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 DEVOTED TO THE MANUFACTURING INTEREST OF THE DOMINION.

Vol. 43. TORONTO, OCTOBER 4, 1901. No. 7.

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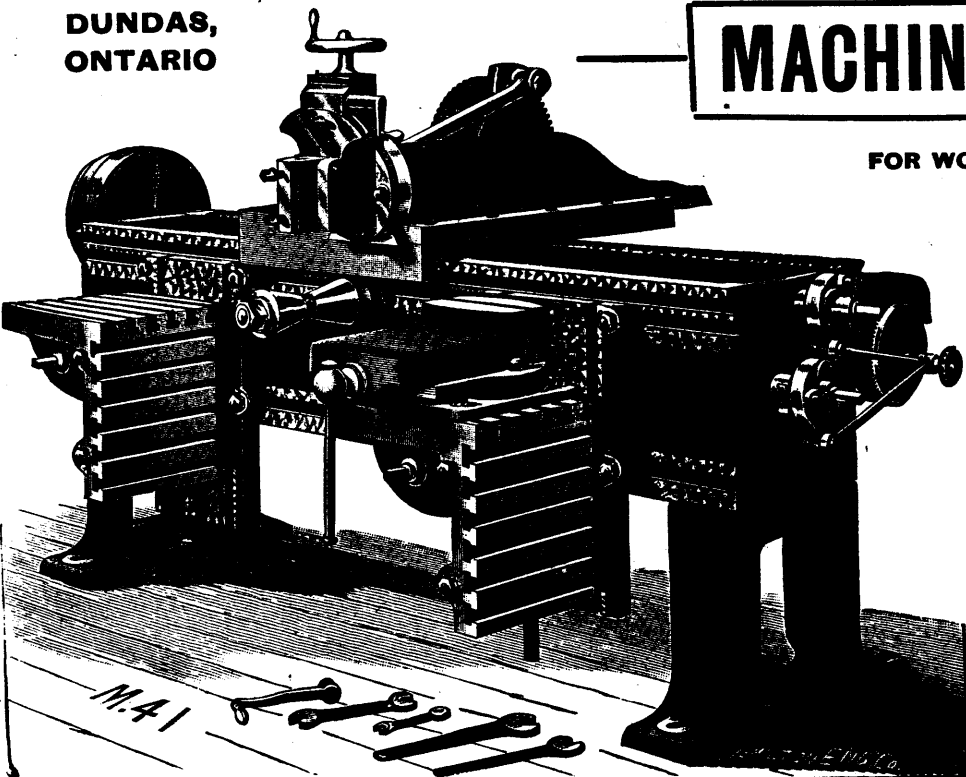
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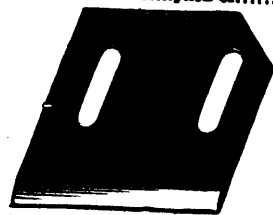
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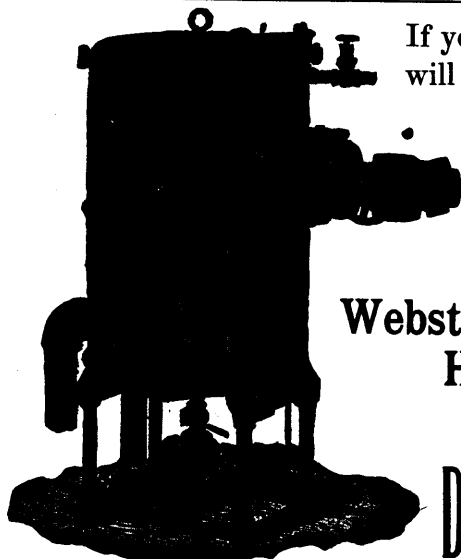
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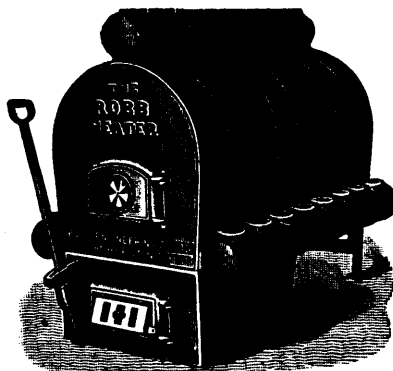
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THIS IS OUR SPECIALTY

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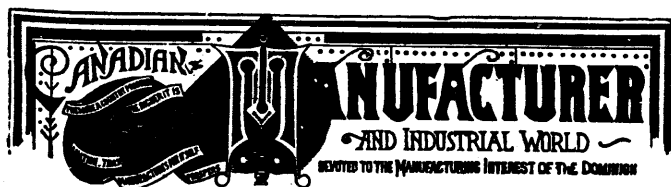
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ESTABLISHED IN 1890.

PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

The Canadian Manufacturer Publishing Co., Limited.

McKinnon Building, Cor. Melinda and Jordan Sts., Toronto.

Cable address: "CANAMAN." Western Union Telegraphic Code used.

MESSRS. DAVISON & CO.,

164 Federal Street, Boston, Mass.

AGENTS FOR UNITED STATES.

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J. J. CASSIDEY, Editor and Manager

NO SUGAR WITHOUT BEETS.

According to The Sugar Beet, one of the most lucrative sources of wealth in the United States is the manufacture of sugar from the sugar beet, or would be if the farmers who are depended upon to grow the beets did so in a systematic and thorough manner. The editor says that he is in constant receipt of information regarding the starting of new beet sugar enterprises; and in his opinion, if such conditions continue, there will be a reaction, and the existing beet sugar industry will suffer. The average existing beet sugar factory is at a disadvantage, owing to the fact that the raw material—beets—is not furnished in sufficient quantities; and the blame is laid upon the farmers. There are very few soils, we are told, devoted to sugar beet cultivation that will not yield an average of ten tons to the acre, and in some cases twice that amount, and if that yield falls short it is generally through the neglect of the farmer. According to the tenth census there were, during the year 1900, 135,000 acres of land in the United States planted in beets, yet the yield averaged less than six tons per acre. In Germany, during the years 1897-98 and 99, the average to the acre was 13, 12.5 and 11.3 tons respectively. The normal daily capacity of American beet sugar factories, in 1900, was 22,000 tons; and if it is admitted that the average campaign is 100 days, there should have been at the disposal of the thirty-seven then existing factories 2,200,000 tons of beets if they had all been worked at their maximum, which would mean 220,000 acres planted in beets, or an area of 65,000 acres more than were actually devoted to that special crop.

Mr. Ware, the editor of The Sugar Beet, has always insisted that the farmers and the manufacturers should work together:—The farmers alone, he says, appear to be neglecting the opportunities they have within their reach; and the solution he sees to the question is for the manufacturers to take hold of this most important agricultural problem, and themselves actually cultivate the beets they require.

The establishment of beet sugar factories in Ontario is a matter exciting much interest at this time, and it would be well for the promoters to look to it that there should be no deficiency of materials should their enterprises eventuate.

THE IMPENDING AUSTRALIAN TARIFF.

Naturally the most important subject relating to Australian trade just at present is the new Federal Tariff Law. No

The Canadian Manufacturer

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

details regarding the precise text of this measure have, as yet, been made public, but it is stated that it has actually been drafted, although the members of the Government are pledged to secrecy regarding its provisions, in order to prevent importers from anticipating them. The London Times reports that the measure, as now framed, is expected to produce a revenue of £8,700,000 annually. The general impression is that the duties will be found to range from 20 to 35 per cent. The farmers and graziers in Victoria, fearing that increased duties will still further enhance the cost of farm implements and machinery, have been circulating a petition throughout the country for presentation to the Lower House of the Federal Parliament asking that the free list should include the following very comprehensive groups of articles: Agricultural, dairying, horticultural and viticultural tools, implements and machinery; animals for breeding purposes; apparel made of moleskin and dungaree; moleskin and dungaree; carts, wagons, drays, and parts and materials thereof; barbed wire, ordinary fencing wire, wire netting; axle grease; corrugated iron and other building materials; salt; tarpaulins; separators, refrigerators, and other machinery, tools, implements, and materials used in the manufacture and preservation of cream, butter and cheese; paper used for packing and wrapping butter; butter boxes, and the wood for same; reaper and binder twine, sewing twine of hemp or flax; butter cloth; corn sacks, woolpacks, and gunnies; grass seeds; manure of all kinds; sheep-shearing machines, sheep dip; camp ovens; irrigation machinery and implements; portable engines, traction engines, patent safety oil engines; machinery used for the preservation of meat and other perishable products; jam jars and preserving jars; fruit cases and material thereof. That the manufacturers in the Federated colonies will consent to have this sweeping list of articles, many of which are now being made in Australia in considerable quantities, exempted from protective duties is highly unlikely, but if the agrarian portion of the population insist upon concessions, it may be that the duties on many of the foregoing articles will be placed as low as ten per cent., while all that are not already being manufactured locally will probably be placed upon the free list.

Customs Regulation Bill.—Although this very important measure does not deal directly with the tariff, it is none the less of the utmost interest to all who have commercial dealings with Australia, and, in view of the fact that it has now nearly completed the Committee stage in the Lower

House, it is possible to present a summary of its more salient features, based upon the text of the bill printed by Australasian Hardware and Machinery, that will probably not be seriously modified unless Imperial sanction is refused to some of them.

Prohibited Goods.—Clause 47 imposes a penalty of £100 on the importing of any prohibited imports. Among the latter are mentioned, in Clause 49, goods manufactured or produced wholly or in part by prison labor all goods having thereon or therewith any false suggestion of any warranty, guarantee or concern in the production or quality thereof, by any public officials, Government or country. An amendment made this clause apply to goods falsely described as warranted by any manufacturer or other firm.

Licensed Warehouses.—By Clause 73, four classes of licensed warehouses are established or permitted. First, general warehouses, to be used for warehousing goods generally; second, private warehouses, to be used only for warehousing goods the property of the licensee; third, machinery warehouses, to be used only for warehousing machinery and similar heavy or bulky goods; the fourth class is for manufacturing.

By Clause 131 goods dutiable under two or more classifications shall pay the highest rate. Substitutes, or articles that are capable of being substituted for dutiable articles, are dutiable at the same rate. Samples are admitted duty free, subject to certain restrictions.

Contracts and Tariff Changes.—The bill provides in Clause 145 that if, after any agreement is made for the sale or delivery of goods duty paid, any alteration takes place in the duties collected affecting such goods, before their entry for home consumption, then, in the absence of expressed written provisions to the contrary, the agreement shall be altered as follows: (a) In the event of the alteration being a new or increased duty, the seller, after payment of the new or increased duty, may add the difference caused by the alteration to the agreed price; (b) In the event of the tariff being altered by the abolition or reduction of duty, the purchaser may deduct the difference caused by the alteration from the agreed price.

Ad Valorem Duties.—In ad valorem duties, by Clause 147, Sub-Clause (a), the value shall be taken to be the fair market value of the goods in the principal markets of the country whence the same were exported, in the usual and ordinary commercial acceptance of the term, and free on board at the port of export of such country, and a further addition of ten per cent. on such market value. This value is to be verified at the time of entry by the production of the genuine invoice, and by a declaration signed by the owner. The genuine invoice, by Clause 148, means the original invoice prepared and issued by the seller, showing the true description of the goods, and the actual money price paid, or to be paid, for the goods, in the country whence they were exported, and without any reduction. In the case of goods consigned for sale in Australia, the invoice is to show the actual money price for cash at which such goods are saleable in the principal markets of the country whence they were exported at the date of the shipment. If the owner refuses to pay the duty as assessed by the collector, or ascertained by experts, the collector may sell the goods. In disputes as to duty, the owner may deposit the amount of duty demanded, and within six months after may commence an action against the collector. Any excess of the deposit over the proper duty will be refunded by the collector with five per cent. added.

Drawback.—No drawback, by Clause 160, will be allowed

on any goods of a less value for home consumption than the amount of the drawback, or on which the import duty paid did not amount to £1.

Fine for Pretense of Smuggling.—A penalty of £100 is imposed on selling or offering for sale any goods upon the pretense that such goods are prohibited imports or smuggled goods.

THE STEEL STRIKE.

Speaking of what might have been expected as the result of the steel strike, Tin and Terne, of Pittsburg, Pa., says:—

Nearly everyone connected with the iron and steel trade, except the workers themselves, felt assured from the beginning that the Amalgamated Association strike would have a disastrous end. Even the men would probably have foreseen the inevitable result if they had not been grossly deceived by the willful misstatements of President Shaffer and some of his associates, willingly aided at the start by some daily newspapers which endeavored to please their constituents. It would be strange to expect a strike to succeed which was for an unjustifiable end and which involved wholesale bad faith and universal breaking of contracts. Nor should the officials have been so brash as to think for a moment that they could forecast the stock market and expect its assistance.

What the Amalgamated Association has lost is not a question of so many mills or so many members. Its loss of prestige is greater than these. It no longer holds the balance of power in any branch of the United States Steel Corporation, and it will not be able to enforce the many unreasonable demands which it has until now successfully made upon manufacturers.

Speaking broadly for the future, however, the organized workmen have lost much more than appears on the surface. They have permitted the training of many men into skilled positions who would, under former conditions, have been unable to acquire that skill without going through a long apprenticeship. The work of years in holding down the number of men permitted to hold skilled jobs, by requiring them to go through a long course of preparation in minor jobs, has been undone in the course of a few weeks. In times of activity like the present, especially with the decreased production of the past two months, which must be largely made up, this will not be felt, but the time will come some day when it will be felt.

The most important effect of the strike, however, is one which will not necessarily adversely affect the men, while, in the long run, it may prove to be a boon to skilled labor. We refer to the breaking up of the organization to such an extent that the dictum can no longer be arbitrarily maintained that the present method of rolling tin plates and sheets is the only possible method. There is no question in the minds of advanced managers and engineers that the present method is entirely too laborious and expensive. The close organization of the Amalgamated Association has been the main obstacle in the line of making experimental departures and trying entirely new methods. The way is now open for such work, and there is every reason to believe it will not be many years before sheets and tin plate are rolled in a much more rational manner and with a great reduction in the manual labor and expense involved.

If we look over the list of iron and steel products exported from the United States, we find a pretty close harmony indicated between the quantity of such exports in a given line, and the extent of the departure we have made in the manufacture of those lines from old time practice. We export less sheets and tin plates than we do of any important line, and we have made less progress in the rolling of sheets in the past twenty years than we have in any other line. We are practically following British methods and paying two and a half or three times as much per ton for the same work. In the lines we export, we pay much higher wages per day, but on account of labor saving machinery and increased output, the tonnage rate is actually less. The same will be done with tin plates and sheets in a few years.

THE TRADES AND LABOR CONGRESS.

The seventeenth annual convention of the Trades and Labor Congress of Canada began its sessions in Brantford, Ont., September 17, Ralph Smith, Esq., M.P., of Nanaimo, B.C., the President, in the chair. The attendance was large, delegates from every province of the Dominion, and from every important industrial centre being present, composed of men who stand high in the organizations they represent.

The report of the Secretary, Mr. P. M. Draper, was on the whole satisfactory to the meeting, but it was noted that there were still 736 labor organizations in the Dominion unaffiliated with the Congress. Of 141 railway organizations but four paid per capita tax to the Congress, two in Toronto, one in Winnipeg and one in Hamilton. The total number of unions paying per capita tax to the Congress was 135, and the amount received \$809, as follows:—Ontario, 72 unions with 4,650 members, \$379; Quebec, 21 unions with 1,696 members, \$134; British Columbia, 30 unions with 1,214 members, \$177; Manitoba, 7 unions with 436 members, \$39; Nova Scotia, 1 union with 67 members, \$5; Prince Edward Island, 1 union with 83 members, \$14; New Brunswick, 3 unions with 235 members \$59.

Many of the matters discussed by the convention are of more than passing interest to readers of this journal. The President, in his address, speaking of the reforms they desired to bring about, said they had no right to expect that their objects could be brought about by revolutionary measures, but they should not play into the hands of their opponents by manifesting a disposition to mistrust the elected leaders of the movement all over the country. Referring to the alleged importation of aliens by the C. P. R. to take the place of striking trackmen, he said that it had been considered too costly a proposal for them to put the law in motion against the company; that he was convinced that the best and cheapest way to settle the matter was to have the Department of Labor assume the deportation of aliens rather than recovery of fines, without expense to the unions, but at the expense of persons violating the act. What organized labor wanted was an anti-contract law of general application—a law prohibiting as well as voiding the importation under contract from any country of laborers of any kind. Speaking of compulsory arbitration, Mr. Smith said that, considering the condition of affairs in Canada, he was convinced that the principle was worth a trial, impartial arbitrators to be appointed by the Government. He recommended the organization of a Canadian federation of labor, and though he believed that unionism should be international, such could be assured only by the strength of national unions.

The President, advocating the organization of a national Canadian labor federation, said:—"I think it is of vast importance that this Congress should accept some method of increasing its own usefulness. There ought to be a Canadian federation, for, whilst I believe that unionism ought to be international in its methods, to meet the necessity of combatting common foes, this usefulness is only assured by the strength of national unions. A federation of American unions, represented by a national union, and a federation of Canadian unions represented by a national union, each working with the other in special cases, would be a great advantage over having local unions in Canada connected with the national unions of America. I think greater success would be accomplished in the settlement of disputes in each country if the leaders of each were the representatives of their own national grievances. I do not reflect on any American officials who have handled our labor troubles in Canada, but I am certain

of this, that there are such distinctive differences in the condition of each that a presentment of Canadian matters by Canadian leaders, and vice versa by American leaders, would lead to a greater success, and would not in any way prevent a federation of the national bodies."

A resolution was passed that, owing to the militia having been called out to "aid the monopolist against the laboring classes" at Vancouver, London and Valleyfield, all union men should abstain from joining any military organization, except in case of the country being invaded. The resolution was discussed at length, the general opinion being in its favor, but it was thought by some that the passing of it would impress the public that the trade union organizations of the Dominion were disloyal. An amendment was moved providing that the question be referred to the different Trades and Labor Councils for discussion, and then brought before the Congress next year.

A resolution was passed that the Congress petition the Legislature to discontinue allowing non-union men to carry firearms to intimidate union men striking for better conditions, cases being cited as occurring at Toronto and Brantford during recent strikes. Another resolution was passed that "inasmuch as the work of the Lower House of the Province of Quebec is vetoed by the Upper House, this Congress place itself on record as in favor of the abolition of the Upper House."

The Congress also voted in favor of compulsory conciliation in labor disputes in preference to compulsory arbitration, which was recommended by the President. The teaching of Imperialism in public schools was disfavored, and concurrence was made in the Executive's suggestion to employ a capable lawyer to go to Ottawa to frame and endeavor to have passed bills beneficial to the working class.

Owing to the development of Canadian industries, the extension of trade abroad and the belief that the native population should be trained in the arts and sciences underlying the theory and practice of trades and manufactures, a resolution was passed instructing the Executive to promote the establishment of technical schools adapted to the requirements of the localities where situated, and under the auspices of the Dominion Government or otherwise.

As we have stated, the men who composed the Trades and Labor Congress have the confidence of their respective organizations, and are possessed of large influence in shaping the legislation of Canada. They are earnest workers, and their efforts are to create and regulate conditions in which every manufacturer is deeply interested. What are our manufacturers doing to keep in friendly touch with these organizations? We are not aware that any association of manufacturers, or employers of labor, sent delegates to the Congress bearing kindly greetings, expressing the wish that any actions taken would be for the best interests of the whole country, but it would have been a graceful act, and an eminently proper thing to do.

DOLLARS ARE WANTED.

The migration of the patients from the Lakeside Home for Little Children, on Toronto Island, to the Hospital for Sick Children, on College street, this city, a few days ago, was a most pathetic sight. As is usual every year, with the advent of warm weather, some three or four score of suffering and helpless little children, who were being cared for in the College street institution, and their nurses and attendants, were carried in ambulances and carriages to the deck of a steamer awaiting them at the dock, and after a delightful

excursion on the blue waters of Lake Ontario, were removed with equal care and tenderness to the Lakeside Home, where for several months, in the enjoyment of the refreshing and invigorating breezes from the lake, they were nursed back, some of them, to health, many of them to a condition which prepared them for the closer confinement of the coming winter. The sight of the migration was pathetic; it always is, to see the helpless little ones carried in strong arms, held close to sympathetic and loving hearts; and it is well to bear in mind at all times that it costs money to maintain these most deserving institutions. Reader, feel down in your pocket, fish up a dollar and send it immediately to the Toronto Hospital for Sick Children, or a cheque for a more generous amount would be better; and be assured that whatever you may give will be thankfully received and faithfully applied for the alleviation of the suffering little ones.

EDITORIAL NOTES.

