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TORONTO, JULY 20, 1894.

No. 2.

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THE TORONTO EXHIBITION.

The Toronto Industrial Exhibition Association have assigned the Canadian Manufacturers' Association their accustomed office room in the Press Building on the Fair Grounds, and I take pleasure in announcing that it will be thus occupied during the two weeks of the forthcoming Fair beginning on September 3. All members of the Manu-

facturers' Association will make this their headquarters during the Fair; and all Canadian manufacturers, and American manufacturers, and all other manufacturers, and all their friends their sisters and their cousins and their aunts are invited to make use of the accommodations which will be there provided. As usual, the latch string will hang on the outside of the door; and on the inside will be found conveniences which will be appreciated under the circumstances. The Fair promises to be exceedingly interesting to all concerned, and particularly so to manufacturers. The management are doing all within their power to make it thus, and they will undoubtedly succeed, as they always do. The Toronto Fair is always of great pecuniary advantage to exhibiting manufacturers.

J. J. CASSIDEY, Secretary,
Canadian Manufacturers' Association.

THE FRENCH TREATY.

A decided and important departure has been made in Canadian affairs in the ratification by the Dominion Parliament of the treaty recently made with France negotiated by Sir Charles Tupper on the part of the British Government. The event is one of great importance to Canada, as it is unique in the history of the country that it should have been made specially at the request and through the efforts of our High Commissioner; and indicates the large and constantly increasing importance and influence of Canada not only with the Mother Country but with the world at large. The time has arrived when Canada may not only shape her own internal fiscal affairs to suit herself, but may also negotiate fiscal treaties with other nations and to exercise all the important functions of independent statehood.

It is important to note, then, the advantages Canada is to derive from this treaty, and the price we will have to pay for those advantages. The application of it is restricted to but a few articles, and the advocates of it—the Government—seem to think that, all things considered, the arrangement will result in much good to this country. The treaty provides that non-sparkling wines containing twenty-six per cent. or less of alcohol, according to the Canadian system of testing, and all sparkling wines shall be exempt from the surtaxe or ad valorem duty of 30 per cent.; the present duty on Castile soaps shall be reduced one-half; the present duty charged on nuts, almonds, prunes and plums shall be reduced by one-third. In return France will admit at the minimum tariff Canadian products of canned meats, condensed milk, pure; fresh water fish, fish preserved in their natural form, lobsters and crayfish preserved in their natural form; apples and pears, fresh, dried or preserved; fruits preserved; rough and sawn building timber, wood pavement, staves, wood pulp, extract of chestnut and other tanning extracts, common paper, machine made; prepared skins, boots and shoes; furniture of common wood, furniture, other than chairs, of solid wood, common flooring in pine or soft wood and wooden sea-going ships. Canada agrees to extend to France any commercial advantage granted to any other

country, and France agrees to give to Canada the advantage of any reduction in the articles enumerated granted to any other power, the treaty to be terminable in twelve months should either of the parties so decide, but should Canada increase the duty on the wines mentioned, the French Government reserves the right to terminate the treaty immediately. So if Canada does not find the arrangement advantageous she can withdraw from it in a year, or, by imposing increased duties break the treaty at once.

Canada agrees to remit all the ad valorem duty on French wines, one-half the duty on Castile soap, and one-third the duty on nuts, almonds, prunes and plums; and in return France will admit certain Canadian products at her minimum rate of tariff duty. This favor may be of advantage to us when we become large exporters of canned meats, condensed milk, and fresh and dried fruits, but we have not yet distinguished ourselves as exporters of such articles. We are favored in like manner in whatever we may desire to export of fresh water fish, lobsters and crayfish, but not as regards salt water fish; and it is questionable if Ontario or Manitoba, the most productive sections of the Dominion of fresh water fish, will avail themselves of the French market for these products. We presume that all rough and sawn timber may be used for building purposes, and therefore such stuff may be liable in France to only the lower duty, as would be furniture manufactured of common wood, and also common pine or soft wood flooring; but these items seem to embrace about all the manufactures of wood which Canada could send to France under the lower rate of duty provided for in the treaty. Nothing whatever is said in the treaty of such manufactures of wood as agricultural implements, road vehicles, railway cars, wood pulleys, cabinetware, etc., all of which we suppose, are excluded from the treaty rate. Owing to the character of the favored articles and the cost of transportation, it is not very probable that Canada will be, even under the advantages supposed to be conferred by the treaty, much of an exporter of cheap, common furniture and lumber to France; and we are certainly not favored as regards other manufactures of lumber. In view of the fact that wooden sea-going ships are things of the past, and that the French mercantile marine consists almost exclusively of ships of iron or steel, there seems to be but little or no advantage to accrue to us in the privilege of building wooden ships for France, where they are not wanted. We fail to observe, then, wherein any Canadian industry, particularly any manufacturing industry, will be benefited by the operation of the French treaty.

On the other hand it seems inevitable but that some important Canadian interests will suffer. Under the treaty our ports will be thrown open for the admission of cheap French wines, the purity of which cannot but be questionable, and which it has heretofore been the policy of the Government to exclude as far as possible, and this to the damage and detriment of the native industry which is now quite capable of supplying the country with what we know to be a pure and wholesome article sold at very reasonable cost. Most if not all these so-called cheap French wines are fortified by the admixture with them of spirits distilled from the lees of the wine vats. In France, we

understand, this production of distilled grape spirits is freely allowed by the government, while in Canada it is absolutely prohibited; and this being the case it does not seem fair that fortified French wines should be permitted to so freely compete with Canadian wines where fortification with grape spirits is not possible because the manufacture of such spirits is not permitted. The fortification of wines should always be with grape spirits, or brandy, but often, for the sake of cheapness, especially when made for export, as in the case of the cheap French wines that will be admitted to Canada under the treaty, is effected with alcohol made from potato, beet roots or grain. The dividing line between natural and fortified wines, fixed according to alcoholic strength is necessarily arbitrary because natural wines vary in strength, importers demanding the highest possible strength even when fortification with spirits is not necessary for the preservation of the wine. Thus it is that Spanish clarets for the Bordeaux market are generally fortified up to the limit fixed by the French law for natural wines; yet they are admitted up to 15 per cent. of alcohol because natural wines are sometimes as strong. The British limit is, we believe, fixed at 15 per cent., the present French limit being 11 per cent., with a tax according to the excess of alcohol for all exceeding that strength.

The French laws forbid any wines to be sold for home consumption that contain any foreign alcohol, but afford facilities in bond for all such adulterations when for exportation. The French make large quantities of fortified wines for exportation which are excluded from the home market; and this new tariff will admit to Canada, for our consumption, a class of French wines which French laws will not allow to be consumed at home. France is thereby accorded greater privileges in Canada than our internal revenue laws permit to our own people. If the treaty had given us reciprocity in wines, and if Canadian wine makers were allowed to manufacture grape brandy, as in France, perhaps the arrangement would not be so one-sided as it is; yet France would have but little fear of such competition because she prohibits from home consumption all wines containing foreign spirits; and excludes all objectionable competition by a double system, one of which is practically prohibitive, the other extending only to those countries with which she has special treaties covering wines, our treaty not covering that article. Under our treaty France will become a large exporter of wines to Canada, but Canada will still have her wines shut out of the French market by a prohibitive general tariff.

In France there are two systems of tariff; one known as the general tariff, is applicable to all countries which have not treaty relations with France; the other being called the special tariff, or minimum tariff, applicable to such countries as have treaties with France. The difference between these two tariffs is sufficient to operate as a practical prohibition, against the products of these countries which do not have have commercial treaties covering all items in which such differences appear.

CANADA'S TREATY-MAKING PLENIPOTENTIARY

Now that Canada has arrived at a period of her history when she can make commercial treaties with foreign pow-

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ers, it is interesting to observe the business capacity of the man who was our plenipotentiary in the only treaty thus far made, and also the innovations which have been made in the consular and commercial branches of the diplomatic services of Great Britain and some other European countries during the past decade. These innovations have been found necessary owing to the rapid and complete transformation which the commercial world has of late years undergone, and have been inaugurated to meet the changed conditions of trade and the closer competition in the markets of the world.

None will challenge the fact that Sir Charles Tupper was a strong power in politics even before the confederation of these provinces into the Dominion of Canada; that his ready and resourceful brain did good service in calling into existence this great and influential nation, and that very much is due to him for what he has done for his country since then. His assertiveness was valuable in bringing order out of seemingly incongruous elements, but his executive achievements as a minister of the Canadian Government, particularly as the chief of the Finance Department, while exceedingly clever in many respects, showed that he could see no further into a millstone than the man who made it. We know that in forming or rather reforming the tariff he made serious blunders, particularly in the iron schedules, and that against the advice of many men possessed of equal intelligence and far superior to him in both general and technical knowledge regarding the particular industries in which they were engaged, and which were to be seriously effected by the proposed tariff. The fact is, Sir Charles is one of that old style gentlemen who think they know more than others regarding anything with which they care to concern themselves, and who brook no meddling or interfering, nor even suggestions from any. This is the sort of a Finance Minister Sir Charles was, and as a Plenipotentiary negotiating a treaty he was identically the same sort of a man. We are not aware that any burning desire or heart-longing existed in the Canadian breast for any treaty with France, and now that one has been negotiated we fail to discover that any one save and except Sir Charles really felt any desire that it should be ratified. The event, however, illustrates the fact that a forceful man like Sir Charles can carry a point, or indeed several of them when he makes up his mind to do so. He may be an accomplished plenipotentiary and as expert at negotiating treaties with foreign countries as he was at making tariffs, but it does not appear that his endeavors in either direction are just what Canada needed or needs.

Canada under the plenipotentiaryship of Sir Charles Tupper will most probably have some such experiences as befell Great Britain previous to the present era when accomplished statesmen who, unfortunately, were not practical business men, were entrusted with the duty of negotiating tariffs; and these experiences will probably continue until such time as the truth dawns upon the Government that to business men, not professional statesmen, should be entrusted such vitally important duties. In 1865 the British Foreign Office suffered a bitter experience of this character, as a result of which the advisability of appointing commercial attaches to embassies and legations was first suggested. The British ambassador to Prussia negotiated in that year

a commercial treaty with the German Zollverein. The Ambassador, like Sir Charles Tupper, was not versed in the intricacies of commerce, and there slipped into the treaty a faulty definition of "woolen textures," which, by excluding from the minimum tariff a grade of goods extensively exported to Germany, caused Birmingham and Manchester an estimated loss of £2,000,000 annually. When in 1881 the German government consented to discuss the negotiation of a new treaty with Great Britain, Lord Russell, at that time British ambassador at Berlin, requested the Foreign Office to place at his orders, in addition to the usual Foreign Office experts and secretaries, an expert well versed in the varied and extensive commercial relations of the two countries. The Foreign Office, in answer to this request, being most anxious to avoid a recurrence of the wool incident, requested Mr. Joseph Crowe, at that time Her Majesty's Consul-general at Leipsic, to proceed to Berlin and assist Lord Russell in the negotiations. On the arrival of Mr. Crowe at Berlin, however, the German Government, basing their objections on the fact that Mr. Crowe did not hold diplomatic rank, stated that they could not recognize or permit him to actively participate in the negotiations. The British Foreign Office removed this difficulty by appointing Mr. Crowe commercial attache to the Berlin legation, with diplomatic rank, and, thanks to his special knowledge, the treaty negotiations were concluded in a manner quite satisfactory to the manufacturing and commercial interests of the United Kingdom.

In 1883 when Lord Lyons was negotiating a commercial treaty with France, Mr. Crowe was transferred to Paris as commercial attache, and has remained there ever since; and in 1889 Her Majesty recognized the services he had rendered British commercial interests by the bestowal of Knighthood upon him. About that time Mr. Law, a member of the British Consular Service, was appointed commercial attache to the Russian embassy; and besides these two we believe there are no other commercial attaches in the British diplomatic service.

The appointment of at least one commercial attache to every important British legation has been proposed in the House of Commons a dozen times in the last ten years, and in theory at least, the suggestion has always been approved by the Government of the day; and the proposition has never failed of support in the press and in the manufacturing and commercial corporations of the country.

The reason for this delay, and perhaps the most potent in bringing it about, is that the aristocratic families who almost exclusively hold these diplomatic offices, Whigs and Tories alike, strongly object to the appointment into the service, of so-called tradesmen as attaches where their official standing give unrestricted entree into the circle of aristocrats that cluster around every British legation. Where these commercial attaches have been appointed, the chiefs of embassy have had to recognize them and their wives socially, otherwise the country to which they are accredited would also ignore them socially, and the purpose of their appointment would be frustrated.

Columbia, the land great and glorious
The home of the brave and the free

PROFITS IN THE BEET-SUGAR INDUSTRY.

This journal is so thoroughly convinced of the adaptability of Canada to the successful prosecution of the beet-sugar industry under reasonable encouragement from the Government during the first few years of its operation, that we have taken frequent occasion to urge prompt and adequate legislation in its favor. It is impossible to read of the marvellous expansion of the industry in Europe, and of the wonderful advantages resulting to the agricultural and industrial interests in the countries where it has been established, without entertaining a strong desire and expectation that like results should be experienced here. In a recent issue we showed how very profitable the industry had proved to the large sugar factories in Germany during the campaign of 1893-94, and furnished a list of many of the handsome dividends which had been earned. We have frequently quoted from the reports of the United States Consuls in Germany, France, Austria-Hungary, Russia, Denmark, Sweden, etc., extracts showing the strong impression which the success of the industry in these countries had made upon the minds of these Consuls, under which they have been persistently urging upon their Government and countrymen the advantages and profits which would be realized from the extensive prosecution of beet-sugar production in the United States.

In the Consular Reports published in Washington, June, 1894, there is a report by Mr. Julius Muth, U. S. Consul at Magdeburg, Germany, dated February 17, 1894, which might be expected to cause considerable discouragement to the promoters of this industry. Fortunately, many of the other Consuls in Germany furnish complete details upon a most important point which Mr. Muth appears to have entirely overlooked, or neglected to take into account in his calculations. The following extracts from his report are subjoined:—

“Since the (new) law went into effect, the quantity of beets grown and sugar produced and exported has continued to increase. In the campaign year, 1892-93, there was an excess over the previous year. The figures so far obtainable for year 1893-94 are in excess of 1892-93. Indications point to a considerable enlargement in the beet area for the coming season. This, to a mere observer, would be conclusive proof of a flourishing industry, but in reality it is not. In order to reduce the cost of production per kilo of raw sugar, and to obtain a profit, the factories are forced to increase their capacity, and thus, with the increasing competition of other nations, an over production of sugar is being created, which will finally prove disastrous, especially to the smaller factories. It is claimed by men in the business, that the abolition of the National tax has contributed to this. To illustrate this, the development of the prices of raw sugar, the cost of beets, and the working expenses must be compared.” Mr. Muth gives the following figures:

	1882-83.	1892-93.
Average price of raw sugar, excluding tax, per 100 kilos.....	\$9,044	\$6,457
Reduction in price in 10 years, 28.6 per cent.		
Average price of beets, per 100 kilos.....	52.36 cents	49.74

Average cost of working expenses, per 100 kilos.....	30.46 cents	17.37
	82.82	67.11

Reduction in price in 10 years, 18.9 per cent.

“To counteract this disproportionate reduction in the sugar prices, manufacturers see their only hope is in an increased production, the general running expenses remaining the same or nearly so. As these conditions affect all alike, a continued fight for the possession of the beets is being waged among the factories, and this fierce competition alone has, so far, saved the price of the beets from falling to the same level as the price of sugar, and has promoted an unnatural extension of beet-growing.” This conclusion of Mr. Muth appears to put the beet-sugar industry in Germany in a very precarious condition, and immediately starts the enquiry as to how his statements can be reconciled with the ascertained facts as to the immense profits obtained during last campaign by German sugar factories. It will be noticed that the above figures assume that the beets grown in 1892-93 were no richer in sugar than those grown in 1882-83, and that there had been no improvement during the 10 years in the methods and skill employed in the extraction of the sugar. It seems strange that this point should have escaped the attention of Mr. Muth, as it is the one which, of all others, has been urged by all other Consuls as the most important factor in the success of the beet-sugar industry. In 1882-83, the average quantity of beets required in all the factories in Germany, to produce 100 kilos of raw sugar, was 1,051 kilos. In 1892-93 only 835 kilos of beets were required to produce 100 kilos of raw sugar.

In 1882-83, 1,051 kilos beets, together with working expenses, cost per 100 kilos, 82.82 cents.....	\$ 8.70
In 1892-93 835 kilos beets, together with working expenses, cost per 100 kilos, 67.11 cents.....	\$ 5.60
In 1882-83, 100 kilos raw sugar sold for \$9,044, less cost \$8.70. Profit.....	\$0.344
In 1892-93, 100 kilos raw sugar sold for \$6,457, less cost \$5.60. Profit.....	\$0.857

As thus corrected, Mr. Muth's figures tell wonderfully in favor of the beet-sugar industry. Not only was the selling price of raw sugar reduced 28.6 per cent. in 10 years, but without any perceptible decrease in the prices paid to farmers for their beets, the factories made two and one-half times as much profit in 1892-93 as they did in 1882-83. Nor must it be overlooked that the bonus or premium obtained by the factories in 1892-93 was a mere pittance compared with the bounty of 10 years ago.

Is there any other industry in Europe for which so much success, either as to cheapening of product, or satisfactory returns to investors, can be shown? Is it any wonder that the production of beets and the manufacture of beet-sugar should keep increasing with marvellous rapidity?

It would be unreasonable to expect that Canadian farmers would be able to immediately succeed in producing beets as successfully as the farmers of Europe, with 40 years of experience, or that Canadian factories should succeed in extracting the sugar with as much skill as those who have been trained to the business for an age. However, we have not the slightest doubt that after ten or perhaps even five years' experience, Canada would succeed in pro-

ducing sugar as cheaply as any country on the globe. We cannot conceive why the Canadian Government, or Parliament, should hesitate in offering to capitalists, for a reasonable term of years, such reasonable bonus as shall secure them from loss in the earlier years of their operation, from competition with the old established, wealthy and experienced manufacturers of Europe.

TORONTO INDUSTRIAL FAIR.

The management of the Toronto Industrial Fair are again actively engaged making preparations for this year's exhibition which is to be held from the third to the fifteenth of September next, and which it is intended shall be even more attractive and interesting than any of its predecessors. Mr. H. J. Hill, the manager, has sent us a copy of the Prize List which contains much information having reference to the management of the Fair which we have pleasure in laying before our readers.

