, Valve
Millers, Vertical Milling Machines, Valve Chuck, Box Chucks,
etc., for Cutting and Stamping and Drawing Tin
and Metal Tools up to the Heaviest Work Required.**

The Elmwood Lumber and Manufacturing Company has been incorporated at Elmwood, Ont., with a capital stock of \$15,000, to manufacture lumber, laths, shingles, etc.

The Carey Wire Sewing Process Company of the Dominion of Can., with headquarters at Montreal, has been incorporated with a capital stock of \$250,000, to manufacture the Carey wire process sewing machine, wire being used instead of thread.

The largest lumber cargo ever shipped by a single vessel from a Pacific coast port, was last week completed by Robert Ward & Co., limited, of Victoria, on the Hawaiian ship John Eno, loading at Huggitt & McIntyre's mill at Cowichan. The cargo consisted of 30,287 pieces, measuring 2,580,797 feet. The Eno's tonnage is 2,700. She has sailed for Port Pirie. The *Seattle Post Intelligence* states that the largest cargo ever taken from Puget Sound was 1,932,976 feet, on the British steamer Suffolk, which sailed from Port Ludlow to Melbourne on October 20th, 1890. Next to this comes the British ship Ellsland, which took 1,981,503 feet, and the British ship Australia, which carried 1,849,000 feet. Hence our Province has with this shipment beaten the previous Pacific coast record.—Vancouver, B.C., Commerce.

The Standard Ice Machine and Refrigerating Company of Toronto, has been incorporated with a capital stock of \$50,000 to manufacture machines and machinery for the purpose of ice making, refrigerating, etc.

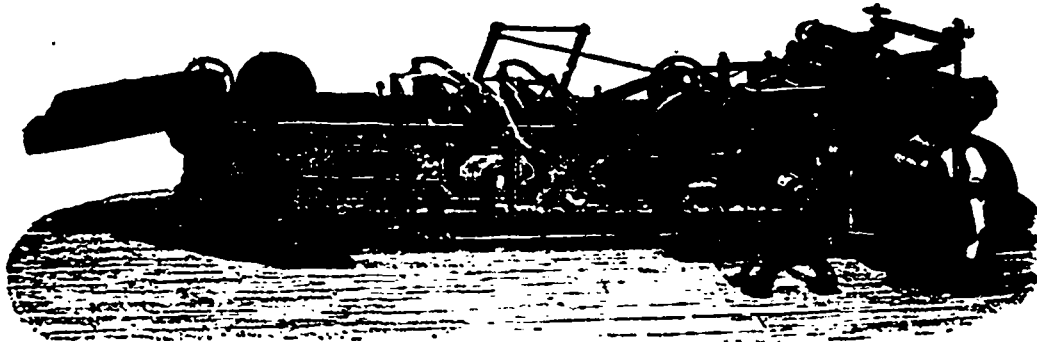
The Waterous Engine Works Company, Brantford, Ont., inform us that some of the shipments of machinery recently made by them include a circular saw mill to J. Sucksmith, Kaslo, B.C., a very heavy saw mill to Victoria, B.C., to be forwarded from there further up the coast for Wm. Sutton; shafting, bearings and stands, three large grip couplings, and several grip pulleys to the Sandwich, Windsor & Amherstburg Railway Company, Windsor, Ont. One Prescott steam feed, steel girder log carriage, and four large grip pulleys to the Hudson River Pulp Company, Three Rivers, Que.; and a 25 h.p. portable saw mill to Jos. Prince, Barry's Bay, Ont. They have just received an order from the Wingham Electric Light Co. for five pairs of grip gears to attach five water wheels to their line shaft, also the line shaft boxes and grip pulleys, the value of which amounts to about \$3000. They are also very busy in their pulley shop having several small orders in addition to those mentioned above.

The Perkins Electric Switch Manufacturing Company, Hartford, Conn., present a very attractive business card in another page, in which allusion is made to some of the electrical goods manufactured by them, in which are included single and double pole switches, from 5 to 150 amperes capacity, dovetail rosettes, lamp sockets, etc. These goods are all of superior workmanship and design, and are for sale in Canada by the Canadian General Electric Company, Toronto.