Mr. L. S. Ware, editor of The Sugar Beet, Philadelphia, has been decorated by M. Loubet, president of the French Republic, with the order of Chevalier de la Legion d'Honneur, for exceptional services rendered the world's sugar industry. Mr. Ware was a member of the International Jury at the Paris Exhibition of 1900 and the only American selected by the United States government to defend the cane and beet sugar interests, not only for that country but for the colonies of Cuba, Porto Rico and the Sandwich Islands, representing a total invested capital for the exhibitors of this special commodity of nearly \$500,000,000. The French government has withheld this distinction for a year, so as to keep it separated from exhibition honors, it being intended that it should be granted under a special clause for work accomplished during a period of twenty years. The Sugar Beet is now in the twenty-second year of its publication under the auspices of Mr. Ware, under whom it has assumed the utmost importance as the organ of the beet sugar industry in the United States.

Life has no pleasure for Theodore Shaffer, president of the Amalgamated Association. He ordered a strike against the steel trust without sufficient reason. That strike has proved a failure as it was sure to do. He has called it off. And his followers are the only losers. Some of them are glad to resume work; others, notably the tinplate men, are wild with anger. Some of them will find their old places open to them; others will not. Six tinplate mills once union are now non-union. Some of the tinplate men have formed an independent organization. A delegation of sheet workers was fairly ready for a riot. They represented the Wellsville mill. This mill, they said to Shaffer, had been non-union twenty-two years. The members agreed to join the union in June, and came out on a strike. Now the Amalgamated has deserted them. Scores of the men own homes in Wellsville, but the strike has ruined their employment, and they must go elsewhere. These are only samples of what this strike has done for labor. Mr. Shaffer must bear the burden of the defeat. It will be remembered that when he advised the executive board to end the strike shortly after it began he was overruled and ordered to continue it. He had made a serious mistake in ordering it in the first place; he made a second mistake in not washing his hands of the matter and leaving the onus of defeat on the executive board. If he saw clearly his false position after that conference, as the reports at the time seemed to indicate, he should have resigned the presidency of the Amalgamated

Association. If the experience of other labor leaders, such as Irons and Debs, may be regarded as prophetic, Shaffer, although he fought to the last and carried out the directions of the executive board, will probably soon disappear from the field.—Buffalo Express.

By the Trades Congress, at Brantford, two resolutions were passed which directly conflict with one another. One declares true patriotism to be international; another asks the expulsion of alien laborers. Patriotism is a love of country, of one country, and cannot be made to include more; cosmopolitanism is the reverse of patriotism. The congress, moreover, declared the population of Canada to be cosmopolitan; if it were, it would not be patriotic; it would have no love for one country more than another. The common ground on which the mixed population of Canada meets and unites is Canadian, and not cosmopolitan. If the population of Canada were cosmopolitan there would be no aliens. This the congress did not admit; and it showed the liberality of its cosmopolitanism by calling upon the Department of Labor to assume the deportation of aliens. The congress here shows itself to be national, and in a dubious sense patriotic, forgetting its boasted cosmopolitanism the moment its own interests appear to look the other way. It went so far as to display jealousy of sex rivalry in the fields of labor by deprecating women acting as barmaids. There may be, and we think there are good reasons why they should not so act; but these reasons have nothing to do with the male jealousy, which suggests the restriction of this employment to men.—Monetary Times.

President Shaffer, at Pittsburg, Pa., last week, handed the Associated Press a history of the late steel strike and the terms of the settlement. He complains of desertion by the American Federation of Labor, which he says was pledged to help the Amalgamated Association.

"Perceiving that lack of money, loss of public approval, desertion by hundreds of our own people and neglect by other organizations would make it impossible to gain a decisive victory, we endeavored to save what we could."

The settlement is on the following basis, a separate agreement being made with each company:—The old scale is adopted. Companies may discharge any employees who shall by interference, abuse or constraint, prevent anyone from peaceably following his vocation without reference to connection with labor organizations. Non-union mills shall be reported as such, no attempt to be made to organize, no charters granted, old charters retained by men if they desire. The company shall not hold prejudice against employees by reason of their membership with the Amalgamated Association. This agreement is to remain in force three years, from July 1, 1901, but terminable at ninety days' notice from either party on or after October 1, 1902. This last clause is to be voted upon by the tin lodges and an answer given immediately.

The revised figures showing Canada's financial position for the fiscal year ended June 30 have been published. In his budget speech early in the year, Finance Minister Fielding, estimated the probable revenue on consolidated fund account at \$52,750,000, and the probable expenditure at \$46,400,000, which would give a surplus of \$6,300,000. The estimate of revenue is slightly in excess of the actual figures, while the expenditure somewhat exceeds the prognostication. The total ordinary revenue amounted to \$52,551,722, while the expenditure under the same head was \$46,805,751. This makes the surplus about \$600,000 less than the Finance Minister figured it would be. The capital expenditure upon railway subsidies, the South African contingent, etc., amounted to \$11,083,958. Mr. Fielding's estimate was \$10,700,000, and deducting from this the surplus and sinking fund, he looked for an increase of about \$1,800,000. The increase, as it turns out, will be \$2,849,000. For the previous fiscal year the financial statement was as follows:—Ordinary revenue, \$51,029,999; expenditure, \$42,975,279; surplus, \$8,054,710; capital expenditure, \$9,742,187; decrease of debt, \$779,639. The revenue for the first two months of the present fiscal year was \$8,817,062, or \$600,000 ahead of July and August in the previous year. The expenditure was \$5,362,982, as against \$4,173,471 for the first two months of 1900.

CAPTAINS OF INDUSTRY.

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

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

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

A grand stand, having a frontage of 1,000 feet, which will seat 10,000 people, will be built to the northeast of the permanent grand stand at the Toronto Industrial Exhibition grounds, to accommodate the public at the Royal Review, which will take place there on October 11, at an estimated cost of about \$3,000.

The Sunlight Soap Co., Toronto, are installing one of the Jones & Moore Electric Co.'s slow speed motors for direct connection to one of their presses.

Visitors to Toronto during the forthcoming visit of the Duke and Duchess of Cornwall and York will note a specially beautiful electrical decoration on the big jewelry store of Messrs. Ryrie Bros., Toronto. The work is being done by the well-known firm of R. A. L. Gray & Co.

The gas well of the Grey & Bruce Oil & Gas Co., Hepworth, Ont., has been discovered to be filling up with oil and salt water to a depth of four hundred feet. The oil is of a very superior quality.

Charles E. Hill's carding mill, Nashwaskis, N.B., was destroyed by fire September 21. Loss about \$3,000.

The Consolidated Phosphate Co., Toronto, have asked the council of Hull, Que., for a bonus of \$25,000 and exemption from taxes for ten years, in consideration of which they will erect a factory for the manufacture of fertilizers, the machinery for which would cost about \$50,000.

The Canadian Niagara Power Co.,

Niagara Falls, Ont., has awarded the contract for the tunnel and portal to A. C. Douglas, at a price of over half a million dollars. The tunnel will be 2,200 feet long and 21x19 feet in diameter.

The Burt Mfg. Co., Akron, Ohio, have just entered their tenth order from the Pittsburg Plate Glass Co. for Cross oil filters.

Betford & Jenks, Port Huron, have contracted with the Grand Trunk Railway Co. for the erection of their new elevator at Point Edward, to replace one recently destroyed by fire. The new elevator will be a fine steel structure of 1,500,000 bushels capacity, and will be in operation in twelve months.

Messrs. Sylvester Bros., Lindsay, Ont., have placed an order with the Jones & Moore Electric Co. for an electric light plant.

It is false economy to neglect the repair of anything needing it. Just as much so in the matter of painting the roofs and sidings of your buildings as anything else, and probably more so. Zanzibar Anti-Rust Paint is water and weather proof and one coat will put your buildings in the best condition. Whether for repairing leaks and cracks, or covering new metal, wooden or felt surfaces, Zanzibar Paint produces most durable results. The Garfield Paint Co., Cleveland, O., will be glad to make quotations and send samples of different colors.

The annual report of the Dominion Iron & Steel Co., which is building up an immense steel plant at Sydney, C.B., and also developing iron mines near the steel works, shows that there has been expended up to the present time \$9,571,054.41. In his report to the president, General Manager Moxham says: We have been considerably disappointed in the delay in completing the plant; nevertheless two of our blast furnaces are now in operation and the other two so near completion that their operation will not be long delayed. The 400 coke ovens have been completed. The blooming mill has most of the machinery in place and everything needed to complete it is on the ground. The open-hearth plant is being energetically pushed by the contractors, and at the present rate of progress will be completed during the early fall. The piers and unloading plants are practically completed. We have gone far enough in the development of our ore mines at Wabana and in the working of our coke ovens and also in the development of our limestone to speak with certainty as to these three items. There only remains the cost of labor, and with a thoroughly modern design of plant and the very satisfactory way in which the new machinery has so far dropped into line in its practical working, I think we can rest assured that there is no doubt as to our labor costs.

The sun never sets on Cross oil filters. The Burt Mfg. Co., Akron, Ohio, the manufacturers, report them in use in twenty different countries. A shipment of them was recently made to Stockholm, Sweden.

A company is being formed at Sault Ste. Marie, Ont., by F. H. Clergue, to manufacture steel seamless lap welded and butt welded tubes. The buildings will be 1,200x500 feet, constructed entirely of steel.

The Grand Trunk Railway elevator near Sarnia, Ont., was destroyed by fire September 23. Loss about \$90,000.

Fire in Chadwick Bros.' brass foundry, Hamilton, Ont., did damage, September 25, to the extent of about \$11,000.

The Berlin Brush Works, Waterloo, Ont., was damaged by fire September 21, to the extent of about \$3,000.

Pneumatic Tools and Appliances ARE GREAT MONEY SAVERS.

Air Hoists, Baggage Handlers, for Agitating Liquids or Syrups in Refineries. Cushion and Carpet Cleaners, Clipping Tools for use by Machinists, Boiler Makers, Stonecutters and Marble Works. Calking and Drilling, Air Brushes

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PISTON INLET AIR COMPRESSORS FOR ALL DUTIES
THE JAMES COOPER MFG. CO. LIMITED
 299 St. James St., Montreal

Pneumatic Augers, Punches, Hammers, Rammers, Rotary Drills, and Augers. Reversible Boring Machine, Flue Cutters, Rollers and Welders, Air Lift Pumps, Jacks, Paint Spreaders, Bolt Nippers.

BRANCHES - - ROSSLAND, B.C. RAT PORTAGE, Ont. HALIFAX, N.S.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

The B. F. Sturtevant Co., Boston, Mass., have sent us their catalogue No. 118, having reference to the steam hot blast heating and drying apparatus manufactured by them. Over thirty years ago, we are told, the first steam hot blast apparatus was built by B. F. Sturtevant. It was a small affair with tubular heater and pulley fan, but it contained the embryo of the present type. The introduction of this device marked a distinct departure in the methods of heating, ventilating and drying. It has since been developed until it can be readily built in any proportions and adapted to the most peculiar requirements. The great diversity in sizes and arrangements is one of its essential features. The entire heating surface is massed in a fire proof casing in connection with the fan which can be driven by belt, engine or motor as may be desired; if by engine, the exhaust therefrom can be utilized in the heater. The heated air is forced just where it is wanted, not merely allowed to go; positive circulation and ventilation thus being assured. This action is entirely independent of the weather and may be varied at will. The book is fully illustrated with representations of different adaptations of apparatus. The company

also publish independent treatises on ventilation and heating, and on drying, which illustrates the application of the Sturtevant apparatus for such purposes, and which would no doubt be sent on application.

Messrs. R. A. L. Gray & Co., Toronto, the well-known electrical contractors, report that they have lately completed a couple of miles of pole line, with transformer, for the corporation of East Toronto.

The Jones & Moore Electric Co. are building for the Ontario Chemical Co. one of their new type 20 h.p. multipolar generators and a 25 h.p. 500 bolt motor.

The ratepayers of Smith's Falls, Ont., will give the Frost & Wood Co. \$20,000, and the right of way for a railway siding to their works. Extensive enlargements will be commenced at once.

The Leader Automobile & Engine Co., Toronto, has been incorporated with a capital of \$25,000. The provisional directors include S. E. Van Camp and W. J. Cummings.

The Frazee Storage & Cartage Co., Toronto, is being incorporated with a capital of \$150,000, of which R. J. Copeland, Esq., of the Copeland-Chatterson Co., is one of the provisional directors.

The company has secured the option for a twenty-one year lease upon a lot opposite the west side of the new City Hall, on which will be erected a building about one hundred feet square and six storeys in height. It will be constructed of steel, brick and stone, having concrete floors with automatic sprinkler system making it fireproof throughout, thereby reducing the cost of insurance to a minimum. It will be equipped with a hoist of sufficient capacity to elevate the largest van with its contents, thereby effecting a great saving both in time and expense of handling. It is also proposed that the building will contain a large vault for the deposit of silverware and such like values. Stables and yard will be in the rear of the property.

The Canada Shingle Co., Hastings, B.C., has been incorporated with a capital of \$30,000, to operate a shingle mill, and carry on a general lumbering business.

The Ladysmith Lumber Co., Ladysmith, B.C., has been incorporated with a capital of \$25,000, to manufacture lumber, etc.

The Smith's Falls Electric Co., Smith's Falls, Ont., has installed a new 2,000 incandescent light machine and a 350 h.p. water wheel.

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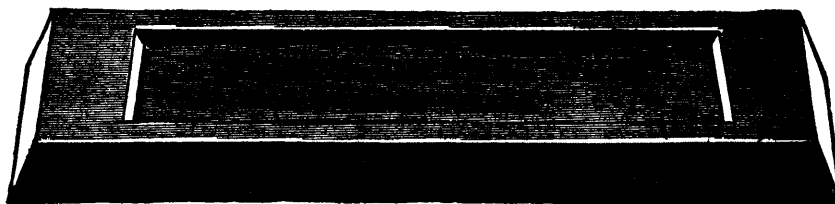
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THE BEST IS NONE TOO GOOD.

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

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AND
ALL OTHER WHITE METAL MIXTURES

SYRACUSE SMELTING WORKS

WILLIAM AND ST. THOMAS STREETS, - - MONTREAL

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

Owing to the ever increasing scarcity of pine in northern Michigan and Wisconsin, the big lumber companies of the United States are deserting their old stamping grounds and removing to Canada. The Saginaw Salt & Lumber Co., one of the largest concerns of its kind in Michigan, has already purchased a large tract on the Detroit River and will at once commence the erection of a large sawmill, using portions of its Saginaw property in its construction. This mill will have an approximate output of 80,000,000 feet of lumber annually. C. K. Eddy & Sons, who have mills in both Saginaw and Bay City, have announced their intention of ceasing operations in Michigan and of removing their plants to Sandwich. The Eddy company is probably the largest lumbering concern in the United States, and the announcement of its removal to Canada gives renewed credence to the story that a gigantic combination of all the lumber interests of the United States is in process of formation. What the result of such a mighty consolidation would be it is not

difficult to foresee. There are no logs left in the Saginaw Valley except a few which will be finished within the next six months and then things will be absolutely dead there. The prohibitive lumber duty prevents the sawing of Canadian logs on the American side at a profit, and the big mill-owners without exception are looking for Canadian locations if they have not already secured them.

A pulp mill will be erected at Dryden, Ont., by Charles Wright, of Port Arthur, Ont.

Messrs. E. H. & W. E. Thomas, will erect a large broom and brush factory in St. Thomas, Ont.

The Dominion General Engineering Co., Montreal, has been incorporated with a capital of \$500,000, to manufacture the Tree rotary engine. The charter members include J. W. Greenshields, K.C. and W. H. Lawrie.

The Jones & Moore Electric Co. have received an order for two 20 h.p. 250 bolt generators complete with switch board from J. Schintzler.

The large steel barge, built by the Hamilton Bridge Co., for the Montreal Transportation Co., was successfully launched from Zealand's ship yards, Hamilton, Ont., a few days ago. The boat is 280 feet in length, with a capacity of 75,000 bushels and was built at a cost of \$50,000. It is probable contracts will be placed for one or two others of even larger dimensions at an early date.

The Canadian Dressed Poultry Co., Woodville, Ont., will establish a cold storage plant at an estimated cost of \$30,000.

The Beitung Iron Co. have a mine twenty-four miles north of Sault Ste. Marie, Ont., which is reached by the Algoma Central Railway. A vein of sixty per cent. specular iron ore, 300 feet wide, has been found. The whole deposit is in the nature of a mountain, suggesting comparisons with the Helen mine at Michipicoten. Machinery will soon be installed, and the company expects to ship ore to the Canadian Soo before winter.

CAMEL BRAND **BELTING**
BALATA
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 Linen Fire Hose,
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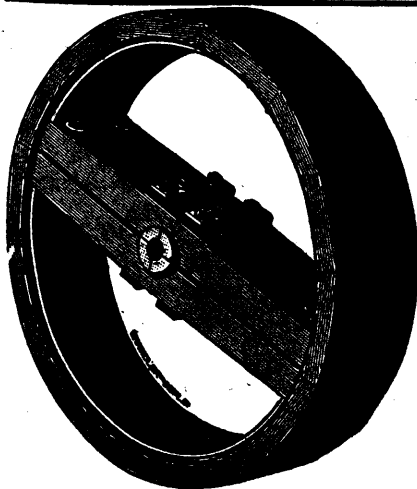
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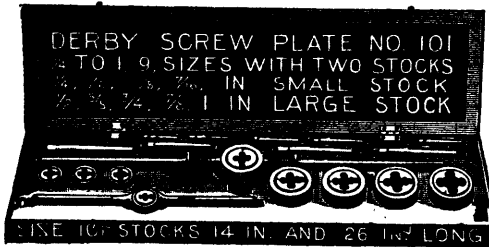
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BUTTERFIELD & CO., - Rock Island, Que.

A new cable has been laid between Pelee Island, Lake Erie, and the mainland, for the Dominion Government, under the supervision of J. F. Richardson, chief electrician of the Canadian Pacific Railway Co's telegraph. There had been in operation a cable previously laid from the island to Point Pelee on the mainland, but owing to the rocky condition of the shore, it seldom stood the ice during one winter. This cable was taken up, and the bad portion taken out, nine miles of deep sea cable spliced on the good portion, and the renewed cable re-laid more to the westward, where a sandy or clay bottom extends between the island and the mainland. The new cable and its shore connection to Leamington, Ont., is 16½ miles in length, a somewhat longer mileage than by the old cable. There is 13½ miles of line on the island. The maintenance of communication between the island and the mainland is of great importance during the winter time owing to the dangerous crossing for the mail. The cable and its land connection on Pelee Island are worked as a telephone circuit.

The new National Museum, Ottawa, will be a three-storey structure, lighted by electricity and equipped with two passenger elevators and a third lift for raising and lowering heavy goods. It is probable that the building will be 250 feet long, with a wing fifty feet long extending from each side. The dimensions of the centre will be determined by the size of an auditorium which it is proposed to erect. This auditorium will be capable

of comfortably seating 350 persons, and will be used for lectures and for the general meetings of the Royal Society. In one wing of the museum there will be an office for the Superintendent of Mines, while in the other wing the director of the geological museum will have his office. Laboratories for the metallurgical and assay offices of the Department of Mines are also likely to be provided, as well as a library for the mines and geological staffs.

The Welsh Tinplate & Metal Stamping Co., proprietors of the Cambrian Works, Llanelly, Wales, have sent us an advance copy of their new illustrated price list of stamped and machine made tinned, japanned and galvanized wares. The lines of articles mentioned in the book embrace those in general use for domestic purposes, and the letterpress is printed in English, French, German and Spanish languages, the measurements in inches and centimeters, and the prices in sterling, the list being prepared chiefly for the export trade. The company have another list in press covering their manufactures of pieced-ware in tinned, japanned and galvanized, which will be published about the close of the year.

Midland, Ont., will spend \$60,000 in improving its water works system.

Messrs. Boeckh Bros. & Co., Toronto, Wm. Cane & Sons, Mfg. Co., Newmarket, Ont., and London Brush Co., London, Ont., have been incorporated with a capital of \$1,500,000, under name of The United Factories, with head office at Toronto.

Wallaceburg, Ont., will establish a new water works system.

Victoria, B.C., will vote on a proposition to raise \$100,000, for sewage purposes.

A flour roller mill will be erected at Vermillion, Ont., by the Hudson's Bay Co.

F. G. Gale, Waterville, Que., will erect a two-storey addition, 85x52 feet, to his factory.

The Royal Carpet Co., will erect a factory at Guelph, Ont., if the ratepayers will raise \$7,000 to help them do so.