The Board of Directors of the Industrial Exhibition Association is composed of some of the best and most active of Toronto's business men, at the head of which, as president of the Association, is Mr. J. J. Withrow. The Canadian Manufacturer's Association send five of its members as members of the Exhibition Association, and three of these are members of the Board of Directors, to wit, Messrs. George Booth, R. W. Elliot and W. K. McNaught. Other members of the Board who are also members of the Manufacturers' Association are Messrs. William Christie, first vice president, and W. E. Wellington. The Manufacturers' Association is also represented on the Finance Committee by Messrs. Booth and McNaught, and on the Special Attractions Committee by the same gentlemen.

Manufacturers who may have exhibits there will be interested in these portions of the general rules and regulations governing the Exhibition which will affect them.

Necessary attendants upon machinery will be furnished with special passes for admission to the grounds upon application to the Secretary's office. These will admit the holder twice each day.

On the entry of each article a card will be furnished the exhibitor, specifying the class, section, number of entry and name of exhibitor, which card must remain attached to the article during the Exhibition.

For the exhibit of all classes of manufactures, applications for space should be made to the Secretary as soon as possible. Space will be allotted according to order of application up to August 11, after which date it will be allotted according to the extent previously undisposed of.

On and after August 20 exhibitors and their workmen will be admitted to the grounds and buildings for the purpose of getting machinery and implements into position.

As it is intended to have the Exhibition fully opened to the public at the time named, exhibitors are notified that articles arriving after the above dates will not be allowed to compete. Exhibitors of machinery and other heavy articles are expected to have them on the grounds and placed in position the week preceding the opening of the Exhibition.

Exhibitors must provide for the delivery of their articles upon the Exhibition Grounds. The Association will not,

in any case, make provision for their transportation or be subjected to any expense therefor, either on their delivery at or return from the grounds. All expenses connected therewith must be provided for by the exhibitors themselves, and all express and cartage charges must have been prepaid.

Articles not accompanied by their owners may be addressed to the superintendent of the department in which they are to be exhibited, who will receive them on their being delivered at the grounds, if all cartage and other charges on the same have been prepaid.

Every facility will be afforded for the transaction of business, by taking orders, but no delivery of articles sold can be made on the premises during the Exhibition except by special arrangement.

The Association will take reasonable precaution to ensure the safety of articles sent to the Exhibition, but the owners themselves must take the risk of exhibiting them; and should any article be accidentally injured, lost or stolen, the Association will give all the assistance in their power towards the recovery of the same, but will not make any payment for the value thereof.

A portion of the Main Building is fitted up with shafting and power, especially for the exhibition of processes of manufacture. The Association hope that manufacturers who are in a position to assist in this feature will send some of the machines used by them in the manufacture of their products, and it is certain that they will be amply repaid for their trouble by the extra benefits they will receive from such an exhibit.

Favourable arrangements have been made with all the railroad and steamboat companies for the conveyance of passengers and articles to and from the Exhibition at greatly reduced rates, and for special excursions from all parts of the Dominion and the northern portion of the United States.

All exhibits sent as freight (not by express) will be returned free on the freight having been prepaid one way, that is, to Toronto.

Arrangements have been made with the Customs Department for the admission of articles from foreign countries for exhibition, free of duty, on giving the customary bond.

All implements, machinery, etc., can be unloaded from the railway cars directly upon the grounds, the expense of transshipment being thus avoided.

All articles sent by express will be delivered on the grounds without extra charges by the Express Companies.

The Great North-Western and the Canadian Pacific Telegraph and the Express Companies have offices on the grounds; and there is a post-office at which mails are received and despatched twice daily. The grounds are also connected with the City of Toronto and other places throughout the Province by telephone.

Visitors may be assured of finding on the grounds everything necessary to the convenience and comfort of young or old, during the entire day. Ample restaurants and lunch rooms, managed by experienced caterers, and under the supervision of the Board of Directors as to the price and quality of food, will serve meals and refreshments during hours of exhibition at reasonable rates. A barber's shop, wash rooms, and baggage rooms for the deposit of satch-

els, cloaks, etc., and in charge of responsible parties, are conveniently located for the accommodation of visitors. The city authorities will co-operate with the officers of the Association in every practicable manner to ensure the safety and contribute to the pleasure of the visitors.

Agricultural implements. Representatives of the Manufacturer's Association upon the Committee of this department are Messrs. W. K. McNaught, George Booth and J. J. Cassidey. The Implement Building is fitted throughout with shafting so that exhibitors can show their machines in operation. Shafts are turned to 2½ inch guage, speed 65 to 70 revolutions per minute. Manufacturers who were exhibitors last year will, if possible, be allotted the same space as was then occupied by them if applied for in time. Exhibitors of portable engines driving the general shafting will be furnished fuel free of charge. No charge is made for either space or power. Articles in this Department will be received for exhibition only.

The different sections of this class include grain and seed drills, mowing machines, reaping machines, horse and steam power thresher and separators, fanning mill, hay working implements, portable grist mills, grain crushers and grinders, horse powers, machines for cutting and pulp-ing roots, straw cutters, steam plows and cultivators, iron and wooden plows, horse hoes and cultivators, harrows, land rollers, ensilage corn cutters and elevators, potato diggers, portable engines, traction engines. All other machines and implements used for agricultural purposes not included in these sections.

Engines and Machinery. The Manufacturer's Association representatives upon this Committee are Messrs. George Booth, chairman, J. J. Cassidey, Samuel May and W. K. McNaught. No charge for space or power. All machinery in motion, except portable, must be exhibited in Machinery Hall, if so required, space, steam power and shafting for which are furnished free of charge. Main shafting must not be interfered with. Exhibitors requiring them must supply themselves with split pulleys. There are two shafts in Machinery Hall each 2 3/8 inches in diameter, speed 150 revolutions and 300 revolutions per minute.

The different sections of this class include stationary steam engines and connections and parts thereof; steam hammers, road engines, etc., wood-working machinery of all descriptions, iron working machinery of all descriptions, emery wheels, emery grinders, etc., flour mill machinery and appliances of all descriptions, portable saw mills, saw saw mill machinery, tools, etc.; portable and stationary fire engines, steam and hand, fire extinguishers, etc.; wind, steam and power pumps, well, force and cistern pumps, etc.; boot and shoe making machinery, brick machines, hoists and other machinery not included among any of the above; locomotives, passenger cars, street cars, headlights, lamps, couplings, car springs, and other railway appliances; fire alarm telegraphs, telegraphic instruments, telephones and telegraph and telephone supplies; all kinds of electrical inventions and appliances, dynamos, lamps, heating and cooking apparatus, etc. No prizes or awards in any of the above sections.

Other sections in this Department are as follows: Fire escapes, to be shown in operation, diving armor and appliances, life preservers, life saving rafts, appliances for

launching life boats. Prizes in these sections as recommended by the judges. Silver medals as follows: Best exhibits of models for sailing yachts, pleasure boats and skiffs, racing skiffs and shells, canoes, sculls, oars and paddles, steam yachts.

Miscellaneous Manufactures. In response to enquiries made of leading manufacturers it appears to be the desire of a very large majority of them that prizes should not be offered in the general line of manufactures. It will be, however, at the option of the Jury on Awards to recognize by the awarding of medals or diplomas, any exhibit where the extent or merit of the same would seem to call for special recognition.

The Manufacturers' Association representatives on the Committee in Miscellaneous Manufactures are: Messrs. W. K. McNaught, chairman, R. W. Elliot, George Booth, Samuel May and J. J. Cassidey.

The sections of this class include fire and burglar proof safes, vault doors, and bank lock combinations, counter and platform scales, cutlery, razors, etc, fire arms and sporting goods, bells, skates, fishing rods, lines, etc.; nails, screws, bolts, rivets and washers; machinists and mechanical engineers' tools, edge tools, saw and axes, spades, hoes, picks, shovels, etc.; hay, manure and other forks and agricultural tools, scythes and lawn mowers, locks and keys, files, horse shoes, and other manufactures of iron.

Specimens of farm and other fencing, common and self-acting farm and other gates.

Gas and kerosene fixtures of all kinds, plumbers' and engineers' brass work, tinsmiths' work, tinware and wire work, etc.

Lead pipe, lead shot, sheet lead, sheet brass work, sheet zinc work, coppersmiths' work, shows cases, etc.

Goldsmiths' and silversmiths' work, jewelry, etc.

Skilled mechanical work. Three special prizes will be given in each of the three sections of this class according to merit and value of exhibit, specimens to be the handiwork of mechanics, apprentices and non-mechanics.

Refrigerators for family, butchers', brewers' and grocers' use.

House furnishings—washing machines, mangles, wringers, etc.; brooms, brushes, etc.; hollow wooden ware, childrens' wooden toys, wheelbarrows, etc.

Tents, flags, sails, awnings, bunting, etc.

Boots and shoes, tanned skins, cordovan, belting and sole leather and all kinds of leather for manufacturing purposes, shoemakers' supplies.

Harness and saddlery and materials; engine hose and rubber goods, trunkmakers' work, furniture and upholstery, glass, earthenware, etc.; book binding, printing, stationery, etc.; paper hangings, shades, blinds, etc.; groceries and provisions; wines, hairwork, building work and materials, knitting and sewing machines, musical instruments, including organs, pianos, band instruments, etc.

Textile fabrics. In this department are included woolen goods, knitted goods, cotton goods, carpets, mats, etc.; wearing apparel, flax and hemp goods made from the growth of Canada, furs of Canadian manufacture.

Mr. R. W. Elliot is chairman of Committee on Chemical Manufactures, pharmaceutical preparations, philosophical and surgical instruments and appliances, etc.

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Stove Department. Manufacturers' Association representatives, George Booth, chairman, J. J. Cassidey. In this Department are included stoves and ranges, grates, furnaces, oil stoves, etc.; castings, hollowware, etc.

Carriage Department. Exhibitors in this Department must confine their entry to one vehicle in each distinct line. Displays will include heavy work-coaches, landaus, etc.; light work-phaetons, buggies, roadcars, etc.; market and express waggons, sleighs, etc.; parts of carriages and other vehicles, axles, springs, etc.; bicycles, etc.

HISTORY OF THE PULLMAN BOYCOTT.

A plain and concise history of the boycott of the Pullman Palace and Sleeping Car Co., with which it is well all our readers should be familiar, is given in the New York Evening Post, which says:—

The boycott had its beginning in a reduction of wages which was forced upon the company last year by the panic. The company promised to restore the old rates as soon as business conditions would permit. Car-building is subject to competition, like other trades. Railroad companies buy cars where they can get them cheapest. Under the influence, or rather the inexorable law, of competition the prices of cars have fallen in the last two years 24 per cent., and work is very slack at the reduction.

On the 7th of May last the workmen of the Pullman car works made a formal request for a restoration of the wages they were receiving before the reduction of last year. Mr. Pullman met them two or three days later and gave the reasons why the conditions of business would not allow the restoration of the old rates. He said that the business depression and the reduction of orders for cars had compelled the company to reduce their force from 5,815 men in the beginning of 1893 to 2,000 on the 1st of November; that by hard struggling and by underbidding for work he had been able to keep the latter number employed and to increase the number gradually until he had 4,200 employed. How he had done this he explained in detail. He took an order for 55 passenger cars for the Long Island Railroad at \$300 per car less than the actual cost to the Pullman Company. He took an order for 300 cattle cars and 250 refrigerator cars for the Northwestern Railroad at \$12 per car less than cost, and 25 cars for the Lake Shore Railroad at \$79 each less than cost.

He added that there was less than sixty days' contract work in sight under all orders, and no possibility of getting any more work at prices measured by the wages of May, 1893. In order to provide work and wages for the town of Pullman, where the company's largest interests lay, he had closed the Detroit works altogether. Furthermore, the company had expended \$160,000 in internal improvements which, under normal conditions, would have been postponed or spread over a number of years.

On the day following this exposition of the company's affairs the local committee of the employes ordered a strike, which was at once carried into effect. Mr. Pullman was very much relieved by the removal from his shoulders of the responsibility for the bread and butter of those 4,200 men and their families. The Pullman Savings Bank had on deposit \$488,000, nearly all of which belonged to the workmen. The deposits immediately began to run down,

having been reduced by the sum of \$32,000 since the strike began—a much smaller reduction than might have been expected, seeing that the pay-rolls before the strike amounted to \$7,000 per day. Probably some of the men got work elsewhere.

What followed is well known. The American Railway Union made a demand that the Pullman Company should submit to arbitration the question whether it could afford to raise wages at a time when it was building cars at less than cost merely in order to give the men employment at some rate of pay. An arbitration accepted voluntarily presupposes an agreement to abide by the decision of the arbitrators, but a decision in favor of the employes would not put the company in funds. It would not furnish new orders for cars at higher prices than before. As a decision adverse to the company could not be complied with in any event an arbitration would have been not merely useless but a downright mockery, and, if adverse, would have left the company in a still worse position—a position implying bad faith. Probably the Railway Unionists had this fact in view when they insisted so strongly on arbitration, and when they refused the company's offer to submit its books to examination by a committee of the employes.

The present boycott is an attempt to starve out society. The whole population subsists by the movement of trains, and can not exist more than a few days without such movement. In passing judgment upon the enormity of the offense which the American Railway Union is committing it must be remembered that not only is the strike which it has ordered entirely a "sympathetic" one, but that no warning was given to the different railroad companies which would have enabled them to meet the situation.

EDITORIAL NOTES.

The workmen at Pullman, Ill., who struck for more wages when the company were running the shops at a loss in order to keep the hands at work, are evidently fully imbued with the notion which has taken possession of the minds of large numbers of people recently that wages grow on blackberry bushes, and that capitalists have only to stretch out their hands and pluck them.—Ottawa Citizen.

Mr. Mulock's bill providing for the protection of motormen and other employees operating electric and other railway cars, has passed its second and third reading in the House of Commons. The bill as submitted to the House was presented in the form of an amendment to section 10 of the Railway Act of 1888, which defines the powers of the Railway Committee. To the powers given to that committee is added the following: "And many also make regulations requiring proper shelter to be provided for motormen and other employees operating electric and other railway cars." The bill is now before the Senate. It is one about which there need be no difficulty. In our severe winters the motormen are exposed to the fierce weather which is frequently experienced, and without some shelter are likely to be subjected to climatic influences, which must render them unfit at times to properly discharge their responsible duties. The bill will be, therefore, a benefit, not only to the motormen themselves, but to the public, whose

lives are jeopardized from any inability to perform their duties promptly, and to the companies who employ them as well. That such shelters are possible and beneficial has already been proved, and if the companies engaged in the electric car business have not the humane feelings which would prompt the furnishing of such protection voluntarily, it is highly desirable that means of compelling them to adopt such shelters should be within the reach of those to whom the supervision of railways is entrusted. The bill is emphatically a humane one, and as such it will meet with the hearty approval of all classes of the community.—The Shareholder.

Considerable attention has been given to the report recently made by U.S. Consul Mason, at Frankfort, Germany, upon the Taussig process of smelting and casting metal by electric heat in air tight furnaces. There is no limit to what may be expected from the development of electrical energy, and it may be that the future will see iron and steel worked in that manner, but one statement made in the report seems rather visionary in the light of recent investigations. This is, that the process mentioned may result in the production of pig iron in the mountains and in remote districts having water power, but no ore or coal. U.S. Consul Monaghan, at Chemintz, Switzerland, last summer made a report on steam power and electricity in that country. In that report he showed that electrical power secured by harnessing the mountain streams of Switzerland cost fully as much, if not more, than the same horse power produced by steam. He held that with these figures showing actual costs it would be extremely difficult to turn from steam to electricity. If this is the best that can be got from water power acting upon electrical producers, the prospect of using electricity for coal in metal working seems a long way in the future.—American Manufacturer.

An appendix to the report of the Canadian Minister of Agriculture for 1893, which is in the form of a special report of the executive commissioner on awards on agricultural implements at the World's Columbian Exposition, has just been published. It goes somewhat into detail concerning the treatment received by certain Canadian exhibitors of agricultural implements at the hands of the Executive Committee on Awards. With a view of refuting the charges of corruption, the Chicago Herald says:—

"After exhausting all the other subjects of complaint against the United States, the Canadian newspapers have discovered, seven months after the World's Fair closed, that the Dominion exhibitors were unfairly treated by the Exposition management. The specific charge is that Canadian exhibitors of agricultural implements were deliberately swindled out of awards to which they were entitled, by venal and corrupt judges. It is difficult, of course, to disprove a charge of this kind, but it is equally difficult to prove it, and the Canadians have not proved it. Neither will most people familiar with the subject believe that there is any truth in the indictment. Under the management of John Boyd Thacher the Bureau of Awards was undoubtedly the most stupid, ill-conducted department of the Exposition, but there was at no time any grounds for believing that its operations were willfully dishonest. It was wrongly conceived, badly organized, and handicapped by a pig-

headed director, but when that is said all has been said. It was honest according to its lights, and the Canadians fared no worse than all the other nations did. This is not saying much, it is true, but it should be sufficient to refute the charge of specific malice toward our neighbors across the line."

When the Herald says "the Canadians fared no worse than all the other nations did," it does not say much in the way of defense. The Canadian report sets forth no claim of being treated any worse than other countries were treated; it merely reiterates, somewhat more in detail than has heretofore been made public, the wrongs and abuses heaped upon Canadian exhibitors. The department of awards at the Columbian Exposition was not only "wrongly conceived, badly organized and handicapped by a pig-headed director," as the Herald admits, but it was imbecile, impotent and rotten and therefore incapable of treating anyone justly. The same abominable and damnable treatment that was dealt out to the Canadian exhibitors was dealt out to every other country that was represented at the Fair, and a century will elapse before the taint and stain that have polluted Columbia's fair name will have been effaced.—Reifsnider's Farm Machinery.

The Toronto Mail has awakened to the fact that the new tariff is grossly unfair to the makers of agricultural implements. The Herald pointed this out six weeks ago. Agricultural implements are protected to the extent of 20 per cent., while the raw materials which go to make them are taxed to a much greater extent. Thus the manufacturer has practically no protection, while the farmer has to pay a tax of 20 per cent. on his machinery, for the advantage, not of the manufacturer, but of the iron maker. Canada does already a considerable export in implements, finding a market for them in South America, Australia, South Africa and England; and this would grow rapidly under a policy of free raw material for the manufacturer—that is free iron. What is wanted is not an increase in the duty on agricultural implements, but the removal of the duties on iron in its various forms.—Montreal Herald.

The Herald knows that this statement cannot be verified, and therefore it is not honest in making it. It knows that it was distinctly shown by Mr. Wallace in the House of Commons when the question was being exhaustively discussed that the duty upon all the iron and steel entering into the construction of a reaper could not be more than about \$6, while the revised duty upon the implement, costing \$100, would be \$20, a net protection of about \$13. As the Herald very truly asserts, the manufacturers of agricultural implements were doing a gratifyingly large export trade when the duty upon bar iron and steel was 30 per cent. greater than it is now, the change being decidedly in their favor. The day is a long way off when the duties upon iron are removed.

