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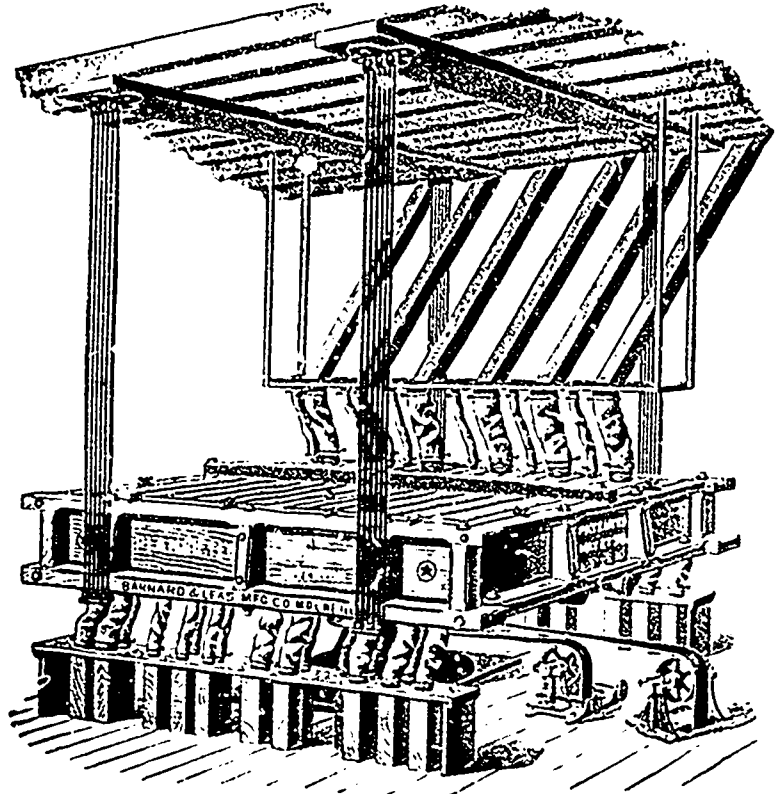
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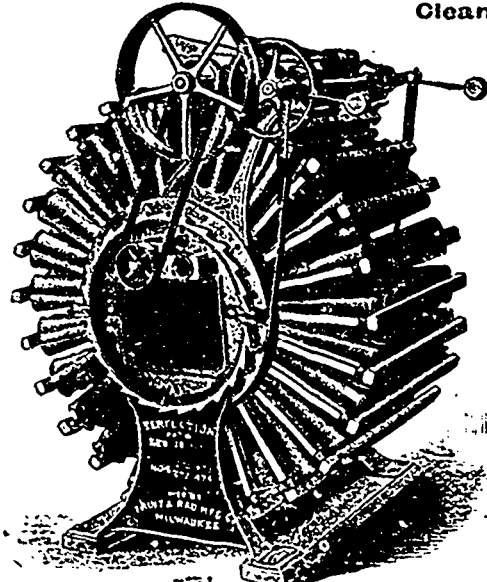
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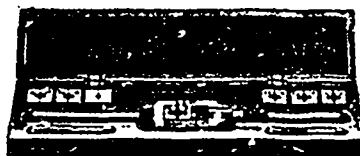
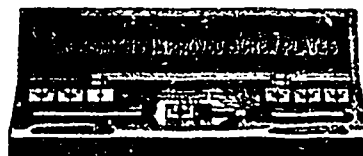
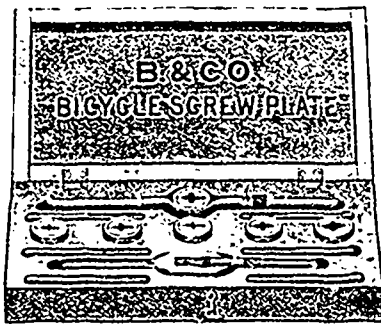
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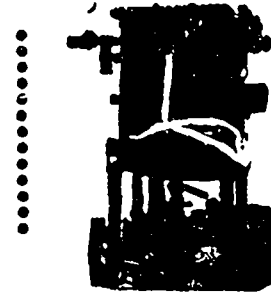
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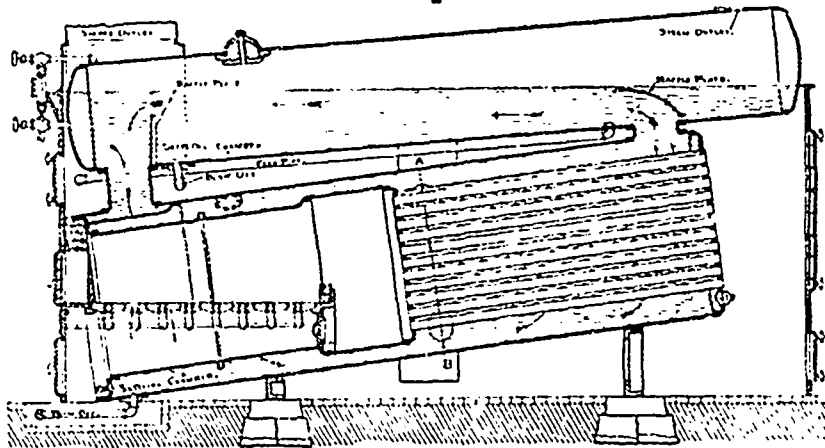
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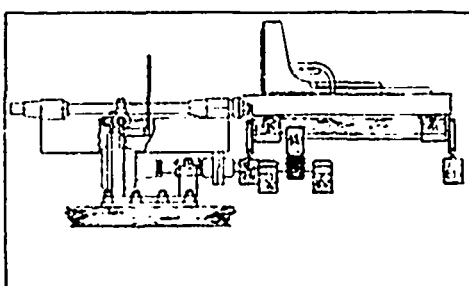
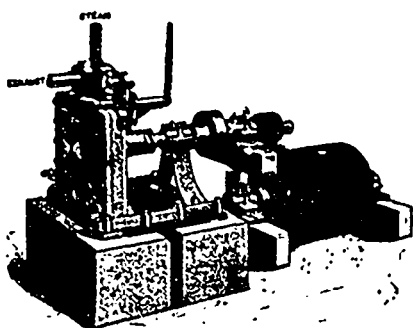
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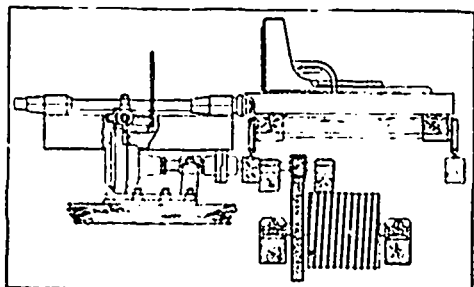
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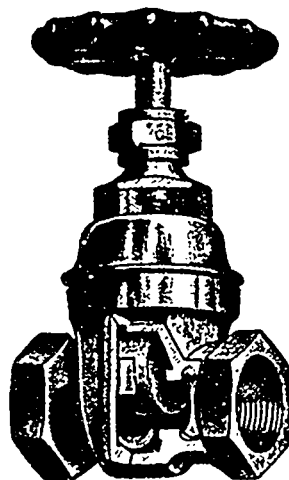
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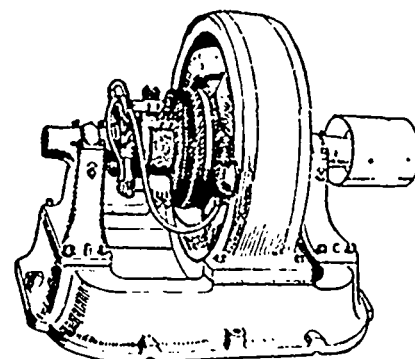
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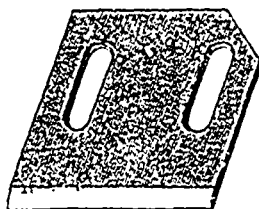
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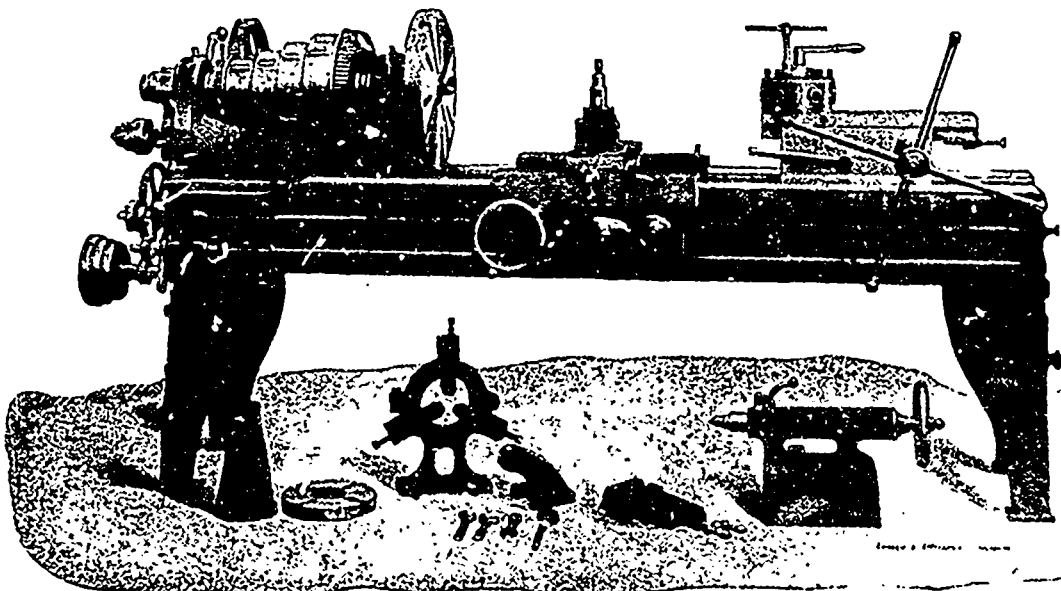
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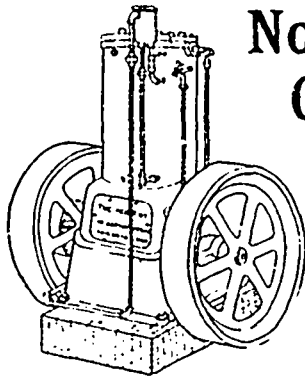
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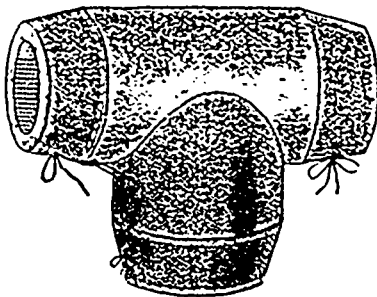
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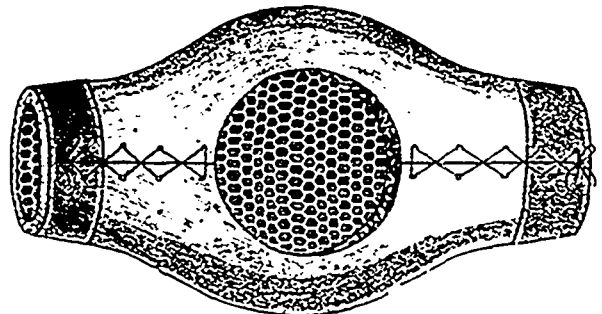
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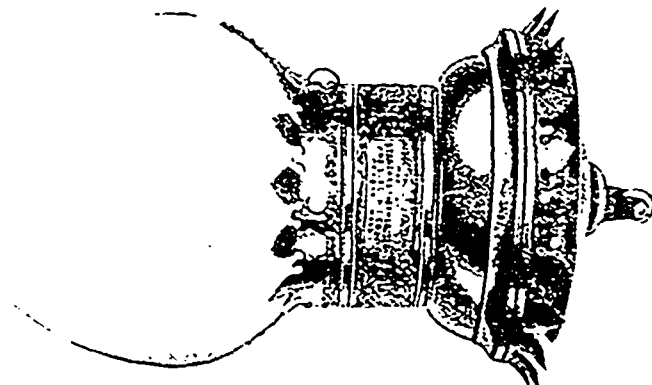
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THE ALIEN LABOR ACT.