W. J. Copp, Hamilton, Ont., will establish an iron foundry at Fort William, Ont.

The Oshawa Wire Fence Co., Oshawa, Ont., has been incorporated with a capital of \$50,000, to manufacture wire, wire-fencing, etc. The provisional directors include Albert Hesselbacher, F. L. Fowke and L. K. Murton, all of Oshawa.

The Ampere Electric Mfg. Co., Montreal, has been incorporated with a capital of \$50,000, to manufacture electrical apparatus, etc. The provisional directors include C. R. Whitehead, R. E. T. Pringle and E. E. Cary, all of Montreal.

The Novi Modi Costume Co., Montreal, has been incorporated with a capital of \$75,000, to manufacture all kinds of clothing, etc. The charter members include Frederick Moule, R. L. Richards and J. W. Long, all of Montreal.

The town council of Mount Forest, Ont., will purchase the works and property of the Electric Light Co.

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Are Made by the **ARMSTRONG MFG. CO., BRIDGEPORT, CONN.**

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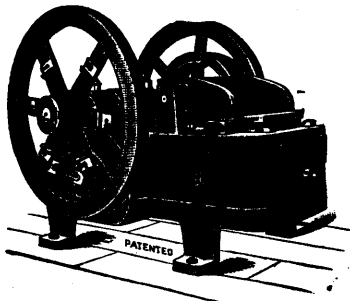
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STURTEVANT MILL CO.,

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

The Three Rivers Gas, Heat & Power Co., Three Rivers, Que., has been incorporated with a capital of \$250,000, to manufacture gas, gasolene and acetylene. The provisional directors include W. J. Poupore, Ottawa, J. C. Malone, Three Rivers and J. H. Doody, St. John, N.B.

The Toe Sea Moss Carpet Co., Fraserville, Que., has applied for incorporation with a capital of \$50,000. The applicants include Eugene Cote, Isle Verte and S. C. Rion, Fraserville.

THE DURHAM RUBBER CO.

We have pleasure in noting the evidences of practical progress being made by The Durham Rubber Co., Bowmanville, Ont. This enterprising concern is steadily working its way to the front. They have been in business but a short time, but already the expansion of their trade has compelled them to add large extensions to their original factory. Their present additions are now well under way, and when completed will more than double their capacity. The new battery of boilers and machinery which they are now installing are of the most modern and up-to-date types, and no expense is being spared in bringing their plant to a state of highest efficiency.

They report business far in excess of last year, and are anticipating a large trade in the coming season, for which

they have already closed some large contracts.

In visiting their factory one receives a cordial welcome, and cannot fail to be impressed with the air of a healthy business.

THE ROBB HOTWATER HEATER.

The Robb Engineering Co., Amherst, N.S., have sent us a copy of their recently published catalogue having reference to the Robb hot-water heater made by them. This heater, we are told, has been on the market for the past six years and its success has far exceeded their expectations. As explained, it is a radical departure from the ordinary patterns of hot-water heaters, and overcomes the objections common to older forms.

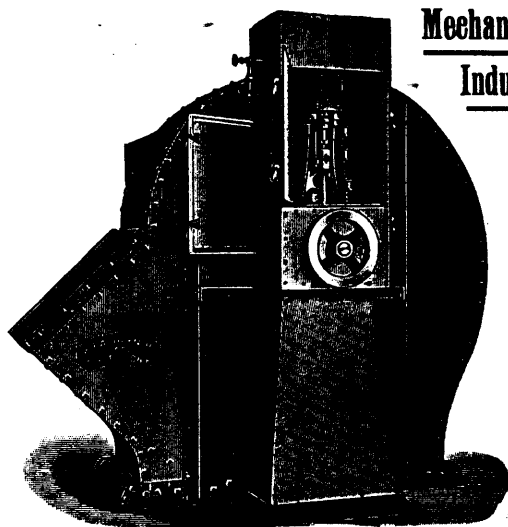
One reason for the great popularity of this heater is that it will successfully burn all kinds of fuel, and is, therefore, suitable for any locality. It does not clog with soot when burning soft coal, and several of these heaters are in use for heating large houses in country districts where wood is the principal or only fuel. Hard coal and coke can also be used with perfect satisfaction.

Heating by hot water, we are told, is undoubtedly the most satisfactory method and is rapidly growing in favor. It produces a mild, even heat throughout the building, and is easily regulated to suit the weather. There are no hissing

or pounding noises such as are heard in a steam system, and there is complete freedom from the dust, ashes and cellar odors which so frequently accompany the heated air from a furnace. Less fuel is required than with other systems, and with ordinary care, practically no repairs. The only objection that may be urged against hot-water heating is the greater first cost, but this is more than offset by the durability and economy in fuel.

To obtain the best results from this system it is necessary to select a heater properly designed for the work, and the principles of hot-water heating are briefly given to show what are the requirements of a good heater.

The grate upon which the fuel rests is intended to admit the air between its bars in order to supply the necessary oxygen to keep up combustion. If too little air is supplied, the fire will not burn properly and fuel will be wasted. The smoke rises in the chimney because it is lighter than the atmosphere and produces a partial vacuum above the fire, which causes the air to draw through the grate. If the chimney is too small, or obstructed in any way, there will not be sufficient draft, and any obstructions in the smoke flues or passages of the heater will have the same effect. In burning fuel such as soft coal or wood, which makes a long flame, a certain amount of room above the fire is necessary for



Bottom Angular Up Discharge Right Hand Fan.

Mechanical Induced DRAFT FANS

Installed in connection with a Boiler Plant, will prevent smoke, will give greater fuel economy and increased boiler capacity, besides which the initial cost is far less than that of a chimney.

Mechanical Draft may be applied to old boilers to increase draft at a minimum initial outlay.

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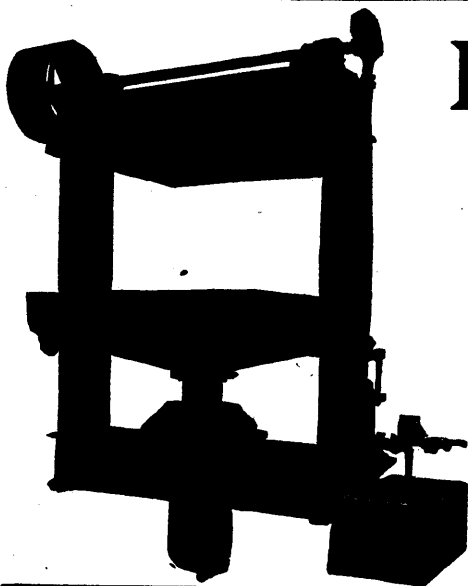
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combustion. If comparatively cold surfaces, such as the sections of a hot-water heater, are too near the fire, the flame will be checked and smoke will be produced in exactly the same way as the flame of a lamp becomes smoky when held close to the bottom of a cup of water.

Certain substances are good conductors of heat, others are poor. Cast iron is a good conductor, and the amount of heat that will be transmitted through it depends upon the difference in temperature of the fire on one side and the water on the other. The hotter the fire and the cooler the water, the more heat will be transmitted. Soot is a very poor conductor of heat. A coating of one-half inch will almost entirely prevent the transmission of heat, while a very slight coating means a large waste of fuel.

The particles of water at the bottom of a pot over a fire expand as they become heated, and being therefore lighter than the remainder of the water, float to the top, the cooler particles descending. The same thing takes place in a hot-water heating system, the water as it is heated rising to the radiators in the rooms, the cooler water in the radiators descending to the heater. As already stated, the cooler the water the more heat it will absorb from the fire. It is therefore important that the motion of the water be as rapid as possible. The quicker the

heated water moves away, allowing colder water to take its place, the greater will be the economy and efficiency of the system. Any obstructions in the piping, radiators or heater which impede the circulation of the water are therefore a serious disadvantage. For instance, if the heater is so constructed that the water has to travel through crooked, narrow, horizontal passages, the circulation will be slow and the transmission of heat imperfect.

The book contains numerous illustrations having reference to the Robb heater as a whole, and its various constituent parts, with appropriate explanations thereof, price lists, etc., which will be sent on application.

VULITE.

The Vulite Syndicate, 40 Wilson St., Finsburg, London, E.C., England, have received a letter from the Virgemount Chemical Works, London, England, of whom Messrs. Boake, Roberts & Co. are proprietors, regarding their experiments with Vulite, in which they say:

We have now completed the series of experiments which we have had in hand for some time, in regard to bringing Vulite up to a standard of efficiency that must command general recognition, and we give you below the results.

A natural hard water was taken and

tried at the rate of one part of Vulite to 500 of water; the water was then boiled for two hours with this addition of Vulite, and after the above period, was allowed to settle and the clear supernatant liquor examined, with the following results:

	Original water.	After treatment with Vulite.	Salts Rem'vd.
Silica.....	.84	.28	.56
Oxide of iron.....	.84	.28	.56
Calcium carbonate	17.95	1.05	16.90
Calcium sulphate.....	9.37	2.36	7.01
Magnesium carbonate..	4.56	.00	4.56
Magnesium sulphate...	15.99	7.56	8.44

The above figures represent grains per gallon.

The salts above mentioned are those which form incrustation in steam boilers, and it will be noticed that after same had been treated for two hours only, the Vulite removed seventy-six per cent. of these undesirable bodies, which shows the improvement of what would be equivalent to forty per cent., and we have every assurance that if Vulite is used regularly and according to requirements, it unquestionably would prove a most effective disin crustant.

The John Calder Co., Hamilton, Ont., has been incorporated with a capital of \$50,000, to manufacture clothing. The provisional directors include Arthur Horsfall, William Southam and John Calder.

CONTRACTORS, ATTENTION!

If you are excavating in stone, use

THE "LITTLE GIANT" ROCK DRILL

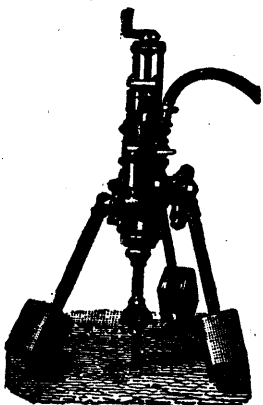
... NINE SIZES ...

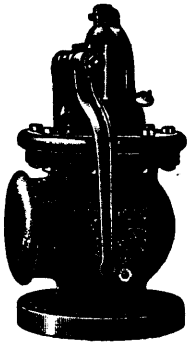
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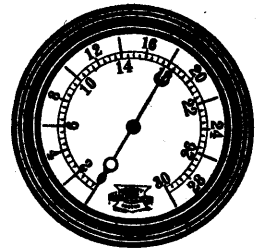
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A TRUTHFUL GAGE IS THE ONLY GOOD GAGE



THE HURONIC.

The steamer Huronic, the largest fresh water vessel ever built in Canada, was successfully launched at the yards of the Collingwood Shipbuilding Co., Collingwood, Ont., Thursday, Sept. 12. A special train from Toronto carried a number of distinguished visitors to Collingwood to attend the launch. The vessel was christened by Miss Long, daughter of President John Long of the shipbuilding company. The Huronic was built to the order of the North-West Transportation Co., Sarnia, from designs by Hugh Calderwood, manager of the shipbuilding company. She is constructed of open hearth steel throughout, and is of the following dimensions: length over all, 325 feet; between perpendiculars, 308 feet; beam, 43 feet; moulded depth, 27 feet. She will have accommodation for two hundred saloon passengers and a large number of steerage passengers. The propelling machinery was built by Messrs. John Inglis & Sons, Toronto, from designs by their superintendent, Mr. James C. Smith, late of Chicago and West Superior. The machinery consists of a vertical triple-expansion engine with cylinders 26, 42 and 70 inches in diameter by 42 inch stroke. Steam is supplied by four Scotch boilers, 12 feet 6 inches in diameter by 12 feet long. The steamer

is designed for a speed of 15½ miles loaded. At the banquet after the launch of the Huronic, Mr. John Long, the president of the company, spoke of the need of a bonus to stimulate the steel shipbuilding in the Dominion. He declared that foreign ships should have only such rights in Canada as Canadian ships have in the countries from which the foreign bottoms come. He added that it was the development in the west of Canada that had encouraged his company to take up shipbuilding. Hon. Israel Tarte, Minister of Public Works, spoke as follows:

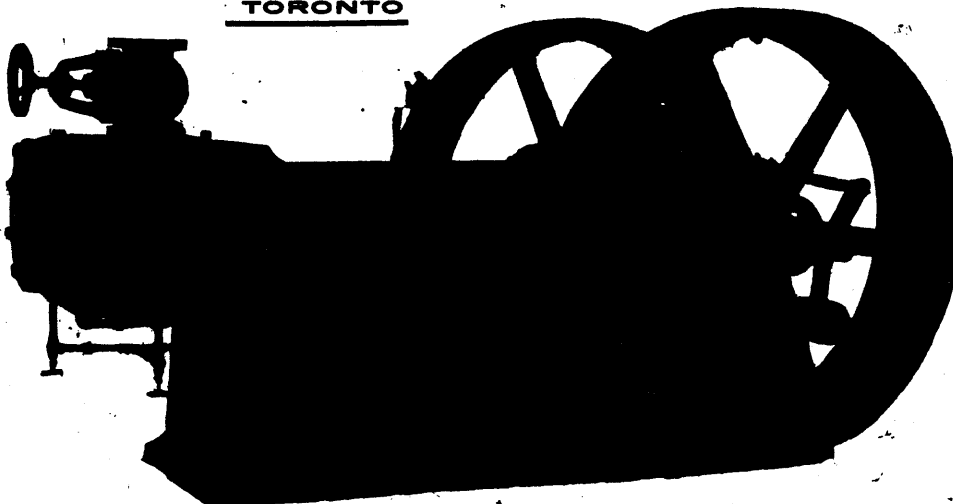
Canada is making splendid progress. I altogether decline to agree with those who find cause for disappointment in the last census. We are doing remarkably well. We often forget we are a young country. Confederation is only thirty years old—just long enough to have laid the foundations of this country. The launching of that noble ship is the best evidence that we are doing well. At confederation Canada consisted of small and scattered communities. We are understanding each other better and better, and Canada stands to-day a united nation. We invite foreign capital to Canada, provided it comes to us to stay. A few days ago I had to refuse the offer of Captain Wolvin. I would have been unworthy the confidence of the Canadian Parliament had I done anything else. We are short of Canadian bottoms to

carry Canadian trade. The present Canadian bottoms cannot carry more than 5,000,000 bushels of grain. We are short of Canadian bottoms, but we are not short of courage, and we have the spirit and enterprise and skilled labor to make good the deficiency. Let us keep cool; let us not give away our national property because we are not immediately ready to handle all our trade. Let us be for this country before everything else, and we will come out all right.

Mr. Tarte then directed some attention to the railways. He said: The transportation question is to be solved. We are solving it by improvements. The railways will have to help us. I am glad to see here my friend Mr. Reeve, general manager of the Grand Trunk. The Grand Trunk Railway Co. is powerful, but not as powerful as the Canadian people. We are their bosses. They have their terminal now at Portland, but the time will come when the Grand Trunk will be glad to come back to Canada, because we have the shortest route to the English market. We look to them to make it the best, and the Grand Trunk will realize that as soon as the facilities of the St. Lawrence river are sufficient. We will have to spend money. Master of the administration, as I am, I cannot do it without money. The question is, will the Canadian people fully make up their minds to stand by their own country? You have heard

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of the possibility of the country bonusing shipbuilding. Well, for a free-trade government it is a pretty hard thing to do. The Americans have closed their doors to us. We should keep our trade for ourselves. Shipbuilding might be bonused for two or three years if enough Canadian bottoms could be built in that time to carry Canadian trade in Canadian channels. In the meantime the ports of Quebec and Montreal and St. John will be made right. Do you appreciate the magnitude of the possibilities we have on hand? Let us have a sufficient Canadian lake marine; we will be a great nation quicker than most people believe. We will make greater progress in the next ten years than in the last forty years.

Capt. Alex. McDougall spoke upon the growth of Canada's trade and facilities. He approved the system of waterways furthered by Mr. Tarte. He declared that the lake marine and ocean marine must remain separate. To unite them would not pay. There must, he said, be transhipment at the seaboard.—Marine Record.

IMPROVEMENTS AND NEW INDUSTRIES AT SAULT STE. MARIE.

A resume of the work now being carried out at Sault Ste. Marie has been compiled, and from the particulars given up to date we take the following:

At Sault Ste. Marie eight dredges have begun work on an approach and channel for the great ore receiving and shipping

dock the Clergue companies have decided to put in. These docks will be above the Canadian lock about a mile and near the site of the charcoal furnaces and initial steel plant, now nearly ready for operation. A site has been chosen further up the shore at the long point that sweeps out into the "Soo" river, for the proposed additions to the steel-making capacity of the company. This will be improved later.

The great power canal of the Michigan Lake Superior Power Co., on the American side of the rapids, is about completed so far as the excavation is concerned, though it will take a long time to clean up the bottom, line the sides of the canal for the lessening of friction, cut out the ends that now hold the water back, and complete the power house. The turbines will be started up next summer. Work on the mammoth power house is progressing very fast. The foundations are all in, the steel work has arisen one storey, the steel and masonry receiving chambers are done, and the turbines are being placed very fast. A number of them are already in and ready, while many more are on the ground. Each of the eighty is expected to develop more than 600 horse power, making an installation equal to that at Niagara. Excavation of the wide forebay—1,400 feet across at the power house end—is done, and the sides are being lined with timber and masonry. This power house is the largest steel erection under construction in America to-day, there being more than

6,000 tons of structural material in the building. To aid in this construction six travelling derricks are placed upon tracks on the top of the steel work and are in constant use. In addition to them, hydraulic riveters, etc., are in continuous occupation. The masonry curtain of this building along the river front is up one storey and will be pushed up as fast as the three remaining storeys of the steel work can be raised.

Excavation for the third power canal, the second upon the Canadian side, is well started, and will be pushed, as there is need of the rock to be taken therefrom. This rock is going into the various buildings under way about the chemical end of the works, in connection with the sulphur and nickel works as well as for the wall of the steel mills up the river.

These steel mills will be in operation, rolling about 500 tons daily, in two or three months. The foundations for two charcoal furnaces of 150 tons daily capacity each are in, and the substructure is raising as rapidly as the material can be brought and put in place.

Steel ore cars of fifty tons capacity are being constantly received for the Helen mine railway, and are forwarded to the mine by shipload. Those cars are now stenciled "Algoma Central & Hudson Bay Railway," as is all the rest of the rolling stock of the company. The main line of road northward from the Sault is being steadily pushed northward, and is expected to make a connection with the Helen mine, 100 miles north, this winter,

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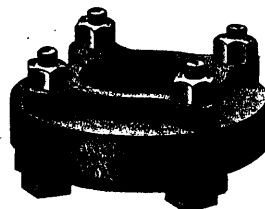
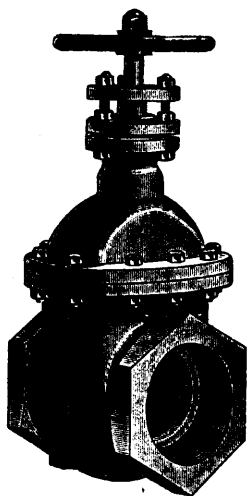
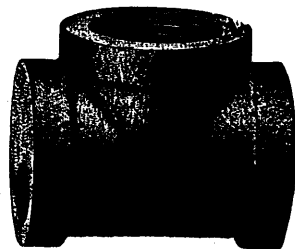
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STEAM TRAPS and RADIATOR VALVES,
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We can forward goods same day as we receive orders. Write for Latest Price List.

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TORONTO, ONT.**



so that ore can be brought down at any season to the works at the Sault. The Helen mine road itself is being pushed northeasterly to the new Josephine mine, and to a connection with the main line at the point where surveys show the junction. Work has commenced at this Josephine mine, and that property is expected to make some shipments next year. A careful sampling of the Helen is showing a better grade of ore than had been anticipated, and it looks as though careful mining, such as can be carried forward when the property is more fully opened, will furnish a Bessemer grade.

With the approaching completion of the American canal and the drain upon Lake Superior that will thereafter result, it was necessary to hasten the work upon the proposed dam across the Sault rapids. This dam has been under way now for a month, and the concrete piers are about completed for a fourth of the width of the river. The dam follows the line of the Canadian Pacific's international bridge. The concrete piers are closely spaced, and will be connected by steel shutters, etc., that will regulate the flow of the stream. This dam will be completed by the time the American canal is ready for water. Instantly the flow over the rapids will be greatly reduced. With the additional drain that will come with the second Canadian power canal, the flow over the old channels will be nearly dried up, and the historic Sault rapids will be a mere memory.

The company's railway projects east of

the Sault, in the Sudbury country are progressing, and there are now several pyro-tite miners there in preliminary operation for this concern.