The Waterous Engine Works Co., Brantford, Ont., write us as follows:—"If you had in your paper a notice of the accident that occurred at J. D. Shier's mill at Bracebridge, we would like you to correct the impression given by that statement by stating just how the accident occurred. The band mill was speeded by us when we left it in Mr. Shier's mill, at 300 revolutions per minute, and it had run in this way for six or seven weeks. The week previous to the accident, Mr. Shier increased his boiler capacity and then speeded up his engine, and as a result the band mill was run at 420 revolutions per minute; it was tested here to 450 revolutions. An examination of the remains after the accident to ascertain the cause thereof, revealed the fact that the governor belt of the engine was tightly twisted round the engine shaft, the lace holes being torn out at the ends. This was direct circumstantial evidence that the governor belt had broken and the engine had run away, increasing the speed to such an extent that the band saw fly wheel already put to its limit or probably beyond, could not stand it. The mill was not sawing so there was nothing to hold the engine or put a drag on it. The accident might have been avoided by having a stop motion on the engine, which would have stopped it immediately the belt broke. Mr. Shier's damages will not probably exceed \$500. What we wish to do is to correct the impression that the band mill was at fault. The accident was one that could have been avoided had proper precautions been taken with the engine, and one that is liable to happen at any time where the speed of the engine is uncontrolled."

The Rathbun Company, Deseronto, Ont., manufacturers of "Star" Portland cement, inform us that the distinguishing word "Star" is registered for their security and protection. The use of this cement is authorized, they tell us, by the Province of Ontario, and Toronto City engineers. They invite correspondence with those who desire tests, samples, and further information.

IMPROVED WOOL WASHER



BUILT BY
C. C. SARGENT'S SONS
Graniteville, Mass.,
U.S.A.
Builders of Wool Washers
Burr Pickers, Wool
Dryers, etc.

The above represents our New Hydraulic Wool Washer, superior to Rake Machine. Send for Ill. Catalogue.

DRAPER'S IMPROVED
GLOBE VALVE

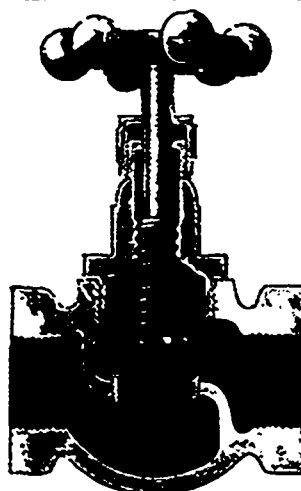
Patented
Constructed to prevent Seals or Grains of Dirt being Caught between faces at point of closing.

When the projection on valve enters the seat orifice, of which it is an easy fit, only clean fluid rushes past. Seals, etc., are pushed back and the faces meet with nothing between to injure them. Send for prices and particulars to

T. DRAPER
Manufacturer

BALL VALVES for various purposes
Oil and Salt Well Supplies,
Etc., Etc.

PETROLEA, ONT.



The Evans Friction Cone Co.
85 WATER STREET, BOSTON

Thousands of sets of Cones driving all classes of machinery.
Thousands of Horse Power in use driving Dynamos.

ones for Varing Speed.

Address, **Jenckes Machine Co.**
SHERBROOKE, QUE.

MACHINERY.

FOLLOWING list of New and Second-Hand Boilers, Engines and General Machinery for sale by The Canada Machinery and Supply Co., Brantford, Ont., dealers in New and Second-Hand Machinery and Supplies:—