Statistics illustrating the growth of trade relations between the United States and Canada have been transmitted to the Senate by the Secretary of the Treasury. The statistics, which have been prepared by both the United States and Canadian authorities, cover a period of seventy three years from 1821 to 1893, inclusive. The figures given show, among other things, that the exports of merchandise in 1821 from the United States to Canada amounted to \$2,014,529 and the imports from that country to the United States to \$4,4500. In 1893, on the other hand, the ex-

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ports amounted to \$24,138,482 and the imports to \$22,108,916. The total of exports for the seventy-three years covered by the statistics was \$1,468,159,324, and the total of the imports amounted to \$1,299,957,798.

The American emissaries of disorder who are said to be now at work in Canada should not be countenanced by Canadian workingmen. Canadians have nothing to do with the strike now in progress in the States. Its success or its non-success can in no way affect them, and it would be absurd for them to make any sacrifices to help those who cannot be regarded as friends. American workmen can come and go unquestioned and unimpeded in Canada, but thanks to the American unions a Canadian workman who seeks admission to the States is met at the frontier by something very much like an exclusion Act which disputes his passage and can be, as it often has been, used to turn him back. Canadians who found jobs in the States have been hunted down by men like De Barry and ignominiously deported from the country under provision of what they call their Alien Labor Act. Peffer, the Populist and Socialist Senator from the west, in order to play into the hands of these same unions, will shortly secure legislation imposing a poll tax of \$50 on all mechanics entering the States, just as Chinamen are taxed. When Canadian workmen are appealed to to extend their sympathies to American workmen they should remember these things. If Canadian labor is not free to enter the States, but is flouted and insulted at the frontier in the interests of American labor, have Americans any right to expect the sympathy and support of Canadian workmen in helping them out in a labor struggle? We hold that they have not, and that Canadian workmen wherever and whenever they are appealed to to aid the strike should at once repel the agitator as one who looks for friendship in return for a slap in the face.—The Empire.

The plant for the purification of beetroot juice by means of electricity has now been successfully in operation in France for some time past. In a report by Prof. von Lippmann, the details of the process are given at some length. In it he states that a Siemens dynamo, generating a current of from 30-40 amperes at a pressure of 4-5 volts, has given the best results. The warm diffusion juice is placed in a large vat between electrodes of sheet zinc, and after the current has been switched on, a thick muddy precipitate separates at the anode and gradually settles to the bottom of the vessel. The process is, therefore, one which has been devised to rapidly coagulate the albumen used in purifying the raw juice; and it is claimed that the process is both more economical and more expeditious than that formerly employed. The use of zinc plates as electrodes one would have thought dangerous, but Prof. Lippmann states that there are no zinc salts present in the juice, although the mud which separates at the electrode consists chiefly of zinc oxide in combination with organic matter. In a modification of the French process, which is being tried in America, electrodes of aluminium and carbon are employed, and the sugar solution heated to 200 deg. F. in a shallow electrolytic tank. A pressure of 4-5 volts is then employed, the quantity required of course depending on the size of the electrodes. The nascent aluminium basic hydrates produced seem to bring about the defecation and decolorising of the liquor. In this process, however, it is necessary to add a precipitant, such as phosphate of soda or superphosphate of lime, to remove the aluminium salts from the sugar solution before it is removed to the

vacuum pans. Since the sugar industry in Germany is now in a very prosperous condition, and there is a general movement towards the enlarging of the existing factories, and the erection of new ones, especially in the Mecklenburg district, it is probable that the electrical method of purification will be tried by many of the German houses.

The Literary Digest has a translation of an excellent article from a Florentine newspaper written by F. Alessio re Capital and Labour from which we select as follows:

Saving is the essential condition of the increase of production, and hence of work; without saving there can be no capital; without capital there can be no progress; with out progress there can be no social well-being. Saving is that which, as every one knows, begets credit, of which the virtue consists in causing the elements of existing wealth to circulate more actively and become more productive. Saving is the true point of departure, the true embryo, so to speak, of capital.

Franklin—a name which ought to be particularly dear to the working classes—recommends to them in his "Counsels of an Old Workman to a Young Workman" that they save something out of their wages, however small, every day. Franklin is right, since saving is the indispensable condition for every citizen becoming independent, and still more for every one of the working classes; also the condition for acquiring that tranquility of spirit which is necessary to every one in order to develop his faculties and bring out the best that is in him.

Saving constitutes that great institution of human foresight which transmits to one generation the full enjoyment of a part of the wealth created by a preceding one. Capital can not spring from wealth already consumed, but from saving alone. Therefore, those who, with Marx and the other revolutionary Socialists, pretend that social wealth has a dishonest origin either deceive themselves or wish to deceive. Honest and pure is the origin, as honest and pure is the destination, of capital.

Capital is not money alone, but every instrument of production. Land, raw materials, buildings, machines, roads of communication and transport, mechanical and chemical discoveries, costly experiments, the studies of those who make nothing, but who, as Adam Smith so well said, teach others to make something; schools, technical as well as all others, which serve for instruction and for teaching virtue; all the forces, in a word, which human intelligence, from the beginning of the ages to this day, has learned how to conquer, to discipline, to associate with its work; all these constitute capital and serve for the development of production no less than of the material agents representative of labour. Labour has developed, consumers have been multiplied, the arts and industries have progressed in proportion as capital has been formed and been increased.

The tariff, at least for the next year or two, is now virtually fixed, and the removal of the paralyzing effects of uncertainty upon trade and industry will, it may be hoped, be speedily followed by increased activity along all lines. The net result of the tariff changes is a substantial reduction upon a few articles of importance, a trifling reduction upon a much larger number, and the old rate, or even an increase, upon many. How the reform, falling as it must do very far short of the expectations which had been aroused throughout the country, will be received by the people, cannot be definitely known until the day of reckoning, the next general election. Meanwhile, if that is delayed for a year or two, as is probable, there will be time for many things to happen which will be potent factors in determining the issue. Should the country be favored with

re-arning prosperity, it may be predicted with a good deal of confidence that the Government will be sustained. On the other hand, should the "hard times" continue or become still harder, the chances of the Government will be very seriously impaired and its defeat become probable. And this result, in either case, will follow without much regard to the question whether the policy of the Government is or is not in any large degree responsible for the country's prosperity or adversity. "After this, therefore on account of this," will be the unconsciously but practically decisive argument in the minds of many.—The Week.

A most interesting and unique departure in trade journalism which has recently been developed in some of our American exchanges, almost simultaneously appears in our esteemed Toronto contemporary, the Canadian Electrical News. We refer to what appears to be an advertisement of a political character in a prominent position in the Electrical News in which its readers are urged and invited to work for the election of a certain patriot as Governor of the State of New York. We did not observe that during the recent provincial campaign our esteemed contemporary advocated the cause of either Mr. Mowat or Mr. Meredith; but it now comes out strong as an advocate of the election of a certain person as Governor of New York. Is this some sort of a thinly veiled movement for annexation, or what?

President Cleveland has behaved well in this crisis. Pity it is that the United States system forces him from all power so soon.—The Empire.

Why should Mr. Cleveland be the recipient of the pity of The Empire? Any other president would have been quite equal to the crisis. Mr. Cleveland was elected as an avowed free trader, and he has declared time and again that he would do all he could to destroy protection. And the Empire is a protectionist journal, so called. Why not rejoice, as all good protectionists do, that the United States system will force him from power at the next election!

The Puget Sound Lumberman promises good times in the near future to the lumbering industry as follows:—

The mills of the Pacific Northwest are not worrying very much about the future of the lumber industry. It is the present that they are losing sleep over. In this they are not alone. In common with every industry the lumber trade is in bad shape, and the depression is not confined to the Pacific coast; it is everywhere. From the Atlantic to the Pacific and from Manitoba to Texas come reports of slow demand, low prices and poor collections. This is due entirely to the financial depression. The retail lumber dealers are only buying for actual consumption and not for stocking up purposes, and so long as the period of unrest prevails, just so long must the movement of lumber be restricted to actual requirement. When stocking up commences the future will take care of itself.

What a demand for lumber and shingles must come when business revives. Nearly every lumber yard in the country looks as if a cyclone had passed through, and it will be, to most of the yardmen, like starting business over again. Stocks have been badly reduced since the financial flurry struck the country; in fact none have been buying the past year to stock up. The orders that have been placed with the mills and dealers the past 10 months were for the bare necessities, such as repairs, etc. The farm-

ers, mechanics and capitalists have postponed building until brighter days. When, therefore, business revives what an immense amount of building there will be!

The same is true of the demand in foreign lands. Australia, for instance, must begin to build soon; so must South America, where the rebellions and wars of the past five years have retarded progress. And Mexico and Europe need buildings.

All this activity will come when the sun shines again, and then the saw mills will be busy places. And the Pacific Northwest will prosper as it never prospered before. With a heavy influx of settlers into the smiling valleys and prairies, consuming an immense amount of lumber; the foreign demand taxing the capacity of the cargo mills; the new markets opened in the east, and a good local trade this section will be a beehive of industry.

La Minerve returns to its unprofitable attempt to demolish Mr. Laurier's statement as to why, "after fifteen years of silence, he should have changed from a protectionist to a free trader." Mr. Laurier has never made any labored explanation of that very labored transformation. In those "fifteen years of silence" he had simply to watch the trial of protection in Canada and to note the results. Through such processes almost every honest and intelligent Canadian would have followed his example.—Montreal Herald.

Is that so! Just to think of it; for fifteen years an overwhelming majority of the people of Canada have, according to the Herald, been dishonest and stupid. In what high estimation doth our dear contemporary hold the honesty and intelligence of its fellow country men.

The statement that men are killing the fish in our delightful little lakes in the hills of Quebec with dynamite by wholesale for the American market calls for prompt action on the part of the authorities. We have a new and fresher Adirondacks in the Laurentian hills lying north of the city; and it is a crime to have these lakes absolutely depleted of fish by the murderous dynamite system of gathering them for sale. When we are told that a half stick of dynamite secured four bushels of brook trout for sale, it would be but painting the lily to add a comment. This reckless slaughter of the finny inhabitants of these lakes should cease, and the authorities must make it their business to see that it does.—Montreal Star.

Prohibit the export and the slaughter will cease.

A good many people sell their cast-off clothes—often quite a correct thing to do. Still, who would suppose that the Imperial British Government, with its revenue in round figures of £100,000,000, netted £2 14s. 1 d. last year from the sale of old clothes belonging to the Swaziland police? From the sale of rags, also, it realised £11 1s. 10d.

The New York correspondent of the Philadelphia Ledger writes that "it is the opinion of ex-Comptroller Hepburn, president of the Third National Bank, that one of the results of the protracted period of business depression will be a signal change in what may be termed industrial geography. He believes that many small industrial communities are to lose their factories and shops, and that these industries will be driven into large centres of business like New York, Philadelphia and Chicago, where manifold and extraordinary facilities are afforded. Thus the present depression, while a deathblow to many smaller cities and towns, is likely, in his opinion, to increase the greatness of the great cities, and to accelerate the movement toward the centralization of trade."

When the Brooklyn Tabernacle was destroyed recently by fire, for the third time, and the occurrence was once again attributed to electricity, we ventured to express our grave doubts whether electricity had had anything more to do with it now than before. The investigation that followed soon showed that whatever else might be the cause it was not electrical. Thus arose the need of a new theory for what still remains a very suspicious fire, and, nothing loth, the officers of the church had a new theory to air. We give it in the exact words of Mr. Leonard Moody, chairman of the Tabernacle Board of trustees:—

“That fire,” said Mr. Moody, earnestly, “was a providential dispensation. I think it was Christ’s way of helping us. He certainly did help us, I think. After I got in the board we paid all our current obligations. We got the Sage mortgage extended. We raised money by popular appeal. We did all we could and then Dr. Talmage preached his farewell sermon.”

“And then,” he continued, in a slow and solemn voice, “Christ said to us: ‘Boys you’ve done well. I’ll relieve you of your troubles.’ And then he burned the church.”

As Mr. Moody uttered these last words his voice sank almost to a whisper and his manner was intensely earnest. After a pause of a minute, Mr. Moody became more cheerful.

“I don’t believe,” he said, “that Christ believes in running a church under a big debt. He called us to a halt for that reason. I don’t believe Christ believes in running a church with any debt. If He does, I don’t.”

That explains everything, of course. Most men would hesitate, nowadays, to represent our Saviour in the light of an incendiary; but no such misplaced reverence checks a Talmage trustee. The only wonder is that when the timely fire had been so “providentially” started, Mr. Moody and his colleagues did not help it along.

The investigation into the origin of the fire has resulted in a verdict that it was due to a candle carried by a man inside the organ that Sunday morning. This explanation certainly seems more natural, though less cheerfully blasphemous than Mr. Moody’s. At any rate, as we said, while the ashes were still red hot, electricity had nothing whatever to do with it.—Electrical Engineer.

There is something of more than local interest in the following story relating to the strike in the Washington Mill at Lawrence, Mass., which closed very abruptly and curiously. It had continued for weeks, and the leader of the strikers, George McBride, was as defiant as ever in his declaration that they would bring the management to terms. But one day a sheet of paper was handed him containing these questions:—

- Who handles the funds of the strike?
- How much have you drawn from the funds?
- How long have you roomed at the Hotel Brunswick?
- Did your new suit come from the strike funds?
- Is it true that you paid up three months’ back rent since the strike began?
- Is it true that your daily bill of fare at dinner includes broiled chicken?
- Is it true that one day recently you spent \$7 in treats in a saloon?
- How many strikes have you been engaged in previous to this?
- Is it true that you only worked one-third of your time last year?

Is it true that you loafed two-thirds of the time last year, while your wife worked in the mill and you carried her dinners?

Before McBride had finished reading the questions his lordly manner had disappeared; he immediately began working for a settlement; and within a week the men returned to work on their employers’ terms.

“Help one another,” is a motto to remember during these Cleveland times, and this can be done in no better way than by insisting that you are supplied only with American goods made in America. Ask your neighbors to do the same.—American Economist.

A sound suggestion that every Canadian should act upon. Canadian made goods should be good enough for Canadians.

The Pullman strike has ended, as everyone saw in the beginning it probably would end, in the discomfiture of the strikers. They adopted a policy of force, boycott and coercion, weapons that never accomplish any permanent success. Until the contrary is proven we have no reason to discredit Mr. Pullman’s statement that the business of his company was such as would not warrant higher wages being paid than those he offered the men. The strike has established one thing, at all events: No employer will be likely in the future to get the Pullman craze and build sanitary houses, libraries and parks for his men. The Pullman strike will effectually knock this so-called philanthropic idea out of the heads of any employers who might otherwise be liable to entertain it. The Philadelphia Record is authority for the statement that Pullman has decided to transfer all his plant and shops to New Jersey, where he thinks there is greater protection for life and property. It is stated that under no circumstances will another wheel turn in the car shop at Pullman. The transfer is to begin just as soon as the present unpleasantness has subsided. If this statement turns out to be correct the strike will be an expensive one for the workmen and for Chicago as well. The storekeepers of Chicago and Pullman will be deprived of the trade of the three thousand operatives who have been supported by the Pullman company. No one will believe that Mr. Pullman is influenced in this matter so much by the lack of protection in Chicago as by the fact that he has been threatened and bulldozed by men for whose welfare he has been somewhat personally concerned. We are not pretending to justify Mr. Pullman, but merely trying to view the matter in the way that it probably strikes him—Toronto World.

Representative Strauss, of New York, has introduced a bill in the United States House of Representatives to regulate railroads engaged in interstate commerce. It is designed to prevent the manipulation of stocks, bonds and all sorts of railroad securities by capitalists, and to protect the owners of stocks and small holders. One of its most important provisions makes it a crime for an officer or director to sell stock or bonds short for the purpose of depressing the value of railroad properties. It also prohibits voting trusts of stock. To secure disinterested receivers, it provides that no employe, officer or director of a road shall serve in that capacity. The Interstate Com-

merce Commission is to appoint in each judicial district, under the bill, one or more examiners, who are to look into all the books of railroads which go into receiverships. If they discover evidence of mismanagement or breach of trust toward any class of creditors, they are to certify the evidence to the Attorney-General to be used as a basis for legal proceedings. Provisions are made by which stockholders may follow property that has been diverted to the private estates of directors, or to other purposes, and to institute legal proceedings for its recovery.

Trade unionism, to a great extent, has taken the shape of usurpation of power that cannot exist in any quarter side by side with civil liberty. First forcing men to enter into membership, then denying the right of outsiders to work, then dictating to the employer, resorting to violence and conspiracy, step by step organized labor proceeds from tyranny to rebellion. How mistaken is the policy of the men who control the labor order may be seen in the present attempt to control the management of the railroads. The officials of the railroads, even the stockholders, would not dare stop their own trains as the American Railway Union has done. Was there any desire to punish the Pullman Company or its employes, the railroads would have to take some other method to do it than by ceasing to haul Pullman cars or abandoning the operation of their roads altogether. What, then, a man is not permitted to do with his own, it is preposterous to say a labor organization may do with somebody else's property. But in our respect for "labor," backed up by a show of force, we have too often lost sight of sound principles, and false doctrine has been accepted as truth.

A scheme is projected in Paris to insure persons from being buried alive. A good plan to avoid this danger is, to advertise, as those who do not are exceedingly apt to be treated as if they were dead—which is quite natural when they show no signs of life!

The following is the text of the principal resolutions adopted by the intercolonial conference recently in session in Ottawa, which was moved by Hon. Geo. E. Foster, seconded by Sir Henry Wrixon:

"Whereas, the stability and progress of the British Empire can be best assured by drawing continually closer the bonds that unite the colonies with the Mother Country, and by the continuous growth of a practical sympathy and co-operation in all that pertains to the common welfare;

"And whereas, this co-operation and unity can in no way be more effectually promoted than by the cultivation and extension of the mutual and profitable interchange of their products;

"Therefore resolved, that this conference records its belief in the advisability of a customs arrangement between Great Britain and her colonies by which trade within the Empire may be placed on a more favorable footing than that which is carried on with foreign countries;

"Further resolved, that until the Mother Country can see her way to enter into a customs arrangement with her colonies, it is desirable that, when empowered so to do, the colonies of Great Britain, or such of them as may be disposed to accede to this view, take steps to place each

other's products, in whole or in part, on a more favored customs basis than is accorded to the like products of foreign countries;

"Further resolved, that for the purposes of this resolution the South African customs union be considered as part of the territory capable of being brought within the scope of the contemplated trade arrangements.