These and other developments are progressing as fast as possible. It means a vast expenditure and an enormous machinery of organization. This organization reaches far beyond the limits of the Sault and the immediately surrounding region, and if it could be laid bare would present a magnificent example of heroic activity and foresight.

Mr. Clergue is not building for the immediate future, vast as that is, but for a very considerable period, and as time progresses and the foundations laid far down are built upon and come into view, the work now being carried forward will assume its true importance and its real connection with the scheme of Canada's advance and development.—Marine Record.

THE MINERALS OF ONTARIO.

Mr. Thomas W. Gibson, director of the Ontario Bureau of Mines, in his recently issued report covering the year 1900, gives an interesting table comparing the mineral output for the Province for the first three months of 1901 with that for the whole of 1900. The aggregate value of the output for the quarter was \$827,860, showing a large proportional increase as compared with the whole of the year 1900, for which time the yield of the same products was \$2,541,131.

	Three Mths, '01.	Twelve Mths, '00.
Gold—		
Ore treated, net tons	10,174	46,618
Gold product, oz	3,150	18,767
Value of gold	\$54,520	\$297,861
Silver—		
Silver product, oz	20,077	160,612
Value of silver	\$12,046	\$96,367
Nickel and Copper—		
Ore raised, net tons	72,036	218,693
Ore smelted, net tons	36,706	211,960
Matte product, net tons	5,832	23,336
Nickel in matte, net tons	903	3,540
Copper in matte, net tons	840	3,364
Value of nickel	\$190,858	\$756,626
Value of copper	\$75,625	\$319,681
Iron ore, net tons	36,503	90,302
Value at mines	\$44,106	\$111,805
Pig Iron—		
Ontario ores, net tons	21,083	22,887
Foreign ores, net tons	27,580	77,804
Mill cinder, etc.	3,486	13,092
Pig iron, product	28,694	62,386
Value of pig iron	\$438,659	\$936,066
Arsenic, lbs.	236,054	606,000
Value	\$12,046	\$22,725

The largest increases are in iron ore and pig iron; nickel and copper remain at about the same level of production; arsenic shows a decided increase, while gold and silver have fallen off.

The quantity of iron ore smelted into pig iron during the quarter at the three furnaces in Ontario, all of which are in steady operation, was 48,663 net tons, of which 21,083 tons were from Ontario mines and 27,580 tons were imported ore. The proportion of native ore smelted during the quarter rose to forty-three per cent. of the whole, as against twenty-three per cent. in 1900. In addition to

Valves
The Standard for Valve Excellence.
TRY ONE ON YOUR WORST PLACE
Made in all the Standard Patterns.
The Jas. Morrison Brass Mfg. Co. LIMITED.
 Steam Specialties, **TORONTO**

STOP REPAIRS

Caused by a dripping exhaust pipe—it's a needless expense.

A Burt Exhaust Head

Stops it all—noise, trouble, expense.

SEND FOR CATALOGUE.

THE BURT MFG. CO.,

AKRON, OHIO, U.S.A.

LARGEST MFRS. OF OIL FILTERS IN THE WORLD

PERSISTENCE IN ADVERTISING..

In the expansion of business now bringing profit to so many manufacturers, advertisers who have made themselves regularly prominent in past years have been notable in reaping the rewards of persistent publicity by advertising in

The Canadian Manufacturer.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

ESTABLISHED 1823.

WILSON BROS. BOBBIN CO., LIMITED (1900)

LARGEST MAKERS IN THE WORLD
45 GOLD MEDALS AND DIPLOMAS



BOBBIN AND SHUTTLE MANUFACTURERS



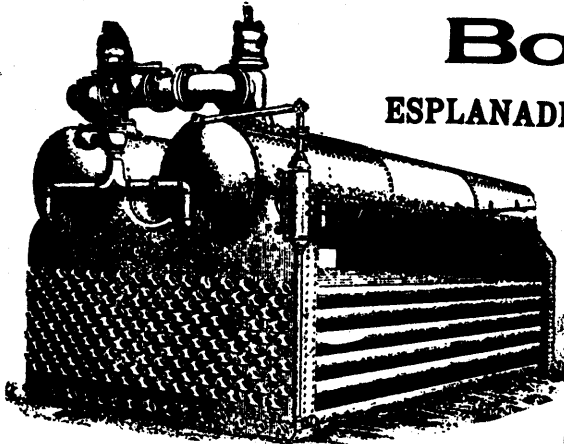
Address, - CORNHOLME MILLS, TODMORDEN

TELEGRAMS :
"WILSON'S, CORNHOLME,"
ABC and AI Codes.

BRANCH WORKS—LIVERPOOL AND ST. HELENS
Office and Showrooms—14 Market Place, Manchester.

The Canadian Heine Safety Boiler Co.

JOHN J. MAIN,
MANAGER.



ESPLANADE (Opp. Sherbourne St.)

TORONTO

HIGH-CLASS
Water Tube Steam Boilers..

FOR ALL PRESSURES
DUTIES AND FUEL

From 75 to 600 H.P. Each

REFERENCES :

N.B.—We do not make small Boilers

The Toronto Electric Light Co., Limited; The T. Eaton Co., Limited; The Massey-Harris Co., Limited; The Gutta Percha Rubber & Mfg. Co.; The Wilson Publishing Co., Limited; Sunlight Soap Co., Dominion Radiator Co., Central Prison, Foresters' Temple, Toronto City Hall, Canada Biscuit Co., Confederation Life Co. (all of Toronto, where Boilers may be seen working), also Orillia Asylum, Orillia, Ont., and LaPresse Publishing Co., Montreal.

the ore, 3,486 tons of scale and mill cinder were smelted.

The total quantity of nickel and copper ore mined during the three months was 72,036 tons, being a proportional increase as compared with the whole of 1900 of thirty-one per cent. The quantity smelted was 36,706 tons.

The following table gives a comparison of the values of mineral products in 1898, 1899 and 1900 :

Product.	1898.	1899.	1900.
Building stone, rubble, etc.	\$750,000	\$667,532	\$650,342
Cement, natural rock.....	74,222	117,039	99,994
Cement, Portland.....	302,096	444,227	598,021
Lime.....	308,000	535,000	544,000
Drain tile.....	225,000	240,246	209,738
Common brick	914,000	1,313,750	1,379,590
Pressed brick & terra cotta	100,344	105,000	114,419
Paving brick.....	42,550	26,950	26,950
Sewer pipe..	93,717	138,356	130,635
Pottery.....	155,000	101,000	157,449
Petroleum products.....	1,243,490	1,747,352	1,869,045
Natural gas..	301,600	440,904	392,823
Carbide of calcium.....	55,976	74,680	60,300
Salt.....	278,886	317,412	324,477
Gypsum.....	4,000	16,512	18,050
Graphite.....	6,000	16,179	27,030
Talc.....	500	5,000	5,000
Mica.....	7,500	38,000	91,750
Corundum.....	.....	.....	6,000
Felspar.....	.....	.....	5,000
Iron ore.....	48,875	30,951	111,805
Pig iron.....	530,789	808,157	936,066
Steel.....	.....	.....	46,380
Nickel.....	514,220	526,104	756,626
Copper.....	268,080	176,237	319,681
Zinc ore.....	.....	24,000	500
Arsenic.....	.....	4,842	22,725
Gold.....	275,078	424,568	297,861
Silver.....	51,960	65,375	96,367
Totals.....	\$7,235,877	\$8,416,673	\$9,298,624

The total value of the output in 1900 was \$881,951 more than in 1899, an increase of ten per cent. The number of workmen employed and the amount paid in wages were respectively nine per cent. and fifteen per cent. in excess of the figures for last year. The chief increases were in Portland cement (\$153,794), petroleum products (\$121,693), iron ore (\$80,854), pig iron (\$127,909), nickel (\$230,522), and copper (\$143,444), and the main decrease in natural gas (\$48,081), and gold (\$126,707).

The "NEW YANKEE" **Drill Grinder**

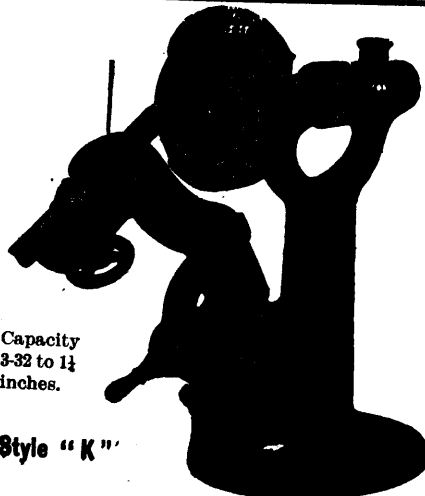
SAVES 50 PER CENT. OF TIME IN ADJUSTMENTS

COMPLETELY
SELF-
CONTAINED

OUR machines require no wrench, measuring instruments or gauge saws. We have entirely done away with them. Any amount of clearance desired can be obtained instantly. Drills can be ground to do more and better work. Send for Catalogue showing 10 styles, and full explanation of machines grinding from No. 60 to 5 inches.

JOHN LUMSDEN & CO., 375 St. James St. MONTREAL

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



Capacity
3-32 to 1 1/2
inches.

Style "K"

In the following table are given figures showing the progress of the pig iron industry during the past five years:

	1896.	1899.	1900.
Ore smelted, tons..	51,138	110,036	100,692
Scale and mill cin- der, tons.....	5,888	10,004	13,092
Limestone for flux, tons.....	8,657	25,301	24,927
Coke for fuel, tons	30,348	74,403	59,345
Charcoal for fuel, bushels.....			955,437
Pig iron product..	28,302	64,749	62,386
Steel product.....			2,819
Value of pig iron product.....	\$353,780	\$808,157	\$936,066
Wages for labor...	\$47,000	\$79,869	\$97,905
Average workmen, number.....	125	200	419

The total quantity of pig iron produced during the year was 9,344 tons less than in 1899, but there was again an advance in the value per ton, the average price rising from \$12.48 in 1899 to \$15 in 1900. The total value of the pig product in 1900 was therefore \$127,909 more than in 1899. Steel figures in the returns for the first time, 2,819 tons of the open hearth variety having been produced at Hamilton, worth \$46,380.

Ores raised from mines in Ontario were smelted to the extent of 22,887 tons, or twenty-three per cent. of the whole, the remainder being ore imported from the United States, mostly from the Lake Superior district. It is in every way likely, now that an abundant supply of good hematite has been discovered in the Michipicoten district, which can be freely drawn on for the use of Ontario furnaces, that the proportion of native ores smelted during 1901 and succeeding years will be much greater than heretofore.

There were 200 workmen returned as employed at the blast furnaces of the Province in 1899, earning aggregate wages of \$79,869; in 1900 the average number was 419, and the wages paid \$97,915. From the latter amount is excluded wages paid for construction work on the new furnace at Midland. In the iron mines themselves 439 men found employment, whose aggregate earnings were \$107,583. This is nearly as large a sum as the value of iron ore produced, but in it is included a considerable amount expended in opening up the Helen and other mines and placing them in a position to begin shipments.

The production of pig iron from Ontario ores and the amounts paid out of the Iron Mining Fund since its establishment have been as follows, it being understood that under the regulations framed in pursuance of the Act the bounty year ends Oct. 31 annually, and that aid is given only in respect of ore raised subsequently to Jan. 1, 1896, and actually smelted into pig iron in the Province:

Year.	Tons Pig Iron.	Bounty.
1896.....	4,000.00	\$4,000 00
1897.....	2,603.95	2,603 95
1898.....	8,647.19	8,647 19
1899.....	12,752.07	12,752 07
1900.....	6,737.80	6,737 80

Totals..... 34,741.01 \$34,741 01

The iron industry is further aided by the Dominion government's bounty on

Toronto Elevator Co.

MILLWRIGHTS AND ELEVATOR SPECIALISTS

Estimates Given and Losses Adjusted

OUT-OF-TOWN WORK PROMPTLY ATTENDED TO.

PHONE JOHN H. SHALES, 1535 Manager

AGENTS FOR....
Miller Bros. & Toms,
Elevators
Leitch & Turnbull Co.
Limited, Elevators.
Greening's Wire Ropes.

74 ADELAIDE ST. WEST
TORONTO

ALEX. GARTSHORE, President. J. G. ALLAN, Sec.-Treas. JAS. THOMSON, Vice-Pres. and Gen. Mngr.

GARTSHORE-THOMSON PIPE & FOUNDRY CO. Limited

GAST IRON PIPE

3 in. to 60 in. diameter.

For Water, Gas, Culverts and Sewers

Special Castings and all kinds of

FLEXIBLE AND FLANGE PIPE.

WATER WORKS SUPPLIES

HAMILTON, ONT.

PACKARD

ELECTRIC COMPANY LIMITED

MAKERS OF

LAMPS AND TRANSFORMERS

SOLE AGENTS FOR CANADA

SCHEEFFER RECORDING WATT METERS

ST. CATHARINES, - CANADA

A Money Maker...



SUTTON BOILER COMPOUND

PREVENTS

Loss of life and property, and saves fuel and expensive repairs. Trade mark is on every package for the protection of our customers. For Engineers' Supplies, Oil, Grease, Packings, etc., write

THE WM. SUTTON COMPOUND CO., OF TORONTO LIMITED

186 QUEEN STREET EAST

pig iron, puddled bars and steel ingots. The Canada Iron Furnace Co., the Deseronto Iron Co. and the Hamilton Blast Co., all received the Dominion government's aid.

GLASS PAVEMENTS.

The inventor of the glass pavement, which is winning its way in France, is a M. Garcher, who manufactures his product from finely crushed glass, which is subject to great heat and heavy pressure. The result is that a substance which is said to be less affected by wear

than the best and hardest granite, and to support a pressure of over 10,000 pounds to the square inch. To break a slab of the material a weight of nearly five tons, falling from the height of three feet was necessary. This glass pavement is being laid down at the expense of its inventor in several test places where the traffic is exceptionally heavy. If at the end of five years, the pavement has worn well, the municipality has undertaken to adopt it on a large scale; if not, M. Garcher, who evidently has confidence in his material, is under contract to replace the old pavement at his own cost. Unfortunately, the new pavement is said to be noisy.

The Wm. Hamilton Mfg. Co.

Peterboro, Ont., Can.

Acting as the Patentee's Licensee

Are prepared to manufacture and supply

SAVERY'S PATENT SHAKE FRAMES

—FOR—

Fourdrinier Paper Machines,

AS DESCRIBED IN

Canadian Patent No. 57,819.

—ALSO—

SAVERY'S PATENT COMBINED DRYER STEAM JOINT AND SAFETY VALVE

AS DESCRIBED IN

CANADIAN PATENT No. 68,093.

ABOUT 2,000 NOW IN USE.



BALE'S Fire Cement

FOR
LINING AND REPAIRING
STOVES, FURNACES, RETORTS

And all work where
great heat is required.

BALE & CO., Newgate St., LONDON, ENG.

GAS PURIFICATION and GENERAL
IRON MERCHANTS



TRIMO
This PIPE WRENCH
is drop forged and built for hard usage. Does
not crush, slip, or lock. All parts interchangeable.
Send for catalog showing complete line.

TRIMONT MFG. CO., Roxbury, Mass., U.S.A.

FOR SALE

The Manufacturing Rights, patented in Canada, of a VALUABLE APPLIANCE extensively adopted by Electrical Lighting Companies and users of high steam pressure in Great Britain. Full particulars from

WOOD & GREGORY, Limited,
Duke's Rd., LONDON, ENG., W.C.

LABRADOR.

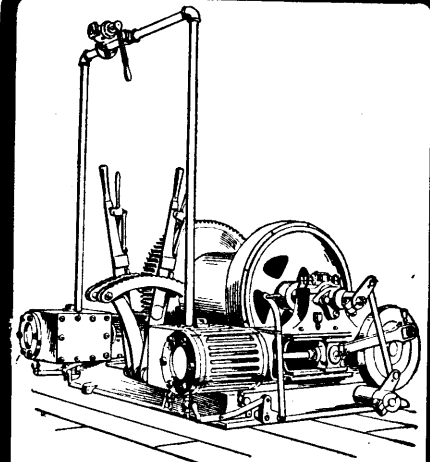
Labrador is now attracting the attention of mining capitalists, and its exploitation on a large scale may be looked for ere long. While it has not been known so far as to have any gold deposits, it does possess iron beds and pulpwood areas of perhaps even greater value than the Klondike's wealth, and certainly more accessible. Labrador occupies a portion on the eastern face of the continent akin to that occupied on the west by the Yukon territory, but for four or five months of the year Labrador can be reached easily by the mail steamer plying from this port.

The territory is vast—half as large as Europe—and settled only along the coast line by about 3,000 Newfoundland fishermen and as many Eskimos. Scattered bands of Montagnais Indians roam the interior, estimated at about 5,000 in all, who trap and chase deer and other animals. A few explorers who have journeyed through parts of this region have returned with glowing accounts of its mineral and timber wealth, and now the tide of capitalistic interest is setting in that direction. Newfoundland governs the eastern slope and supplies the only convenient method of reaching the coast line; Canada controls the western half, whence no development is possible save by way of Hudson's Bay and Strait.

The most significant indication of the trend of commercial expansion as to Labrador is that A. P. Low, of the Dominion geological survey, the only Canadian scientist familiar with the region, has been induced to resign his post to accept a place with a Philadelphia syndicate, at a salary of \$10,000 a year, to explore and locate mineral deposits in the Labrador peninsula. The syndicate plans for operations on a large scale along the great rivers which seam the region, and looks for a big return on its investment. Mr. Low and party are now on their way from Ottawa to this port, where they will join the mail steamer which runs from here along the Labrador coast during the summer months, and which will

**E. B. THOMPSON,
CUSTOM HOUSE BROKER
GENERAL FORWARDING
and TICKET AGENT,**

Correspondence Solicited. **38 YONGE ST., TORONTO.**



BACON'S 1901

Hoisting Engines

These engines are designed with special reference to efficiency, durability and convenience in operation.

Besides various standard sizes and styles, modified types are built, specially adapted for underground use, contractors, bridge builders, ships and docks, operating cableways, etc., etc.

Whether your requirements are small or large, we shall be glad to receive your inquiries, and to submit attractive figures for your consideration.

**JENCKES
The MACHINE
COMPANY.**
SHERBROOKE, QUE.

Branch Offices in
Principal Canadian Cities.

COAL JAS. H. MILNES & CO. COKE

WHOLESALE DEALERS IN
Best Grades of STEAM COALS.
Best Grades of BLACKSMITHS' COALS.
Best Grades of FOUNDRY COOKES.
 Shipments made direct from Mines to any point in
 Canada. Write for quotations.

Head Office: 78 QUEEN ST. EAST

TORONTO.

Docks: Esplanade, Foot of Yonge

convey them to the locality where their prospecting will be set on foot.

This is not, however, the only expedition proceeding there this season. Mr. Clergue, of Ontario, who is inaugurating immense industrial enterprises in the northern part of the province, has arranged for the steamer Glencoe to take a large exploring party up through Hudson's Bay to determine if a trade outlet by that waterway can be maintained successfully.

He is now proposing to capitalize his several properties into a corporate concern with a stock list of \$120,000,000, and if it can be shown that there is a marine route in this direction which will enable the company's products to be shipped direct, it will considerably improve the prospects of the proposed corporation. His party will likely remain in the region until late in the fall so as to prospect the territory thoroughly.

PEAT MOSS FOR PAPER MAKING.