- ONE BOILER, TO BRICK IN, 4 in. dia. x 11 ft. 7 in. long, 4 3-in. tubes, in first class order.
- THREE 25 H.P. PORTABLE loco, fire box boilers, in good order.
- TWO 5 H.P. FIRE BOX BOILERS for cheese factories.
- ONE 12 x 16 SLIDE-VALVE ENGINE, Beckett's make.
- ONE 10 1/2 x 15 HORIZONTAL ENGINE, Whitelaw make, in first class order.
- TWO 9 x 12 HORIZONTAL ENGINES, Waterous make, "Clipper."
- ONE 9 x 12 HORIZONTAL ENGINE, Morrison maker, Hamilton.
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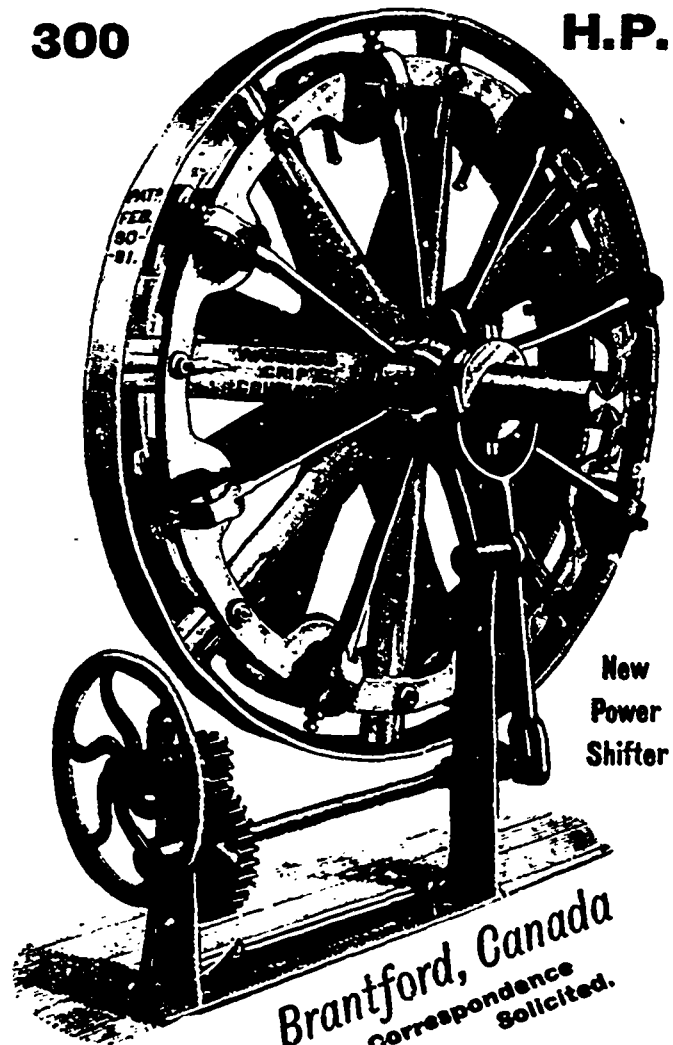
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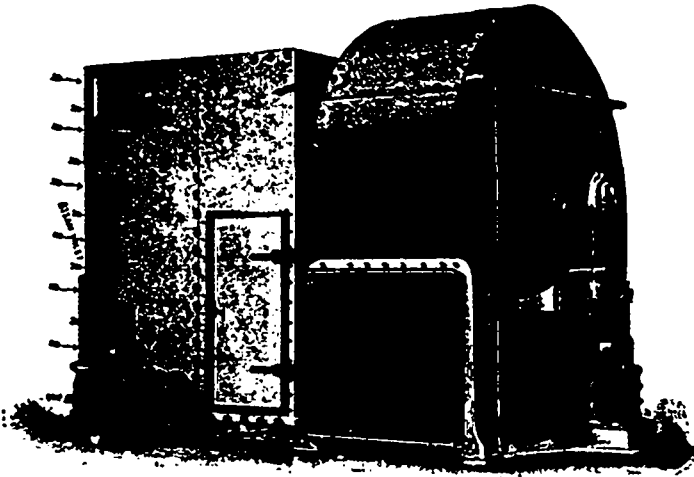
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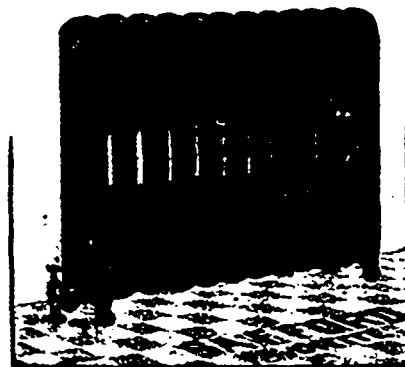
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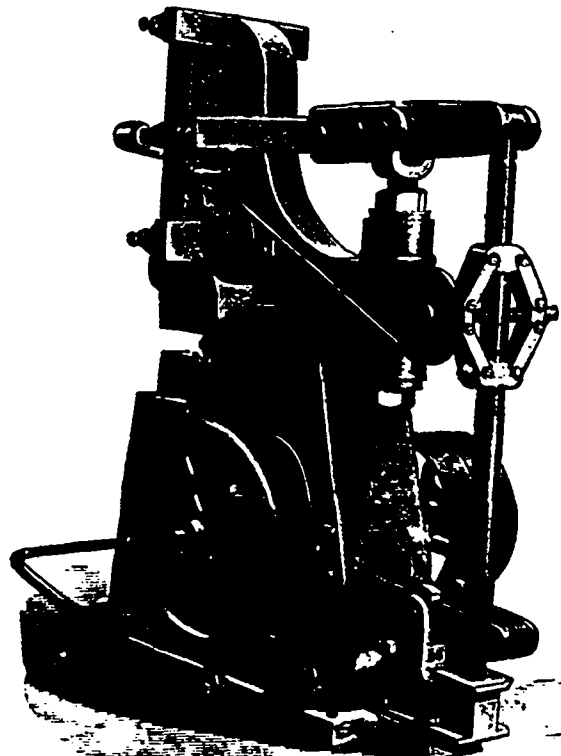
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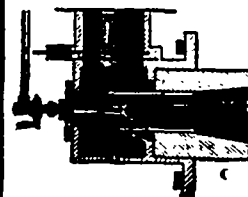
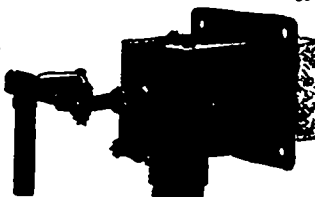
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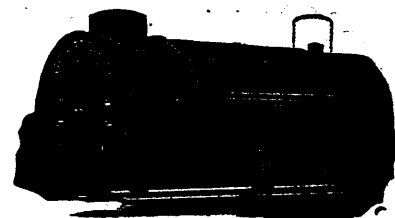