In 1881, when C.H. Hill, now of the Brazilian navy, was on the Jeannette relief expedition to the Arctic regions, sent out by the government, his ship for a time was laid up at Reykjavik, the capital of Iceland. While he was there he saw a derelict float in and strike the wharf. It was at once made fast, and proved to be loaded with yellow pine lumber. The vessel was literally covered with moss and barnacles, and investigation disclosed the fact that the name of the old craft that for years by the tide had been driven hither and thither was the "Jamestown." The inhabitants of the place thought that a great prize had fallen into their hands. Everybody turned out and took a hand in unloading. The lumber came out in good condition, and the Reykjavikans estimated that there was enough in it to last them for twenty-five years. But, alas, what a world this is as a hope crusher! After the people had unloaded and piled the lumber the Danish government stepped in and confiscated it and started a lumber yard of its own. On the return from the Jeannette expedition, the government made inquiry regarding the "Jamestown" and learned that she was loaded in Pensacola, Fla., in 1865, soon after the close of the Civil War. Thus for sixteen years the lumber-laden vessel had floated as a derelict on the high seas.

This is one of the most formidable attempts ever made to apply the principles of the boycott to the settlement of a local strike, but there is no reason to doubt that it will prove, as usual, a dismal failure. In the nature of things, a boycott must be resisted. The boycotter is a species of blackmailer. To yield once to a blackmailer is to invite continued levies, and so also to yield to a boycotter is to invite him to dictate, again and again, the terms upon which business shall be conducted. Sooner or later, determined resistance must be made, and those who have had to deal with blackmailers have found that it is easiest to resist the first demand.—Philadelphia Ledger.

The United States Light-House Board is rapidly perfecting arrangements to replace the present beacon on Fire Island entrance to New York bay with the famous Le Paute lens, which was exhibited at the World's Fair at Chicago, Ill. The government purchased it for \$10,000 and came into possession of a light which has no equal in the world. As 150,000 ships pass Fire Island annually, it has been decided to erect the new light at this, the most important station in the country. Experiments are being made with the new lens at Tompkinsville (S.I.) light-house station under the personal supervision of Capt. W. S. Schley, U.S.N., light-house inspector, who glows with enthusiasm in describing the wonders to be accomplished by the huge lantern. The strength of the new light will be 250,000,000 candle power, which is 50,000,000 greater than the search light now placed at Sandy Hook.

Harper's Weekly urges the House of Representatives to take a radical line of action on the Tariff Bill, as returned to it from the Senate for consideration. "It is the duty of the House of Representatives," says the Weekly, "to radically amend or defeat this bill. It is better that McKinleyism should remain on the statute book, and that the agitation for real reform should continue, than that a Congress pledged to tariff reform should give the country a bill in many respects no better and in some respects worse, than the McKinley law. The conferees of the House should represent the convictions of the House."

The action of the Washington Government in directing the army to protect main lines of railway as military and mail routes is significant in more ways than one. It puts the riotous obstructors in the position of antagonists of the United States, in which public sympathy will be against them; and it sets up the National Government as a protector of property that is usually considered to properly fall within the care of the individual states. In this respect state rights suffer, and at the hands of the chief of a party which has always upheld state rights. It is evidently well that this should be, but it is not exactly what the constitution contemplates.—Gazette.

The end of the tariff debate in the United States Senate has enabled the sugar Senators, wool Senators, silver Senators, iron Senators, railway Senators, lumber Senators, cordage Senators, whiskey Senators, India rubber Senators, leather Senators, cotton Senators, wire Senators, tin plate Senators, oil Senators, mineral water Senators, mail Senators, steel-rail Senators, steamboat Senators, paper Senators, soap Senators and others to turn their attention to the public interests.—Toronto Globe.

It will also afford an opportunity to the fool editors of papers that publish such drivel to try and explain wherein these Senators were remiss in their duties in endeavoring to defeat and ward off the evil effects that their country would suffer should the Wilson Tariff Bill become law.

Messrs. F.B. Vandergrift & Co., 50 South Fourth Street, Philadelphia, have sent us advance sheets of their digest of what will be the new United States tariff, which, they say, will be published in full by them within 72 hours after it becomes law. This edition is specially compiled for manufacturers and dealers, and it gives the list of articles classified under their proper headings for ready reference, together with the rate of duty, paragraph of the law and decisions of the Courts; also the allowance of wastage, showing duty to be returned on manufactured articles exported with benefit of drawback; the values of all foreign coins; a condensed express tariff; and other useful matters in connection with the Customs service.

The Cleveland, O., Marine Review of June 30 contained some fifty pages of illustrations and descriptive matter, including seven double page engravings illustrative of the new lake steamer North-West, and portraits of the 58 officers and managers of the Lake Carriers' Association. It is a study in politics to observe that while the policy of the United States for many years has not been to encourage the foreign commerce of that country as carried on in American vessels, in consequence of which such traffic is most discreditably small, the policy as affecting domestic commerce is such as to entirely exclude foreign vessels and to build up fleets of as fine and beautiful ships as can be found any where in the world, a beautiful specimen of which is the North-West, over which the Review goes into such raptures.

The Canadian Magazine is always a welcome visitor. The July number is an excellent one and reflects great credit on the publishers. We trust the public is giving it that hearty support which it richly deserves. The contents of this number are as follows:—"The Supernatural in Macbeth," Walter Townsend; "The Criminal and Artificial Production of Monstrosities," Archie Stockwell, M.D.; "A Story of the Metropolis," H. Cameron Nelles Wilson; "Three Years Among the Eskimos," J. W. Tyrrell; "Papineau and His Home," Thomas P. Gorman; "Pandora," E. Yates Farmer; "A Serenade,"

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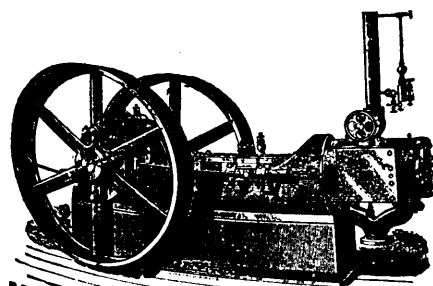
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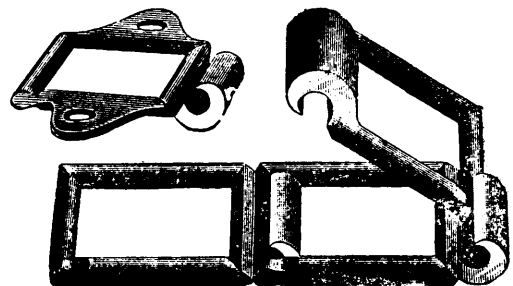
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Keppell Strange; "The Beautiful Bahamas," Hon. Donald MacInnes, Senator; "Death's Soliloquy," W. J. K.; "Out-Door Sports in Australia," J. Lambert Payne; "The Changed Grave;" "In North-Western Wilds," William Ogilvie, D.L.S., F.R.G.S.; "Gable Ends, Coralinda," Clara H. Mountcastle; Book Notices.

A glance at the contents of Godey's Magazine for July (reduced this month from 25 to 10 cents) shows that this famous old magazine loses nothing by the reduction in price. The illustrations and letter press are the best, and the list of contributions shows that well-known writers have been secured. This number contains the closing chapters of Leon Mead's powerful novel, "Chance," and the Seward articles are continued. The other illustrated articles are "The Authors Club," by Gilson Willets; "Citizens of the Air," by Eleanor E. Greatorex, illustrated by the author; "Pope Leo XIII. and the Consistory," by Charles H. Adams, and "The Wood Thrush's Nest," by Olive Thorne Miller, illustrated by Charlotte F. Daley. There are short stories by Kate Upson Clark, Elizabeth Bisland and James Buckham, and the poems are by M. Inlay Taylor, illustrated by Paul de Longpre, Henry Turrell and Felix Carmen. The departments are all worth reading.

Dominion Expenditures for Public Buildings.

The Minister of Finance has presented to the House of Commons the supplementary estimates for the fiscal year, just commenced; the following being the amounts for public buildings in Ontario:

Toronto customs house, examining warehouse, savings bank and Receiver General's office—Recovering roofs, renewing floors, electric clocks, vaults, repairs, etc.	\$5,000
Toronto drill hall, the city having provided a plot of land as agreed upon—To complete.....	20,000
Rideau Hall—Heating apparatus, electric lighting, new dairy, etc.....	13,000
Stratford public building—To make good damage done by fire of 21st April.....	10,000
Port Arthur public building—Revote of lapsed balance to complete payments to contractors on overdue amounts and to provide for further fittings and furniture required, etc.	4,605
Petrolia public buildings—To complete payments to contractors on overdue amounts and to provide for additional fittings and furniture required.....	9,700
Orillia public building—To complete payments to contractors on overdue amounts and to provide additional fittings, sidewalks, fences, etc.....	4,615
National art gallery and fisheries exhibit, Ottawa—Recovering roof, etc.....	1,600
Amprior post-office, customs house, etc.....	7,500
Kingston Royal Military College, engineer model shed.....	2,500
Toronto, new magazine.....	4,000
Amount required to pay for repairs and improvements in the post-office building, at Lucan, Ont.....	351
Dominion reformatory.....	10,000

These are the proposed votes for Ontario harbors and rivers:

River Beaudette—To continue improvement of river by cleaning out channel.....	\$3,000
Nation river, north branch—For purchase of existing riparian rights and removal of a dam; the parties interested furnishing an equal amount.....	2,000
Trenton harbor—Dredging.....	2,000
Toronto harbor—Works at eastern entrance, etc.; the city of Toronto having contributed \$100,000.....	50,000
Port Arthur—Dredging.....	1,500
Owen Sound—Harbor improvements.....	10,000
Thessalon—New wharf; the municipality furnishing the site free of cost.....	5,000
Removal of Robertson's rocks in main passage between Clapperton and Crocker's Island, Georgian Bay—To	

continue work.....	2,000
Lakes Simcoe and Couchiching—Regulation of waters of..	5,000
Port Dover—Dredging.....	5,000
Port Stanley.....	5,000

Among the miscellaneous items are \$33,000 to purchase machinery for the binder twine factory at Kingston pentenary.

Under the head of militia \$58,000 is to be voted for modern firearms; \$4,000 for monuments in the battlefields of Canada; \$25,000 for an exhibition in the North-west territories; \$130,000 for the Trent Valley canal construction, and a like amount for the Rapide Plat canal enlargement; \$25,000 for a bridge across the Saskatchewan at Edmonton, the municipality furnishing 25 per cent. of the cost.

M. Mastracci, of the French navy, has devised a method of solidifying petroleum and forming it into briquettes. His plan is to mix with each liter of petroleum 150 grammes of tritirated soap, 10 per cent. of resin and 333 grammes of caustic soda. This mixture is heated and kept well stirred while it is being heated. At the end of about forty minutes solidification commences and if any tendency to overflow is shown some drops of soda are thrown in. When the mass is nearly solid, it is poured into moulds so as to make briquettes, which, after being placed in an oven for from ten to fifteen minutes, are allowed to cool. With the addition of 20 per cent. of wood shavings and 20 per cent. of clay or sand, firmer and more lasting briquettes result. Trials have been made with this fuel on tugboats at Marseilles with the result that an equal weight of briquettes produced three times the heat of ordinary coal; while in one instance, with a specially constructed furnace, one kilog. of solidified petroleum was found to equal four kilog. of coal.

The Chloride Accumulator.

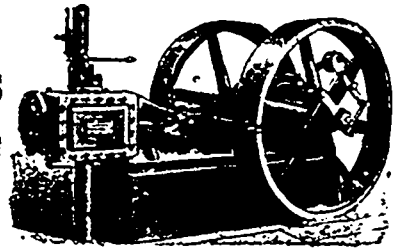
One of the features which the commercial distribution of electricity has heretofore lacked has been the ability to store the current for distribution, when the dynamos are not in operation, without undue loss of current or excessive depreciation of plant. More attention has been given in Europe to this matter than on this side of the Atlantic, and for a number of years European central stations have been operating storage batteries; but up to the present time there are but three central stations operating on this side, in which a storage battery is used commercially, one being located in Boston, another in New York, and the third in Germantown, a suburb of Philadelphia. In Europe it has been found that the storage battery fills a very important part in successful isolated plants, as for lighting large com-

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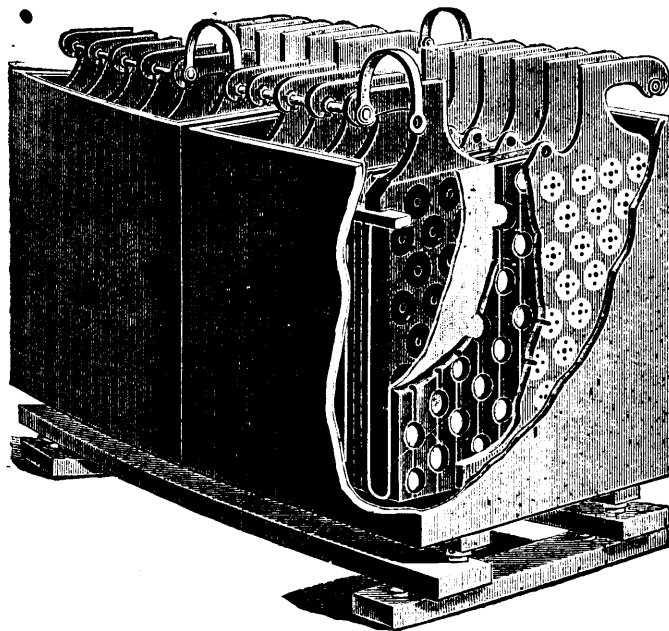
Successful know in an experiment. The appreciating electrical in the wh

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commercial buildings, country residences, etc. This particular electrical industry has received much attention in America, and quite a number of isolated plants are in operation, in addition to quite an extensive use for electrical launch work. The great drawback in the past has been the inability to secure a really commercially suc-



cessful battery, but this result has been at last obtained, and we are now in a position to say that the company which has been working in an experimental way for some years past in Philadelphia is now offering a battery, which is in every way equal to the maker's claims. The Electric Storage Battery Company of Philadelphia, Penn., appreciating the great necessity for a commercially perfect system of electrical storage, and that its importance exceeded any other feature in the whole field of electrical industry, have succeeded, after over

five years' effort, and the expenditure of more than a quarter million of dollars, in producing an accumulator constructed on correct mechanical, chemical and scientific principles, and so far in advance of anything hitherto attained, that their advent may be said to inaugurate a new era in electric storage.

A brief description of this perfected accumulator given to us by this company will be of interest, and enable anyone to understand why this most modern form of accumulator has entirely done away with defects and disadvantages heretofore encountered. They say:

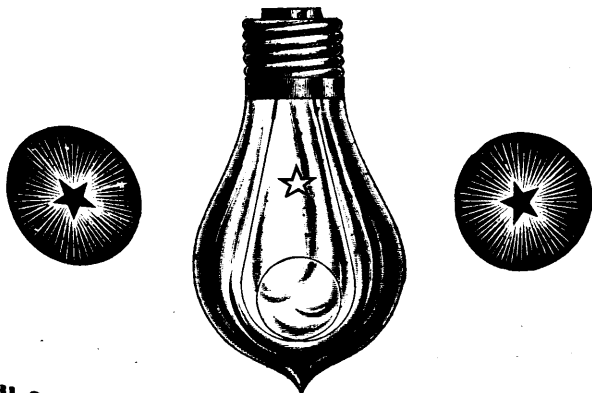
The elements are made of cast plates, or pastilles of a salt of lead, enclosed in a dense frame of metal cast around under heavy pressure. This plate of lead salt so framed is then reduced electro-chemically to pure metallic lead. We now have a plate entirely composed of metallic lead, partly in compact form, partly in minute crystalline subdivision, differing from a plate of cast or rolled lead, only that some of its parts are of a crystalline character, a difference purely mechanical, in no wise chemical, being the same plate which Plante used in his original discovery, except for this important mechanical difference.

We then put these plates requiring oxidizing, with alternate lead plates, in a cell with an electrolyte, and pass current through them for a sufficient time to convert the pure crystalline metallic lead into peroxide of lead.

It is well known that in a crystalline form the molecules of matter are arranged in a different order from what they are in any mechanical mixture. In the mechanical mixture the aggregation of the atoms is strictly fortuitous; that is to say, it is a mere question of chance how they are arranged, and they have no cohesion among themselves beyond that which is given to them by the cementing mixture which holds them together. In the crystalline form, however, all this is changed; the molecules of the body are arranged in perfect symmetrical order, and they are held together by molecular affinities which regulate the order of their distribution and secure the coherence of the mass. It is quite true that the material is denser unless some means are employed to modify the density; but although this is the case, the molecular channels which exist in the interstices of the crystals are arranged in as regular order as the molecules of the crystals themselves.

The discovery and successful application of this principle has enabled us to produce an accumulator with every quality which is most desirable, viz.: a high rate of charge and discharge without injury to the plate, a high capacity of storage, and the maintenance of the voltage through a very large percentage of the capacity. Along with this there is also a very greatly increased durability; and the

"STARR" Incandescent Lamps . .



Full Candle Power. Long Life. Low Price.

Made of any Candle-Power and Voltage, and with bases to suit the different sockets in use.

Unrivalled Quality. :- High Efficiency.

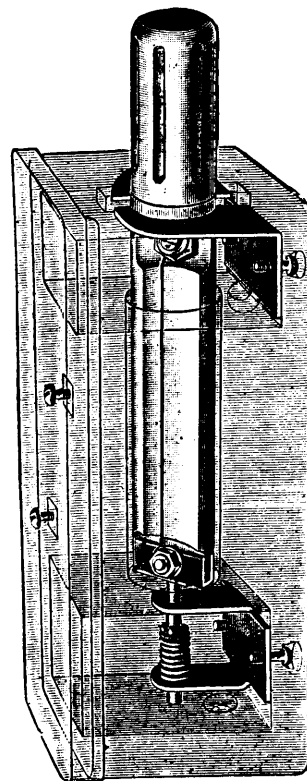
Write for Quotations, stating Voltage and Base used.

JOHN STARR, SON & CO. (LIMITED)

... Halifax, N. S. ...

Illustrated Catalogue of Electrical Supplies on Application.

The Packard Transformer



The Transformer can be cut out of circuit and a burned out fuse replaced without the use of any tool whatever.

Packard Transformer Fuse Box Complete (\$ SIZE)

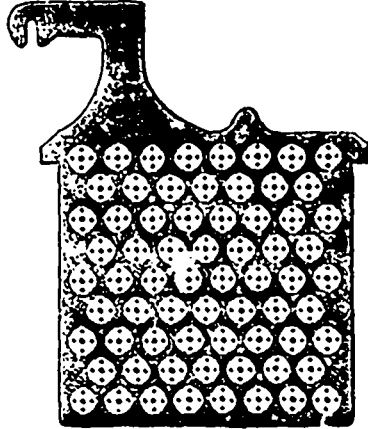
Packard Lamp Co., Ltd.

:-: Montreal

Makers of Packard Lamp and Transformers.

fact that the same number of ampere hours can be stored in half the weight of plates as against every other previous system, not only makes their introduction a distinct era in electrical science, but opens up an increasingly wide field for their use in every day life.