For the benefit of manufacturers and other readers who may be interested in the matter, we herewith give an exhaustive synopsis of the Canadian Alien Labor Act:

The title of this Act is, "An Act to restrict the importation and employment of Aliens," and it was assented to and became law on June 29, 1897.

Section 1 provides that from and after the passing of this Act it shall be unlawful for any person, company, partnership or corporation, in any manner to prepay the transportation, or in any way to assist or encourage the importation or immigration of any alien or foreigner into Canada under contract or agreement, made previous to the importation or immigration of such alien or foreigner, to perform labor or service of any kind in Canada.

Section 2 provides that all contracts or agreements hereafter made by and between any person, company, partnership or corporation and any alien or foreigner, to perform labor or service, or having reference to the performance of labor or service by any person in Canada, previous to the importation of the person whose labor or service is contracted for into Canada, shall be void and of no effect.

Section 3 provides that for every violation of this Act the person, partnership, company or corporation violating it by knowingly assisting, encouraging or soliciting the immigration or importation of any alien or foreigner into Canada, to perform labor or service of any kind under contract or agreement, expressed or implied, with such alien or foreigner previous to his becoming a resident in or a citizen of Canada, shall forfeit and pay the sum of one thousand dollars, which may be sued for and recovered by Her Majesty's Attorney-General of Canada, or the person duly authorized thereto by him, as debts of like amount are now recovered in any competent court in Canada, the proceeds to be paid into the hands of the Receiver-General: and separate suits may be brought for each alien or foreigner who is a party to such contract or agreement.

Section 4 provides that the master of any vessel who knowingly brings into Canada any alien laborer, mechanic or artisan who previous to embarkation had entered into contract or

agreement to perform labor or service in Canada, shall be deemed guilty of an indictable offence, and on conviction thereof shall be punished by a fine of not more than five hundred dollars for each alien so brought, and may also be imprisoned for a term not exceeding six months.

Section 5 provides that nothing in this Act shall be so construed as to prevent any citizen or subject of any foreign country, temporarily residing in Canada, from engaging, under contract or otherwise, persons not residents or citizens of Canada, to act as private secretaries, servants or domestics, nor shall this Act be so construed as to prevent any person, partnership or corporation from engaging, under contract or agreement, skilled workmen in foreign countries to perform labor in Canada in or upon any new industry not at present established in Canada, provided that skilled labor for that purpose cannot be otherwise obtained; provided, that nothing in this Act shall be construed as prohibiting any person from assisting any member of his family, or any relative or personal friend, to migrate from any foreign country to Canada for the purpose of settlement here.

Section 6 provides that the Attorney General, in case he shall be satisfied that an immigrant has been allowed to land in Canada contrary to the prohibition of this Act, may cause such immigrant, within the period of one year after landing or entry, to be taken into custody and returned to the country whence he came, at the expense of the owner of the importing vessel, or, if he entered from an adjoining country, at the expense of the person previously contracting for the services.

Section 7 provides that the Receiver-General may pay to any informer who furnishes original information that the law has been violated such a share of the penalties recovered as he deems reasonable and just, not exceeding fifty per cent., where it appears that the recovery was had in consequence of the information thus furnished.

Section 8 provides that no proceedings under this Act, or prosecutions for violation thereof, shall be instituted without the consent of the Attorney-General, or some person duly authorized by him.

Section 9 provides that this Act shall apply only to such foreign countries as have enacted and retained in force, or as enact and retain in force, laws or ordinances applying to Canada of a character similar to this Act.

MR. CLARKE AND THE ALIEN LABOR ACT.

At the recent session of the Dominion Parliament, Mr. E. F. Clarke, M.P., representing a Toronto constituency, was exceedingly persistent in demanding that the Government institute whatever machinery might be necessary to put the Alien Labor Act in force, so much so that the act is now in operation.

We quite agree with Mr. Clarke and all others who believe that the Alien Labor Act of the United States, as it has been enforced at Buffalo and Detroit, is an outrage regarding which many bitter words might be spoken with much propriety. It goes without gainsaying that Canadians who have sought to better their condition by seeking occupation in the United States have met with most inhospitable treatment there; and it is not surprising that much resentment has been felt, which at length resulted in the enactment of a law in Canada identical with that of the United States. But it is to be

observed that of late we hear nothing of the DeBarry's and their deportations of Canadians, and there is good reason to believe that in this era of Anglo-American good feeling, our friends across the border, and those who have influence there are heartily ashamed of the part they have been indulging in in this disreputable and unneighborly attempt to keep Canadians from seeking employment in the United States, and have tied up their DeBarry's in the kennels where they properly belong. We therefore cannot understand why Mr. Clarke should become so suddenly and particularly solicitous in this matter.

The enforcement of this Alien Labor Act, however, while it might afford but slight and doubtful benefit to those in whose behalf it was created, is calculated to work much harm to others. It is true that Section 5 is supposed to be favorable to manufacturers who may be embarking their capital in a new industry not at present established in Canada, in that they are permitted to import skilled labor therefor provided it cannot be otherwise obtained; but no provision is made regarding obtaining foreign artizans for industries already established, where there is no supply to be obtained at home. It is a very poor way to encourage a manufacturer in introducing new designs in his business, which cannot possibly be done with such labor as he finds available here in Canada, and which requires the services of specialists and experts, when he finds himself confronted with a law that imposes upon him a fine of a thousand dollars if he sends to the United States or any other foreign country for such an assistant. Under this Act a manufacturer who desires to introduce a new and novel machine or apparatus, the successful operation of which requires the services of a specialist, introduces such a machine, and imports such an operator for it at the risk of a heavy fine, the imprisonment of his operator and the destruction of his business. And such disreputable proceedings, which Mr. Clarke so earnestly desires to see made possible, is encouraged by a promise of a moiety of the fine going to an informer, as is shown in Section 7. Mr. Clarke should know that the enforcement of this Act means that the most despicable espionage is to be set up against manufacturers, and that spies and informers are to beset them on every hand.

FOREIGN EXHIBITS AT THE TORONTO FAIR.

From letters we have received and from information derived from other sources, we are led to believe that the exhibits of machines, machinery, and the products generally of manufacturers at the forthcoming Toronto Fair will be very large—perhaps larger than for a number of years, and of the most interesting character. Heretofore quite a number of Americans have been rivals of their Canadian competitors in exhibiting many lines of their products, but this year, we understand, this rivalry has to be met from other countries also, for much space has already been applied for by manufacturers and exhibitors, not only from the United States, but also from Great Britain, Germany and France. In many lines neither of the European nations named ever attempt to compete with the United States in their displays at the Toronto Fair, while in many other lines some of the most beautiful and interesting displays shown come from across the ocean; and now that the full force of Canadian tariff preference to British imports has come into effect, we find that

many of the manufacturers of the Mother Country are pre-empting locations and spaces in which to display their wares, and to prove that their excellence is fully equal to those of either Canada or the United States. We would suggest then that those of our friends who want to be properly represented at the approaching Fair take the necessary steps now while desirable locations may be had.

THEOLOGY AND DEPARTMENTAL STORES.

A meeting of the Retail Merchants' Association of Toronto was held a few days ago. This Association was organized about a year and a half ago, chiefly for the purpose of combating the departmental stores, and influencing legislation in that direction; and at this meeting it was shown that another enemy of the guild was to be punished or driven out of business, to wit the peddlers, those peripatetic fellows who push banana carts through the streets and hawk fruits and vegetables from door to door. And so not only the big fish who invest in departmental stores, but the little minnows who eke out their precarious living by peddling, are to be squelched if possible by the Retail Merchant's Association.

An interesting part of the programme observed at the meeting alluded to, was an address by Rev. Morgan Wood, a sensational preacher who is exciting some mild admiration on the part of his friends who happen to be retail merchants, it being understood that neither departmental store proprietors nor peddlers are included.

According to the report in a morning paper, Mr. Wood said that he was not a socialist, reformer, political economist, or anything else in that connection; he was there merely because he took an interest in the universal problem of the concentration of wealth by the few and the struggles for a livelihood by the masses. There is a phase or element, said Mr. Wood, in the commercial world which might be termed unnatural monopoly. There are certain monopolies which must be recognized; they are just and natural. The railways, telegraph and similar concerns, heat, light and power companies, etc., these are all natural monopolies, for all of the people must control them. No one man should cater to all of the demands of a community. It is unnatural for a dry goods merchant to endeavor to sell boots and shoes and jewelry. Let him sell all the dry goods consumed in a community if he can, but he has not a moral right to try to take from another source another's means of subsistence. The departmental store is an unnatural monopoly; it is the natural result of an unnatural condition of society. One of Mr. Wood's remarks was:—"There is something radically wrong in public opinion when the merchant places a secret mark upon his goods."

The community are certainly under obligations to Mr. Wood for explaining the difference between natural and unnatural monopolies, and this is made very plain in his suggestion that railways, heat, light and power companies, etc., are controlled by the people. This is news to most of us. And then the reverend gentleman tells us that no one man should cater to all of the demands of a community, but, saving the fact that no one man could possibly become such a monopolist, we fail to see why he should be prevented from catering to any one want if he is to be debarred the privilege of attempting to cater for all the wants. If a retail merchant is to be allowed to cater to those who want beef, why should he be prohibited

from catering to those who want cabbage or fish? And if beef, cabbage or fish, why not extend the lines and allow him to cater to those who want bread. Where, oh, where would Mr. Wood draw the line? What is it to be "unnatural" in trade? Why is it unnatural for the dry goods merchant to sell boots and jewelry any more than for the butcher to sell vegetables and fish? Why should Mr. Woods say that the dry goods merchant becomes immoral as soon as he offers boots and berries for sale? What constitutes "immorality?" And what a queer idea it is that Mr. Wood should declare it radically wrong for a merchant to place a private mark upon his goods. Mr. Wood should revise his code of ethics or else go out of business.

THE CANADIAN TARIFF AND IMPERIAL TREATIES.

In view of the negotiations now in progress for the renewal of the Belgian and German treaties with Great Britain leaving Canada a free hand as regards her tariff, much importance attaches to the despatch of Mr. Chamberlain to Lord Aberdeen in August last, in reference to the position of Canada regarding commercial treaties. The text of this despatch which Mr. Fielding referred to in his Budget Speech we now append. After stating that the question respecting the bearing of the treaties with Germany and Belgium on the Canadian Tariff Act had been fully discussed by the law officers of the Crown with Sir Louis Davies and Mr. Blake, Mr. Chamberlain continues:

"Your Ministers contended in the first place that as Canada had before the date of the treaties been granted full power to legislate in regard to tariff matters, these treaties, which constitute a restriction on that power, could not bind her Majesty in regard to the trade between Canada and Germany and Belgium without Imperial or Canadian legislation. The law officers were unable to accept this view. They advise that the treaties in question are binding on her Majesty in respect of trade between Belgium and Germany and Canada. The power of making treaties is vested in the Crown, and the treaty when concluded and ratified is obligatory upon the Crown, so far as other countries, parties to it, are concerned. It may be that, in order constitutionally to carry out the obligations of the treaties, legislation is required in some portion of her Majesty's dominions to which the treaty relates, but with that the foreign Power with whom the treaty has been made has nothing to do. In such cases the ratification of the treaty may be delayed until the necessary legislation has been obtained, but if the treaty has been ratified, even though such legislation has not been passed, the Crown is bound.