The utilization of peat moss in the manufacture of paper forms the subject of an English patent, recently granted to

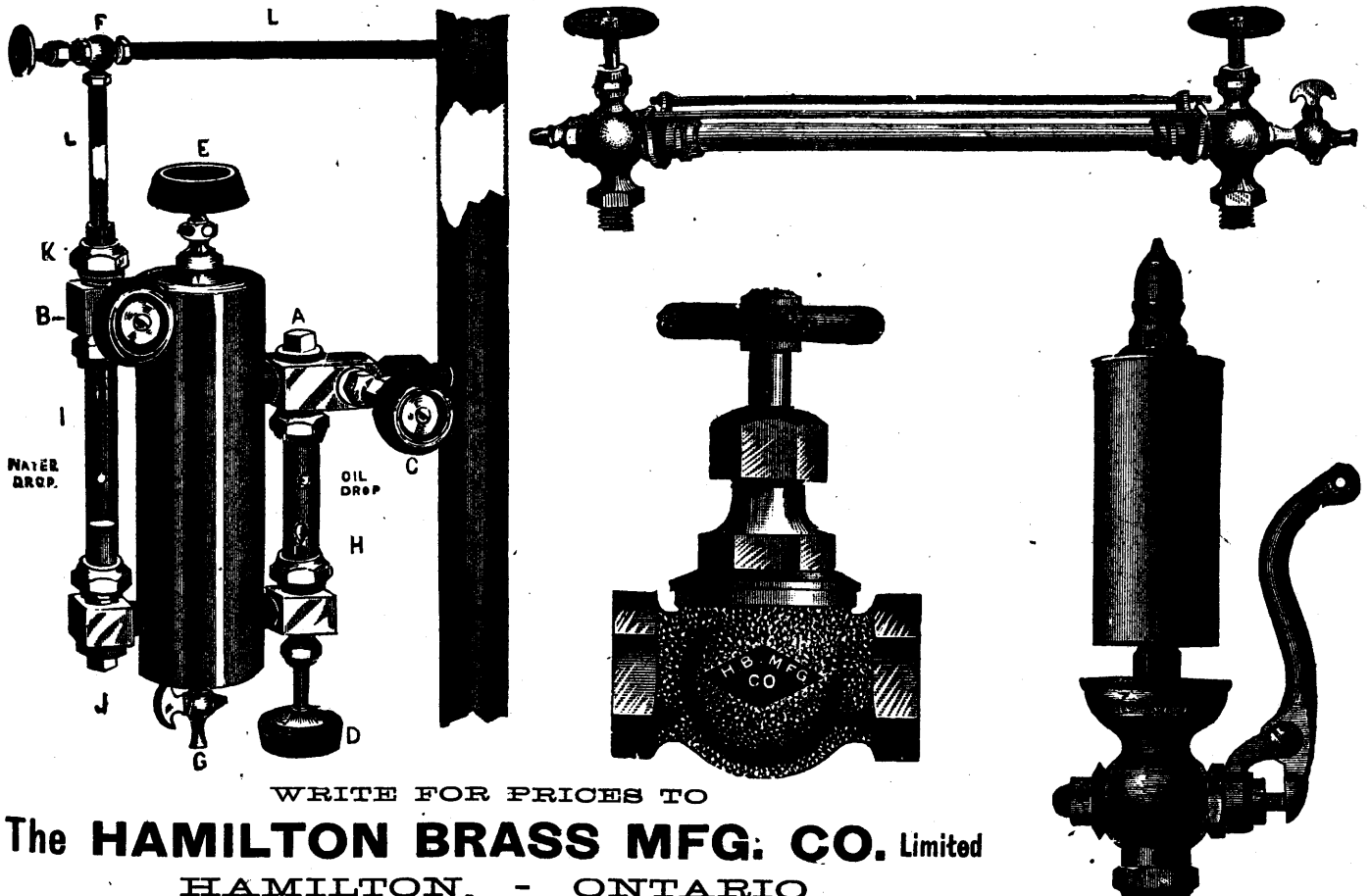
W. M. Callender. It is admitted that many attempts have been made with more or less success to produce a fibrous material from peat. In the present process it is claimed the material is entirely different from that of previous methods, as the sphagnum moss is operated upon before it is converted into peat. In some peat deposits there is a growth of moss covering the peat varying in thickness from one to several feet, and it is this moss which is operated upon. There is no trouble in removing the humus from the fibre as in peat, as the living moss is clear and clean from all dirt and humus, and possesses in itself considerable strength of fibre. The patentee describes his process as follows:—

I first gather or dig the living moss, and in some cases leave it exposed to the sun to partially dry. I then sort over the moss and remove all foreign roots and matter, and, placing the resultant fibre in a beating engine where it is beaten in such manner as to draw out all the fibre it contains; the product, or pulp, is then fit for certain grades of paper making, and can be made into paper either alone or in combination with other

paper stocks. It can also be sized or colored, or a varying amount of clay or other filler added thereto, according to any special purpose for which paper is required.

Another method is to take the peat moss after it has been picked over, and digest it either under pressure, or not, in an alkaline solution, but which I preferably, though not of necessity, make caustic. The duration of the digest depends upon the ultimate use of the paper, but I have found that I can make a fibre that will produce a pliable paper after a digest of about ten hours under a steam pressure of about forty pounds to the square inch, and with an alkaline liquor testing about fifty baume and slightly caustic. After the completion of the digest the fibre must be thoroughly washed, and this can be done by means of a washing attachment to the beater.

When the fibre is quite clean it is then brushed or drawn out carefully in the beater and is ready to be made into paper as above described. The process produces a pulp or paper which is of brownish color; it can, however, be bleached in the usual way by the use of



WRITE FOR PRICES TO

The **HAMILTON BRASS MFG. CO. Limited**
HAMILTON, - ONTARIO

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

WANTED**A NEW or SECOND-HAND LATHE**

(Second-hand in first-class order preferred)

24 in. Swing to Handle.**Shafting 12 feet long.**

Address, with full particulars and lowest price,

THE MONTREAL COTTON CO.,

VALLEYFIELD, P. Q.

WANTED**Representative in Canada**

Acquainted and calling upon

THE HARDWARE TRADE,

by a firm whose goods are already introduced and well-known in the Dominion. Apply with reference, stating experience and terms.

STOWELL MFG. & FOUNDRY CO.,

SOUTH MILWAUKEE, WIS., U.S.A.

chloride of lime or other bleaching agent. It will be seen from my foregoing description that there are almost endless combinations to which my invention can be applied, as the fibre or pulp produced thereunder can be used alone for the manufacture of paper pulp or board, or can be mixed in almost any proportion with any stock suitable for paper making.

PEAT AS MATERIAL FOR BROWN PAPER AND BOARDS.

For the last thirty years paper manufacturers have been looking for a cheap hard stuff to take the place of cellulose, rags, straw, etc., and naturally many experiments have been made to substitute peat for these materials. The latest inventions have been:—First, Zschorner's process; in which is used a high-pressure apparatus, filled with peat, saturated with two per cent. baumic nitric acid; this mixture is then subjected to pressure, in the apparatus, for a period of twenty minutes. The material is then washed for the purpose of eliminating the acid, after which the process is repeated. The cost of chemicals for treating every 100 kilos of peat would amount to 5s. The time required to carry out this process would be about three hours, so that for the production of packing paper it would take six hours. The cost would be as follows, viz.:—For chemicals, 5s.; for labor, insurance, light, etc., 5s.; for twenty per cent. prima cellulose, 5s., which would be 15s. per 100 kilos, or £7 10s. per ton. This being about the market price of packing paper, would leave no profit.

Feszty's patent is a boiling process, using the same chemicals as Zschorner; therefore, the cost of production is about the same. Both these processes have been laid aside as being of no commercial value. Chemical processes having been proved to be of no value, it has been left to Mr. Christian Esser, a paper expert of considerable experience, to invent a mechanical process for the conversion of peat into half-stuff without the use of chemicals or boiling, whereby the cost of production is greatly reduced. The process is as follows:—In the paper mill a hollander is laid out with a sieve, wherein the peat is washed with clean water for about twenty minutes, in order to eliminate the earth matter. It is then automatically placed in the patent machine and worked for about twenty minutes. It then passes into the mixing hollander, and thence through the paper-making machine, the whole process occupying about two hours to make either packing paper or cardboard. It is evident that very little power is required, as no boilers or decorticators are necessary.

The cost of production of peat cardboard under Mr. Esser's process would be as follows, viz.:—For 100 kilos peat, 6d.; for labor, power, insurance, etc., per 100 kilos cardboard, 3s. 6d.; that is 4s. per 100 kilos cardboard, or £2 per ton.

This cardboard would find a ready market at any time for, say, £4 per ton or more, and is preferred by box-makers as it is nearly waterproof, is lighter than

DIXON'S**DOES TWO THINGS**

AND DOES THEM THOROUGHLY

STOPS THE BELT FROM SLIPPING.**PLEASES THE MAN WHO USES IT.****SOLID Belt Dressing.**

NOTHING EQUALS IT.

SAMPLE SENT FREE. SEND FOR ONE.

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

"Zanzibar**Anti-Rust****.. Paint" ..**

MADE TO ENDURE

GARFIELD PAINT CO.

TORONTO, ONT., CANADA

W. A. FLEMING & CO., - Montreal, Que.

Agents for Quebec and Maritime Provinces

Write for Booklet

"A STUDY IN BLACK."

For Roofs of all kinds, Bridges, Iron Work.

THE SMART-EBY MACHINE CO. LIMITED,

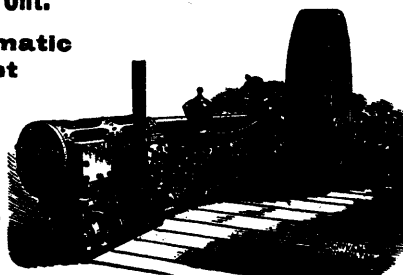
191 Barton Street East, Hamilton, Ont.

High Speed Engines, Brown Automatic Engines, Boilers, Rogers' Patent

Shaking and Dumping Grate Bars, Pumping Machinery,

Electric and Hand Power Travelling Cranes, Shafting, Pulleys, General Machinery, Etc.

Western Office—419 Hasting St., Vancouver, B.C.



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strawboard, does not wear the cutting knives so readily, and, further, when cut or bent for use retains its superior fibrous qualities. Having regard to the fact that a very large portion of Ireland is under bog, the commencement of such an industry in that country would seem to have the elements of immense economical and commercial success. We have received samples of paper and board manufactured by this process.—Kuhlow's.

MERCERIZED COTTON.

A German chemist and an Austrian mechanical engineer have invented an improved mercerizing process, and have obtained letters patent in all countries. They mix copper, ammonia, and cotton waste in a large vat. In about six hours, a liquid of dark blue color is formed, which passes into a large filter press, and then out of small glass tubes through a mild sulphuric-acid bath. It is then of a gelatinous consistency, and is caught by a small glass rod, in the hand of a boy or girl, and reeled on to a large glass spool, as it passes through the bath. The copper and ammonia, together with other chemicals, are deposited as a sediment, and are used again. As the threads are reeled, they receive a bath of cold water from a siphon. The numerous spools centre on one large spool, and are then reeled on to another, and so on, always under cold water, until all chemicals and acids are removed. This stage of the process takes four hours. The thread is then taken to a drying room.

A corporation has been formed, with a paid-up capital of 2,000,000 marks (\$476,000), called "Vereinigte Glanzstoff Fabriken;" it now has in operation a factory employing 400 hands, in the village of Dremen, ten miles from Aix la Chapelle, and a factory employing an equal number of hands at Mulhausen, Alsace, Germany. My observation, while visiting the factory in this district, was that the employees were nearly all boys and girls, or unskilled labor. At present, I am informed by the inventors that they are unable to fill all the orders. They began exporting to the United States this year.

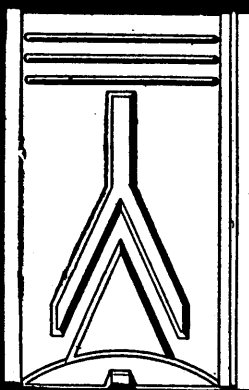
The product is brilliant in color and finish and of considerable textile strength. The thread consists of ten or twenty fibers twisted into one, but can be made of any desired thickness. They also make a thread called "horsehair artificial silk." The machines are small and compact, and are operated by ingeniously applied electric power; each machine can be started or stopped without interference with the others.

The factory is built on the bank of a small stream, which furnishes water power to run a large dynamo, the force being then distributed to small batteries on each machine. They are now manufacturing 600 pounds daily.

The Canadian Locomotive Co., Kingston, Ont., will receive contracts to build twenty engines for the Intercolonial Railway, and similar orders from the Clergue roads at Sault Ste. Marie, Ont., and the Dominion Steel Co., Sydney, C.B., about sixty engines in all.

THE METALLIC ROOFING COMPANY LIMITED

"EMPIRE"



STEEL SHINGLES

TORONTO

M.R.C.B.

OUR... "EMPIRE" STEEL SHINGLES

GALVANIZED OR PAINTED

Offer you the acme of durable satisfaction and fine appearance.

They're the only shingles made that are formed into shape first and galvanized afterwards so that cracks and raw edges are impossible. We warrant them absolutely fire, lightning, rust and rain-proof.

They have a patented lock and water gutter, found in no other shingles—fit perfectly and are laid easily.

Interesting reading about them, and many other of our famous fire-proof building materials in our catalogue. Have you one?

**N.Y. & Boston Limited
Kniekerboeker Special
South-Western Limited**

Famous Trains between

BOSTON	CINCINNATI
NEW YORK	CHICAGO
WASHINGTON	ST. LOUIS

Via

Big Four Route

AND

**NEW YORK CENTRAL
BOSTON & ALBANY**

Cafe, Library, Dining and Sleeping Cars

M. E. INGALLS, President.
W. J. LYNCH, Gen. Pass. and Ticket Agent.
W. P. DEPPE, Asst. Gen. Pass. and Tkt. Agt.
CINCINNATI.

THE PACKING OF THE CENTURY
HAUGHTON'S PATENT METALLIC PACKING CO.
6 LOMBARD COURT LONDON E.C.

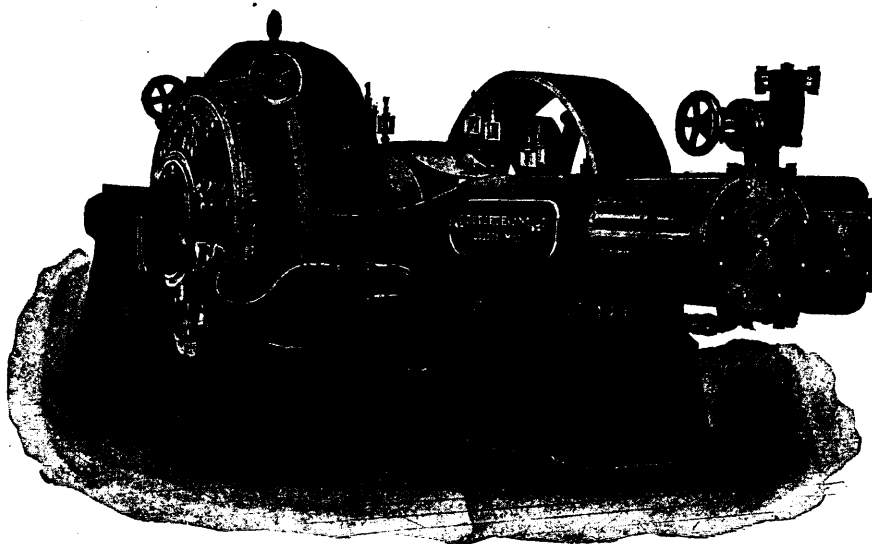
Composed of ribbons of anti-friction metals, combined with metallic and other lubricants, therefore in this form will fit any size gland.
USED IN THE BRITISH and FOREIGN NAVIES.
Always elastic. Lasts for years without re-packing. Packed in cases of 10 and 20 lb., and drums of 1, 1, 2 and 5 cwt.
SPECIFY-HAUGHTON'S PATENT PACKING.

A STURTEVANT GENERATING SET WITH HORIZONTAL ENGINE.

The centre crank type of horizontal engine lends itself most admirably for connection to generators of the circular type, as is evidenced by the accompanying illustration. Upon one side of the engine the shaft is connected to the armature shaft, which is supported in an outside bearing, while to the other end is fitted the centrifugal governor. The illustration presents one of the complete line of sizes of generating sets recently developed by the B. F. Sturtevant Co., Boston, Mass. The armature shaft is connected to the engine shaft by a flanged coupling, one-half forged solid with the armature shaft, and through bolted in all except the smaller sizes, which are connected by tap bolts. A substantial base forms a harmonious part of the engine bed and renders the entire foundation extremely rigid.

valve is of the balanced piston type, and is provided with snap-rings and operated in a removable bushing, thereby making it a simple matter to always keep it tight. The regulator, which is of the most delicate construction, secures the closest possible regulation through a range from

types the magnet frame is of magnet steel, the armature is of the barrel-wound toothed-drum type, carbon brushes are employed, and the entire machine tested at a full load run for a sufficient length of time to bring every part to its maximum temperature, which has never been found



zero to three-quarters cut-off. Continuous sight-feed oiling arrangements are provided throughout.

With the smaller sizes of these engines both four and eight-pole generators are used, while in the large sizes only the eight-pole type is employed. In both

to produce a temperature rise exceeding forty degrees centigrade.

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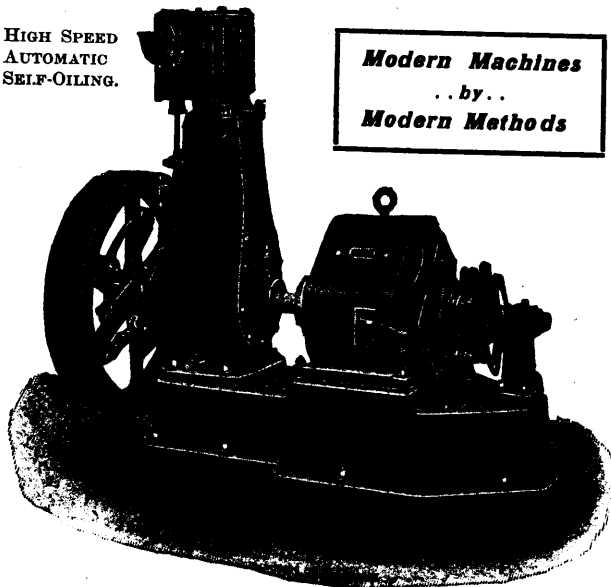
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A ROYAL ENTERTAINMENT.

During their visit to Ottawa a few days ago, their Royal Highnesses the Duke and Duchess of Cornwall and York learned how the Canadian lumberman lives. They saw the man as he is, his home as he builds it far up in the forests. They saw him fell his trees, cut and trim the logs, pile them on sloops, and do it all with a speed begotten only of long practice. They saw him use his cant-hook with as much ease as if it was a tennis racquet, and they saw the marvelous skill with which he walks on turning timbers drawn hither and thither by rapid currents—the feat of “log-rolling.” They rode the turbulent Ottawa on a real “crib,” and liked it, and they ate pork and beans in a real shanty, and liked it. They tasted sea pie, green tea without milk, bread baked in the shanty, and they liked it all. They ate it, moreover, much as the lumberman eats it, no polished table, no snow-white cloth or glinting silver, no costly china or cut glass. They ate it sitting on a bench of solid timber, and they held their plates in their laps. They saw the hard bunks of rough-hewn boards, which is the lumberman’s brass bedstead and spring mattress, and they saw the thick, coarse blankets which serve him for eiderdown quilts. They know now how the lumberman of the Ottawa valley spends his day—when he has visitors.

The Royal party were taken in cars of the Ottawa Electric Railway to the Little Chaudiere rapids, a few miles distant, where a number of cribs of hewn timber had been prepared for the occasion. These cribs were twenty-four feet wide and thirty-five feet long, and were simply huge rafts of squared timbers bound together with traverses. Four “loading sticks” were laid over the timbers, and on them was a flooring or platform. The party had seats, but that was all, cabins and staterooms being unusual on lumber cribs.