They are not, on the one hand, pasted cells, i.e., cells in which the active material, or material destined to become active, is mechanically applied to the grid or frame, and are, therefore, free from all the defects arising from the want of sufficiently intimate attachment between the active material and the frame. On the other hand,



they are not "Plante" cells, i.e., cells in which the active material and the frame are one and are, therefore, free from the defect of the ultimate disintegration of the frame. They combine the advantages of a perfect mechanical and electrical connection between the frame and the active material, and the formation of the latter by means which ensure absolute uniformity and maximum porosity.

The weights for a given capacity being so largely reduced, this battery will only require about half the floor space necessary for other accumulators. Economy is,

therefore, effected in space, cost of stands, labor of erecting, cost of transit and packing. These subsidiary considerations alone represent an important per cent. in saving.

The company are manufacturing elements weighing all the way from 4 1/2 pounds up to 1,000 pounds or more, and of a capacity from 12 1/2 ampere hours to 5,000 ampere hours or more. They are also putting these elements up in cases suitable for phonograph, grapho-

phone, automatic piano and kinetoscope work, and also have placed upon the market a very neat medical battery, so arranged as to give either 2 or 4 volts and 5 or 10 amperes, this battery being fitted with mahogany case and strap handle for carrying.

The company has recently installed a large number of isolated plants, and within the last year have placed in the station of the Germantown Electric Light Company of Germantown, Philadelphia, a battery having a capacity of 2,000 ampere hours; in addition to this they have a large trade in portable batteries for phonograph and other uses.

That our readers may have some idea of the extent to which storage batteries have been used in light and traction work in Europe, we are informed by the company mentioned that in Paris, France, alone, there are over 100,000 electric lamps supplied by the chloride accumulator, as well as a large amount of electrical power, and that also in the same city, there are two lines of railway running from Paris to the suburb of St. Denis, having lengths respectively of 5 1/2 and 5 3/4 miles, using successfully the chloride accumulator, which up to May 1st, were running an average of 1,550 car miles per day. This railway requires in the neighborhood of 450 horse power to drive their plant, and have in daily use 61,776 plates.

The Electric Storage Battery Company having its main office in Philadelphia is closely allied to the Chloride Electrical Storage Syndicate, Limited, Clifton Junction, Manchester, England, and the Societe Anonyme pour le Travail Electric des Metaux, of Paris, France, and these three control the patents covering the chloride accumulator.

Mill men will be interested in reading an account of the starting of a big mill to be run by electricity. There has been started the mill of the Columbia (S. C.) Water Power Co. The mill is 400 feet long, and when completed will have a capacity of 50,000 looms. The goods manufactured will be duck and sail cloth, from 14 to 126 inches in width. The new mill is to be run entirely by that method of power. The capital stock of the plant is \$700,000.

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Cor. King and Victoria Sts. - TORONTO.

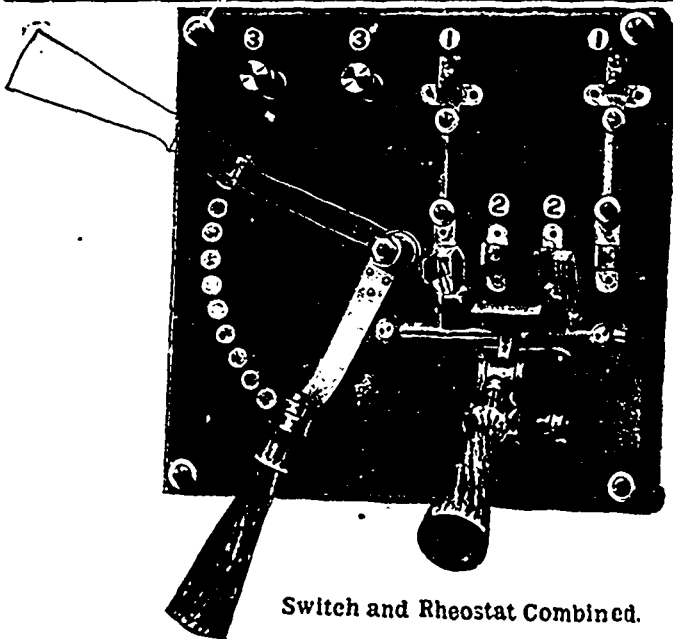
Galvanized Iron, "Gordon Crown."
Tin Plate, "M. L. S."
Solder, 1/2 & 3/4, "M. L. S. Guaranteed."

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Switch and Rheostat Combined.

PROTECT YOUR MOTORS

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HILL PATENT Self-Locking Starting Switch

23 No possible chance for an accident as the Switch cannot be closed until the resistance is all in

CHEAP • COMPACT • DURABLE

....Made only by the....

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SEND FOR CIRCULAR AND PRICE LIST.

NEW YORK
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CHICAGO
Central Electric Co

Mr. A. York, ha I have being refi The P ment in p wash or liquid; f liquids, t to their e matter ar being tre stream o which ar This pr substance very valu thousand This pr while the plant of n space and I have : can send : purify suc recovered

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THE LARI

FOR

In the W

Thirty-Eight designs Portable and Stationary T

BUFFA

Chicago Offi

Purifying Refuse Waters.

Mr. A. P. Mende, manufacturing chemist, 14 Water street, New York, has sent us a letter which explains itself, as follows:

I have been granted the following patent:—For a process of purifying refuse waters and recovering thereby the valuable products.

The Patent reads thus:—"This invention has a relation to improvement in process of treating and recovering valuable products from wash or waste waters, from factories or the like, or from other liquids, thus providing means whereby the liquids are purified, prior to their escape into the streams, relieving said liquids of all organic matter and thus serving a two-fold purpose, namely, the liquids after being treated by my process become pure and will not pollute the stream or body of water and the retrenching of valuable products which are separated from such liquids are effected.

This process applied in woolen mills to regain the grease and other substances from the scouring and from the fulling rooms is, indeed, very valuable to the woolen mills; it means a saving to them of many thousands of dollars.

This process of recovering is continuous and takes only one day, while the old method requires ten to twelve days; moreover, the plant of my process is very much more economical, both in point of space and cost.

I have a model plant in my laboratory that any kind of a factory can send a barrel of waste water and personally see the way we purify such waters and recover the organic matters therefrom. Such recovered products have a ready and remunerative market.

CAPTAINS OF INDUSTRY.

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

The St. George Electric Co., St. George, N. B., are applying for incorporation with a capital stock of \$2,500 to generate electrical energy for commercial purposes.

The Reid Bros. Co., of Toronto, are applying for incorporation with a capital of \$50,000 to manufacture billiard tables and supplies, bowling alleys and supplies, patent bent rim split pulleys, etc.

Port Hope, Ont., will invite tenders for the construction of water-works.

Carleton Place, Ont., will expend \$18,000 in the construction of a new town hall.

Messrs. D. Moore & Co's foundry at Hamilton, Ont., was destroyed by fire July 12.

Mr. Drury, Port Colborne, Ont., will erect a flour mill to cost about \$13,000.

Jacob Miller's machine shop at Clinton, Ont., was destroyed by fire July 14, loss about \$2,500.

Edward Shuttleworth's sash and door factory at Weston, Ont. was destroyed by fire June 30.

The Crown Pressed Brick Co., Ottawa, are seeking incorporation with a capital stock of \$100,000.

The flour mill at Arden, Man., is now under the control of Wilson Moore & Co., who will operate the same.

The competition of native coal has caused a reduction of \$1 a ton in the American article at Winnipeg, Man.

Bryan & Co.'s stave and hoop mill near Cedar Springs, Ont., was destroyed by fire July 6, loss about \$10,000.

Kincardine, Ont., has voted \$40,000 for a waterworks system, and \$10,000 to establish an electric light plant.

H. McDowell & Co., manufacturing druggists, Vancouver, B. C. have been incorporated with a capital of \$100,000.

The Shirra Milling Co., Caledonia, Ont., are seeking incorporation with a capital stock of \$25,000 to manufacture flour.

Messrs. Hiram Walker & Sons, Walkerville, Ont., will build new bottling works in connection with their distillery to cost some \$6,000.

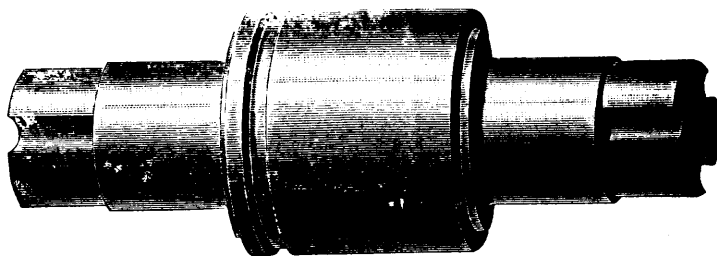
The Brantford (Ont.) Stoneware Mfg. Co. are applying for incorporation with a capital stock of \$50,000 to acquire the W. E. Welding pottery in Brantford and manufacture stoneware, tiles, terra cotta, etc.

A bonus is offered in aid of a flour mill at Wawanessa, Man. About a score of persons made enquiries as to the capacity of the mill required and the conditions attached to the bonus, but all of them drew back when they found out that a 150 barrel mill is required.—Winnipeg Commercial.

A company has lately been organized in Halifax for the purpose of manufacturing the Horton Patent Fire Ladder. This is claimed to be a great improvement on any of the ladders now in use and is much admired by firemen. The first one now nearly completed is for the city of Halifax. The directors of the company are Hon. H. H. Fuller, John Starr, John Peters, W. I. Horton and John M. Geldorf, Jun.

.....MANUFACTURERS OF.....

Superior Chilled Iron Rolls



Chilled Iron Roll, as used by Iron Rolling Mills. Various sizes.

Perfect Surface, Deep Chill, Hard, Tough, Durable, Guaranteed free from flaw

.....FOR.....

Iron Rolling Mills, Rubber Works, Paper Mills, Flour Mills, Etc.

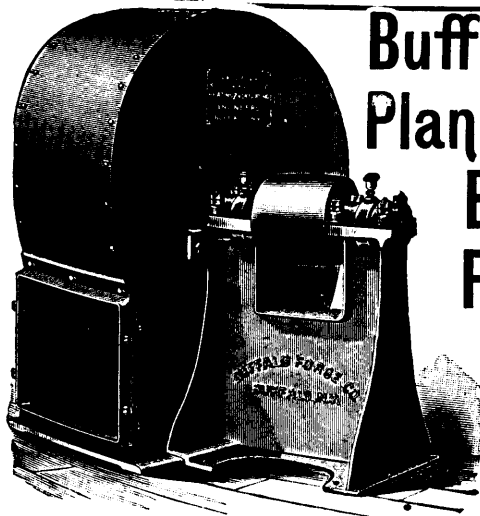
.....FOR ROLLING.....

Iron, Steel, Gold, Silver, Brass, Copper, Wire, Lead, Paper, Etc.

Extensive plant for Grinding and Corrugating Rolls

Wm. & J. G. Greey

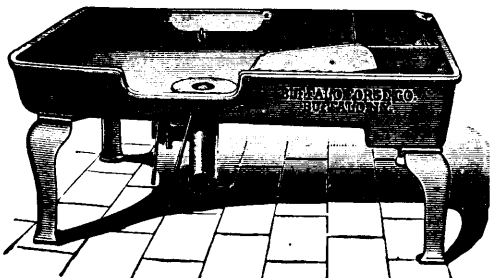
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THE LARGEST FORGE
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Thirty-Eight Other Designs of Portable and Stationary Types.

BUFFALO LUMBER DRY KILNS

Blowers, Blacksmiths' Tools, etc.

Chicago Office:—22 & 24 Randolph St.

Toronto Representative, W. H. Petrie, Toronto. Ont.

Richard Howarth, Merriton, Ont., will extend his business and manufacture carpet warp.

The enlargement of the Granite Knitting Mills at St. Hyacinthe, Que., will accommodate ten additional sets of cards which are to be placed therein.

The Stanstead Electric Light Co., Stanstead, Que., are seeking incorporation with a capital stock of \$25,000 to generate electrical energy for commercial purposes.

Mr. Vivian Burrill's saw mill at Mitchell Station, near Carmel, Que., a few days ago did what is claimed to be the largest day's sawing done by any one circular saw mill in that section of country. In 10½ hours the cut was 48,079 feet, all one inch boards, the cut in 15½ hours being 70,446 feet. Who built the machinery?

At a recent meeting of the Toronto City Council, Alderman Thompson stated that he had knowledge that a syndicate of capitalists were making preparations to start iron smelting works in this city, in connection with which they would ask a bonus, and grant of land upon which to build. Alderman Hallam stated that a woolen factory, to be operated with a capital of \$150,000, and giving employment to 80 hands, desired to locate in Toronto, and would do so if suitable inducements were offered.

The large mill of the Lincoln Paper Mill Co. at Merriton, Ont., was struck by lightning on the night of July 11, setting on fire the bag room. The flames quickly spread to the rag-room and store-house, and despite the strenuous efforts of the fire department, these parts of the building were destroyed. The store-house contained a large quantity of manufactured paper and about 400 tons of raw stock which burned furiously. All the paper-bag machinery was burned and the printing presses damaged. The firemen succeeded in preventing the flames from reaching the paper-making plant, and it is thought that part of the business will soon be put in operation again. The damage is about \$15,000 on building and machinery, and \$8,000 on stock. The mill employed about fifty hands in the manufacture of wrapping paper, bags and flour sacks.

J. T. Turnbull, secretary of the Wool Grower's Association, has received several letters in reply to the advertisements and enquiries of the association. Wm. Zinger, who owns a woolen mill at Teeswater, Ont., may be induced to remove his mill to Edmonton, and another mill owner in Ontario also expresses his willingness to change his location for a consideration.—Edmonton, Alberta, Bulletin.

Mr. Elisha Gilpatrick and other American gentlemen purpose erecting a large mill somewhere along the line of the Canada Eastern Railway. In this mill it is proposed to make use of hemlock logs. These logs will be sawn into boards, the boards will then be planed and dried, and shipped by rail to the United States market. The drying process will occupy about six weeks, and after they have been dried for that length of time the weight will be much less, and the expense of shipping will decrease accordingly. The capacity of the mill will be about 4,000,000 feet per year. The undertaking is under the auspices of Mr. Alex. Gibson, the lumber king of the Nashwaak.—Fredricton, N.B., Gleaner.

The Eddy Co.'s new pail factory and store-room at Hull, Que., are nearly completed. The factory is situated at the rear of the company's saw mill and is almost completed. It is constructed of stone and covers an area of 348 feet in length and 60 feet in width. In its construction every possible precaution has been taken against fire. Fire proof walls are erected between the three compartments, namely, those for lathing, hooping and painting. The doors between the rooms are also fire proof, so that if fire breaks out in one part it can be easily confined to it alone. The machinery will likely be moved into the building next week. An interesting feature of the new structure is that the power will be transmitted a distance of 108 feet by means of rope pulleys. These will extend from the water power in the saw mill. A great convenience will be that the pails will be conveyed from the factory to the new store house close by on cars. The new store house is situated about forty feet from the factory and covers about the same area. It is rapidly advancing toward completion.

Kay Electric Co'y

MANUFACTURERS OF

DYNAMOS

FOR

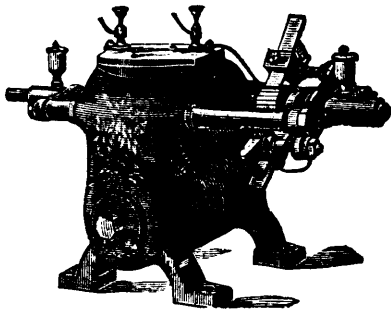
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AND ALL KINDS OF

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CARBON AND PORCELAIN CO.

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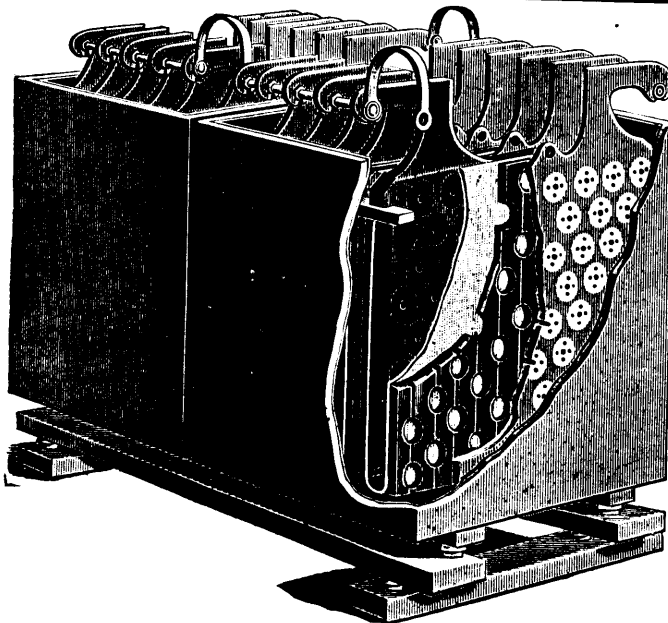
MANUFACTURERS OF

Carbon Points for All Systems of Arc Lights

BATTERY PLATES, CARBON BRUSHES, and all kinds of PORCELAIN for Electrical and Hardware Lines.

All goods guaranteed equal in quality to the best manufacturers in the world.

PETERBOROUGH, - - ONTARIO



THE CHLORIDE ACCUMULATOR

The Electric Storage Battery Co.

SOLE AMERICAN MANUFACTURERS OF

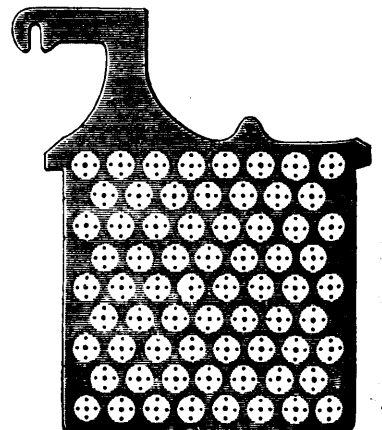
The Chloride Accumulator

Elements of all sizes, from 100 to 10,000 Watts-hours capacity each.

Traction Cells a Specialty

Electric Launch Equipment, Telegraph Phonograph, Surgical and all Special Cells.

Drexel Building - Philadelphia



The council of the town of Regina, Ass., has decided to appropriate \$10,000 for the erection of buildings for the Territorial exhibition in 1895.

The new pumping engines being built by the Caledonia Iron Works, Montreal, for the Montreal waterworks will have capacity to pump 50,000,000 gallons of water per day.

The Goldie & McCulloch Co., have an order for complete outfit for Messrs. Muir & Ross, of Mattawa, Ont., for their new flour mill, including Wheelock engine, boiler, etc.