"Your ministers urge in the second place that the tariff treatment granted the United Kingdom by the Tariff Act is open to every country the tariff of which fulfils the conditions stipulated, and that there is therefore no preference granted to Great Britain which may not equally be secured by any other country, and that the Belgian and German treaties do not require that the benefits of the reciprocal tariff should be extended to those countries. The law officers, however, point out that these treaties provide that in the Colonies the produce of Germany and Belgium shall not be subject to any higher or other duties than those which may be imposed upon similar articles of British origin. This obligation is absolute

and unqualified, and as the United Kingdom has been admitted to the benefits of that tariff, Germany and Belgium are entitled to it also. It appears to them impossible to import into these articles of the treaty the conditions that they apply only where parity of treatment is extended to Canadian goods. It follows that the benefits of the reciprocal tariff must be extended to other countries entitled in Canada to most-favored-nation treatment in tariff matters. On the admission of Belgium and Germany to such benefits these other countries become also entitled by virtue of the most-favored-nation clause. The law officers have further reported that if after the termination of the Belgian and German treaties, on July 30, 1898, Canada should grant the benefit of the Reciprocal Tariff to any foreign countries fulfilling the conditions of reciprocity mentioned in the Tariff Act, the most-favored-nation clauses would render it necessary for her to grant the same advantages unconditionally to the following countries, viz., Argentina, Austria, Hungary, Bolivia, Columbia, Denmark, Persia, Russia, Sweden, Tunis, and Venezuela. Switzerland also, they think, should be included, as, though the words of Article 9 of the Commercial Treaty with that country are not very clear, they think they are sufficient to include the Colonies. They consider this is not so in the case of France and Spain, as it appears to them that the question of parity of conditions may fairly be implied in the agreements with these countries, but even in these cases the construction which might be put upon the terms agreed cannot be regarded as free from difficulty.

"This decision will render it necessary, as I advised you in my telegram under reference, that your Ministers should at once take steps to admit goods from Belgium, Germany, and all other countries entitled to most-favored-nation treatment in Canada at the same rate of duty as is charged on similar goods of British origin pending the termination of the Belgian and German treaties on July 30, 1898, and also to repay any excess duties that may have been levied in the meantime, for which your Ministers hold they have full power under Section 28 of chapter 29 of the revised statutes. I desire to add in connection that the action of the Dominion Government and Parliament in the matter, though unfortunately its full effect will be temporarily postponed, has been warmly welcomed and appreciated by her Majesty's Government and the people of this country, as a measure which cannot fail to result in material benefit to the Mother Country and to Canada, and to weld together still more firmly the ties that now unite them.

CANADIAN QUICK LETTER DELIVERY.

The Canadian Post-Office Department has concluded arrangements for the inauguration on the first of July of a special delivery service, whereby a letter, bearing in addition to the ordinary postage a special delivery stamp of the face value of ten cents, posted at any post-office in Canada, and addressed to a city post-office having now free delivery by letter-carrier, shall be specially and promptly delivered to the person to whom it is addressed within the limits of letter-carrier delivery at any one of the following post-offices, namely:—Halifax, St. John, Fredericton, Quebec, Montreal, Ottawa, Kingston, Toronto, Brantford, Hamilton, London, Winnipeg, Victoria and Vancouver. Whilst the delivery of such letters will, for the present, be restricted to the city

post-offices named, they may be mailed at any post-office in the Dominion. It is expected that by the first of July, or very soon thereafter, special delivery stamps will be on sale at all money order post-offices.

The special delivery stamp differs materially in design and size from the ordinary series, the dimensions of the engraved work being $1\frac{1}{2}$ inches long by $\frac{1}{2}$ of an inch wide. The advantage of such a contrast is that the letter to which a special delivery stamp is affixed can be at once picked out by those handling the mails including it, and its delivery greatly hastened. The design of the special delivery stamp is without any vignette, and consists substantially of a panel across the top of the stamp, containing the words, "Canada Post-Office," with a lathe-work border round the other three sides of the stamp. The centre of the stamp is occupied by an oval containing lathe-work, with the word "ten" in the centre, and the phrase "special delivery within city limits" in a white letter on a solid panel encircling the word "ten." On each side of the stamp, connecting the oval with the border, is a circle with the numeral "10;" the space between the oval and the border is occupied by ornamental work. At the bottom of the stamp in the lathe-work border appears a white panel with the words "Ten Cents" The color is dark green.

The regulations relating to first-class matter (inland post) will apply with equal force to special delivery letters, the only difference being the special treatment which the latter receive with a view to accelerating their delivery.

EDITORIAL NOTES.

The Argonaut Rowing Club is a swell Toronto concern who imagine that Canada cannot produce row boats good enough for them, and so they had a boat built "on the other side," to wit, in the United States, and had the impudence to ask the Government to admit it to Canada duty free. It is this sort of thing that makes one tired.

The Canadian Manufacturer acknowledges the receipt of an invitation from the Canadian Electrical Association to attend their annual dinner, held at the Windsor Hotel, Montreal, on the evening of June 29th, incident to the eighth annual convention of the Association now in progress in that city. Circumstances beyond his control prevented the editor from being present on this festive reunion, but he was in telepathic touch with the good fellows there assembled, Judging from previous banquets, even the insulating material surrounding and containing an exhilarating fluid, was not sufficient to prevent the effects of electrolysis and saturation incident to such occasions.

The consumption of crude rubber has been steadily increasing for some time past and has shown signs of gaining on the production. The expansion has been most marked lately in Europe, where a demand is springing up for rubber tired carriages. There is also a general extension of the use of rubber in the manufacture of mechanical goods, especially on the continent. As a result, manufacturers have been liberal buyers of rubber at advancing prices. Recent auction sales of African grades, held at Antwerp, resulted in high prices being paid, and some would-be buyers in this country failed to secure the supplies they wanted, as their bids were too low. At public sales held in Liverpool some 170,000 lbs. of rubber

was offered, all of which brought full or higher prices.—Manufacturers' Gazette.

Toronto-built ships will soon be plying on every part of Canada's inland waters. The Government could not do better than give our shipbuilders an outlet to the ocean by ordering here the new vessel authorized by Parliament for the Prince Edward Island mail service.—Toronto Globe.

Tariff protection is building up the Canadian ship building industry. If we had free trade in ships the people of Toronto would not have been gratified last week at witnessing the launch of what is probably the largest and finest passenger steamer ever built in Canada. It would have been built in Cleveland or some other American city.

The City Treasurer, of Toronto, in his recent budget laid before the Board of Control, speaking of Toronto as a manufacturing centre, says:—

Attention is called to the advantages offered to manufacturing industries by Toronto, which are in the shape of cheap water rates, and exemption from taxes amount to \$40,000 per annum, to which must be added the lease of sites at a nominal rental. Looking to the future the Treasurer offers the suggestion: "The steps taken from time to time to attract industries have been more or less successful, but incessant vigilance and effort alone will bring about results in keeping with the strategic importance of the city in the commercial domain, and in undoubted advantages as a distributing centre and a centre of population. Converging on Toronto from every point that can be touched by rail are lines of railway, well equipped and capable of handling a great trade. The subsidies generously granted towards the building of these roads and the money expended on the Esplanade have done much to place Toronto in the front rank of our Canadian centres of business. But the past will not suffice for the future, and no effort should be abated until the waterways to the seaboard shall have been deepened to allow ocean vessels to reach Toronto safely through the canals, laden with the manufactures of the world. This aim is not too high, nor is the project chimerical, for the metropolis of the greatest self-governing and most loyal Province of the British Empire ought certainly to have its claims in this respect recognized by the Government.

Whether it is true in ordinary tariff matters or not, it is pretty well settled that before we get through with this little affair with Spain that nation will find that in our war fiscal system the foreigner pays the tax.—Peoria, Ill., Journal.

Perhaps so, and still we notice the fact that but a few days ago the Canadian market was denuded of tea, large quantities of which were rushed over the border and into the United States market in anticipation of the ten cents per pound duty that was about being imposed upon the article. Does Spain pay this duty? A New York contemporary says that although no Spanish fleet of war ships has placed that city under its guns, demanding a heavy ransom as an alternative of bombardment and destruction, yet the new law for raising revenue as a war measure will cost New York forty million dollars per month. Does Spain have to foot this bill? And a Chicago newspaper claims that the cost to that city will exceed sixty millions per month. Yea, verily, before the United States get through with their war with Spain, the people will find that their war fiscal system, like an old gun, kicks as hard as it shoots.

The British and Canadian-American Club, Omaha, Neb. is an organization whose object is to extend courtesies to those

of British and Canadian birth and extraction who may visit Omaha this summer to attend the Trans-Mississippi and International Exposition which is now being held there. The club have a permanent headquarters in Omaha, where information is given regarding hotels, etc. Further information may be obtained by addressing the Secretary, Mr. J. C. Lindsay, Ramage Building, Omaha, Neb.

The first reports of the use of the Roentgen rays in warfare were made on May 20th at the United Service Institution by Surgeon Beevor, who described the results of their use in the recent frontier campaign in India, and gave lantern views. Many important cases consisted of bullet wounds received by officers and men who were injured in the bones, joints and internal organs. Their injuries but for the X rays would have resulted in the amputation of limbs and probable loss of life. In all the instances enumerated the bullets were, by the use of the X rays, successfully removed, the men subsequently joining their commands. The portable apparatus weighs 80 to 100 pounds.

Word comes from the Klondike of a singular discovery made by some Hamilton prospectors while crossing the Chilcoot Pass on the first of April last, says the Vancouver Mining Digest. One of the party, a Mr. Kanard, in an investigating tour came across a cave, on exploring which he resurrected what are evidently relics of a very remote period. Amongst a number of utensils of a conjectural character, were several small skins which are said to be those of an extinct species of the *haplocereus montanus*, a very small wild goat formerly inhabiting the Rockies in the far north. The peculiar rich purple tone of the skins led one of the party, who is a leather man, to examine them more closely, when he came to the conclusion that they had been tanned by a mineral process, possibly by a single bath of nitric or muriatic acid and gold. The prevalence of saltpetre and other nitrifying agents in the vicinity, lend color to this supposition. It is estimated that the amount of gold in the skins, apart from their value as a curiosity, will make them a rich find. No doubt whatever about this Mr. Kanard being a Hamilton man.

If the claims of George W. Gesner, of New York City, in reference to the alloy of iron and hydrogen which he is understood to have produced, are true, or even partly true, then his invention is certain to prove of the utmost importance. The frequent presence of hydrogen in iron and steel has been known, but its influence has not been understood. Chemically speaking, hydrogen is a metal, although it commonly exists in the vapor form, just as the metal mercury ordinarily exists in the liquid form. There is no reason known why there should not be an alloy possible between the two metals, iron and hydrogen, nor is there any reason why the alloy should not possess qualities totally different from those of either of the constituents. Mr. Gesner only succeeded in securing a patent (which is referred to in another column) after submission to the Patent Office of specimens of his alloy, and it is to be presumed that these specimens substantiated, to a certain extent his claims, which are principally that the alloy possesses remarkable properties in resisting oxidation and corrosion, being unaffected by even sulphuric acid or aqua regia. On the other hand it is claimed it is nearly as strong as iron, and

can be cast, forged and worked with tools. Iron has rightfully been called the most valuable of metals, but it has one very, very bad fault,—it rusts on the slightest provocation. An alloy, produced at a moderate cost, which would be as good as iron and yet not rust, would be worth for structural and other purposes, very much more than iron. The word iron is of course used to include steel. The demonstration of the value of Gesner's invention, if such demonstration is possible, should be watched with the greatest interest.—Tin and Terne.