The cribs were swung into the river at the head of the timber “slide,” which is just twenty-six feet wide, and away they went, the Duke and Duchess tasting a new enjoyment, which King Edward experienced forty years ago. Stop logs had been taken out of the river above in order to give plenty of water, and the big cribs took the eight, ten and twelve foot drops of the slide without a hitch. The distinguished lumbermen and lumberwomen then left the timbers for the light bark canoe of the Indian. There were in all nine of those canoes in waiting, each being about thirty feet in length. The “Duchess,” in which the Royal pair were, is five feet longer, and was carpeted with musk ox robes. These canoes came from away up on the Abbitibi, and were each manned by a crew of full-blooded Indians. Colin Rankin, of Mattawa, was grand director and supreme supervisor of the Indian canoeemen. Six big river boats, thirty-two and thirty-six feet in length, were also used as transports, and, followed by a great fleet of smaller canoes, the party paddled down to the Rocklife Canoe Club. In the river in front of the club the voyageurs nimbly hopped from log to log, scarcely wetting

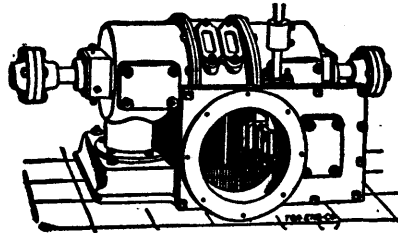
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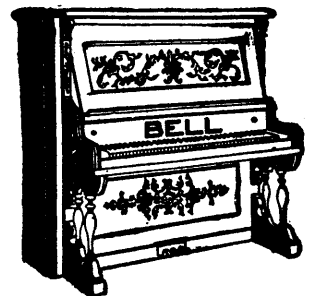
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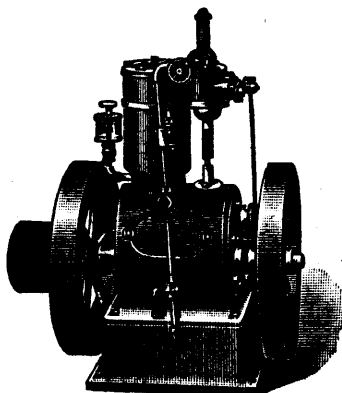
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as much as the soles of their feet, and the Duke saw "log-rolling." Then there was a big race of war canoes, and the party boarded the "Duchess of Cornwall and York" for the run to Rockliffe park. In the woods behind Rideau park a big lumbermen's shanty has been built, surrounded by great pine trees. It has the nickname of the "Bean camp," and is built of great cedar logs from up the Ottawa. Lumbermen built it, and there is not a nail or bit of iron used in its construction, the logs being cut to fit at the corners. The building is thirty-five feet long and thirty feet wide, and the walls are ten feet high, the roof sloping up to the apex three feet higher. There are two layers of split and hollowed logs forming the roof in what are known as scoops, laid on scoop-bearers, and not even the most hard-working and persevering rain storm can affect it. The chinks in the walls were filled with green moss, completing the exterior, except for the pegs on which the lumbermen hang their belongings in place of an attic. Inside the cabin the ducal party saw what they had never seen before—a camboose. This is a great open fireplace, eight feet by ten, in the centre of the shanty, and above it is a corresponding opening in the roof serving as a chimney. In building the camboose a log box is filled with sand, on which the fire is built. A big iron pot was swung over the fire on a sort

of crane, and from this pot the Duke and Duchess learned that wonderful things could come—pork and beans and "sea pie." For those whose education has been neglected in the matter of sea pie, it may be said that the dish is composed of beef, pork and dough, something like the pot pie your mother makes, seasoned enough for a German. Hot water and pea soup came from chaudières, and home-made bread came from bake kettles. These are big round pots in which the dough is placed, and the baking is done in hot ashes raked from the fire. There are no draughts to look to and no dampers to turn. To get into the shanty and see these wonders the Royal party entered by the front door, which is also the back door and the only door. It is in the centre of the front wall. Opposite to it are the bunks, running along the end of the cabin and half the distance of each side;

very primitive berths, one above the other, and capable of accommodating thirty-six men. The rest of one side of the shanty is the kitchen. In front of the bunks are long, log benches, on which the royal visitors sat and where they tasted forest fare. In the ordinary shanty of the lumberman, where the possibility of a prince and princess dropping in to lunch is remote, the floor is simply a layer of logs, uncut, and the facilities for unexpected falls and sprained ankles are excellent. But the Duke and Duchess walked on a floor of red pine planking. The lumber camp was in charge of a foreman over fifty-five lumbermen, Indians and French Canadians from Mattawa, 200 miles up the river, and from Desert, on the Gatineau, away up near the headwaters. These lumbermen, whose experience at five o'clock teas has been somewhat small, proved themselves entertainers of the first order. They

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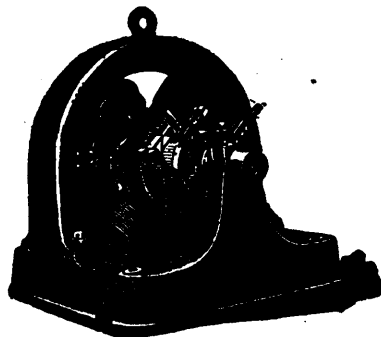
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THOMAS C. IRVING, Gen'l Manager Western Canada, TORONTO.
 JOHN A. FULTON, Gen'l Manager Eastern Canada, MONTREAL.

amused themselves as they do in the long nights in the woods, with songs and fiddle-scrappings, and George, the Duke, and the Princess May looked on, wrapped up in this realistic picture of another life.

Outside the shanty two big forest monarchs had been singled out, and the Duke and Duchess saw the axes swing, the chips fly, and the great trees totter and fall. Two men with axes, carefully ground on a "camp" grindstone, cut through the thick trunk, and stood unconcernedly while the huge timber crashed to the earth, their unconcern being due to the fact that the tree fell just where they intended it to fall. In a very few minutes from the time of the first swing of the axes the tree was down, trimmed and sawn into logs. The logs were hauled on to roll-ways and sleighs, and were ready for transportation.

Close to the tent was a flagpole made of a newly peeled fir tree, with a bunch of evergreen left like a crown at the top, and from this pole, sixty feet high, hung the royal standard of England.

A DISINCRUSTANT.

The Revista Minera Melalurgica y de Ingeneria, of Madrid, the leading journal of its class in Spain, speaking of preventives of incrustation of steam boilers, says:

The use of zinc to prevent the oxidation of the iron and the incrustation in steam boilers has greatly increased during recent years. Heretofore, zinc has been employed for this purpose only in the shape of raw pigs, but after many experiments made by the society of "Mines et Fonderies de Zinc de la Vieille Montagne," which have since been confirmed by the British Admiralty, by the national French marine, and many great maritime companies, it has been established that compressed laminated zinc made in the form of thick plates for application as an inside boiler lining is greatly superior to the old method. In fact, the galvanic current developed transforms the pig of raw zinc into a more porous substance, in which the metallic molecules are isolated one from the other by the corrosion which is quickly produced, resulting in this, that the intimate metallic contact, which causes the generation of the electric current, is eliminated. Compressed laminated zinc, on the contrary, resists the spongy internal corrosion, as it corrodes only on the surface, thus being very slowly consumed and being capable of conducting the current as long as a metallic nucleus remains. The application of the laminated plates is very simple. They are applied to the walls of the boilers by means of strips and are so distributed that the galvanic action is exercised in an even way, when possible, over the entire surface of the iron. When oxidation is produced in any part of the boiler, it is because the nearest zinc plate is too far away. By this employment of pressed zinc the incrustation of the boilers is avoided, and at small cost.

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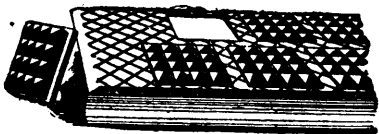
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MARKETS.

Following are reports and observations relating to the markets of Canada and elsewhere, having reference to hardware, metals, paints, oils and such specialties as are usually handled by jobbers and dealers in such goods. Following these items will be found current market quotations of such goods, and the trade are requested to suggest to the publishers any improvements by which it is believed the quotations may be rendered as correct and valuable as possible.

TORONTO, October 4.

Wholesalers report an active demand for goods for the season. Road representatives are sending in good sorting orders, and they are well distributed, showing that country merchants' stocks are meeting with a ready sale. The outlook is most encouraging, and trade inland is expected to expand considerably before the end of the month.

Farmers' deliveries of grain at country points are increasing, and this is causing a freer circulation of money in the country districts. As a result retailers show a disposition to meet their obligations at supply houses, and there is a feeling of confidence all round which indicates prosperity. The values of staple goods are steady, although there is a higher tendency in some lines. The money market is steady. Mercantile discounts are quoted at 6 to 6½ per cent., and call loans at 5 to 5½ per cent.

In the speculation market the steel properties are attracting a great deal of attention. These issues are strong on a report that a statement to be issued would show net earnings for six months amounting to \$54,000,000. In Canadian exchanges there is a general feeling that Canadian Pacific Railway will sell higher. This bullish sentiment is the result of the failure of the Manitoba Railway to develop low rates which were expected this fall. Electric stocks are slated for a rise on increased earnings, and street railway issues are not expected to reach a much higher level for some time. Canadian bank shares are well held and only small lots are transferred.

The clearings of the Toronto banks from Jan. 1 to Sept. 30 reached \$459,600,038, compared with \$370,574,478 for the same period last year and \$366,244,237 in 1899. The total bank clearings in Canada for the week ending Sept. 28 were \$40,052,686, against \$37,092,758 for the previous week and \$30,442,558 for the corresponding week in 1890.

Of interest to grain speculators was the announcement of the large increase in the world's visible supply of wheat. The increase during the past week was 3,449,000 bushels. East of the Rockies the increase was 3,049,000 bushels, and in Europe and afloat 400,000 bushels. Corn increased 601,000 bushels and oats increased 365,000 bushels. There are no large lines of long wheat held by any trader in Chicago, and the short interest is mainly in the North-West. The trade is inclined to look at 70c. wheat as about right, considering the prices of corn and

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Motor Carriages for Pleasure or Business.

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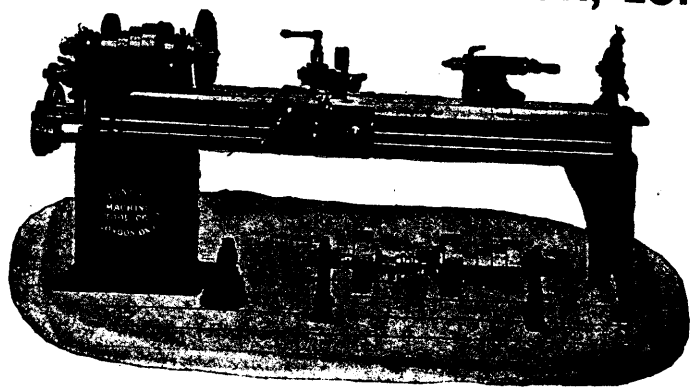
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or tissue, while it destroys burrs, etc., as
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Veneers of Ash, Birch, Bass
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also Crating Material

oats. This basis, however, is not always a correct one to figure on, as so many different conditions exist in wheat that it is impossible to have the market work out the old theories. This is due to wheat being raised all over the world, while coarse grains are confined to a comparatively few countries, who have an exportable surplus.

BRITISH PIG IRON MARKET.—Messrs. Wm. Jacks & Co., 49 Leadenhall Street, London, E.C., Eng., under date of September 20, 1901, write us and quote as follows:—"To-day's prices for pig iron are as follows: No. 1 Gartsherrie, 67/- f.o.b. Glasgow, including dues; No. 3 Gartsherrie, 56/-f.o.b. Glasgow, including dues; Nos. 1, 2 and 3 Cumberland Hematite, 68/-f.o.b. Liverpool; Nos. 1, 2 and 3 Cumberland Hematite, special analysis 72/-f.o.b. Liverpool; Refined DTN Hematite, 86/- in small pigs, 72/- f.o.b. Liverpool. The market continues steady with a moderate business passing. Shipping freights are lower and this will interfere with the placing of orders for shipbuilding material in the near future."

BUFFALO PIG IRON MARKET.—Office of Rogers, Brown & Co., Buffalo, N.Y., October 1, 1901.

The pig iron market continues to gain strength through the increasing scarcity of iron for prompt delivery.

One by one the furnaces regularly engaged in foundry iron manufacture are retiring from the field for the remainder of this year and taking orders only for deliveries beginning with late December and early January.

A number of buyers, finding that they cannot get their favorite brands sooner, have placed orders for these later deliveries running through the first four or five months of next year, meanwhile supplying their wants with less popular brands which are not so well sold.

The advance of fifty cents per ton in southern iron has had no effect on this market, as practically none is sold in this field, it being usually higher than northern-made iron.

The demand is good, prices are firm, and the market may be called strong.

We quote below on the cash basis, f.o.b. cars Toronto, in bond:

Lake Superior Charcoal	\$20 00
No. 1, X. Tonawanda Scotch iron	16 50
" 2, " " "	16 00
" 1, " Niagara iron	16 00
" 2, " " "	15 50
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Connellsville 72 hour Foundry coke	5 00

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TORONTO



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The Publishers announce the preparation of the Sixteenth Edition of the Directory of

MERCHANTS, MANUFACTURERS & SHIPPERS of GREAT BRITAIN & THE WORLD

Containing Classified Trade Lists of the Importers and Exporters, Merchants and Manufacturers of the United Kingdom and all principal trading centres of the World. The work contains nearly 4,000 pages, and includes in addition to the above the Customs Tariffs for every Country and all classes of Goods.

HIGHEST AWARD, GOLD MEDAL, PARIS, 1900. Also in course of preparation, the ninth edition of

THE BUILDING TRADES DIRECTORY OF GREAT BRITAIN

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MARGARET CARLYLE, Parliament Buildings, Toronto.

O. A. ROCQUE, Orleans, Ont.
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CONSULTING ENGINEER

M. Inst. C. E.,
M. Can. Soc. C. E., M. Am. Soc. C. E.
59 JAMES ST., - ST. CATARINES, ONT.

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ULRICH PETERS, M.E.
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FOR PHILADELPHIA, PA.
DESIGNS OF PULP and PAPER MACHINERY

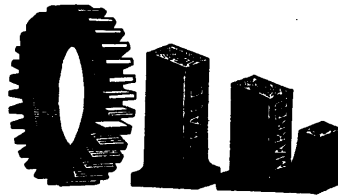
"Capitol" Cylinder

"RENOWN" ENGINE

"ATLANTIC" RED

RELIABLE WELL-KNOWN BRAND

ALL ORDERS PROMPTLY FILLED



THE **QUEEN CITY OIL CO. LIMITED**
SAMUEL ROGERS, Pres. TORONTO, Canada.

THE EUGENE F. PHILLIPS ELECTRICAL WORKS

MONTREAL, CANADA (LIMITED)

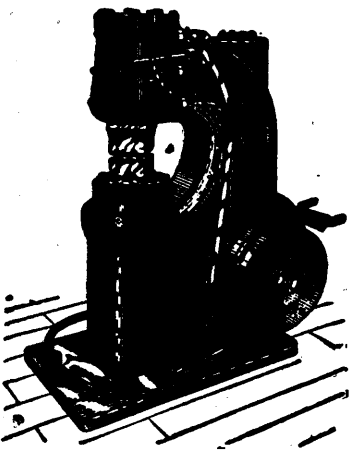
BARE and INSULATED ELECTRIC WIRE

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INCANDESCENT AND FLEXIBLE CORDS,

RAILWAY FEEDER and TROLLEY WIRE

RUBBER-COVERED, MAGNET, OFFICE AND
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The "YEAKLEY" Vacuum HAMMER, Patented

Is unique and unequalled by any other
Power Hammer for its Simplicity, Power,
Ease in Operating and Fewness of Parts;
Nothing to Break, no Steam to Leak, no
Pipes to Freeze, no Delays, no Expense
for Repairs. SEND FOR CATALOGUE.

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SOLE CANADIAN MANUFACTURER,

MONTREAL

What the Trade Wants

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ANY SIZE OR
SHAPE.

WE SELL
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YOUR OWN PAPER—YOUR OWN LABEL—YOUR OWN BANDS.
NO NEED TO BUY FOREIGN GOODS.
OUR GOODS ARE MADE EQUAL TO THE BEST IN THE WORLD,

The Trade will find it to their advantage to get our prices.

L. P. BOUVIER, Envelope Manufacturer, 31 Lombard St., TORONTO.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

TARIFF CHANGES IN GREAT BRITAIN.—
An amended schedule has recently been issued by the British Commissioners of Customs giving the new rates of duty on articles containing sugar. Following is the schedule in question, the latest additional duties being starred :

	s.	d.
Confectionery, soft, viz.—		
A. B. gums imported in bulk, in barrels or cases, on the entry for which the importer has declared that duty on the combined quantity of sugar and glucose used in the manufacture of the goods did not exceed the rate of 2s. the cwt	2	0
Other A. B. gums	3	0
Caramels	3	0
Chewing gums	3	0
Jelley beans	3	0
Turkish delight, etc.	3	0
Fruit, canned and bottled, other than fruit liable to duty as such, preserved in thin syrup	1	0
Fruit, canned and bottled, other than fruit liable to duty as such, preserved in thick syrup	3	0
Marmalade, jams and fruit jellies, if not made from fruit liable to duty as such	3	0
Sweetened spirits tested for strength, additional to the spirit duty, in respect of the sugar used therein—		
proof gallon	0	2

THE NEW ELEVATOR AT MONTREAL.—The contract for the million bushel steel elevator at Montreal has been let to J. O. Jamieson for \$642,000, the agreement being that all the materials will be manufactured in Canada. The principal of these is structural steel. Regarding the ability of Canadian manufacturers to supply this commodity immediately, Mr. Jamieson doubtless has full information, but we notice that Mr. H. M. Whitney, president of the Dominion Iron & Steel Co., advised the council and people of Sydney not to vote a bonus of \$250,000 to a ship-building company. There are other steel works in Canada besides those at Sydney, and the kind of steel needed for the Montreal elevator may not be the same as that needed for the construction of ocean ships. The point of public interest is that the demand for steel exists in advance of the supply. When supply exceeds demand, an export market will have to be found.—Hamilton Times.

THE CANADIAN GRAIN CROP.—Advices received from Montreal state that about three million bushels of the wheat crop of the North-West have already been marketed, some two thousand five hundred Canadian Pacific Railway cars having been employed in moving the crop. This is merely an indication of the manner in which the crop will, as a whole, be handled. This year harvesting commenced early, which will give the farmers more time.

Before the crop showed the signs which, later on, assured the people of the North-

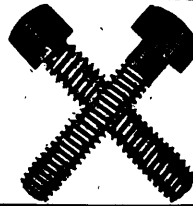
The Diamond Machine and Screw Co., Limited

MANUFACTURERS OF

CAP AND SET SCREWS, STUDS, Etc.

Finished and Semi-Finished Nuts

TORONTO. - CANADA



The Rehder Plating & Mfg. Co.,

THOROLD, - ONT.
Manufacturers of

Stove and Piano Trimmings and Novelties

Fine Grey Iron Castings a Specialty.

Nickel, Copper and Brass Electro Plating.

WRITE FOR PRICES.

West of a phenomenal harvest, the Canadian Pacific Railway had ordered large supplies of new freight cars, and while it would have been impossible for any transportation company to have hauled the crop in its entirety, had it been put to it, it stood ready to move it as the need required.

Officers who have been recently in Manitoba and the North-West state that the farmers are jubilant. The crop will mean something like \$25,000,000 to them. Officials state that the fame of the wonderful crop has spread throughout Europe, and that its effect will be to greatly stimulate immigration next year.

CANADIAN CATTLE.—The cattle exhibited by Canada at the Pan-American won sixty per cent. of the prizes given. The judging has been concluded, and this is the satisfactory result as communicated by Mr. Frank A. Converse, Superintendent of Live Stock, to Mr. G. C. Creelman of the Ontario Department of Agriculture. As the Canadian cattle formed but thirty-five or forty per cent. of the total entries, the result is doubly pleasing. Much of the success of On-

tario's cattle showing is due to the energetic way in which the work of selection was carried on by the officials of the Department of Agriculture, who began their work a year ago. Among the most successful exhibitors from Ontario was Mr. G. W. Clements, of St. George, who, with an exhibit of ten head of Holstein cattle, captured ten prizes.

Some 1,500 cattle all told—Canadian and American—were entered for prizes, and in all classes in which Canadian stock was entered we got a respectable place, while in those classes in which Canadians stand on anything like an even footing the Dominion swept the board.

In Shorthorns Canadians took over \$1,000 in prizes, as against \$418 taken by the Americans; in Ayrshires we took \$430, as against \$130; in French-Canadians, \$402, as against \$157; in fat cattle, \$310, as against nothing; in Herefords, \$355, as against \$740; in Aberdeen Angus, \$72, as against \$480; in Galloways, \$197, as against \$247; in Guernseys, \$130, as against \$710, and in Holsteins, \$412, as against \$930.

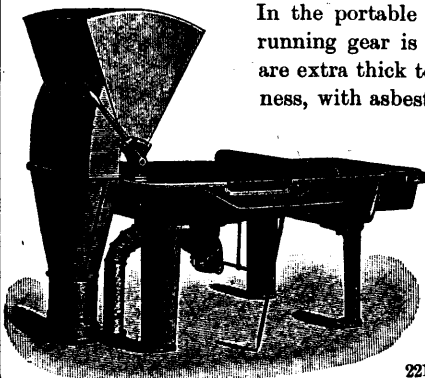
All told Canadian stock captured over \$3,100 in prizes, as against a little over

\$3,800 taken by the Americans, although the proportion of population is about fourteen to one.