A project is on foot to build an electric railway from Hazel Hill to Canso, N.S., a distance of three miles. There is also talk of establishing a similar line between the pulp mill at Milton and Liverpool town, a distance of six miles. — Halifax, N.S., Herald.

R. Thompson & Co.'s lumber mill at Hamilton, Ont., was destroyed by fire July 5, loss about \$1,000.

Byran & Murphy's lumber mill at Sanderson Station, Ont., was destroyed by fire July 6, loss about \$10,000.

Local capitalists of Winnipeg, Man., are building an extensive paper factory there. Several other manufactories are also to be established shortly, now that Assiniboine water power at that point is to be developed.

The T. Eaton Co., of this city, have just got their new engine room completed in their Albert street wing, and we find they have three Wheelock engines in operation there, two of 100 h. p. each and one of 150 h. p., with all the shafting, friction, couplings, and friction pulleys, all from the Goldie & McCulloch Co., Galt.

Low Rates for Insurance on Mills and Factories

I PROFESS TO DO BETTER

Than is commonly done with such risks situated in Ontario or Quebec.

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C. R. G. JOHNSON
FIRE INSURANCE BROKER

42 St. John Street,
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IMPORTANT TO LIGHTING STATIONS

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Alternating Current Indicators

Are now ready. Before purchasing elsewhere send for our New Catalogue, which contains the prices and description of the above instruments, and also a list and prices of other new instruments of our manufacture.

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HALIFAX, N. S., John Starr, Son & Co. Ltd. TORONTO, ONT., Toronto
Electrical Works.

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New Railway Generators and Station Equipments. Complete Railway Car Equipments. Direct Current Lighting Dynamos. Direct Current Power Motors.

Alternating Single and Two Phase Current Generators, for Lighting and Power.

Full Lines of Lamps, Cut Outs Sockets and Switches

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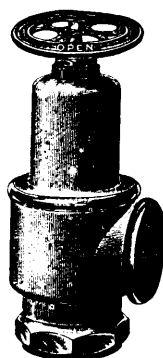
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Business Established in 1832.

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Situation as Carder in Woolen Mill, by thoroughly reliable man, competent to handle any kind of stock. Ten years' experience in Yorkshire, Eng., and fifteen in the United States. First-class reference. Would travel for Manufacturer of Card Clothing. Can design Card Clothing for any machine or for any kind of stock. Address George Haight, Lock Box 18, Sanford, York Co., Maine, U.S.



CROSBY Steam Gage & Valve Co.

Sole Proprietors and Manufacturers of

Crosby Pop Safety Valves, for all kinds of boilers; Water Relief Valves, including the Underwriter, which is fully approved by the Associated Factory Mutual Ins. Cos.; Crosby Steam Engine Indicators, with Sargent's Electrical Attachment; Crosby Improved Steam Gages and Patent Gage Testers; The Original Single Bell Chime Whistles.

All kinds of Pressure and Vacuum Gages used in the various arts.

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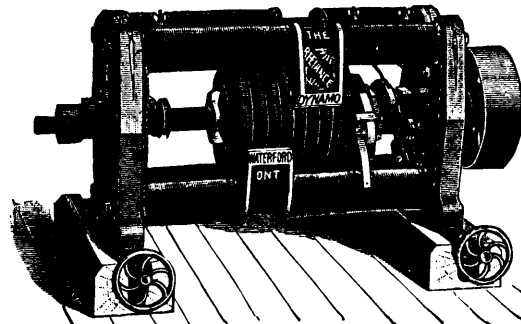
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MANFG.,
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Manufacturers of The Reliance System of Arc and Incandescent Lighting

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BOX 107, : PETERBORO, ONT.



We build Canoes of CEDAR, BUTTERNUT, BASSWOOD and other woods, for Paddling, Sailing, Racing, Fishing, Etc. Skiffs of all sizes.

STEAM LAUNCHES to carry six persons, from \$175 up.

... WRITE FOR CATALOGUE ...

The large mill of the Lincoln Paper Mills Co. at Merriton, Ont., was struck by lightning July 11, and damaged to the extent of about \$30,000.

Mr. George Rankin, of London, Ont., is in town as the agent of a Cleveland syndicate prepared to test and if satisfactory to develop the iron deposits in the vicinity of Portlock and Pesert Lake. A tont road has been cut and Mr. Rankin was yesterday expecting the arrival of a diamond-drill with which he proposes to do the necessary explorings of the depth and quality of the deposit. If the veins are as rich as reported there is good times in store for the settlers in that vicinity, and there is plenty of money behind Mr. Rankin.—Sault Ste. Marie, Ont., Pioneer.

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 :- **FACINGS**

*Core Compound, Ceylon Plumbago
 Foundry Supplies and
 Moulding Sand.*

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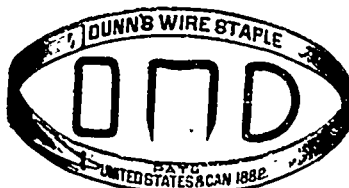
**Root's Positive Blower
 Colliau Cupola Furnace**

Hamilton Facing Mill Co.

HAMILTON - - - **Ontario**

NOTICE

NOTICE IS HEREBY GIVEN to all persons who may desire to manufacture an improvement in Car Brakes, for which certain letters patent of the Dominion of Canada were granted to me, on July 15th, 1892: to wit., patent numbers 39,365, that I am prepared to grant licenses upon reasonable terms under the said patent, and to otherwise place the said patent invention in possession of the public in accordance with law. **J. J. Cassiday,**
 Canada Life Building, Toronto.



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Standard Emery Wheel Co., Albany, N.Y.

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Special Inducements suited to our Stock and the Times

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 CINCINNATI, 1 West Pearl Street.

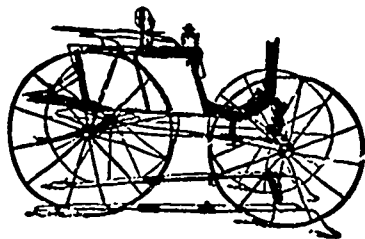
J. Walton, of Edmonton, Alberta, is fitting up his present portable engine to saw lumber with which to erect a larger saw mill, which will be run by the old engine of the Hudson's Bay Company's flour mill, purchased recently by him.

The boiler of the steamer Queen exploded with disastrous effect on July 4, at a point about 12 miles distant from Kamloops, B.C. Two men were instantly killed and several others fearfully scalded. It is an unusual thing nowadays to read of the explosion of a boiler in a steam vessel, owing, no doubt, to the fact that rigid inspection of boilers is required by law.

The engine in use in Hamilton's mill, recently burned down, was one of the first, if not the first engine, brought to St. John. The mill was put into operation July 29, 1822, being the first steam saw mill started here, and the engine was built by the firm of Boulton & Watt, Birmingham, England, of which the famous engineer and inventor, James Watt, was the founder about the year 1775.—St. John, N. B., Globe.

A meeting of the Fire and Light Committee of the Toronto City Council was held a few days ago to consider a scheme looking to the more economical lighting of the city. The scheme is as follows:— "That an option be given the Toronto Electric Light Company for 30 days that in consideration of this valuable municipal franchise they will agree now to enter into an agreement prepared by the City Solicitor that at the expiration of their present contract they will supply 1,000 electric lights, more or less, of named power, for a term of 10 or 20 years at a price not to exceed the maximum of \$85 per light per annum, payable quarterly, and pay to the City Treasurer annually all profits in excess of 6 per cent. per annum paid to shareholders on the paid-up capital, after providing a contingency fund not greater than 10 per cent. on the paid-up capital. No profits to be expended on capital account. The chairmen of Executive and Fire and Light Committees to be members of the Board of Directors. The City Auditors to have access to all books and documents, in order to properly audit the business of the company, and to be paid the sum of \$200 each." A suggestion was also made "That it be recommended that the city corporation do erect and establish its own electric light plant, under the supervision of the City Engineer, and that a by-law be submitted to the ratepayers for the amount required." It was decided to call for tenders for lighting the city on the same conditions as at present, the tenders to be in by the 1st of August. When these tenders are in, the committee will consider whether the figures offered are such as to make it advisable to have the lighting done by a private company.

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JOHN LUCAS, 377 Spadina Ave. Representative for Toronto.

The Tandem Car Brake Co., Toronto, has been incorporated with a capital stock of \$20,000 for the purpose of manufacturing car brakes, etc.

The Robb Engineering Co., Amherst, N.S., will build a pair of Robb-Armstrong automatic high speed steam engines for the new plant of the Seaforth, (Ont.) Electric Light Co.

Messrs. Rolph, Smith & Co., Toronto, the long established and well-known lithographers, have an attractive card in another page in which they enumerate some of the specialties of their business. These include about everything that might be looked for in such an establishment, a partial enumeration being bill heads, letter heads, envelopes, note paper, show cards, calendars, circulars, book plates, debentures, bonds, etc.

Mr. Samuel Hughes, of Lindsay, Ont., has organized a stock company which is seeking incorporation as the Hughes Car Ventilating Co., with a capital stock of \$500,000, with head office at Toronto, to manufacture Mr. Hughes' invention for heating and ventilating railway cars, steam vessels, etc. Messrs. William Mackenzie, James Ross, H. A. Everett and J. C. Grace, all of the Toronto Railway Co., and Mr. Hughes are the incorporators.

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..... MONTREAL.....

Goderich, Ont., desires to establish an electric lighting plant.
F.H. Sleeper & Co., Coaticook, Que., will manufacture electric motors, etc.

The O'Keefe Brewing Co., Toronto, are putting a new 100 h. p. boiler in their brewery.

The woolen mills of R. C. Vance, Glencoe, Ont., were destroyed by fire July 3, loss \$4,500.

Collingwood, Ont., proposes to vote \$10,000 to assist in establishing a municipal electric light plant.

John Ingles & Son, Toronto, have built two large steel tanks for the elevators of the Toronto Arcade.

New heating apparatus, and an electric light plant are to be placed in the Insane Asylum at St. John, N.B.

Mr. Bowers' sash and door factory at Orangeville, Ont., was destroyed by fire July 3, loss about \$8,000.

The Cosgrave Brewing and Malting Co., Toronto, have ordered a large steel tank from John Ingles & Son.

The T. Eaton Co., Toronto, have given John Ingles & Son, Toronto, an order for a 100 h.p. Heine boiler for their store.

Messrs. John Maw & Sons have taken the Standard Foundry, Centre St., Toronto, and are doing a general foundry business.

The Selater Asbestos Mfg. Co., Montreal, has been organized by Mr. Wm. Selator, and will manufacture asbestos goods, etc.

The last shipment of the engines and boilers for the Hamilton, Grimsby and Beamsville Electric Ry. left the works of John Ingles & Sons, Toronto, last week.

The authorities of Elgin County, Ont., will expend \$15,000 during the current season in the construction of bridges at Port Stanley and other places in the county.

The City and Suburban Electric Ry., Toronto, are asking the York Township Council for the privilege to extend the road from the present terminus in Toronto Junction to Weston.

The Copeland Brewing Co., Toronto, are putting in two large steel tanks which were built for them by John Ingles & Son. These tanks take the place of the wooden ones formerly used.

Some of the alterations and improvements being made in the Caledonia Iron Works, Montreal, of which Mr. John McDougall is proprietor, include a new boiler shop 164x64 feet which will be fitted up with every desirable convenience including a Tweddell hydraulic riveting machine. A new blacksmith shop is to be added 65x45 feet.

The Dominion Government will expend \$25,000 in putting in a breakwater at Negrotown Point, N.B.

If satisfactory arrangements can be made the Great Western Electric Mfg. Co., Chicago, will establish branch works in Toronto.

The Gananoque (Ont.) Electric Light Co., have just built an electric welding machine for the bolt works of Mr. George Gillies, that place.

The St. Maurice Tool & Axe Works, of Three Rivers, Que., are applying for incorporation with a capital stock of \$40,000 to manufacture edge tools, etc.

The Sarnia Gas & Electric Co. are placing one of The Goldie & McCulloch Co.'s new Wheelock engine and steel boiler, shafting, etc., in their new power house.

Mr. T. M. Beamish, Brandon, Man., has been awarded a contract for the construction of a court house and jail at Portage la Prairie, Man., his bid being \$22,544.

Messrs J. T. Slater & Sons and Robins & Sadler, of Montreal, are putting new Wheelock engines, made by The Goldie & McCulloch Co., of Galt, in their factories in Montreal.

The Niagara Falls Park & River Railway Co., Niagara Falls, Ont., will build an electric inclined railway at that place connecting with the Maid of the Mist landing at the foot of the cliff.

Messrs. Hyde & Co., Montreal, have been awarded the contract for supplying the cement to be used in the construction of the new bridge being constructed over the Soulanges canal, that city.

The East River Electric Co. is being organized at Picton, N. S., to supply New Glasgow, Ferrona, Westville and Stellarton, that province, with electric energy for lighting and other commercial purposes.

The Toronto Water Works have their new 10,000,000 gallons Blake pump nearly ready for operation. It is intended to place a larger dynamo in these works capable of running 30 arc lamps. The present dynamo is only for 15 lights.

The Goldie & McCulloch Co. have the order from the Collingwood Meat Co., of Collingwood, Ont., for the complete outfit for their extensive works now being erected in Collingwood, including boiler, 2 Wheelock engines, tanks, shafting, pulleys, etc.

The Victoria Electric Light Co., Lindsay, Ont., have placed their order with The Goldie & McCulloch Co., of Galt, for one of their patent tandem compound condensing Wheelock engine and steel boilers to develop 190 h. p. This is to go in their new power house.

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H. J. HILL, Manager, Toronto.

A general hospital is to be erected at Calgary, N. W. T., that will cost \$10,000.

The new Free Library building about being erected at London, Ont., will cost \$14,000.

The opera house being built at Guelph, Ont., and which is to be completed in October, will cost about \$35,000.

The Waterous Engine Works Co., Brantford, Ont., have recently supplied the town of Orillia, Ont., with one of their No. 3 hook and ladder trucks.

As will be seen by reference to their business card in these pages, the Buffalo Forge Co., Buffalo, N. Y., have appointed Mr. H. W. Petrie their Toronto representative.

The Gananoque (Ont.) Electric Light & Water Supply Co. will probably construct an electric railway connecting that town with Gananoque Junction, a distance of about 4 miles.

It was recently noticed in these pages that the town of Bradford, Ont., had purchased a new steam fire engine. It was manufactured by the Waterous Engine Works Co., Brantford, Ont.

Mr. John Farquharson will build a biscuit factory in Montreal.

The addition now being built to St. Joseph's Hospital at Hamilton, Ont., will cost about \$10,000.

Mr. B. W. Folger has been made managing director of the Light, Heat and Power Co., of Kingston, Ont.

D. McMillan, of Barrie, is placing one of Goldie & McCulloch Co.'s new Wheelock engines in his flour mill there.

The Cumberland Mfg. Co. is being incorporated at Oxford, N. S., to manufacture furniture, agricultural implements, etc.

R. Thackeray, Ottawa, is putting a second Wheelock engine of 75 h.p. in his factory on Sparks St., from the Goldie & McCulloch Co., Galt.

The Johnson Electric Co., Toronto, have been awarded the contract for supplying the Seaforth (Ont.) Electric Light Co. with a 1,000 light incandescence plant.

The Hobbs Mfg. Co., London, Ont., call attention to the fact that they make a specialty of crystal, cut and plate glass, bevelled mirrors and cathedral and hall windows.

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Improvements to be made to the waterworks system of Orillia, Ont., will cost about \$12,000.

Messrs. Simpson Bros., Montreal, have started a machine shop for the manufacture of shoe making machinery.

The Brackman & Ker Milling Co., Westminster, B. C., will add considerable new machinery to their mills.

The Burrell-Johnson Iron Co., Yarmouth, N. S., will build the pumping machinery for the water works system of that place which will include two triplex electric pumping engines, each 10 1/2 x 12 inches and two 6 h. p. motors, the capacity to be to deliver 1,550,000 gallons of water each 24 hours.

Messrs. J. H. Brownlee and W. C. Haywood, of Victoria, B. C., propose to build a belt electric street railway, in Nanaimo, B. C., which will be about three miles in length, and to build a continuous line to Wellington via Northfield, 6 miles in length. The cost of the roads will be about \$147,000, and they are to be equipped with the most modern appliances, the scheme including the purchase of engines and dynamos for lighting the towns Nanaimo, Wellington and Northfield.

CANADIAN PATENTS.

The following patents have been issued from the Canadian Patent Office, from May 1 to May 15, 1894, inclusive.

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

Fetherstonhaugh & Co., Bank of Commerce Building, Toronto.
Ridout & Maybee, 103 Bay street, Toronto.

A. Harvey, Central Chambers, Ottawa.
J. A. Grenier, Imperial Building, Montreal.

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

45,912 Register for bins, Albert Dykeman, Portage La Prairie, Man., May 1.

45,913 Gate, Charles H. Widdifield, Whitechurch, Ont., May 1.

45,914 Holder for splashes, Sarah Wilkins Red Jacket, Mich., May 1.

45,915 Middlings purifier and dust collector, Williamson D. Gray Milwaukee, Wis., May 1.

45,916 Mirrors for use in photography, Henry P. Ranger, Rochester N.Y., May 1.

45,917 Carriage pole tip, Edward Bailey, Folkestone, Kent, Eng., May 1.

45,918 Generator for gas, Oliver W. Ketchum, Toronto, Ont., May 1.

45,919 Wooden rim bicycle wheel, The Indiana Novelty Mfg. Co. Plymouth, Ind., May 1.

45,920 Feed water purifier, John W. Hill, Chicago, Ill., May 1.

45,921 Driving and steering actions for cycles, William H. Ford and John Mooney, Shelton, Conn., May 1.

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OF CANADA

E. W. RATHBUN Esq. VICE-PRES.
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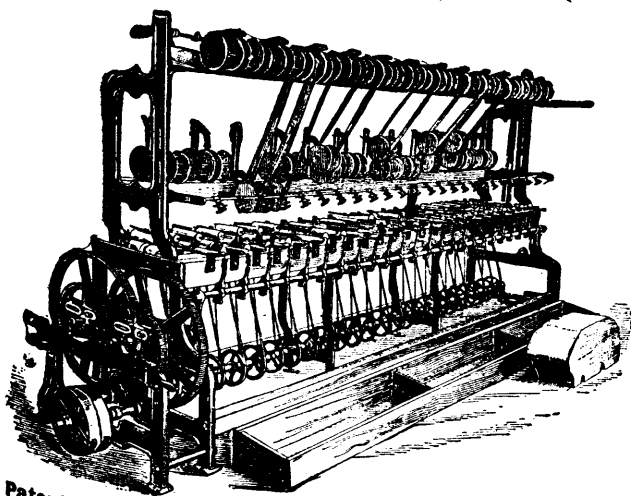
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S. WILSO

- 45,922 Method of and apparatus for making photographic films, Thomas H. Blair, Northborough, Mass., May 1.
- 45,923 Pattern for garments, Henrietta Horn and George A. Horn, both of Newark, N.J., May 1.
- 45,924 Harp, Alfred Dodge, New York, N.Y., May 1.
- 45,925 Purifier and grader for flour, The Hoole Mfg. Co., Sioux City, Ia., May 1.
- 45,926 Sulky, Frederick S. Stoddart and John Nottingham, Syracuse, N.Y., May 1.
- 45,927 Metal pot cover, William C. Mapledoram and John McKellar, Fort William, Ont., May 1.
- 45,928 Signal lantern for bicycles, etc., Frank Rhind, Meriden, and The Bridgeport Brass Co., Bridgeport, Conn., May 1.
- 45,929 Transfer ticket, Charles Punchard and James Ritchie, Toronto, Ont., May 1.
- 45,930 Cement, Sigmund Dentler and Herman Loewenthal, New York, N.Y., May 1.
- 45,931 Culinary utensil, Robert D. Rorison and George W. Winckler, Winnipeg, Man., May 1.