A few days ago a general meeting of the Montreal Builders Exchange was held, at which the question of the custom now becoming common with public companies and institutions of employing foreign architects and contractors was discussed. It was felt that great injustice was being done resident architects and contractors, as there is no necessity for such a practice, and it was considered most unfair that local men should be put in competition with aliens and non-residents, who are free of the burdens of citizenship, and especially in view of the fact that according to the laws of the Province of Quebec, local contractors are held responsible for ten years for the integrity of the work they perform, while non-residents and foreigners escape such responsibility. As a result of the meeting the following proceeding was had:—

Whereas according to a practice of recent introduction both on the part of some architects and proprietors, and especially of public companies, of bringing in aliens and non-residents for the carrying out of work in the building line that our own builders and contractors are fully competent to execute. Resolved that the members of the Builders' Exchange of Montreal hereby strongly and emphatically protest against the continuance of this unpatriotic, unfair and injurious practice and request all those who have the interest of our city at heart to use their influence to put a stop to what has, in the past, worked serious injury to our city and citizens; especially is such action desirable in view of the fact that the contractors in the Province of Quebec have to carry responsibilities for a length of time, not called for in any other country that we know of, and which necessarily cannot be enforced against aliens.

The business end of The Toronto Globe is in strong contrast with its editorial utterances. A few days ago, discussing the outlook of the dry goods trade, its market reporter said:—

A feature in the market this week is the offering here of some very fine American bleached cottons. These goods were bought at slaughter prices, and after paying the duty, are offering here considerably lower than the Canadian makes of a similar line. Local dealers say the goods are of a quality superior to the Canadian cottons, and they certainly offer advantages for those in the retail trade wishing to make purchases in that line at a low price. This will not last, however, and these low-priced goods will soon be cleaned up. There is a disadvantage about stocking up with these slaughter goods, and it is a matter that retailers must settle for themselves, as to whether or not the advantage in the low price sufficiently offsets the disadvantage in carrying large stocks of such goods. When Canadian goods are bought there is no necessity for buying more of the goods than actually meet immediate requirements, so that there is no risk in having piles of soiled goods waiting for customers.

It is quite evident that in the eyes of the business end of The Globe, as it is in the eyes of the whole community, that there is a distinct disadvantage to the trade and to consumers also, in purchasing foreign goods at slaughter prices. It

should also be remembered that every piece of these Yankee goods sold in Canada displaces a similar piece of Canadian goods, and is a blow to Canadian labor.

Speaking of the deep waterway between the great lakes and the ocean, Engineer G. Y. Wisner, of Detroit, who is a member of the Deep Waterway Commission, says:—

"Conditions are arising which make it next to impossible for the Deep Waterways Commission to estimate the value to shipping of their proposed works. It would be a simple matter to make this estimate if conditions were to remain as they are at present, but we must also take into consideration the development of lake shipping which will follow the opening of a deep waterway to the sea.

"The war is the chief cause of uncertainty. I am of the opinion that our navy has come to stay, and that from now on we will be building more warships all the time. These can be built on the Great Lakes much more cheaply than on the coast, and they will be safer, as the enemy cannot reach them if war should suddenly break out.

"The development of a navy is sure to be followed by the development of a great merchant marine, and the ships for this will also be constructed on the lakes, if there is a way to get them to the ocean.

"Another thing that must be considered is that England has been getting her metals from Spain. The supply there is getting so low that the handling is expensive, and she must find another source of supply. It is expensive to get ore in Sweden, and if there is an opportunity to ship ore from the lakes to England without unloading, she will be sure to look here for her supply.

"I feel satisfied that all these changes will follow the opening of a deep water route to the Atlantic. And it is almost an impossibility for us to estimate the benefits of such a work."

The present is a propitious time to have this lake and ocean pathway business settled to the satisfaction of both the United States and Canada. The Quebec Commission are the ones to arrange it. The route lies through Canada and therefore Canada should make it a *sin qua non* that if American warships are to be built in shipyards on the great lakes, and if they and American shipping generally are to have free and full use of our canals and waterways, a *quid pro quo* must be accorded Canada in the way of free participation in the American lake and coasting trade.

As a result of the war now going on between the United States and Spain, the city of Kingston, Jamaica, W.I., is filled with refugees from Cuba, almost all of whom are well to do, and their presence there keeps trade up to the normal standard, although the rainy season and excessively hot weather prevails. Canada enjoys a portion of this prosperity through the large shipments of flour and other produce that are being made to that Island.

The Toronto Globe in its market report a few days ago regarding the conditions of the dry goods trade in this city, speaking of the woolen goods, says:—

A large order was cancelled this week with a leading house, the retailer, a man in the western part of the Province, assigning as the reason that the low price of Canadian fleece wool was likely to depress the price of woolen products and that he might be in a position later to purchase the goods for less money. There was never anything more absurd. The price of Canadian fleece wool is, it is true, a few cents lower than it was last year owing to the 12c. duty on wool shipped to the United States, but there are two reasons why the low

price of the Canadian wool cannot affect the market for Canadian woolen goods this season. In the first place very little Canadian fleece wool enters into the manufacture of Canadian woolen goods, with the exception of blankets. The goods are made largely of foreign wools and they are, it might be said in passing, of such a superior quality that they are crowding out almost altogether the French and German goods that used to meet with such a large sale in the Canadian markets. Then again the Canadian mills are busier now than they have been for many years and are filled with orders that will keep them running to their full capacity for the next five or six months. Earlier in the season they were refusing to repeat orders for delivery earlier than the middle of October; later they asked till November for all repeats, and now they positively refuse to contract for the delivery of orders placed this month till the first half of December. The mills were never firmer on prices than they are this season, so that it is extremely improbable that they will make any reduction in prices. And speaking of Canadian tweeds, The Globe says:—A fact that cannot be controverted is that the great majority of the people in Canada are now clothed with Canadian tweeds. The Canadian mills are making a very fine class of goods now, and although cotton is mixed in with the wool in many cases the goods present a fine appearance, the patterns are up-to-date and very suitable for the trade, the goods are serviceable and give good satisfaction and are altogether a credit to the manufacturers. The Canadian tweeds are now offering cheaper than ever before, and the value given for the money is the best ever offered to the trade in this line of goods. The ready-made clothing trade in Canada is continually growing and the Canadian mills are kept busy supplying the large manufacturers with the cloth.

LITERARY NOTES.

The War leads the July number of Scribner's Magazine. No one saw its beginnings under more favorable circumstances than Richard Harding Davis. As correspondent of The London Times he was accorded every privilege, and was for weeks on the flagship "New York." His account of "The First Shot of the War" and "The First Bombardment" is the graphic picture of what an eyewitness saw when the "Buena Ventura" was taken and Matanzas was bombarded. His pre-eminent faculty of making real to the imagination what he has seen was never afforded a better opportunity. How it feels to be on a great warship in action is made vivid. Snapshot photographs by Mr. Davis add to the sense of reality. "The ship seemed to work and to fight by herself;" he says, "you heard no human voice of command." Mr. Davis will write for no other magazine about the War, and his articles will be a retrospective narrative of its most dramatic features, with abundant illustrations.

Philadelphia Textile School.—We are in receipt of circular having reference to the twenty-second season of the School of Industrial Art of the Pennsylvania Museum, sent in by the Philadelphia Textile School, existing in connection with the Museum. This Textile school was organized in 1884 and represents the most important effort which has yet been made in America to organize the instruction in an art school with direct reference to its application to the actual needs of the textile industry. The circular to which reference is made is a beautiful book bountifully illustrated, with descriptions of the equipment of the school, which includes about every machine and appliance that could be found in any first-class textile mill. There are thorough courses of study observed in the school covering all branches of the trade; and large numbers of students are constantly being graduated from it and who are obtaining lucrative positions in factories not only in the United States but in other countries also. Further information regarding this institution may be had by applying to the Philadelphia Textile School, Broad and Pine Streets, Philadelphia, Penn.

The new official flag of the President of the United States is printed, for the first time correctly, on the cover of the July Ladies' Home Journal. The flag was recently adopted as the President's emblem, and henceforth will be employed to proclaim his official presence. When he is at the White House the flag will be displayed there, and wherever he may go as President of the United States it will be in evidence. Its publication in accurate color detail will be a matter of much interest, inasmuch as it will acquaint the public with the President's emblem.

CANADIAN MANUFACTURERS' ASSOCIATION.

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Chairman Tariff Committee:
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The Executive Committee meet on the second Tuesday of each month.

OFFICES
McKinnon Building,
TORONTO.
 Tel. 1274.

J. J. CASSIDY, - SECRETARY.

THE OBJECTS OF THIS ASSOCIATION ARE:

To secure by all legitimate means the aid of both Public Opinion and Governmental Policy in favor of the development of home industry and the promotion of Canadian manufacturing enterprises.

To enable those in all branches of manufacturing enterprises to act in concert, as a united body, whenever action in behalf of any particular industry, or of the whole body, is necessary.

To maintain Canada for Canadians.

Any person directly interested in any Canadian manufacturing industry is eligible for membership.

CANADIAN INDUSTRIAL LEAGUE.
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WOOLEN MANUFACTURERS' ASSOCIATION,
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W. K. McNAUGHT. A. E. KEMP.
J. J. CASSIDY.

WHAT THE ASSOCIATION ADVOCATES.

The following resolutions were passed at the Twenty-Third Annual Meeting of the Canadian Manufacturers' Association held in Toronto, April 12, 1898.

THE NATIONAL POLICY.

Whereas, from its geographical position and commercial environment the prosperity of the Dominion of Canada depends largely upon the maintenance of a fiscal policy which will foster our agricultural, mining, commercial and industrial enterprises, and which will make the interests of Canadians paramount to those of foreigners, by preventing this from being made a slaughter market for the surplus products of foreign countries; and

Whereas, the observance of such policy gives confidence and stability to capital and enables our artisans to obtain wages far in excess of those which prevail in European countries, and which keeps them in the country by the payment of wages which enable them to live in comfort; and which provides a home market for many lines of agricultural products, which cannot be exported; a policy which also attracts foreign capital and inaugurates industries by inducing those who desire to participate in the benefits of our market to manufacture their products here; a policy which encourages and develops inter-provincial trade, and produces amongst the people a feeling of security, of national pride, and commercial and industrial independence, highly conducive to the welfare of the whole people, without which we can never attain to the zenith of national prosperity; and

Whereas, the revival of the mining industry in this country has given an impetus, not only to agricultural, but to many other industrial enterprises, as nearly everything used or consumed in the mining regions has to be brought from outside sources;

Therefore, be it resolved, that this Association desire to again place itself upon record, that in its opinion the prosperity of this country imperatively demands the continuance of a fixed and definite policy of protection, from the general principle of which there shall be no deviation, in order that our agricultural, mining, commercial and other industrial enterprises may participate in its general prosperity.

PREFERENTIAL TRADE.

While heartily commending the Dominion Government for their desire to confine the scope of the Preferential Tariff exclusively to the Mother Country and the British Colonies, this Association is strongly of the opinion:—

1. That our Preferential Tariff should not be extended to any colony, unless such colony accords to us a tariff preference in their market, equivalent to the discrimination allowed by us in its favor.
2. Where our minimum Preferential Tariff is applied, the minimum rate of duty thereunder should be high enough to protect existing Canadian industries from the competition of countries having lower priced labor, cheaper raw materials and capital, and whose long-established industries give them great advantages over those of Canada.
3. That although the minimum Preferential Tariff has already been extended to Great Britain without any corresponding preference to Canada, we would strongly impress upon the Dominion Government the necessity of obtaining reciprocal concessions from the Mother Country as speedily as possible.

CANADA'S COMMERCIAL AGENTS.

Following is the correct official list of Canada's Commercial Agents in Great Britain, British Possessions and foreign countries.

- J. S. Larke,** Sydney, N.S.W., agent for Australasia.
- G. Eustace Burke,** Kingston, Jamaica, agent for Jamaica.
- Robert Bryson,** St. John, Antigua, agent for Antigua, Montserrat and Dominica.
- S. L. Horsford,** St. Kitts, agent for St. Kitts, Nevis and Virgin Islands.
- Edgar Tripp,** Port of Spain, Trinidad, agent for Trinidad and Tobago.
- C. E. Sontum,** Christiania, Norway, agent for Sweden and Denmark.
- D. M. Ronnie,** Buenos Ayres, Argentine Republic, agent for Argentine Republic and Uruguay.