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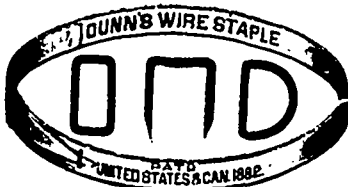
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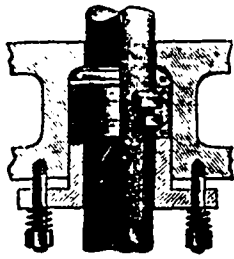
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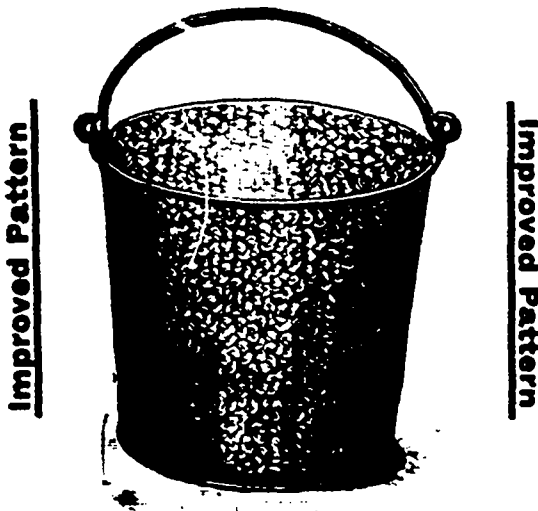
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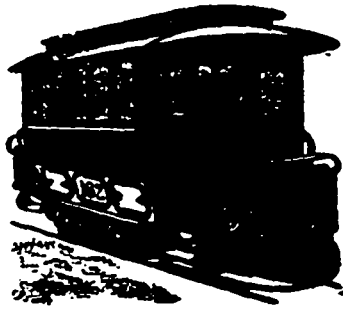
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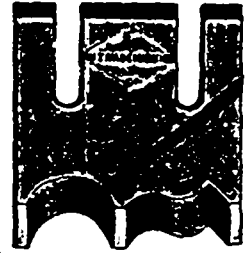
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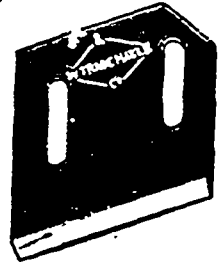
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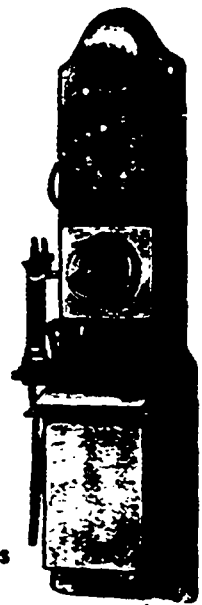
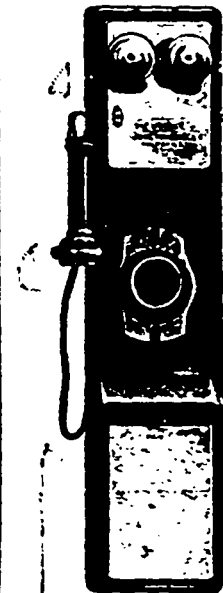
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The report was adopted and the retiring Directors unanimously re-elected. The Board of Directors are now constituted as follows:— James Goldie, Guelph, pres.; W. H. Howland, Toronto, vice-pres.; H. N. Baird, Toronto; Wm. Bell, Guelph; Hugh McCulloch, Galt; S. Neelon, St. Catharines; George Pattinson, Preston; W. H. Story, Acton; J. L. Spink, Toronto; A. Watts, Brantford; W. Wilson, Toronto.