- 45,932 Automatic tires for bags, etc., Henry H. Nelson, Beardsley, Minn., and Peter Nelson, Nora Springs, Ia., May 2.
- 45,933 Hair clipper, Ole Olsen and Charles Green, both of San Francisco, Cal., May 2.
- 45,934 Automatic air brake coupler, William A. Harris, Pelzor, S.C., May 2.
- 45,935 Art of preparing solutions carrying salts of zinc, Parker C. Choate, New York, N.Y., May 2.
- 45,936 Transfer ticket, Samuel Irwin, Markdale, Ont., May 2.
- 45,937 Mucilage, etc., Charles M. Higgins, Brooklyn, N. Y., May 2.
- 45,938 Bung, Nathan Fuchs, Thomas Craney and Thomas C. Strokes, Louisville, Ky., May 2.
- 45,939 Rolls for India rubber mixing and calendering machines, etc., Edward F. Bragg, Cambridge, Mass., May 2.
- 45,940 Rolls for India rubber mixing and calendering machines, etc., Robert Cowen and Edward F. Bragg, Cambridge, Mass., May 2.
- 45,941 Stereoscope, Franklin W. Kremer, Cleveland, Ohio, May 2.
- 45,942 Still, Hermann Hinz, Frankfort, Ky., May 2.

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Patent Bobbin Winding Machine, for Worsted or Cotton Yarns
 Pat. Nov. 22nd, 1887, with variable motion. Pat. Aug. 5th, 1883.
The Only Successful Skein Winder
 Variable Motion, patented Aug. 16th, 1891, and Sept. 5th, 1893.

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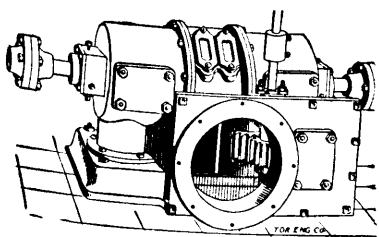
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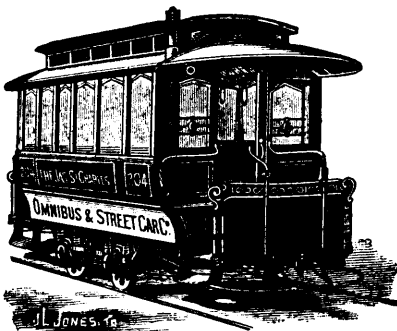
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- 45,943 Composition for and manufacture of condensed food, Herman Bunker, Barrie, Walter P. Chapman, Hamilton, and William R. Wallace, Barrie, Ont., May 2.
- 45,944 Shoe, Nathan S. Read, et al, Philadelphia, Pa., May 2.
- 45,945 Car seat, Harris A. Wheeler, Chicago, Ill., May 4.
- 45,946 Brick press, Thomas Parker, et al, Toronto, Ont., May 4.
- 45,947 Can opener, George H. King, et al, Lynn, Mass., May 4.
- 45,948 Clothes drying apparatus, James Reilly, Calgary, N. W. T., May 4.
- 45,949 Shaft hanger, Daniel J.C. Arnold, New London, O., May 4.
- 45,950 Gas forcing plant, Ebenezer Hill, South Norwalk, Conn., May 5.
- 45,951 Sanitary grate, George Phillips, Victoria, B.C., May 5.
- 45,952 Steam generator, Alexander W. Finlayson and the Finlayson Boiler Co., Detroit, Mich., May 5.
- 45,953 Steam pressure indicator, William M. Dodd, Dayton, O., May 5.
- 45,954 Method of manufacturing ring shaped bodies from solid metal blocks, Oscar Friedrick and Wilhelm Schulte, Duisburger Eisen-Und-Stahlwerke Duisburg, Rhine Province, Prussia, Germany, May 5.
- 45,955 Wagon, hay and stock rack, The Bain Wagon Co., Woodstock, Ont., May 5.
- 45,956 Door spring, The James Hay Co., Woodstock, Ont., May 5.
- 45,957 Device for sharpening shears, Charles N. Sly, and George E. Wadleigh, Medina, N.Y., May 5.
- 45,958 Radiator section, Lawrence R. Blackmore, Newark, N. J., May 7.
- 45,959 Smoke preventer, William R. Mills, Chicago, Ill., May 7.
- 45,960 Hand stamp, John G. Wyatt, Hull, Que., May 7.
- 45,961 Cultivator, Marinus Weber, New York, N.Y., May 7.
- 45,962 Typewriter, Carl F. Reichelt, Berlin, Germany, May 7.
- 45,963 Milk receiver, Alfred Theriault, Ottawa, Ont., May 7.

- 45,964 Mode of shunting cars, Ewen McLennan, O'Leary Station, P. E.I., May 7.
- 45,965 Horse-shoe, James Chapman, Rockland, Ont., May 7.
- 45,966 Dish-washing machine, Alfred Insinger, Philadelphia, Pa., May 7.
- 45,967 Rock arm for horizontal steam engines, Edwin J. Armstrong, Oswego, N.Y., May 7.
- 45,968 Harness for cyclists, William Bonnar, Chicago, Ill., May 7.
- 45,969 Coupler, James D. Connell and John P. Nolan, Algiers, La., May 7.
- 45,970 Railway frog, Frederick Hardy, Birmingham, Ala., May 7.
- 45,971 Tube closers for steam boilers, George C. Hicks, Boston, Mass., May 7.
- 45,972 Fluid pressure engine, William H. Jenks, Brockville, Pa., May 7.
- 45,973 Snow plough, Octave Tessier, Stukely, Que., May 8.
- 45,974 Device for bleaching smoke; James T. Sands, St. Louis, Mo., May 8.
- 45,975 Self-oiling journal box, Harry W. Hill, Cleveland, O., May 8.
- 45,976 Hose reel, Edgar M. Birdsall, Buffalo, N.Y., May 8.
- 45,977 Stove, Samuel Irwin, Markdale, Ont., May 8.
- 45,978 Railway signal, Robert Pfeil, Berlin, Germany, May 8.
- 45,979 Safety device for elevators, Wellington P. Kidder, Boston, Mass., May 8.

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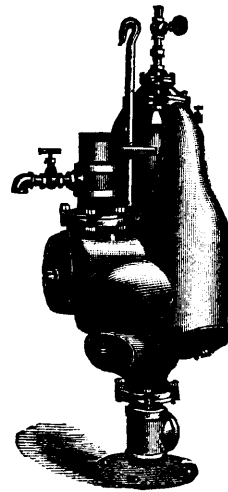
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- 45,982 Ash sifter, Elijah W. Benjamin, Napanee, Ont., May 9.
- 45,983 Harness, Thomas Munroe, New Glasgow, N.S., May 9.
- 45,984 Railway frog, Walter Rowlands, Montreal, Que., May 9.
- 45,985 Street railway car, George Moore, Boston, Mass., May 9.
- 45,986 Car brake, Thomas J. Bailey and John Rowley, Ottawa, Ont., May 9.
- 45,987 Cultivator, The Peter Hamilton Mfg. Co., Peterboro', Ont., May 9.
- 45,988 Car coupler, James C. Rose and John F. MacMillan, Aspen, Col., May 9.
- 45,989 Lifting jack, Charles La Vallee, Toronto, Ont., May 9.
- 45,990 Autographic register, David T. Baxter, Hamilton, Ont., May 9.
- 45,991 Washing machine, John Dille, jr., Muir, Mich., May 9.
- 45,992 Ventilator, James E. H. Paddon, Montreal, Que., May 9.
- 45,993 Pipe wrench, Charles Hall, New York, N.Y., May 9.
- 45,994 Curtain fixture, Irwin Williams and Dennis Koenig, Nelson, Mo., May 9.
- 45,995 Hasp, Thomas Mounce, Toronto, Ont., May 9.
- 45,996 Extension ladder, Albert M. Feurgason, Milford, N. Y., May 9.
- 45,997 Boot and shoe, Stephen Windsor, Tottenham, Ont., May 10.
- 45,998 Paper feeder, Henry E. Smyser, Germantown, Pa., May 10.
- 45,999 Travelling hanger for doors, etc., James T. McCabe, Toronto, Ont., May 10.
- 46,000 Steam boiler, Henry B. White, London, Ont., May 10.
- 46,001 Pipe and hose coupling, William G. Tretheway, and Robert H. Brett, Mission City, B.C., May 10.
- 46,002 Postage stamp, George M. Bright, Abingdon, Va., May 10.
- 46,003 Car for street railways, John A. Brill and George M. Brill, Philadelphia, Pa., May 10.
- 46,004 Game apparatus, George Wilson, Mobile Ala., May 10.
- 46,005 Index, Frank L. Parker, Worcester, Mass., May 10.
- 46,006 Attachment for lanterns, Primus O. Martin, Paducah, Ky., May 10.

- 46,007 Device for recording the speed of engine governors, Emil Lackmann, Berlin, Germany, May 10.
- 46,008 Apparatus for distilling and sterilizing water, Joseph Nagel, Chemnitz, Saxony, Germany, May 10.
- 46,009 Percolator, John W. Evans, Cleveland, O., May 10.
- 46,010 Pipe bending machine, James C. Orr, Winnipeg, Man., May 10.
- 46,011 Chain harness, Rudolf Baumann, Neudek, Bohemia, Austria, May 10.
- 46,012 Car-coupler, John Brown and Henry L. Prowse, Toronto, Ont., May 10.
- 46,013 Radiator, James C. Orr, Winnipeg, Man., May 11.
- 46,014 Horse shoe, Theodore N. Jones, Greely, Col., May 11.
- 46,015 Method of promoting combustion in furnaces, John B. Davids, North Dartmouth, Mass., May 11.
- 46,016 Money envelope, Arthur W. Blachford, Toronto, Ont., May 11.
- 46,017 Ointment for the cure of rheumatism, Henry L. Jackson, Pembroke, Ont., May 11.



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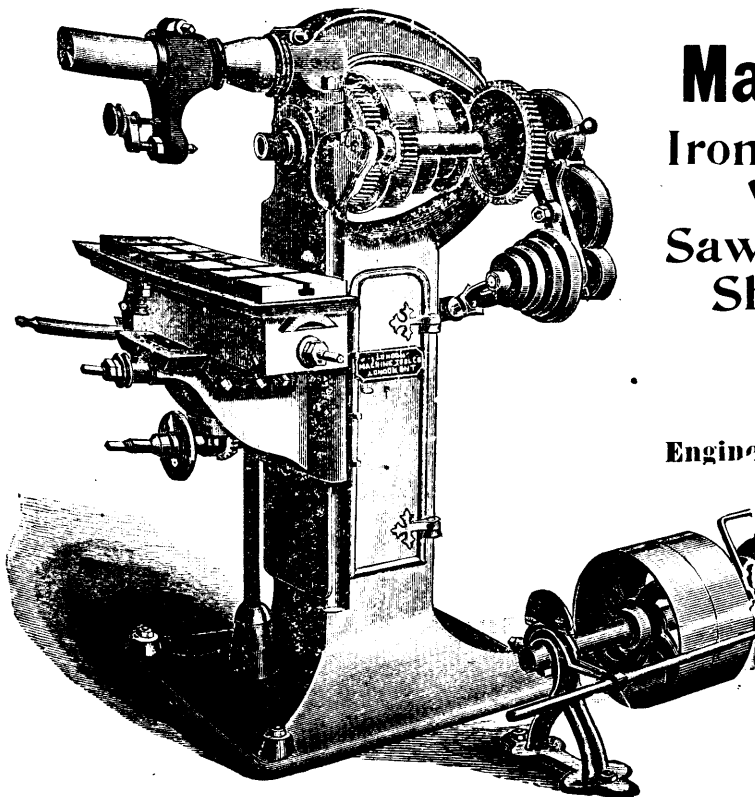
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- 46,018 Washing machine, J. J. Nelson, Toronto, Ont., May 11.
- 46,019 Machine for splitting hogsheads, John H. Ginge, London, Ont., May 11.
- 46,020 Tin packing case for tea, Henry Beckett, Hamilton, Ont., May 11.
- 46,021 Mortar mixing machine, John L. Boweles, Philadelphia Pa., May 11.
- 46,022 Fall boards for pianos, Fridolin Shimmel and Searick F. Nelson, Fairbault, Minn., May 11.
- 46,023 Eye glass, Joseph L. Levy, New York, N.Y., May 11.
- 46,024 Incandescent lamp, George H. Benjamin, New York, N. Y., May 11.
- 46,025 Centrifugal dredging machine, Rodney G. Nash, Morrisburg, Ont., and James L. Allison, Waddington, N.Y., May 11.
- 46,026 Suspended railway, Barney J. Gagnier, Detroit, Mich., May 12.
- 46,027 Apparatus for producing vapour, William B. Mason, Leeds, Yorkshire, Eng., May 12.
- 46,028 Washing machine, Elem D. Matthews, Ely, Ia., May 12.

- 46,029 Nut-lock, Edward H. Thalaker, Petersburg, W. Va., May 14.
- 46,030 Folding box, Frank P. Birkley, Toronto, Ont., May 14.
- 46,031 Cradle, William J. Shortill, Ballinacree, Ont., May 14.
- 46,032 Hay-loader, George D. Houston, Rushville, Ill., May 14.
- 46,033 Rotary engine, James C. Walker, Waco, Tex., May 14.
- 46,034 Controller for elevators, Clarence B. Johnson, Wilkesbarre, Pa., May 14.
- 46,035 Window screen, Edward C. Irwin and Wm. G. Irwin, Winnipeg, Man., May 14.
- 46,036 Bottle, Albert Drouillard, Windsor, Ont., May 14.
- 46,037 Corset, Daniel Kops, New York, N.Y., May 14.
- 46,038 Machine for ploughing and hauling by cable, James McKissock, Winnipeg, Man., May 14.
- 46,039 Book-rest, James K. Brammer, Crosstown, O., May 14.
- 46,040 Harvesting machine, Gerard Beekman, New York, N.Y., May 14.
- 46,041 Hand implement for tooling stone surfaces, William F. Nicholson, Worcester, Mass., May 14.

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- 46,043 Lamp burner, Luther A. Milbank, New York, N. Y., May 15.
- 46,044 Fly net for horses, James Finley, Clarion, Ia., May 15.
- 46,045 Fire extinguisher, Arthur H. Durand, St. Louis de Mile End, Que., May 15.
- 46,046 Ejector, William B. Hollingshead, Bronxville, and Henry S. Blackmore, Mount Vernon, N.Y., May 15.
- 46,047 Car coupler, Samuel R. Stead, Haliburton and Wm. H. Munroe, Toronto, Ont., May 15.
- 46,048 Bicycle, Edward C. Marter and Henry P. Kohn, Gravenhurst, Ont., May 15.
- 46,049 Multicharge gun, Gottfrid J. Hilder, St. Cloud, Minn., May 15.
- 46,050 Current conveyors for electric railways, The Lawrence Electric Co., New York, N.Y., May 15.
- 46,051 Dynamo electric machine and motor, The Waddell-Entz Co., New York, N.Y., May 15.
- 46,052 System for heating railway coaches, The Consolidated Car Heating Co., Albany, N.Y., May 15.

UNITED STATES PATENTS.

GRANTED TO CANADIAN INVENTORS.

The following patents were issued from the United States Patent Office, on July 3, 1894, and reported especially for the CANADIAN MANUFACTURER by Glascock & Co., patent attorneys, Washington, D. C. Printed copies of these patents can be obtained from them for 25 cents each.

- John Forbes, Halifax, N. S., skate.
- Eugene Guay, St. Henry of Montreal, machine for waxing leather.
- Whitmore Irving, assignor to C. A. Steeves, Moncton, N.B., support for vehicle shafts.
- Thomas Talbot, assignor of one-third to B. Charron, Mattawa, Ont., hand car.
- William S. Wilson, assignor of one-half to D.S. Henderson, Brantford, Ont., manufacturing rivets, studs, etc.