In addition to their other duties, the undermentioned will answer inquiries relative to trade matters, and their services are available in furthering the interests of Canadian traders.

- J. G. Colmer,** 17 Victoria Street, London, S.W., England.
- Thomas Moffat,** 16 Church Street; Cape Town, South Africa.
- G. H. Mitchell,** 15 Water Street, Liverpool, England.
- H. W. Murray,** 40 St. Enoch Square, Glasgow, Scotland.
- Harrison Watson,** Curator Imperial Institute, London, England.

THE HOME MARKET.

The Halifax, N.S. Chronicle, commenting on a statement of The New York Mail and Express to the effect that American exports are rapidly increasing, orders for battleships coming from Russia, China and Japan, while American rails and locomotives are in great demand in China, Australia and South Africa, and American bicycles, sewing machines, knitting machines, agricultural implements, printing presses and linotypes are being sold extensively in every civilized land, says:—"Our New York contemporary does not see that it is building up a very effective argument against protection. If American manufacturers are able to compete successfully with those of other countries in neutral markets, why do they need such enormous protection as is given them by the Dingley tariff to enable them to control the home market? If they can sell at a profit in neutral markets it should be clear to every intelligent man in the United States that they must be making enormous profits out of consumers in the home

market. If the picture drawn by The Mail and Express is a correct one, then the manufacturers of the United States need protection no longer, and the Dingley tariff should be scaled down to the actual requirements of revenue."

Commenting upon which The Toronto World says that the Chronicle cannot see that a high tariff is of any advantage to manufacturers unless it enables them to sell at high prices, but in fact many lines of goods are now sold as cheaply in the United States as in England or Germany, yet it is a very great advantage to the American manufacturers not to have to share their home market with the British and German manufacturers. If goods manufactured in Great Britain, Germany and other countries could be sold in the United States on equal terms with American goods, even if the prices remained exactly the same, the American manufacturers would lose immensely, because the trade which they now monopolize would have to be divided with foreigners. The larger the quantity of goods turned out by a factory the cheaper they can be made, and American manufacturers can afford to sell in foreign lands at a very low profit when they are secure against foreign competition at home.

CANADIAN SHIPBUILDING.

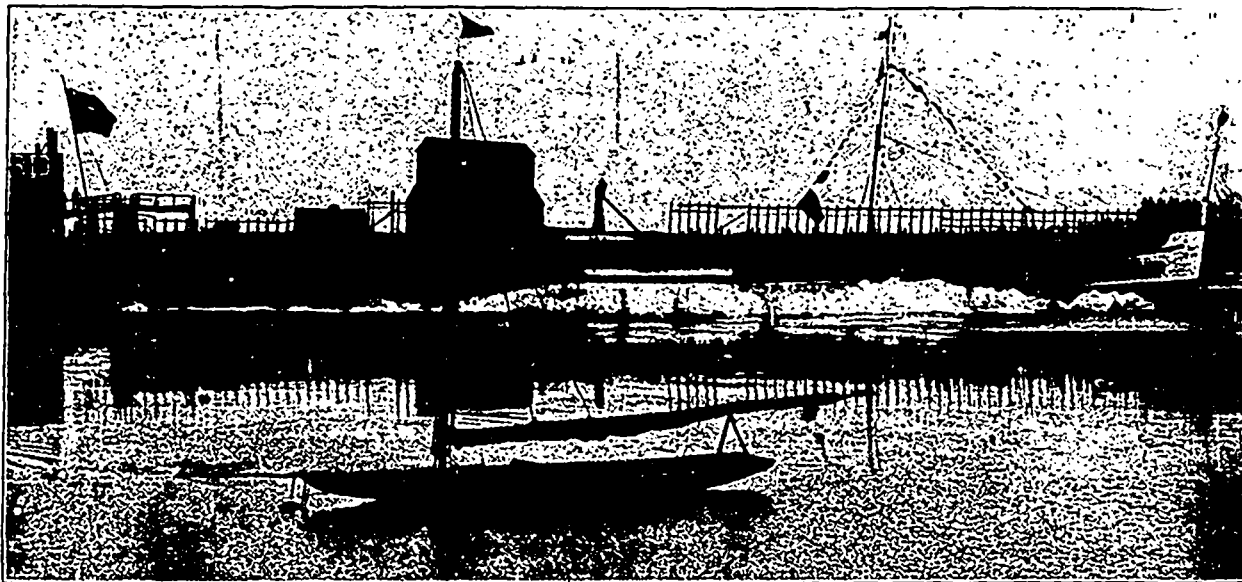
One of the most important events, from an industrial standpoint, that has occurred in Toronto, perhaps in Canada, for many years, was the launching on June 21st of the steamer Toronto, from the shipbuilding yards of the Bertram Engine Works Company, this city. A very fine photogravure of the Toronto as she appeared at the moment of her reaching the water, and a general description of the beautiful ship is given elsewhere.

It has always been strange that the shipbuilding industry, particularly the construction of such vessels as the Toronto, has never assumed the proportions in Ontario, or in Canada that the trade and commerce of the country seemed to demand. We know that many creditable productions of marine architecture have been put afloat in this and other provinces, but they were not of the size and character of that here alluded to. Some of the most useful and efficient steel cruisers for the Dominion fisheries and revenue service now in use were built in Ontario yards, as were some of our popular passenger steamers. Ontario artisans have produced some of the most beautiful and speedy yachts that sail on our inland waters, and many of the large freight carriers and sailing vessels that traverse the great lakes are the handiwork of Canadian skill. We know, too, that one of the greatest and most flourishing industries of Quebec in past years was the construction of wooden ships, in which line the Maritime Provinces were, and are now, to some extent, active competitors. But wooden

ships are rapidly giving place to ships constructed of steel and iron, even as the use of wind as a motive power is giving way to steam; and a remarkable feature of the situation is that while Canada at one time was highly and justly celebrated for the wooden sailing ships she put afloat, she has not kept pace with the improvements and changes that are characterizing the industry in other countries.

One reason given for this anomalous condition is that, even under the policy of tariff protection, no adequate provision was made for the encouragement of the steel shipbuilding industry; that we had no plants sufficiently well equipped for the construction of modern steel vessels, and that it would be cheaper to have our requirements supplied from abroad than at home. But these arguments are most successfully answered and controverted by the putting afloat of the steamer Toronto; and Mr. Bertram, the head of the company who constructed her, is to be commended in proving that the old arguments were wrong.

What is needed now is that other Canadian business men who desire to invest their capital in steamers, do as the Richelieu and Ontario Navigation Company have done, and have their vessels built in Canada. Let them constantly bear in mind that there are enterprising concerns here such as the Bertram Engine Works Company, who have the plant, the capital, and the technical ability to produce as excellent ships as can be built in any other country. They have proved themselves to be Captains of Canadian Industry, of whom the country may well be proud.



THE RICHELIEU AND ONTARIO NAVIGATION COMPANY'S STEAMER TORONTO.

The side wheel passenger steel steamer Toronto, built by the Bertram Engine Works Company, Toronto, from general designs by A. Angstrom, Esq., marine architect, for the Richelieu and Ontario Navigation Company, to ply on their route between Toronto and Montreal. Launched June 21, 1898. The builders have supplied us with the following general data concerning this beautiful vessel:

HULL:—Is constructed of open hearth steel and of the following dimensions:—Length over all, 278 feet; length, keel, 270 feet; beam, moulded, 36 feet; beam, over guards, 62 feet; depth, moulded, 14 feet.

ENGINES:—Of the Triple Expansion, Inclined Jet-Condensing Type; cylinders 28, 44 and 74 inches by 72 inch stroke. The feathering paddle wheels are 22 feet outside diameter and 10 feet 3 in. face of bucket. The air and feed pumps are attached to and worked from main engine.

BOILERS:—Four in number, of the Return Tubular Type, 11 feet diameter, and 11 feet 6 inches long over heads. Each boiler has two 41 1/2 inch, outside diameter, Morison Suspension Furnaces. The boilers are fitted with the Howden Hot Draft and are designed for a working pressure of 175 lbs.

CABINS:—Spacious and elegant passenger accommodations are provided. One hundred and forty state rooms, including four parlor rooms, and large Pullman sleeping cabin, furnish sleeping accommodation for 430 passengers.

The dining room placed on an upper deck has a seating capacity for over 100 persons.

The interior finish and decorations of the spacious halls and deck saloons are most elaborately executed, the main and gallery saloons being finished in Francis I. Renaissance, with the dining room in Louis XVI.

The entrance hall is decorated in Neo-Grec with modern Renaissance details, with the smoking room in Oriental treatment.

The refreshment and writing rooms will be in Elizabethan paneling of prima vera, natural wood finish. The main staircases are in Honduras mahogany with wrought metal balustrades in hammered leaf work finished antique bronze, the main newels carrying bronze figures supporting electric torches. A 700 light Electric Light Plant, with ornamental Electroliers in cabins, furnishes light throughout Steamer. All rooms and apartments particularly subjected to heat are provided with a system of artificial ventilation.

CUSTOMS UNDERVALUATION.

The American Economist cites an instance of one of the most notable victories yet achieved in the stubborn warfare against undervaluation which the customs authorities of the Port of New York have been waging for several months past is that recently gained through the decision of the Reappraisal Board of the General Appraisers. This decision is as follows:

"Cotton lace curtains, lace and embroidered wearing apparel (partly made), and embroidered articles, from Alder & Rappoldt, St. Gall, January 12 and 26, 1898, entered at various prices, advanced up to 138 per cent."

The importance of this brief dictum of the judicial experts of the General Board is set forth by the New York Commercial as follows:

"It is one of the most important decisions ever rendered by the Board, in that it practically affects immense interests among importers of such goods from St. Gall, and supports the contention of the Appraiser of the port that the goods were grossly undervalued in the invoices. The decision is also a big victory for the Government, since it strikes a fatal blow at the consignment abuse, said to have been practiced to a great extent in this particular line of goods, by which the Treasury has unquestionably been cheated of an enormous revenue."

The merits of the case against the importers of St. Gall embroideries had already been stated in the Economist, and it congratulates the Government, the honest importers who have been so long at a commercial disadvantage in the effort to compete with undervalued consignments, and the local customs officials who have carried on the fight in spite of the worst that misrepresentation and fraud could do to defeat their efforts to enforce the laws and collect the revenues.

The Commercial, commenting upon the value of the victory, says:

"So thoroughly convinced were Appraiser Wakeman and his assistants that flagrant undervaluation was being practiced by the St. Gall-New York firms in the invoices of their goods that the former appeared before the Reappraisal Board of General Appraisers—an unusual proceeding—and submitted such strong evidence in the cases that all doubt as to undervaluation was removed. The extent of that undervaluation can easily be seen from the advance made by the reappraising officers over the invoice value."

It is not to be supposed that undervaluation ever occurs in Canada—oh, no, at least it is never mentioned publicly.

A new departure in the Canadian post-office, as well as a new opportunity for the use of the bicycle, will result by the special-delivery system which the Canadian Government has resolved to introduce, beginning on the first of July in all cities where a postal delivery is in force. By affixing a special ten-cent stamp to a letter, in addition to the postage, delivery of the letter within the hour of the arrival of the mail is guaranteed by the department. It is understood that the work will be performed, wherever practicable, by the agency of the wheel.

A special meeting of the Canadian Packers' Association was held in Toronto a few days ago, Mr. W. A. Ferguson, of Delhi, Ont., occupying the chair. All parts of the Province of Ontario were represented. The purpose of the meeting was to hear facts about the growing crops, and was not called with the idea of making an advance in any special line, as there had been no marked change which would warrant such an increase. Better prices are anticipated, however, as there is a growing expansion in the trade of the country. The canners present were of the opinion that the Spanish-American war would open up a larger field for the Canadian growers, as it is estimated that the American army consumes a hundred thousand cases of tomatoes, peas and corn a month.