BILLS OF LADING.—Buyers of American hardwoods will be interested to learn that a determined stand is being made, both by the exporters in the United States and the importers on this side, against the present bill of lading now used by the Atlantic liners which bring the goods to this country. In view of the inequitable conditions of the document now in use, especially what is known as the "London Clause," which compels importers to pay freight before they have received the goods, its value as a negotiable document is practically nil. The Timber Trades Federation have taken up the matter, with the result that a letter has been despatched to the National Lumber Exporters' Association of New York, promising their cordial support. This offer of help has been heartily reciprocated by the American Association, and the Federation have the entire question under their consideration. The action already taken has resulted in considerable improvements having been made on the

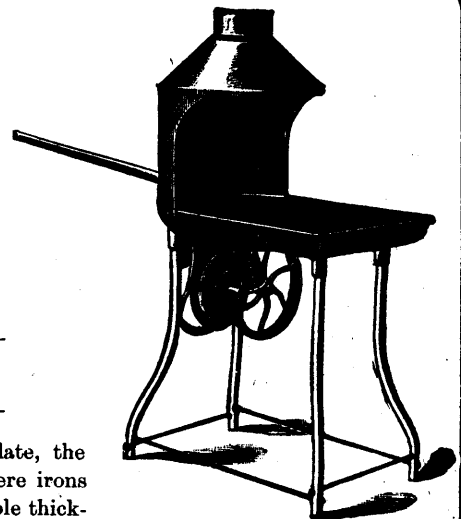
**The Sturtevant
FORGES
Are Built for Endurance.**

34 STYLES AND SIZES



In the portable styles the hoods are of heavy steel plate, the running gear is strong and easily operated. The tuyere irons are extra thick to resist fire, and the fire pan is of double thickness, with asbestos between. The blower is the same as the regular Sturtevant Steel Pressure

Blower, with babbitted journal boxes. Forges for heavy work are built in a full line of sizes, designed for large smith shops, railroad and ship works. The fire pans are heavy cast iron, with coal and water tanks. Tuyeres are adjustable. Special up or down draft hoods of heavy steel plate can be provided.



B. F. Sturtevant Co.
Boston, Mass.

New York. Philadelphia. Chicago. London.

other side, and there can be no doubt that very soon a much cleaner bill of lading will be in use than has hitherto been the case.—The Timber Yard and Machinist, London, Eng.

DEVELOPMENT OF THE HAMMER.—Tracing the development of the hammer, the International Monthly says: Man's first tool was the uplifted hand grasping a stone, and from this came, after many years, the hammer. As heavier blows became necessary the hammer grew in size until it was operated by machinery

LIGHTING, HEATING and MOTIVE POWER ..BY GAS..

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

RICHÉ GAS GENERATOR

at a mere nominal cost per thousand cubic feet. The Generator is simple in construction, and does not require skilled labor to work it. **No Purifiers required.** Products being a Rich Permanent Gas and Charcoal.

These Generators are extensively used in Europe, and were on exhibit at the Paris Exposition.

Particulars by applying to

JULÉS DE CLERCY, Gas Expert,
ROOM 501 CARLAW BUILDING,
30 Wellington St. W., Toronto.

I BUY all Minerals at Mines by contract or otherwise. Mineral Lands and Timber Properties bought and sold.
H. FAWCETT HARTLAND,
Room 309-310 Merchants Bank Chambers,
205 St. James Street, Montreal.
Correspondence Solicited.

TALISMANIC BELT DRESSINGS WILL INCREASE YOUR POWER



"What We're On We'll Cling To."

TALISMANIC BELT CLINCH—For Leather Belts
TALISMANIC RUBBER FACING—For Rubber Belts
TALISMANIC ROPE PRESERVER
JOHN W. BOWDEN & CO.
330 Clinton Street, Toronto, Ont.

in the form of the tilt or helve hammer. When steam succeeded water as a motive power, a steam cylinder replaced the tripping cam, but the first half of the past century had nearly expired before the original form of this tool was at all changed by James Nasmyth's invention of the upright steam hammer. Since then the falling weight of this design of tool has been increased from a few hundred pounds up to 100 and even 125 tons; but excepting the smaller sizes, up to twenty-five tons, it has since 1890 been superseded by the hydraulic press, which by its slow motion produces a more thorough working of the metal. Presses have grown until the capacity of 14,000 tons was reached in 1893, requiring a 15,000 h.p. engine to drive them. Such a tool, with its accompaniment of 100-ton electrical cranes for handling the work underneath, is capable of forging ingots over seventy-five inches in diameter and weighing more than 250,000 tons. This whole plant, costing over \$250,000, was not projected without an adequate understanding that it was to meet the commercial demands of many years to come, and industrial developments, great as they have been, have not as yet called for anything that has tasked its full capacity.

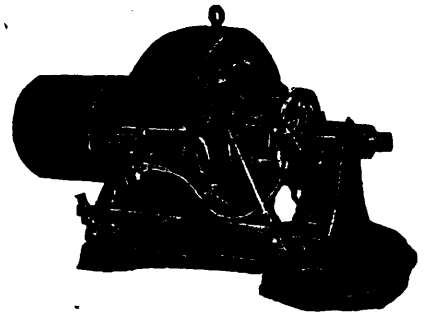
FLAXSEED AND LINSEED OIL.—The leading flaxseed authority of the country, Charles Dickson, is back from his annual survey of the seed and oil situation. Flaxseed is at a high level the world over, he reports. The enormous Argentine yield, which early in the year so demoralized the French trade, has been offset somewhat by a partial failure in India, a shortage estimated now at about fifteen per cent.

Seed people are awaiting the developments in Russia and America. The situation is mixed in those countries. Both crops are incomplete, both have suffered some. Russia has had intense heat in some sections. The western and southwestern crops in this country are short. It is too early to hazard an opinion as to the northwestern promise. The oil position abroad has been affected somewhat by the commercial troubles of Germany, but oil stocks are not large anywhere.

THE VALUE OF ACCIDENTS.—Accident plays quite a considerable part in the discovery of mineral deposits, according to a magazine writer. Many examples are on record. The Freiburg mines, in Saxony, were discovered by a soldier whose horse picked up a stone in his shoe; this stone was heavy lead ore. Copper was found in South Australia from examination of green mineral in burrowings of the wombat. Diamonds in South Africa and gold in California were found by chance. A geologist discovered phosphate of lime in France by analyzing sand that was used to give a violet color to bricks. Any mineral of a peculiar appearance in a district should be carefully examined. For years the great Comstock lode in Nevada was worked for gold, and the rich yellow sand, which eventually turned out to be silver chloride, was

The Jones & Moore ELECTRIC CO.

ELECTRICAL CONTRACTORS



DYNAMOS, TELEPHONES, SLOW SPEED MOTORS, MOTORS, SUPPLIES, DIRECT CONNECTED DYNAMOS.

We manufacture Direct Current Machinery in all sizes and for any purpose.

20 and 22 ADELAIDE W., TORONTO.

KERR'S

"COPPER-ALLOY"

DISC VALVES

ARE THE BEST

—FOR—

HIGH STEAM

ASK YOUR DEALER FOR THEM. CATALOGUE SENT ON APPLICATION.

THE KERR ENGINE CO.

LIMITED

WALKERVILLE, ONTARIO

MILL TELEPHONES

F. O. PLUMMER
Boston, Mass., U.S.A.

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being thrown away. The Broken Hill silver mine, it is believed, was first pegged out for tin. The porous pumice ore of Mount Morgan was sold for cleaning hearths before its value became known.

REFRIGERATORS WANTED.—United States Consul Grout, at Valletta, Malta, writes concerning the demand for refrigerators in that Island, says:—

Malta should prove a good market for refrigerators and ice chests. The few in use here are of the most primitive type. As a rule, they are merely oblong chests, lined with zinc; but even these bring good prices. I believe that the attractive, practical article would meet with a ready sale, if properly introduced. The three ice factories here could supply all the necessary ice. I do not believe there would be much demand for high grade goods; the call would be rather for refrigerators which could be placed upon the market at, say, fifteen dollars or less. The few in use here are principally of English manufacture brought from England by private parties. They are not on sale at the local stores. Malta has direct steamship communication with New York. The Valletta firms most likely to be interested in the introduction of refrigerators are: C. Breed Eynaud & Co., Robert Balbi & Co., M. A. Crockford & Son, Mortimer & Co., Dalzel & Gängel, Bugeja & Micallef, C. V. Galea & Sons, S. Anastasi & Sons, Emanuele Anastasi, P. Galea & Sons, Francis Balbi, and the

Petrolea Bazaar. I would advise that catalogues, printed in English, be forwarded to them, together with the lowest export prices.

THE OUTLOOK IS GOOD.—Trade in Toronto displays a fair amount of activity. There is quite a demand for fall and winter goods in all lines from retailers to sort stocks, the increased sales at country centres during the past month having made this imperative; and the prospects for the coming month indicate a steady development of trade. Travellers' orders are quite heavy as stocks in the hands of retailers become depleted. The mills and factories are busy, labor is well employed, the demand for supplies for the lumber camps is active and gratifyingly large, and the rapid development of the country north of Lake Superior, tributary to Sault Ste. Marie is a strong incentive to business. The outlook is good.

BUSINESS CHANGES.

FROM BRADSTREETS.

ONTARIO.

ARTHUR—John Foster, hardware and stoves, sold out to David Brocklebank.
CANFIELD—Canfield Natural Gas Co., obtained charter.
GODERICH—Alex. McD. Allen, hardware, succeeded by Allen & Melvor.
HAMILTON—Chadwick Bros., mfrs. brass goods, burned out.
MAXVILLE—H. McArthur, hardware, sold out.
NEWTON—Wm. Attig, hardware sold to Thomas Neilson.

OSHAWA—Lander Bros., hardware, etc., stock to be sold.
Oshawa Wire Fence Co., obtained charter.
PARRY SOUND—Gillespie & Grier, planing mill, assigned.
PROVIDENCE BAY—Kennedy & Co., sash and door factory, succeeded by Wm. Charters.
THESSALON—Thessalon Hardware & Coal Co., closing up business.
TORONTO—George McPherson Shoe Mfg. Co., assigned.
WINDSOR—George Ovington, carriage maker, burnt out.

QUEBEC.

MONTREAL—Ampere Electric Mfg. Co., obtained charter.
Garth Co., mfrs. plumbers' supplies, etc., applied for charter.
SHERBROOKE—Eastern Townships Brick & Mfg. Co., applied for charter.
THREE RIVERS—National Tool & Axe Works, factory damaged by fire.

NEW BRUNSWICK.

CAMPBELLTON—W. H. Miller, mfr. shingles, mill destroyed by fire.
EDMUNDSTON—J. Wirt Hall Milling Co., grist mill, etc., succeeded by VanBuren Lumber Co.
NASHWAARIS—Charles E. Hill, grist and carding mill, burned out.
NEWCASTLE—Edward Sinclair Lumber Co., incorporated.
ROTHESAY—McAdamite Metal Co. of Canada, applying for incorporation.

NOVA SCOTIA.

NORTH SALEM—W. Isenor, shingle mill, burned out.
PARRSBORO—Adams & Mason, hardware, dissolved.

MANITIBA.

SPRINGFIELD—Springfield Milling Co., obtained charter.
WINKLER—Winkler Farmers' Elevator Co., obtained charter.

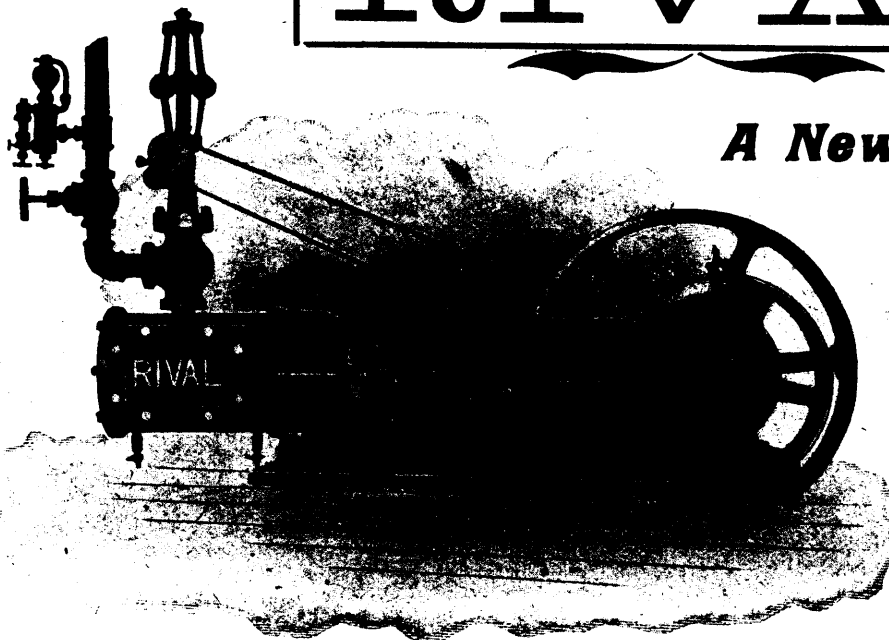
BRITISH COLUMBIA.

ROSSLAND—Crow's Nest Oil & Coal Co., incorporated.
VANCOUVER—Canada Shingle Co., incorporated.

THE...

RIVAL

5 to 50
H.P.



A New Laurie Engine

COSTS LITTLE

TO BUY

COSTS LITTLE

TO RUN IT

In return you get an immense amount of satisfaction.

A competent engineer says he has never seen a small engine that is such good value as the RIVAL.

It has new points not found in any other.

ASK FOR A CATALOGUE

LAURIE ENGINE COMPANY, - MONTREAL

CROW BARS.—Duty 30%.
5 cents per lb.

CRUCIBLES.
Dixon's, 7 cents per number.

DRILLS.—Duty 30%.
Blacksmiths' bit, \$6 to \$15 each.

DYES (Aniline).

DYNAMITE.
30 to 50 cents per lb.

EMERY.
Coarse, 7 cents per lb.
Fine, 5 cents per lb.

EMERY CLOTH.—Duty 25%.
Beader & Adamson, 40% discount.

EMERY HONES.—Duty 25%.
\$3 to \$5 per doz.

EMERY STEELS.—Duty 25%.
\$2 per doz.

EMERY WHEELS.—Duty 25%.
65% discount.

EXPANDERS.—Duty 30%.
Tube, Dudgeon, 33½ discount.

FAUCETS.—Duty 30%.
Brass, \$2.50 to \$5 per doz.
Wood, 60c. to \$1.00 per doz.

FENCING.
Barb Wire, \$3.05 per 100 lbs.

FENCING (Wire).—Duty 15%.
Galvanized, barb, f.o.b. Toronto, \$3.05.
Galvanized, plain twist, f.o.b. Toronto, \$3.05.
Galvanized, barb, f.o.b. Cleveland, \$2.82½ in less than car lots, and \$2.70 in car lots.
Mesh, 5½x10½, 20 rod rolls 55% discount, Can. list.
" 4 x8, 20 " 50 & 5% " "
" 3 x6, 20 " 55 & 5% " "

FERRULES.—Duty 30%.
Tool handle, 5c. & 6c. per lb.

FILES.—Duty 30%.
Black Diamond, 50 and 10% discount.
Globe, 70% discount.
Grobet, net.
Jowitt's, 25% discount.
Nicholson, 50 & 10% discount.
Stubbs, 15% discount.

FITTINGS (Pipe).—Duty 30%.
Bushings, 55% discount.
Cast Iron, 55% discount.
Cocks, 60
Elbows, tees, crosses, couplings, lock nuts, return bends, 50% discount.
Flanges, 55% discount.
Nipples, 55 " "
Plugs, 55 " "
Unions, 55 " "
Wrought Iron, 50% discount.

FLUE SCRAPERS.—Duty 30%.
Engineers' Favorite, 40% discount.
Inglis, 20% discount.
Wire, 50

FORKS, HOES AND RAKES.—Duty 25%.
50, 10 and 5% discount.

FUSE.
Blasting, Single tape, \$3.75 per M ft.
Double tape, \$5 per M ft.

GASKETS.—Duty 35%.
Rubber Insertion, 60 cents lb.

GAUGE GLASSES.—Duty 30%.
Water, 25% discount.

GAUGES.—Duty 30%.
Steam, 50% discount.

GLASS.—Duty 20%. (Window—Box Price).
Star, under 26 in., \$2.15 per 50 ft., \$4.15 per 100 ft.; 26 to 40 in., \$2.30 per 50 ft., \$4.45 per 100 ft.; 41 to 50 in., \$4.85 per 100 ft.; 51 to 60 in., \$5.15 per 100 ft.; 61 to 70 in., \$5.50 per 100 ft.; 71 to 80 in., \$6 per 100 ft.; 81 to 85 in., \$6.50 per 100 ft.
D. Diamond, under 26 in., \$6 per 100 ft.; 26 to 40 in., \$6.65 per 100 ft.; 41 to 50 in., \$7.50 per 100 ft.; 51 to 60 in., \$8.50 per 100 ft.; 61 to 70 in., \$9.50 per 100 ft.; 71 to 80 in., \$10.50 per 100 ft.; 81 to 85 in., \$11.70 per 100 ft.; 86 to 90 in., \$14 per 100 ft.; 91 to 95 in., \$15.50 per 100 ft.; 96 to 100 in., \$18 per 100 ft.
Glass Demijohns or carboys, empty or filled, bottles, decanters, flasks, phials, glass jars, lamp chimneys, glass shades or globes, cut, pressed or moulded crystal or glass tableware, decorated or not, and blown glass tableware—Duty 30%.

GLASS LAMP CHIMNEYS.—Duty 30%.
Common Crimp, per doz. O, 43 cents.
" " " " A, 45 " "
" " " " B, 65 " "
Lead Glass, " " " " A, 50 " "
" " " " B, 75 " "

FRUIT JARS.—Duty 30%.
Standard pints, \$7.25 per gross.
quarts, \$7.75 per gross.
half gal., \$10.00 per gross.
Imperial pints, \$7.75 per gross.
quarts, \$8.75 per gross.
half gal., \$12.00 per gross.

GLUE.—Duty 25%.
Cabinet, sheet, 12 to 13 cents per lb.
Common, 8½ to 9 cents per lb.
Coopers', 19 to 20 cents per lb.
French Medal, 14 to 14½ cents per lb.
Gelatine, 22 to 30 cents per lb.
Huttner, 18 cents per lb.
Strip, 18 to 20 cents per lb.
White, extra, 18 to 20 cents per lb.
LaPage's, 25% discount.
Progressive, 25 " "

GOVERNORS.—Duty 25%.
Gardners', 25% discount.

GRANITWARE.—Duty 35%.
Firsts, 50% discount.

GRAIN CRADLES.—Duty 25%.
With Scythes complete \$33 per doz.
Without scythes, \$18.50.

GRINDSTONES.—Duty 25%.
Large, \$1.75 per 100 lbs.
Mounted, \$3 to \$3.50 each.
Small, \$1.50 per 100 lbs.

HALTER MOUNTINGS.—Duty 30%.
1x1½ inch, 10c. per lb.
(Evans), 1x1½ in., doz. set packages, \$8.00 per gross.

HALTERS.—Duty 30%.
Leather, 1 in. strap, \$3.87½ to \$4 per doz.
Leather, 1½ in. strap, \$5.15 to \$5.20 per doz.
Rope, 1, \$3 per gross.
Rope, 1 to 1½, \$4 per gross.
Web, \$1.87 to \$2.45 per doz.

HAMMERS.—Duty 30%.
Blacksmiths', 10 cents per lb.
Carpenters', Madoles', \$6.40 to \$8.75 per doz.
Carpenters', Warnocks', \$4 to \$7.50 per doz.
Machinists', 22 cents per lb.
Sledge, 10 cents per lb.
Tack, 60 cents to \$1.20 per doz.
Tinners', \$4 to \$6.50 per doz.

HANDLES.—Duty 25%.
Axe, \$1.50 to \$2.50 per doz.
Chisel, \$3.50 to \$5 per gross.
Cross-cut saw, \$2 to \$3 per doz.
File, \$2 to \$2.50 per gross.
Hammer, 50 cents to \$2 per doz.
Pick, \$1.50 to \$2.50 per doz.
Plane, \$3.50 per gross.

HANGERS.—Duty 30%.
Barn Door, round groove, \$4.50 to \$6.50 per doz.
Lanes, \$6.75 to \$12 per doz.
Parlor door, \$3 to \$6 per set.
Stearns, \$5.50 to \$6.50 per doz.

HARVEST TOOLS.—Duty 25%.
Forks, 50 & 10% discount.
Rakes, 50 & 10 " "
Hoes, etc., 50 & 10 " "

HATCHETS.—Duty 30%.
Canadian, 40 to 42½ discount.

HAY KNIVES.—Duty 25%.
50, 10 and 5% discount.

HINGES.—Duty ½ cents per lb., & 25%.
Blind, Parker's, 50 & 10 to 60% discount.
Heavy T and strap, 4 in., 6½ cents per lb.
" " " 5 in., 6 " "
" " " 6 in., 6 " "
" " " 8 in., 5½ " "
" " " 10 in., 5½ " "
Light T and strap, 65 & 5 off.
Screw hook and hinge, 6 to 12 in., \$4.50 per 100 lbs.; 14 in. up, \$5.50.
Spring, \$12 per gross pairs.

HOES.—Duty 25%.
Grub, \$5 to \$6 per doz.