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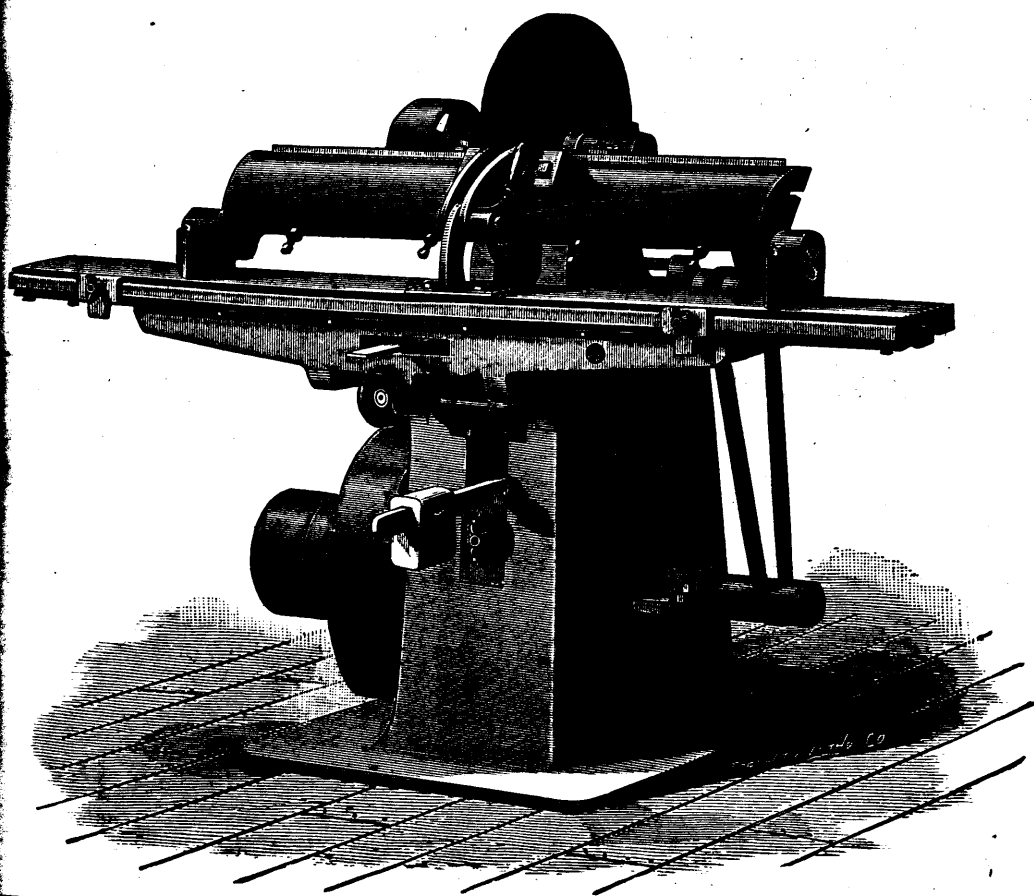
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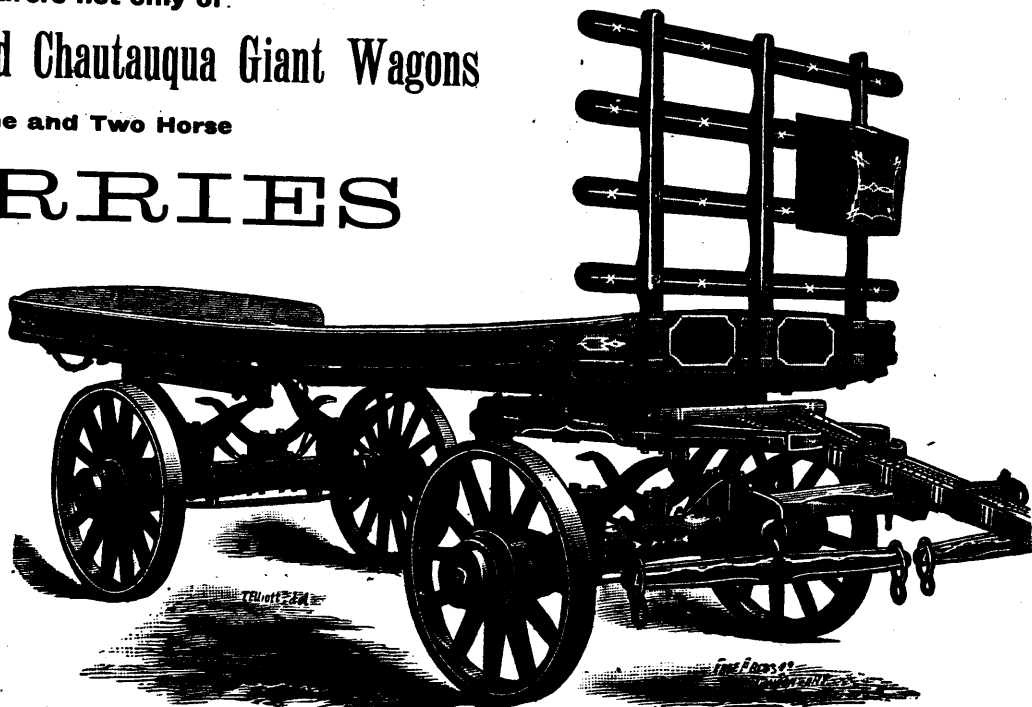
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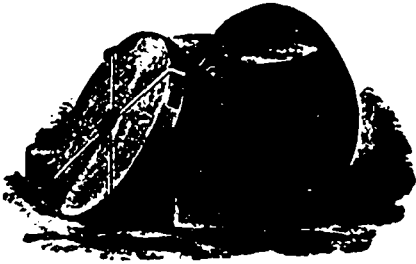