The effects of the reduction of the United States tariff on diamonds in the Dingley law are shown in the heavy increase in importations. At the port of New York, where nearly all the importations of diamonds are received, the imports from January 1 to April 30, 1898, were \$2,085,435, against \$241,175 for the same period in 1897 under the Wilson tariff. Two very desirable results are thereby secured: First, a heavy increase in the revenues of the Government paid entirely by people who can best afford to pay; second, a large decrease, if not a total disappearance, of diamond smuggling.

New South Wales's failure to vote for Australian federation is to be deplored on every ground. It was due to apathy, no doubt, and not to aversion, since there was a majority, if not a sufficient majority, for the proposal. But till Australia federates there can be no effective organization for defence. "Nothing great can be achieved if she has seven war offices with seven armies and seven navies. Endless confusion and delay in the hour of action must result from such a division of command." Thus the Melbourne "Argus"; and every word is true. Not to vote for federation in this hour of Imperial danger is to fiddle while Rome is burning. No question is more urgent or more serious.—London Daily Mail.

An outcry is being raised in England against the importation of Cape hides, which are said to be effected with rinderpest germs. It is claimed that many of the animals suffering from the disease were killed by the Kafirs, who salted and buried the hides. These hides have since been marketed, and are finding their way to English ports and into English tanneries. Fears are expressed that their importation may bring serious results in the introduction of this cattle plague into England. As some of these hides are finding their way to other countries, it becomes those interested to keep a watchful eye on the Cape product.

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Metallic Roofing Co., Limited

1181 King St. West, Toronto.

"The wagon is a funny combination," said the wag. "It is composed, among other things, of a lot of fellows who are always tired. Nobody ever hears of a wagon having its leg pulled, but its tongue is pulled often. It has a bed, which it carries around but never gets in it. Wagons are indispensable in war. If the soldiers have no guns, the axle do, and when they get thirsty they can go to the springs under the seat.

The Exporters' Association of America, an organization which devotes its attention to foreign trade in the interest of American manufacturers, has recently made a report concerning the agricultural, implement and machinery trade of Norway. The organization has ascertained whence Norwegian merchants derive their supplies, and the amount of import trade in these goods. Every important harvesting machine manufacturer in the United States is represented in the markets of Norway and also several manufacturers of plow goods. The annual importations, according to the latest available statistics, amount to \$204,567, and consist mainly of reapers, mowers, plows, harrows and various other agricultural machines. There is no import duty on agricultural machines, with the exception of those operated by horse-power, on which is imposed a duty of 54 cents per two hundred pounds. The large importers are usually granted a credit of three months, while farmers are given three to six months in which to pay for their purchases. The importations are made from well-known exporting points, those from America going via New York.

United States Ambassador Hitchcock writes to his Government from St. Petersburg, Russia, as follows: An order has just been sent to the Baldwin Locomotive Works, Philadelphia, for sixty-five locomotives for the Manchurian Rail-

way, making a total of eighty Baldwins ordered for the Manchurian Railway within the last nine weeks, and a grand total of one hundred and thirty-eight Baldwins sold to Russian railways within the last six months. I am also pleased to report that the Imperial Government has awarded the Westinghouse Company a contract amounting to between \$2,000,000 and \$3,000,000 for the equipment of the rolling stock of its railways with Westinghouse air brakes, and that this contract will probably be duplicated in the near future.

Buffalo is by no means destined to remain the gateway of the grain movement from the North-West. This year there is a very great diversion to Canadian routes of the grain shipped from Fort William, Duluth and Chicago. From the two latter shipping points the Chicago, Duluth and Parry Sound line of boats are carrying corn and wheat to the elevator at Parry Sound. The upper lake boats running in connection with the Grand Trunk Railway carry wheat and corn to the elevator at Midland. By the Canadian Pacific Railway Company's vessels grain is carried to Owen Sound. Other lake carriers, as the Georgian Bay and Lake Superior Steamboat Line, bring down wheat and corn from the western ports to the various terminal elevators on Georgian Bay and Lake Huron. But the three Georgian Bay ports—Midland, Parry Sound and Owen Sound—are the main gateways. From the first the Grand Trunk Railway, from the second the Ottawa, Arnprior and Parry Sound Railway, and from the third the Canadian Pacific Railway, carry the grain onward across Ontario to tidewater and the ocean steamers at Montreal. The quantity of grain going from the North-Western States by these routes is this year enormous. This in part explains the heavy earnings of the railway companies.—Mail and Empire.

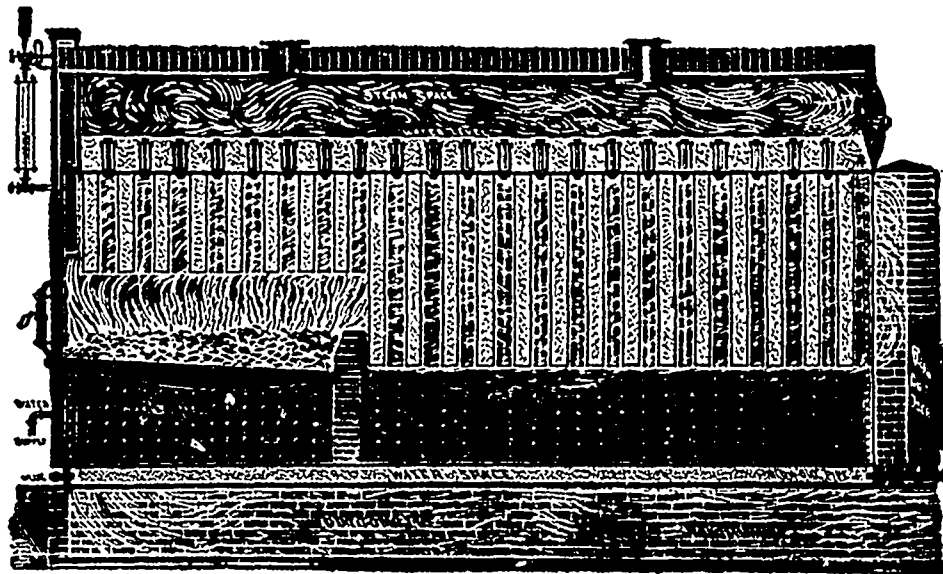
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CAPTAINS OF INDUSTRY.

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

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

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

The Windsor Furniture Manufacturing Co., Windsor, N.S., have rebuilt their factory. The machinery was furnished by the Goldie & McCulloch Co., Galt, Ont., and the McGregor, Gourlay Co. of same place. The brass door fittings are from the Peterborough Hardware Co., and it is roofed with metal shingles from the Metallic Roofing Co., Toronto.

Extensive improvements are being made in the interior of Carlton Street Methodist church, Toronto.

The Canada Milk Condensing Co., Antigonish, N.S., are running full time and turning out very nice goods.

The Ossekeag Stamping Co., of Hampton, N.B., are doing good business at their new factory.

The Londonderry Iron Company will supply the iron for roofing the new Truro Condensed Milk and Canning factory, Truro, N.S.

Jas. Baird, Esq., who recently purchased the Chignecto Colliery from the Londonderry Iron Co. has gone to Great Britain in an effort to secure capital for a thorough development of the property.

The Toronto Rubber Co.'s factory at Hull, Que., when completed, will cost \$100,000.

The Onaping Gold Mining Co. has been incorporated in Ontario with a capital stock of \$490,000.

The Cobb Gold Mining Co., of Ontario, has been incorporated with a capital stock of \$1,500,000.

Hull City Council, Hull, Que., has under consideration a proposal from the E. B. Eddy Company to establish connections with the company's water system. The arrangement submitted would require the city to furnish and lay a six inch water pipe, supplied with two hydrants and hose connections, the pipe to run from the trunk pipe through the company's sulphite mill yard; also a ten inch water pipe to the company's head office. As to rights, the company would be entitled to use the hydrants free of charge whenever required for fire purposes. On its part the company would agree to furnish what water it could spare, at the cost of supplying it, whenever the pumping machines of the city get out of order.

St. Patrick's church, Ottawa, is being remodelled, and other improvements are contemplated, consisting of a main altar in marble, forty colored windows, and some repairs of the organ and heating apparatus. L. Z. Gauthier, Montreal, is architect.

The Western abattoir, Montreal, which was destroyed by fire recently will be rebuilt.

C. J. Brown, City Clerk, Winnipeg, Man., will receive tenders for the supply of cast iron pipe, specials, hydrants, etc.

A new railway bridge will be built by the Grand Trunk Railway near Orillia, Ont.

The Massey-Harris Co. will make a large addition to their factory at Brantford, Ont.

A pork-packing factory will be established at St. John, N.B. The capital stock of the company is \$100,000.

Last year Canada exported \$620,000 worth of cotton to China. Nova Scotia exported in all \$231,000 worth.

It is said that a syndicate has been formed with abundant capital to erect a large first class hotel fronting on King Street East, Toronto, to cost \$750,000.

The Hamilton Acetylene Gas Machine Co., Hamilton, Ont., are in receipt of a letter from Mr. F. R. Bennett, Thessalon, Ont., in which he says: "The acetylene gas machine I purchased from you is giving the best satisfaction. I use fifteen lights that cost me only seven cents per hour, and this is cheaper than coal oil. It is a beautiful light." They also have a letter from Mr. S. B. Anderson, Bothwell, Ont., in which he says: "I have given the gas machine I bought from you a thorough trial and find it first class in every respect, requiring very little care to keep it in running order. It never produces more gas than is required, consequently there is no waste of gas when not in use. It burns with a perfectly steady and regular light."

The Laurentide Pulp Company of Grand Mere, on the St. Maurice River, north of Three Rivers, Que., has its mills almost ready to be put in operation. This concern is one of the largest paper mills in Quebec, and intends to develop its energies to the making of pulp and paper for export to England and the United States almost exclusively. The capacity of the mill will be as follows: Forty tons daily of "news" paper, 30 tons of cardboard, 75 tons of sulphite pulp and 100 tons daily of ground pulp. The company has timber limits of 2,000 square miles, and the motive power is supplied by the falls on the river without the necessity of building a dam. The water is conveyed from the falls by means of an immense flume, which will develop 15,000 horsepower. The company possesses shipping facilities right at their doors, as large ocean going vessels can land at Three Rivers.

The Royal Agricultural and Industrial Society will erect additional exhibition buildings at New Westminster, B.C.

The new municipal building for Kaslo, B.C., will be two stories and stone basement with hot air heating, improved plumbing, etc. Cost \$8,300. The plans were drawn by Messrs. Ewart & Carrie, Nelson, B.C.

An addition is to be made to the Royal Victoria Hospital, Montreal, which will be five stories in height, 49 by 30 feet, and similar in style and material to the rest of the building.

INGERSOLL-SERGEANT Rock Drills

FOR MINES, TUNNELS AND QUARRIES

PISTON INLET **Air Compressors** STRAIGHT LINE
DUPLIX and
COMPOUND.

FOR ALL DUTIES.

... COMPLETE MINE EQUIPMENT ...

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

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

The Gillies Bros. Company's new mill at Braeside, Ont., is almost completed. The machinery is of the most improved and substantial character. The equipment consists of one circular, one set of cutters, edgers, splitter, drag saw, and six shingle machines. The shingle mill will have a capacity of 175,000 a day.

The Sherwin-Williams Paint Co., Montreal, have increased their sales over 400 per cent in the last two years.

The prospects at Acadia Mines are considerably brighter than a few months ago. The Londonderry Iron Co., the chief industry there, have lately signed several quite important contracts, which will give employment to a good number of their former employees. Some nine of the coke ovens are now in operation. The machine shop is running regularly, and also the foundry and the pipe shop is now starting in on a good summer's work.—Maritime Merchant.