HOOKS.—Duty 30%.
Brush, \$7.50 to \$9.
Reaping, 50, 10 and 5% discount.
Chain, wrought, round or grab, \$3 & \$4.50 per doz.
Lumber Piling, \$7 to \$19 per doz.
Malleable, wardrobe, \$1.50 to \$2.50 per gross.
Wire, \$1.25 to \$2

HORSE NAILS.—Duty 30%.—See Nails.

HORSE SHOES.—Duty 30%.
Lt. Med. & H., \$3.40 per keg.
Snow, \$3.95 per keg.
Steel, \$3.80 to \$5.25 per keg.
Toe weight steel, \$6.15 per keg.

HOSE.—Duty 35%.
City Standard, 70% discount.
Phoenix, 60% discount.

INJECTORS.—Duty 30%.
Pemberton, 65% discount.
I. J. C., 65% discount.

IRON.—See Metals.

JACKS.—Duty 30%.
Lifting, 40% discount.

KEYS.—Duty 30%.
Carpenter, 50 cents to \$1.25 per doz.
Desk, 25 to 35 cents per doz.
Mortise Lock, 25 cents to \$1 per doz.
Padlock, 25 to 35 cents per doz.
Rim Lock, 25 cents to \$1 per doz.

KNIVES.—Duty 30%.
Butcher, \$2 to \$5 per doz.
Pocket, \$1 to \$5 per doz.

KNOBS.—Duty 30%.
Door, Bronze, \$7 to \$12 per doz.
White Porcelain, 90 cents per doz.
Wood, \$4.50 per doz.

LACING.—Duty 15%.
Belt (Raw Hide Cuts), \$1 per lb.
(Leather Side Cuts), 75 cents per lb.

LADDERS.—Duty 25%.
Step, 10 cents per foot.
Rung, 10 cents per foot.

LAND ROLLERS.—Duty 20%.
\$12 to \$15 each.

LANTERNS.—Duty 30%.
Cold Blast, \$7 per doz.
Dashboard, cold blast, \$9 per doz.
Japanned, 50 cents per doz. extra.
No. 0, \$5.75 per doz.
No. 3 "Wrights", \$3.50 per doz.
Ordinary, with O burner, \$4 per doz.

LAWN MOWERS.—Duty 35%.
Pennsylvania, 50% discount.
Stearns, 50 " "
Woodyatt, 40 " "

LEAD (Bar and Strip).—Duty 25%.—See Metals.
Lead, pig.—See Metals.

LEAD.—Duty 5%.
Red and White, dry.—See Paints.

LINES (Cotton).—Duty 25%.
Chalk, \$2 to \$3.50 per gross.
Wire, clothes, \$2.50 to \$4.50 per M ft.

LOCKS.—Duty 30%.
Cupboard, \$1.50 per doz. up.
Desk, \$1.50 per doz. up.
Drawer, \$1 per doz. up.
Padlocks, 75 cents per doz. up.
Rim and Mortise, Peterboro, \$1.50 per doz. up.
Amer., \$1.50 per doz. up.

MALLEABLES.—Duty 30%. See Castings.

MALLETS.—Duty 30%.
Carpenters', hickory, \$1.25 to \$3.75 per doz.
Caulking, 60 cents to \$2 each.
Lignum Vitae, \$3.85 to \$5 per doz.
Tinsmiths', \$1.25 to \$1.50 per doz.

MATTOCKS.—Duty 30%.
Canadian, \$5.50 to \$6.50 per doz.

MEAT CUTTERS.—Duty 30%.
Amer., 25 to 30% discount.
German, 15% discount.

METALS.
Ingots.—Aluminium, 35 to 50 cents per lb.
Antimony (Cookson's), 10½ to 11 cents per lb.
" " " " Copper, "English", 18 cents per lb.
" " " " Bar, 25 cents per lb.
" " " " Tin, "Lamb & Flag", 32 cents per lb.
" " " " Straits, 32 cents per lb.
" " " " Bar, 33 cents per lb.
" " " " Zinc, 6 to 6½ cents per lb.; sheets, 7 cents per lb.
Babbit Metal (duty 10%).
Lewis, 7 to 10 cents per lb.
Magnolia, 25 cents per lb.
Post's Zero, 25 cents per lb.
Spooners' Copperine, No. 2, 12½ cents per lb., finest, 25 cents per lb.
Syracuse Smelting Works, dynamo, 29 cents per lb.; special, 25 cents per lb.
Sheets, Black, Duty \$7 per ton.
" " " " 10—\$2.65, 100 lbs.
" " " " 12—\$2.75, " "
" " " " 14—\$3.10, " "
Sheets, Black, Duty 5%.
" " " " 17—\$3.10, 100 lbs.
" " " " 18—\$3.20, " "
" " " " 20—\$3.25, " "
" " " " 22—\$3.30, " "
" " " " 24—\$3.50, " "
" " " " 26—\$3.75, " "
" " " " 28—\$4.00, " "
Sheets, Tinned—7½ cents per lb., Base price.

RIVETS AND BURRS.—Duty 30%.
 Copper Rivets and Burrs, 35 & 5 off; cartoons, 1 cent per lb. extra.
 Extras on Iron Rivets in 1-lb. cartoons, 1 cent per lb.
 Extras on Iron Rivets in 1/2-lb. cartoons, 1 cent per lb.
 Extras on Tinned or Coppered Rivets, 1-lb. cartoons, 1 cent per lb.
 Iron Rivets, black and tinned, 60 & 10% discount.
 Iron Burrs, 55% discount.

ROPE, ETC.—Duty 25%.
 Cotton, 3-16 in. and larger, 16 cents per lb.
 " 5-32 in., 21 cents per lb.
 " 1/2 in., 22 1/2 cents per lb.
 Crucible Steel Rope, 25% discount.
 Galvanized Wire Rope, 25% discount.
 Jute, 8 cents per lb.
 Lath Yarn, 9 cents per lb.
 Manila, 7-16 in. and larger, 13 1/2 cents per lb.
 " 1/2 in., 14 cents per lb.
 " 1/4 and 5-16 in., 15 cents per lb.
 New Zealand Rope, 10 cents per lb.
 Russia Deep Sea, lines 15 1/2 cents per lb.
 Sial, 7-16 in. and larger, 10 cents per lb.
 " 1/2 in., 11 cents per lb.

RUBBER.
 Reclaimed.

RULES.—Duty 30%.
 Boxwood, 75 and 10% discount.
 Ivory, 37 1/2 to 40% discount.
 Lumbermans'.

SAD IRONS.—Duty 30%.
 Mrs. Potts', No. 55, polished, 62 1/2 cents per set.
 " No. 50, nickle-plated, 67 1/2 cents set.
 "Sensible," 55 and 60 cents set.
 "Toy," \$13.00 gross.

SAND AND EMERY PAPER.—Duty 25%.
 B. & A. Sand, 40 & 5% discount.
 Garnet, 5 to 10% advance of list.

SAP SPOUTS.—Duty 30%.
 Bronzed iron, with hooks, \$9.50 per 1,000.

SASH WEIGHTS.—Duty 25%.
 Sectional, \$2.75 to \$3 per 100 lb.
 Solid, \$1.25 to \$2.25 per 100 lb.

SAWS.—Duty 30%.
 Crosscut, Disston's, 35 to 55 cents per foot.
 Hack, complete, 75 cents to \$2.75 each.
 Hack, frame only, 75 cents each.
 Hand, Disston's, 12 1/2% discount.
 S. & D., 40% discount.
 S. & D., 35 off on Nos. 2 and 3.

SCALES.—Duty 30%.
 Champion, 60% discount.
 Gurney's, 40 " "
 Troenmber's, 30 " " Canadian list.

SCREEN'S.—Duty 30%.
 Door, \$7.50 to \$12 doz.
 Window, \$1.75 to \$2.75 doz.

SCREWS.—Duty 35%.
 Bench, iron, \$4.25 to \$5.75 per doz.
 " wood, \$3.25 to \$4 per doz.
 Drive Screws, 87 1/2 & 10% discount.
 Hexagon Cap, 45 " "
 Set, case-hardened, 60 " "
 Square Cap, 50 & 5 " "
 Wood, F. H., bright and steel, 87 1/2 & 10% discount.
 " R. H., bright, 82 1/2 & 10% discount.
 " F. H., brass, 80 & 10 " "
 " R. H., brass, 75 & 10 " "
 " F. H., bronze, 75 " "
 " R. H., bronze, 70 " "

SCREWS, (Machine, Iron and Brass)—Duty 35%.
 Flat head, 25% discount.
 Round head, 20 " "

SCYTHES.—Duty 25%.
 Grass, \$3 to \$10.
 Grain, \$12 to \$14.

SHEARS.—Duty 30%.
 Tailors, 30 % discount Amer. list.

SHELLS (Cartridge).—See Ammunition.

SHOT, See Amunition.

SHOVELS AND SPADES.—Duty 35%.
 Burns', 40 and 5% discount.
 Ely's, " " "
 Gray's, " " "
 Jones', " " "
 Steel, Snow, \$2.45 @ \$2.60 per doz.
 Wood, " "

SKATES.—Duty 35%.
 American Hockey.
 Canadian 40 cents to \$2.50 pair.

SNAPS.—Duty 30%.
 Harness, 40% discount.

SNATHS.—Duty 25%.
 Sythe, \$5.25 to \$8 per doz.

SOLDER (Plumbers').—See Metals.

SOLDERING IRONS.—Duty 30%.
 20 to 90 cents each.

SPIKES.—Duty 1/2 cent per lb.
 Rail, 20% discount.
 Ship, \$5 per 100 lb.

SPRINGS.—Duty 35%.
 Bright Carriage, 6 1/2 per lb. net.

STAPLES.—Duty 30%.
 Barb wire, \$3.75 per 100 lb.
 Bed, 50% discount.
 Blind, 25 " "
 Wrought iron, 75% discount.

STEEL—see Metals.

STOCKS AND DIES.—Duty 30%.
 Blacksmiths', Lightning, 25% discount.
 " Green River, 25 " "
 " Reece, 30% discount.
 " Jardine, 25 " "
 Pipe, Solid, 70 & 10% discount.
 " Duplex, 33 1/2% discount.
 " Jarecki, 33 1/2% " "
 " Oster, 30% " "
 " Armstrong, 35% " "
 Wiley & Russell's, 25% discount, Canadian list.

STONES.—Duty 30%.
 Arkansas, \$1.50 per lb.
 Hindostan, 6 to 7 cents per lb.
 " slip, 9 cents per lb.
 Labrador, 13 cents per lb.
 " axe, 15 cents per lb.
 Scythe, \$3.50 to \$5 per gross.
 Turkey, 50 cents per lb.
 Washita, 28 to 60 cents per lb.
 Water-of-Ayr, 10 cents per lb.

TACKS, BRADS, etc.—Duty 35%.
 Carpet tacks, blued, 80 & 15% discount.
 " " tinned, 80 & 20 " "
 " " in kegs, 40% discount.
 Cheese-box tacks, blued, 85 & 12 1/2% discount.
 Copper tacks, 50% discount.
 Cut tacks, blued, in dozens only, 80% discount.
 " 1/2 weights, 60% discount.
 Fine finishing, 40% discount.
 Leather carpet tacks, 55% discount.
 Lining tacks, in papers, 10% discount.
 Patent brads, 40% discount.
 Picture frame points, 10% discount.
 Strawberry box tacks, bulk, 75 & 10% discount.
 Swedes, cut tacks, blued and tinned, in bulk, 80 & 10% discount; in dozens, 75% discount.
 Swedes, upholsterers', bulk, 85, 12 1/2 & 12 1/2% dis.
 " brush, blued and tinned, bulk, 70% dis.
 " gimp, blued, tinned and japanned, 75 & 12 1/2% discount.
 Trunk tack, black and tinned, 85% discount.
 Zinc tacks, 35% discount.

TAGS.—Duty 25%.
 Shipping, 50 @ 70 cents per M.

TAR.
 Coal \$2.75 bbl.
 Refined, \$4 per bbl.

TENTS.—Duty 30%.
 Canadian list, 20% discount.

TONGS.—Duty 30%.
 Ice, \$9 per doz.
 Pipe, "Brown's," net.
 " "Brock's," 25% discount.
 " "Trimo," 25 " "

TRAPS.—Duty 30%.
 "Hawley & Norton's," 65% discount.
 "Newhouse," 45% discount.
 "Victor," 75% discount.

TRUCKS.—Duty 30%.
 1, \$3.75; 2, \$5; 3, \$6.75 each.
 "Handy" Canadian, \$16 to \$18.

TUBES FOR BOILERS.
 1 1/2, 1 3/4, 2, 2 1/4, 2 3/4, 3, 3 1/4, 4
 15, 12, 12, 10 1/2, 13, 14, 14 1/2, 18 1/2, 24 1/2 ft.

TURNBUCKLES.—Duty, 1/2 cent per lb., 25%; 3/4 cent discount.

TURPENTINE.—Duty 5%.
 55 cents per gal.

TWINES.—Duty 25%.
 Bag twine, 3-ply, 20 cents per lb.
 " 4-ply, 20 cents per lb.
 Binding, 12 1/2 cents per lb.
 Colored, 27 cents per lb.
 Cotton bag, 30 cents per lb.
 Cotton, White, 20 to 30 cents per lb.
 " Colored, 30 to 40 " "
 Hemp, 20 cents per lb.
 Jute, 20 cents per lb.
 Mattress, 45 cents per lb.
 Sewing, 45 cents per lb.

TWINE—Continued.
 Tarred Lath, 11 cts.
 Wrapping, 22 to 27 cts.

VARNISHES.—Duty 20 cents per gal.
 20% off 5-gal. lots.
 Black Japan, \$2 per gal.
 " No. 1, 75 cents to \$1.50 per gal.
 Brown Japan, \$1.50 to \$2.50 per gal.
 Carriage, No. 1, \$2 to \$3 per gal.
 " body, \$4 to \$6 per gal.
 " rubbing, \$2.50 to \$4 per gal.
 Demar, \$2 to \$2.50 per gal.
 Elastic Oak, \$1.50 to \$2.50 per gal.
 Furniture Brown Japan, \$1.25 to \$2 per gal.
 Furniture, extra, \$2 to \$2.50 per gal.
 " No. 1, 75 cents to \$1.50 per gal.
 Gold Size, Japan, \$1.50 to \$2.50 per gal.
 Hard Oil Finish, \$1.50 to \$2.50 per gal.
 Light Oil Finish, \$1.50 to \$2.50 per gal.
 Shellac, orange, \$2 to \$2.50 per gal.
 " white, \$2 to \$2.50 per gal.

VICES.—Duty 30%.
 Amer., 13 cents per lb.
 Brooks', 13 1/2 cents per lb.
 Peter Wright's, 15 cents per lb.

WASHERS.—Duty 1/2 cent per lb., 25%.
 Buggy, 75% discount.
 Wrought iron, 40% discount.

WASHING MACHINES.—Duty 35%.
 Re-acting square, \$51.00 per doz.
 " Round, \$48.00 " "
 Roker, \$48.00 per doz.
 Popular Brands, \$30.00 to \$42.00 per doz.
 Dowsell, \$3.75 each.
 Re-acting (Dowsell), \$5 each.

WIRE.
 Barbed Wire, see Fencing.
 Brass Wire, (duty 10%), 50 to 50 & 2 1/2% discount.
 Copper Wire, (duty 15%), 45 & 10% discount net cash 30 days, f.o.b. factory.
 Smooth Steel Wire, (duty 20%), is quoted at the following net selling prices:
 No. 6 to 8 gauge, \$2.30 per 100 lbs.
 " 9 " " 2.80 " "
 " 10 " " 2.87 " "
 " 11 " " 2.90 " "
 " 12 " " 2.95 " "
 " 13 " " 3.15 " "
 " 14 " " 3.37 " "
 " 15 " " 3.50 " "
 " 16 " " 3.65 " "

Other sizes of plain wire outside of Nos. 9, 10, 11, 12 and 13, and other varieties of plain wire remain at \$2.80, base, with extras as before. The prices for Nos. 9 to 13 include the charge of 10 cents for oiling. Extras net per 100 lb.: coppered wire, 60 cents; tinned wire, \$2; oiling, 10 cents; special hay-baling wire, 30 cents; spring wire, \$1; best steel wire, 75 cents; bright soft drawn, 15 cents; in 50 and 100-lb. bundles net, 10 cents; in 25-lb. bundles net, 15 cents; packed in casks or cases, 15 cents; bagging or papering, 10 cents.

Fine Steel Wire, 17 1/2 off. List of extras, in 100 lb. lots, No. 17, \$5; No. 18, \$5.50; No. 19, \$6; No. 20, \$6.65; No. 21, \$7; No. 22, \$7.30; No. 23, \$7.65; No. 24, \$8; No. 25, \$8; No. 26, \$9.50; No. 27, \$10; No. 28, \$11; No. 29, \$12; No. 30, \$13; No. 31, \$14; No. 32, \$15; No. 33, \$16; No. 34, \$17. Extras net: tinned wire, Nos. 17-25, \$2; Nos. 26-31, \$4; Nos. 32-34, \$6; coppered, 5 cents; oiling, 10 cents; in 25-lb. bundles, 15 cents; in 5 and 10-lb. bundles, 25 cents; in 1-lb. hanks, 50 cents; in 1/2-lb. hanks, 75 cents; in 1/2-lb. hanks, \$1; packed in casks or cases, 15 cents; bagging or papering, 10 cents.

Galvanized Wire, per 100 lb.: Nos. 6, 7, 8, \$3.50 to \$3.85; No. 9, \$2.85 to \$3.15; No. 10, \$3.60 to \$3.95; No. 11, \$3.70 to \$4.10; No. 12, \$3 to \$3.30; No. 13, \$3.10 to \$3.40; No. 14, \$4.10 to \$4.50; No. 15, \$4.60 to \$5.05; No. 16, \$4.85 to \$5.35. Base sizes, Nos. 6 to 9, \$2.57 1/2 f.o.b. Cleveland.

Clothes Line Wire, solid 7 strand, No. 17, \$4.25; No. 18, \$2.65; No. 19, \$2.35; f.o.b. Toronto, Hamilton and Montreal.

WASTE (Cotton).
 Colored, \$5.50 to \$6 per 100 lb.
 White, \$7.75 per 100 lbs.
 " extra, \$8 per 100 lb.

WHEELBARROWS.—Duty 30%.
 Garden, \$2 to \$4.50 each.
 Navy, \$19 per doz.
 Iron wheel, \$22.50 per doz.
 Steel tubular, \$7.50 to \$10.50 each.

WRENCHES.—Duty 30%.
 Agricultural, 60% discount.
 Alligator, 50 " "
 Coes', 30 " "
 P.S. & W., 30 " "
 Stillson's, 25 " "
 Trimo, pipe, 25 " "

WRINGERS (Clothes).—Duty 35%.
 Ajax, \$66 per doz.
 Canadian, \$28 to \$30 per doz.
 Crescent, \$17.50 to \$20 per doz.
 Leader, \$30 per doz.
 Novelty, \$25 to \$27 per doz.
 Popular Brands, \$16.50 to \$22 per doz.
 Royal American, \$26 to \$30 per doz.
 Royal Canadian, \$26 to \$30 per doz.

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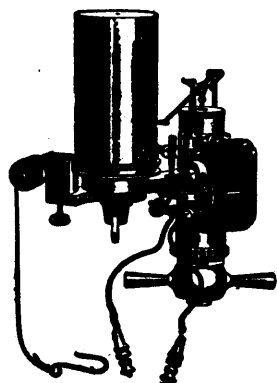
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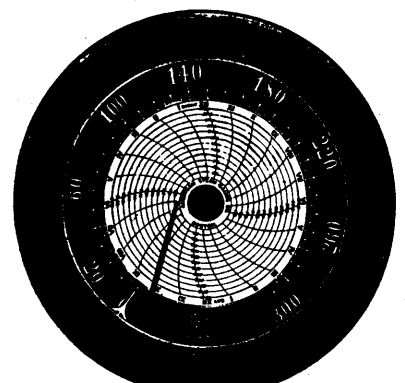
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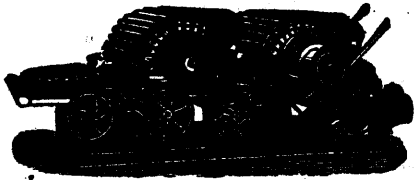


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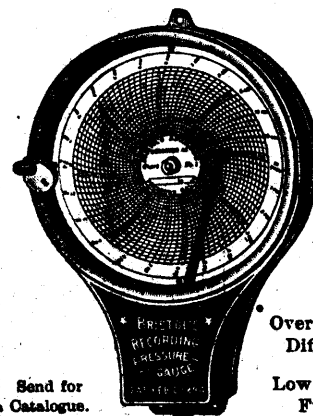
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