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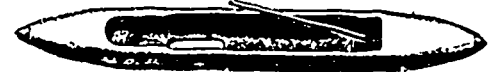
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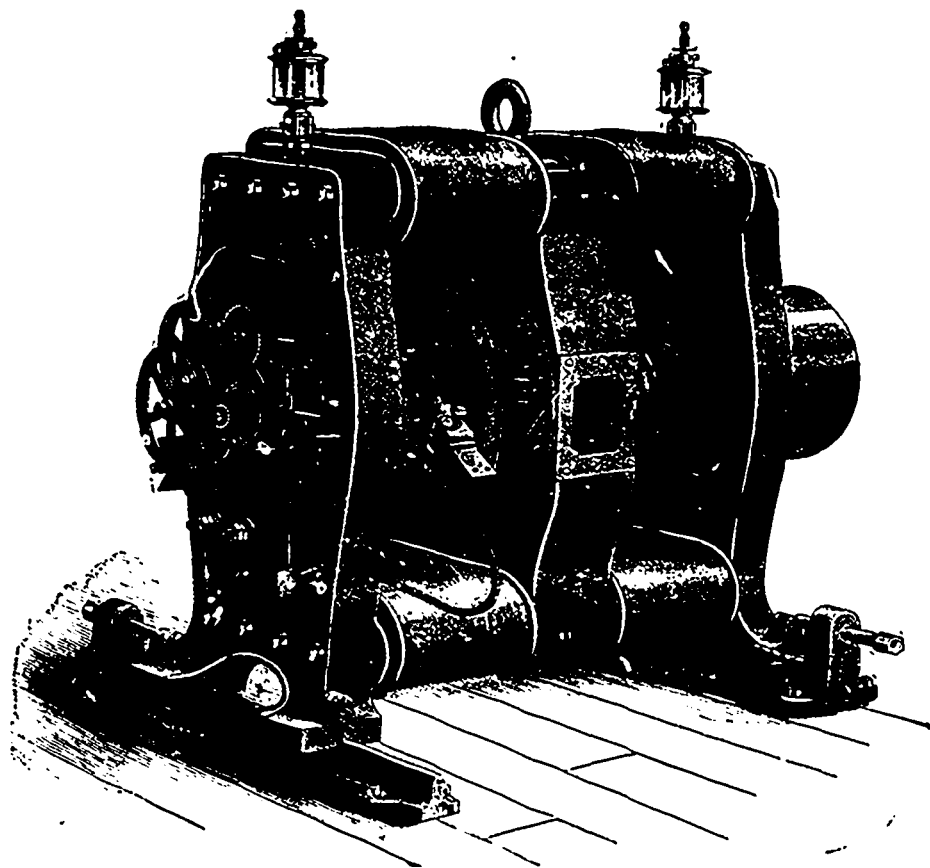
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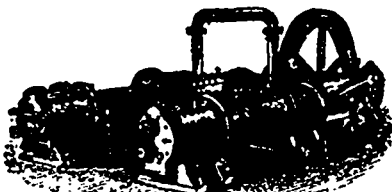
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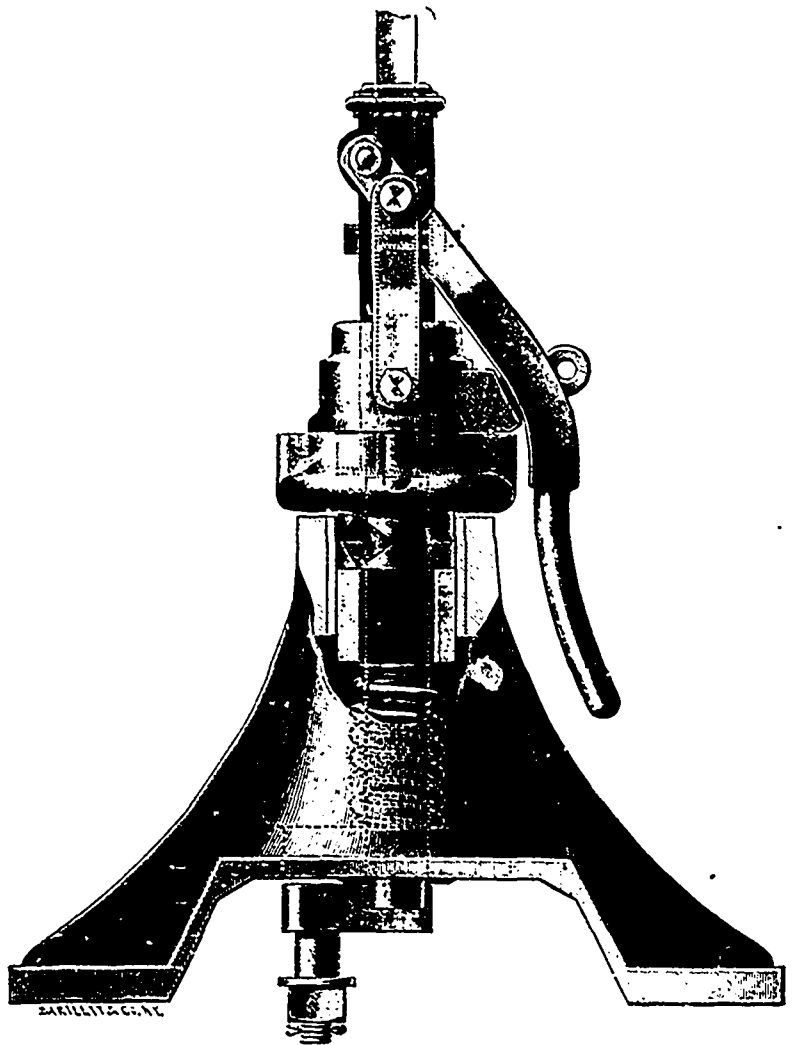
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1 3/8	1 3/8	5.01	"	3	2 13/16	22.59	"
1 1/2	1 1/2	5.94	"	3 1/4	3 1/8	26.60	"
1 3/4	1 13/16	7.46	"	3 1/2	3 1/4	30.94	"
2	1 15/16	9.83	4 cts.	4	4	42.33	5 cts.
2 1/4	2 1/8	12.53	"	4 1/2	4 1/2	53.57	"
2 1/2	2 1/8	15.55	"	5	5	66.13	"

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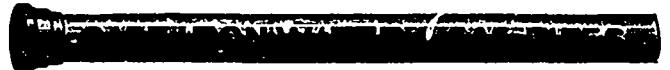
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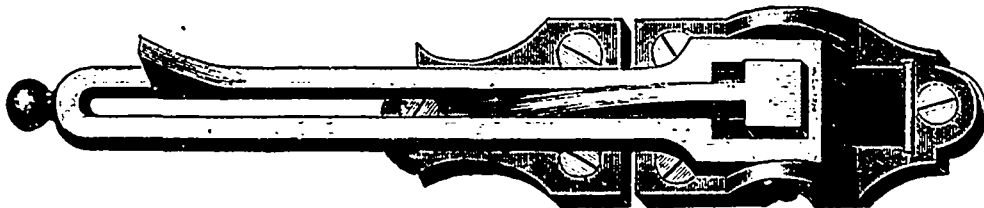
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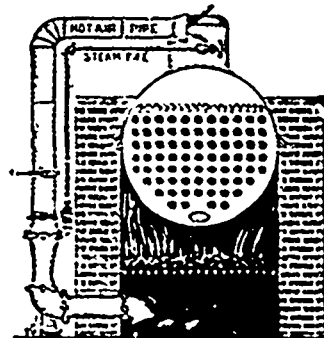
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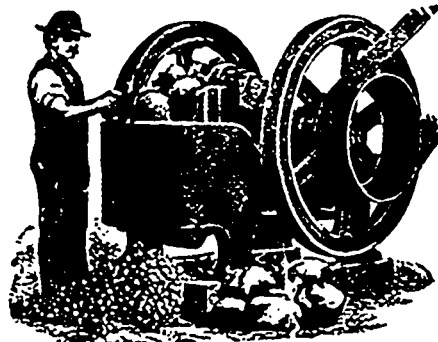
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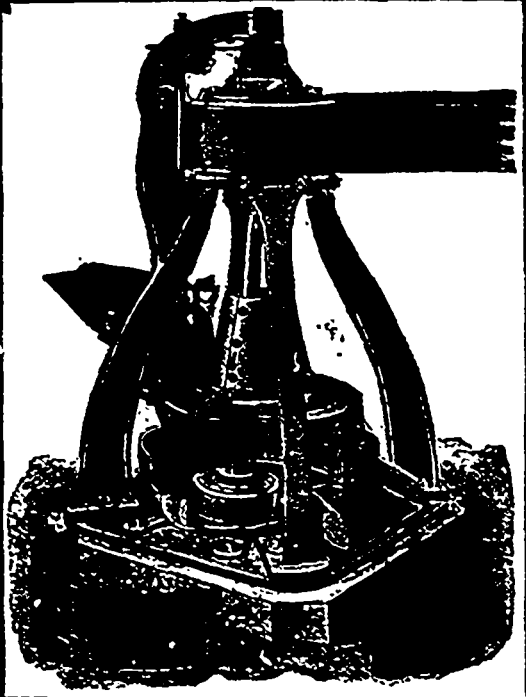
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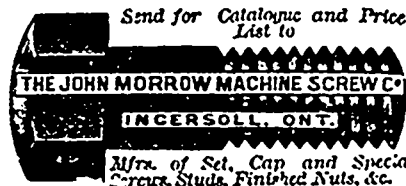
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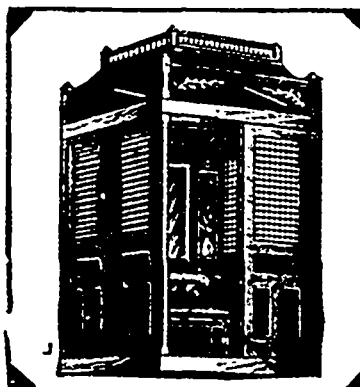
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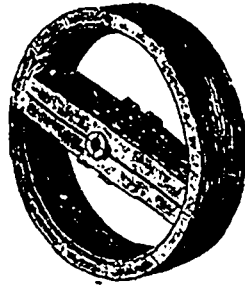
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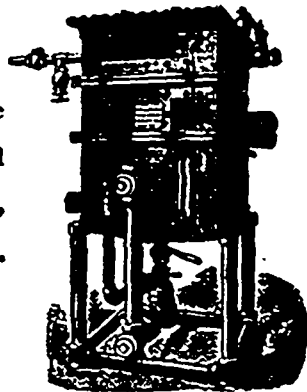
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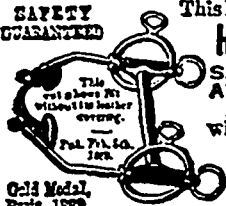
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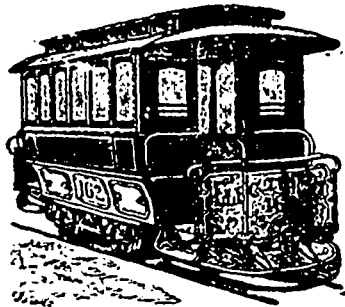
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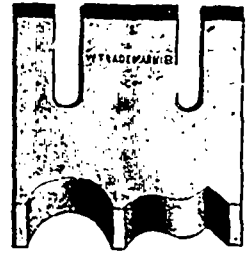
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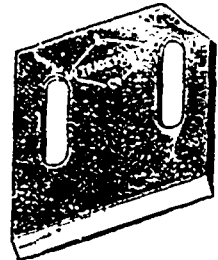
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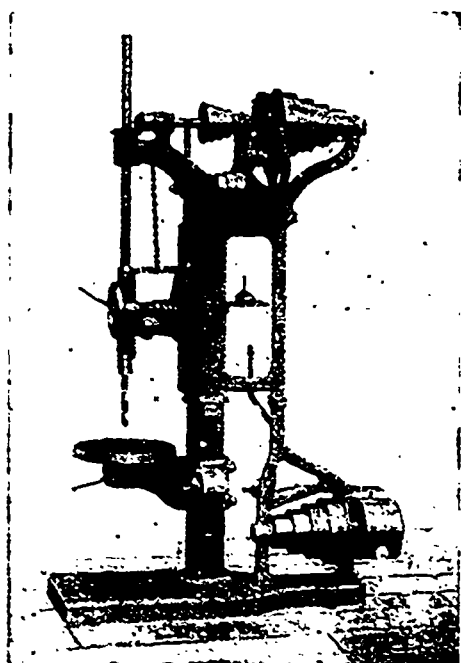
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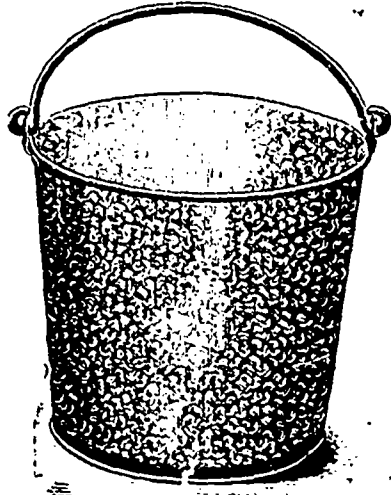
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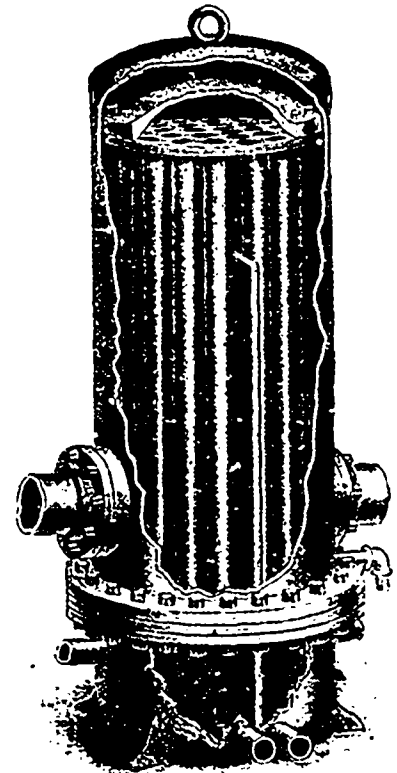
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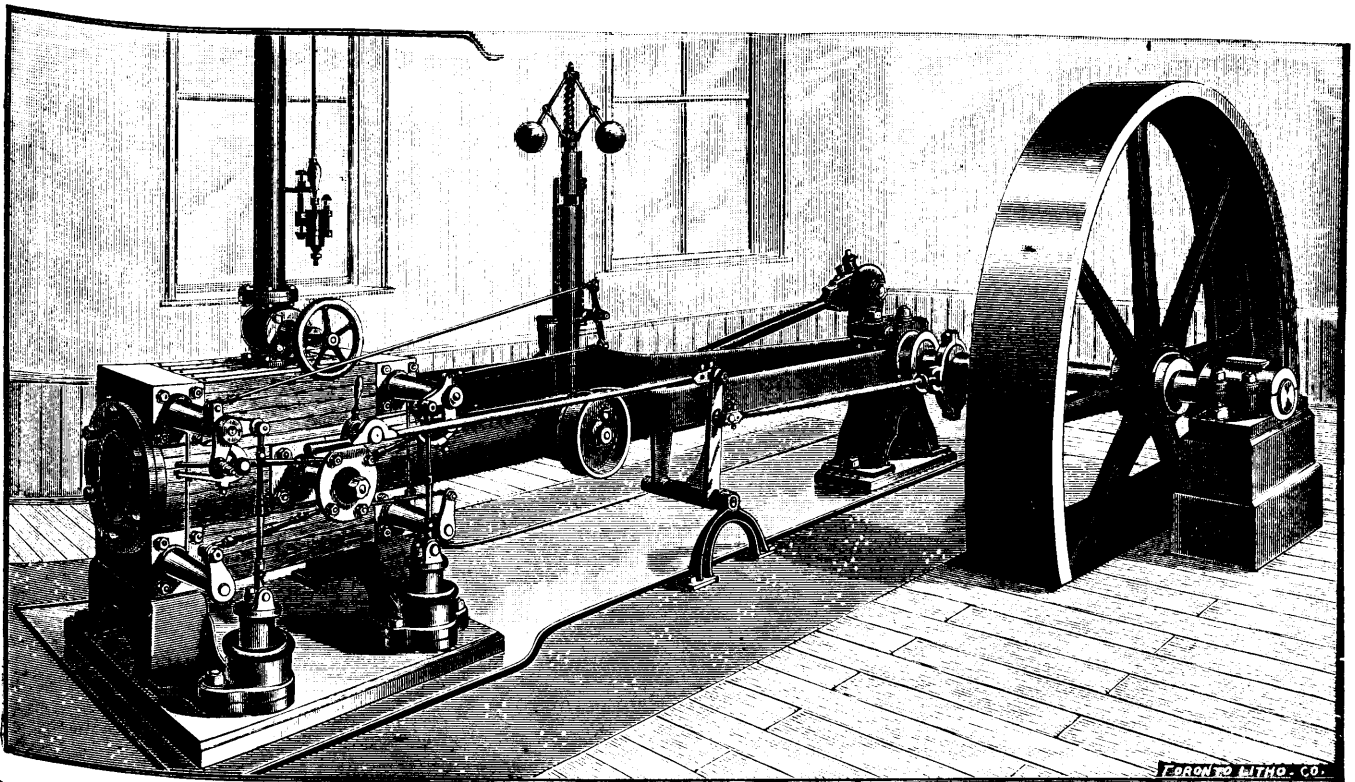
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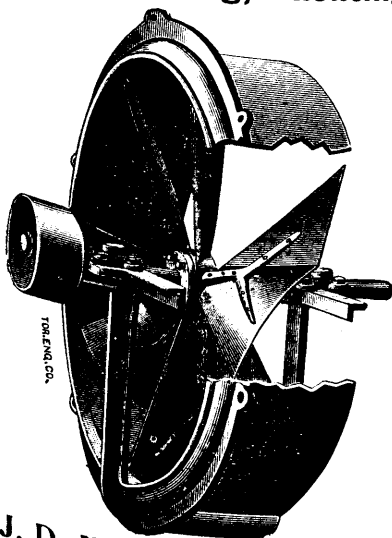
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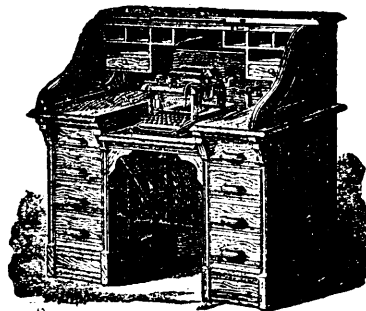
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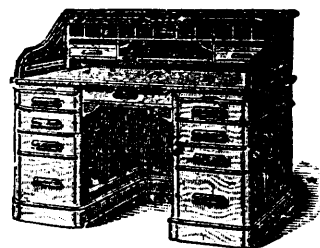
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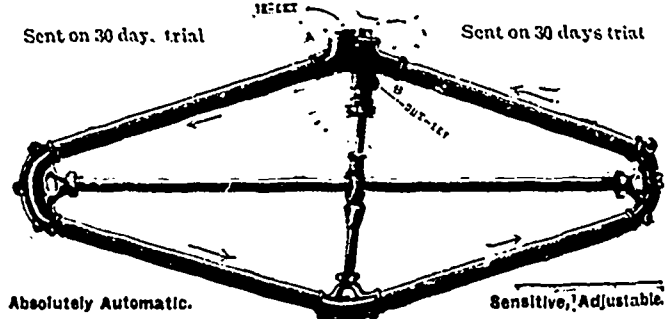


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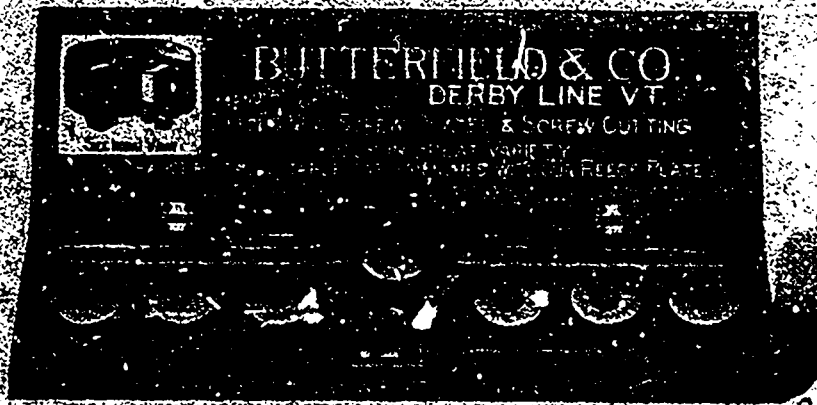
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