The Shediac Boot & Shoe Company, of Shediac, N.B., employs from eighty to ninety hands and pays out about \$350 in wages every week.

The surveying of a route for the proposed railroad from Amherst to the North Shore Truemanville and Chapman Settlement, N.S., has been decided upon by the Amherst and Eastern Railway Co.

At Listowel, Ont., Mr. W. E. Binning, architect, is preparing plans for a Sunday School building in connection with the Presbyterian church at Chesley, the building to be 72x30 feet, so circular in form, with transepts, gallery, etc., probable cost \$3,500.

The Chicoutimi Pulp Co., Quebec, Que., shipped 2,200 tons of pulp via the steamer Louisiana, of Glasgow, recently. This is claimed to be the first full cargo of pulp ever exported from Canada.

The plans for a new Methodist church in Chesley, Ont., are being modified, tenders opened being over the amount appropriated, \$6,500.

The Rat Portage Lumber Co. mill at Rat Portage, Ont., was destroyed by fire June 22nd.

The Oxbow Milling Co.'s flour mill, at Oxbow, N.W.T., was destroyed by fire June 1st.

Tenders are being invited for a bridge across the Boyne river, at Carman, Man.

Messrs. Cole & Gable, are contemplating establishing a flour mill at Dauphin, Man.

Tenders are called for the mason work of a Methodist church to be built at Brandon, Man.

The Brandon Machine Works Co., Brandon, Man., are applying for incorporation with a capital stock of \$40,000.

Stuart & Harper, Winnipeg, Man., will supply and install a 150 light electric lighting plant in J. Y. Griffin & Co.'s packing house, Winnipeg, Man.

The machine shop of Burley & Gallighan, Rat Portage, Ont., was burned June 14th.

A saw mill has been started at Otter Tail, B.C., by J. H. Nelson.

The business of A. Kingdon has been taken over by the Lake of the Woods Brewing Co., Rat Portage, Ont.

John McLeary's saw and shingle mill, Bristol Ridge, Que., was destroyed by fire recently.

The Gas & Water Co.'s building, Sherbrooke, Que., was destroyed by fire June 16th.

The Brandon Machine Works Co., Brandon, Man., are applying for incorporation with a capital stock of \$40,000.

Tenders are asked in London, Ont., for a new cigar factory for Fraser & Stirton.

The Nova Scotia Steel Co., New Glasgow, N.S., recently sold about 70,000 tons of iron ore from Newfoundland to a German furnace company.

The Wahnapiatae Gold Fields Co. has been incorporated with a capital stock of \$1,250,000.

T. A. Code, Perth, Ont., is enlarging his woollen mills at that place.

The Berlin Felt Boot factory, Berlin, Ont., will have two additions made to it immediately.

Messrs. Gordon & Phillips, Chatham, Ont., will establish a woollen mill, to be lighted by electricity, at Tweed, Ont.

The Roland Farmer's Elevator Co., Winnipeg, Man., has been incorporated with a capital stock of \$12,000.

A Roman Catholic Church will be erected in Berlin, Ont., this fall, to cost \$10,000. A. W. Holmes is the architect.

Arrangements have been made by Mr. A. M. Peterson, Colborne, Ont., to use the Cleveland cylinder for engines on the Government railway system.

Messrs. H. A. Lozier & Co., Toronto, Ont., received an order recently for 500 Cleveland bicycles for the foreign trade.

The saw mill of Mr. Alfred McDonald, Point St. Charles, on Little Lake, near Peterborough, Ont., was destroyed by fire June 24th.

The cheese factory of Mr. R. Arnott, Peterboro, Ont., was burned June 18th.

Tenders for the erection of a large pork-packing establishment in Harriston, Ont., will be invited.

THE Defiance Machine Works,

DEFIANCE, OHIO, U.S.A.

Established 1850

INVENTORS AND BUILDERS OF UP-TO-DATE
NINETEENTH CENTURY

AUTOMATIC Wood-Working Machinery

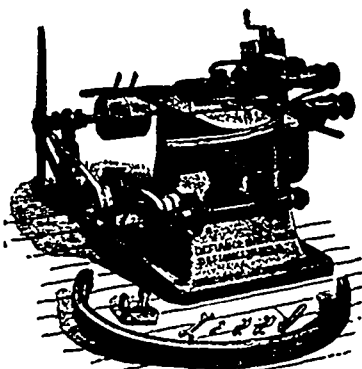
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WAGON AND CARRIAGE WHEELS, HUBS, SPOKES, RIMS
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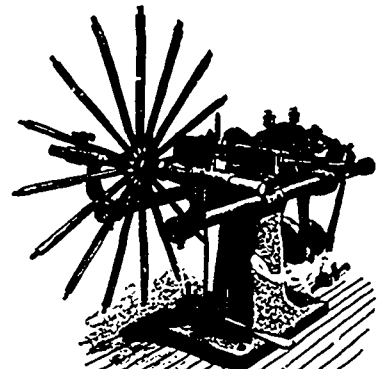
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Ground, Washed & Flour

WHEELS of highest
quality for general
& special purposes.

Grinding Machinery.



The State Line Tale Co., Chattanooga, Tenn., who are wise in that they advertise their business in these pages, and who manufacture the Acme acetylene gas burner, inform us that they now have a very gratifyingly large trade in these burners in Canada as well as in the United States. We are not aware that any concern in Canada manufactures burners for acetylene gas.

Messrs. Dick, Ridout & Co., Toronto, who have long been in business as manufacturers of jute and other bags, etc., have purchased the entire plant of the recent Cobourg Woolen Company, at Cobourg, Ont., and are now busily employed in overhauling, repairing, refitting, etc., the same, and will soon have their factory in operation. The factory will be equipped with recent and up-to-date machinery. The concern is a 7-sets mill driven by steam of 200 horse power, and will produce woolen goods as before. Messrs. Dick, Ridout & Co. will, in the near future, remove their bag manufacturing plant from Toronto to Cobourg, when they will not only make bags, but also the cloth of which the bags are made, also horse blankets and other specialties. The head-offices, warehouses, etc., will remain in Toronto.

The C. Turnbull Co., Galt, Ont., have let the contract of their new building to Kribs & Co., Hespeler, Ont.

Mr. H. Swackhamer, Acton, Ont., is organizing a joint stock company to manufacture sole leather, at Guelph, Ont.

Messrs. M. B. Perinc & Co., Doon, Ont., are making additions to their twine mills.

Messrs. Hamolin & Ayers, Lachute Mills, Que., inform us that they are so constantly rushed in their woolen business that, to enable them to meet the demands of their trade they will erect and equip an addition to their woolen mills that will enable them to more than double their present output. The new mill will be up-to-date in every respect, and equipped with the most modern and approved machinery.

The Richmond Aqueduct Co., Richmond, Que., has been incorporated with a capital stock of \$100,000 to furnish water for domestic and other purposes.

Messrs. T. Profontaine & Co., Montreal, have been incorporated with a capital stock of \$50,000 to manufacture lumber and timber.

La Compagnie d'Exposition Agricole, Industrielle regionale de Quebec, has been incorporated with a capital stock of \$50,000 at Saint Malo, Que., to hold exhibitions of agricultural, industrial or other products, at or near Quebec.

F. L. Fowke, Oshawa, Ont., is asking for tenders for two grain elevators to be built at that place.

The Maritime Sulphite Fibre Co., Chatham, N.B., are prepared to contract for their supply of pulp wood for next season.

Wray & Hawkshaw's flour mill at Lucan, Ont., was destroyed by fire June 17th.

A fine piano action factory is being built by the Otto Rigel Co. on King street west, Toronto, covering an area of 100x42 feet, at a cost of about \$10,000.

The Ontario Rolling Mills Co., Hamilton, Ont., were to have started up their new works on June 23th.

The Red Lion Hotel, King street west, Toronto, will be enlarged at a cost of about \$2,000.

The executors of the estate of the late John Ferguson have retired from the firm of Ferguson & Patinson, of Preston, Ont. The business will be continued under the name, style and firm of Geo. Patinson & Co.

In order to live up to the provisions of their Canadian patent the Carborundum Company of Niagara Falls have commenced the production of carborundum on the Canadian side at the Falls. Their new factory was not in readiness to start owing to the non-arrival of the electrical apparatus, but the company established a temporary furnace in the power house of the Niagara Falls Park & River Railway, and there made the first carborundum to be produced in the Dominion of Canada. This fully complies with the letter and the spirit of the Canadian patent law.—The Iron Age.

The Electric Co. of St. Johns, Nfld., are increasing their plant and have ordered a 150 horse power tandem compound engine from the Robb Engineering Co., Amherst, N.S.

THE CANADIAN RAND DRILL CO., have moved their General Sales Office, controlling Canadian Territory, to 18 Victoria Square, Montreal, in order to facilitate their business which has been rapidly increasing during the last two years. They have established an office at 88 York St., Toronto, one in Halifax, one in Rat Portage in charge of Mr. George J. Ross, and one in Rossland in charge of Mr. Mondenhall. They are as usual manufacturing largely along the lines of duplex construction which they have advocated from the first. A duplex compressor costs a little more in the first place than a straight line machine but the difference in economy of the two offsets the difference in price. Their Toronto office has lately contracted with the Canadian Copper Co., the largest nickel producers of Canada, for a very large mining plant. The Canadian Gold Fields of Marmora, they have also just equipped with a large Corliss Compressor.

Through the Halifax office the Interoceanic Coal Mining Co., of Westville are also installing one of their high class machines for pumping. Duplex construction permits of an economical arrangement of cylinders in proper ratio to the steam pressure at hand, and to the air pressure required.

The Rat Portage office last year installed from start to finish a large plant at the Sultana mine, a large plant at the Foley mine, and also a large plant at the Mikado. They are now putting in machinery at the Cameron Islands mine, and also a large plant for the Boulder Gold Mining Co., which is controlled by Mr. Leclair and other American capitalists.

The Rossland branch has rather the advantage of the others in that it has a large warehouse at its back and is able to fill orders from stock. They have lately contracted with the Knob Hill mine for a large power plant and two mining plants, the object being for the second mining plant being supplied with power from the one compressor located at Knob Hill.

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ROLL
FLOUR
GROUND

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The Anglo-Sicilian Sulphur Co.,
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WIRE MANUFACTURERS
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Wire Screens for Every Class of Material.

Perforated Metal of Steel, Copper, Brass, Zinc for all purposes.

Special Attention given to Miner's Requirements.

The Luxfer Prism Company, Toronto, have opened up agencies in Victoria and Vancouver, B.C. Mr. F. W. Barrett, Sec. Treasurer of the Company, has just returned from a business trip to the coast, and reports a most promising outlook for trade in British Columbia. In Vancouver, especially, a great many commercial buildings are in course of erection, and Luxfer prisms are to be a feature in most of them. The new business opened up in the West, in addition to the rapidly increasing trade in the East, necessitates increased facilities for manufacture. To meet this demand, the company have just added to their plant, so as to have three times their previous capacity. They have installed an additional dynamo, built by the W. A. Johnson Co., Toronto, of

2,000 amperes capacity. They also have three electrolytic tanks, containing nearly 1,500 cubic feet of bath, and these baths carry over 12,000 pounds sulphate copper in solution, making probably the largest electrolytic plant in Canada. This plant is used for electro glazing of all kinds of glass, under the patents held by the Luxfer Prism Company.

The tender of Messrs. M. Beatty & Sons, Welland, Ont., for the construction of three dredges has been accepted by the Dominion Government.

The Dominion Bridge Co., Montreal, have been awarded the contract for the iron work of the hydraulic lift lock at Ashburnham, Ont.

The J. & J. Taylor Safe Works, who have for many years been well known to the trade and who have very extensive works in Toronto, have registered their business in Montreal under the name of J. & J. Taylor.