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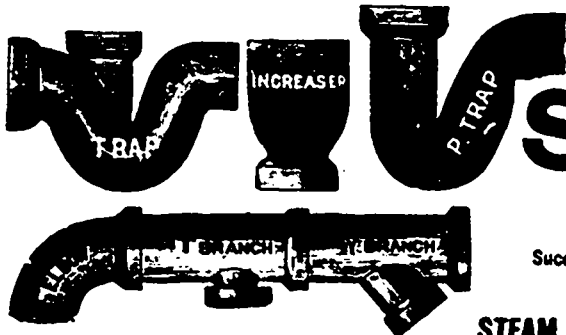
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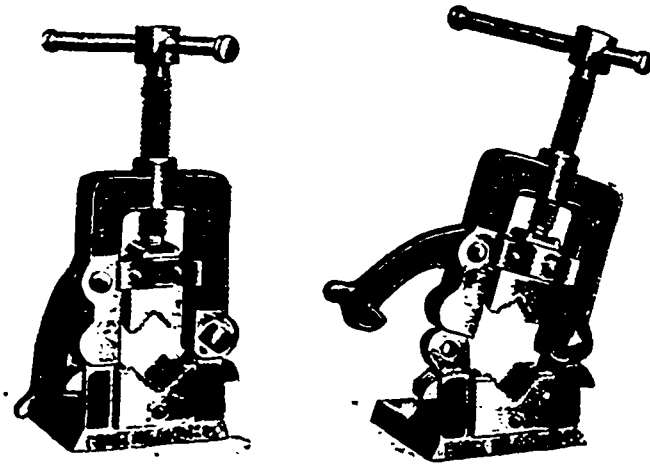
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