The J. R. Booth Lumber Company, Hull, Que., are sending to Montreal every week about forty barges, each loaded on an average with 300,000 feet of lumber. This lumber is for export and will be shipped to Europe. About thirty cars a day of lumber, averaging 13,000 feet each, are being forwarded to Montreal by the same company.

Considerable interest has been awakened in Montreal in the report that there is a tendency in Great Britain to use spruce lumber in preference to Baltic white wood, for the reason that Scandinavian and Russian white woods can no longer sufficiently supply that market. The Ottawa Lumber Company have made arrangements to have sawed 75,000 spruce logs taken from their timber limits on the Rougo River, in the county of Montcalm, Que. This stock will be loaded direct on the cars and transported from thence to steamer at Montreal for shipment to the British market. The Company are also taking out a quantity of square birch and ash for export to Germany.



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For Heads of 3 Feet to 2000 Feet.

ADAPTED TO MILLING AND ALL POWER PURPOSES.

Recent tests at Holyoke enable us to guarantee:

The Largest Power ever obtained from a wheel of the same diameter. The highest speed ever obtained for the same power. The highest mean efficiency ever obtained when running from half to full gate. We guarantee also: A runner of the greatest possible strength. A gate unpaired in quickness and ease of opening and closing.

Write for pamphlet, stating your Head.

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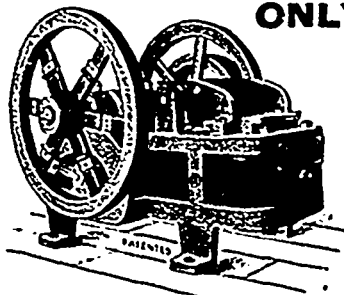
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35-inch Crocker Wheel Plant at the works of the Boston Rubber Co., St. Jerome, Que.

This Wheel is to be found in representative plants in nearly all parts of the Dominion. It possesses among its leading features

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Designs prepared for complete plants and the best development of power possible under the peculiar circumstances of head, etc., in any locality.

CIRCULARS AND PRICES ON APPLICATION.

The JENCKES MACHINE CO.,

28 LANSDOWNE STREET
SHERBROOKE, QUE.

The Lang Tanning Co., Berlin, Ont., are completing a new brick beam house. They are installing a new Wheelock engine, an electric generator, and two fifty h.p. electric motors.

Geo. Reid & Co., Toronto dealers in textile machinery, have purchased the whole of the machinery in John Routh's woolen mill at Cambellford, Ont.

The Pacific Sheet Metal Works, whose headquarters are at Fairhaven, Wash., have a branch factory at New Westminster, B.C. The plant consists of a main building 140x75 feet and a warehouse 90x45 feet. There are four sets or lines of machinery. These lines are parallel, the material starting at the north end of the factory and passing south until it is finished at the south end a complete can ready for shipment. A four tonggang press stamps out the lids, taking a sheet of tin plate at a time and producing twenty-four lids with one operation. Other machines are provided to cut out the body blank and give it a cylindrical shape. These bodies are automatically carried to the side seam soldering machine, which makes the body blank a perfect cylinder, which is next conveyed to a machine which locks on the bottom, a further machine soldering the bottom, when the cans are conveyed to the warehouse and crated ready for shipment.

The Hamilton Powder Co., Montreal, will erect a magazine in British Columbia capable of holding ten car loads of powder.

Henry Bird, Bracebridge, Ont., has recently introduced a number of mules into his woolen mill, supplied by Geo. Reid & Co., Toronto.

The Canadian Pacific Railway will build a grain elevator at Sand Point, St. John, N.B.

A bye-law will be submitted to the ratifiers of Prescott, Ont., to issue debentures for the construction of waterworks and sewerage systems there.

The Great Northern Railway Co. have asked the city of Quebec for a subsidy of \$200,000, \$50,000 to be paid on completion of the Hawkesbury bridge, \$50,000 upon the construction of workshops in that city, and \$100,000 upon the completion of the road.

Messrs. E. B. Lovv & Son, Charlottetown, P.E.I., have been making additional improvements and adding new machinery to their tannery.

There have been several parties in the vicinity of Haliburton, Ont. lately inspecting the hardwood forests of the neighborhood and making inquiries with a view to extensive operations there. The demand for hardwoods suitable for the manufacture of furniture is steadily on the increase, and in Haliburton municipality there are estimated to be about 300,000 acres of such forest land, covering nine townships. It is also proposed to erect a mill there for the purpose of cutting veneers of birch for the English market.

The Ontario Lands and Oil Co., Sarnia, have applied for incorporation to carry on the business of distilling and refining oils, etc.

The E. B. Eddy match factory in Hull, Que., is being levelled to the ground, it being the intention to erect a new structure on the site on a much larger scale, placing in it the latest kinds of labor-saving machinery.

Bourque's lumber mill at Hull, Que., was destroyed by fire June 14th.

The George E. Tuckett & Sons Co., Hamilton, Ont., will erect a new factory in which to manufacture tobacco from Canadian leaf.

The Goldie & McCulloch Co., Galt, Ont., have shipped a Wheelock engine weighing 19,440 pounds to the Montreal Belt Line Railway Co.

The Canadian Rand Drill Co., Montreal, have sold to R. O. Jennings, Fort Steele, B.C., a big power pump for use in the hydraulic mining plant, which the Jennings Co. are installing on Brewery Creek.

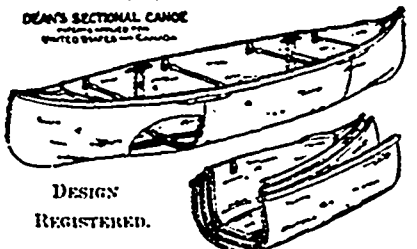
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DEAN'S Sectional Canoe.
 Patents applied for United States and Canada.



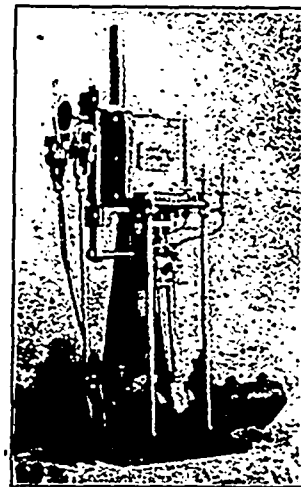
The only Klondike Canoes carried by the Express Companies. Bulkheads may be placed between the sections when bolted together, making each section a water tight compartment. The only serviceable Portable Canoe made. Write for catalogue and prices.
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PATENT FOR SALE.
 Canadian Patent No. 33178 relating to apparatus for rapidly discharging cargo from vessels, whereby the necessity of shoveling grain, coal, etc., in small quantities is avoided. Apply to
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the benefit of our long experience—any of our big catalogues—and up-to-date information on these goods on receipt of a post card.

The Pedlar Metal Roofing Co.
OSHAWA, ONT.

A brick factory is being built on Atlantic avenue, Toronto, for Messrs. John W. Lee & Co., proprietors St. David's Wine Growers Co., which will cost about \$7,000.

A three-storey stone residence is being erected on St. George street, Toronto, for Thos. W. Horn, president of the Luxfer Prism Co., which will cost about \$25,000.

MALCOLM MILLS CO.

Manufacturers of
Fancy Twist Yarns, in Worsted, Silk Cotton, etc. Polished Threads.
Silk Nolis Yarns.
Metal Threads and Tinsols.
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Manufacturers of....

OIL-CLOTHS of Every Description

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Carriage Oil-Cloth.

Enamelled Oil-Cloth,

Stair Oil-Cloth, etc.

Office and Works

Cor. St. Catharino and Parthenais Sts.,
MONTREAL, Que.

Messrs. Bickell & Wickett, tanners, Toronto, are enlarging their Front street warehouse at a cost of about \$4,000.

The Baptist tabernacle, Ingersoll, Ont., which was recently destroyed by fire is being rebuilt.

The Nova Scotia Pork Packing Co. has been incorporated with a capital stock of \$25,000, of which Hector McLean of Bridgetown, N.S., is an incorporator.

The saw mill of Mr. W. W. Doherty, Campbellton, N.B., was destroyed by fire June 24th.

The Dominion Express Co., whose head office is on King street west, Toronto, will erect a substantial brick extension thereto, to have a 65-foot frontage on Pearl street.

The Allen Mfg. Co., Toronto, are enlarging their factory by erecting a brick building 80x51 feet, five storeys high, fitted with modern appliances. They will employ nearly 1,000 hands in the manufacture of women's wear.

The Canada Oiled Clothing Co. will soon occupy their factory now being built on King street west, Toronto, the cost of which will be about \$20,000.

The Ontario Rolling Mills Co., Hamilton, Ont., are preparing to go largely into the manufacture of puddled iron, and with this object in view have contracted with the Hamilton Blast Furnace Co., that city, for some 5,000 tons of pig iron. This is a new departure with the Rolling Mills Co., who heretofore confined themselves to the manufacture of bar iron from scrap. The new buildings of the Rolling Mills Co. are rapidly being pushed to completion.

The Hamilton Bridge Co., Hamilton, Ont., are very busy and working overtime to enable them to keep abreast with their orders. They now have under construction at their works thirty spans of highway bridges and a large span for the Canadian Pacific Railway at Galt, Ont.

The Ontario Tack Co., Hamilton, Ont., are building an important addition to their works.

The Hamilton Acetylene Gas Machine Co., Hamilton, Ont., have recently installed a 150-light Cliff-Wardlaw acetylene gas machine in the Algonquin House, Stanley Island, Ont., and shipped fifteen machines to British Columbia.

Messrs. Brown, Boggs & Co., manufacturers of tinner's tools, etc., have just completed an important addition to their factory—brick, 71x42 feet, two stories, part of which will be used for offices, showroom, etc. They will install considerable new machinery, and go quite extensively into the manufacture of die work, pressed and other heavy sheet metal goods.

Clifton House at Niagara Falls, Ont., was destroyed by fire June 26th, loss estimated at \$150,000. A new hotel will be erected on the old site immediately.

Messrs. Wilson & Co., London, Ont., have taken out a building permit for a frame manufactory and office, to replace the burned lead works.

The Hamilton Coffee and Spice Co., Hamilton, Ont., will erect a four story factory.

The E. B. Eddy Co., Hull, Que., have put in their mills a new 14 inch paper machine made for them by Black & Clossen, Hamilton, Ohio.

Felts for Pulp Mills

20 years in the business—the first to make Felts in Canada; capacity 1,000 lbs. per day. All our Felts are woven endless, without a splice. Our Felts will last longer and make dryer Pulp. All up-to-date mills use our Felts. New mills, when in need, write for samples and prices.

HAMELIN & AYERS, Lachute Mills, P.Q.

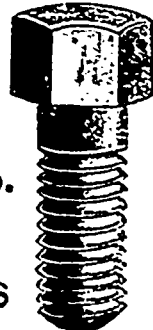
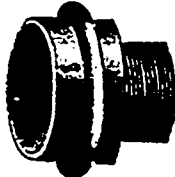
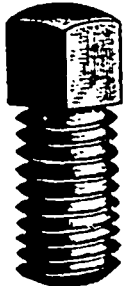
ELECTRIC REPAIR & CONTRACTING CO.

GEO. E. MATTHEWS, Manager. 621 LaGauchetiere St., MONTREAL. TEL. 2177.

COMPLETE ELECTRIC PLANTS INSTALLED.

ELECTRIC APPARATUS OF ALL KINDS REPAIRED ON THE SHORTEST NOTICE.

Armatures Rewound for all Systems. Commutators Refilled.
Write us, our Prices are reasonable and work good.



The **Diamond**
Machine & Tool Co.

TORONTO, ONT.

Manufacturers of....

Machine Screws

OF EVERY DESCRIPTION.

SEND FOR
CATALOGUE
and
PRICE LIST.

Mr. F. H. Clegrue, of the Sault Ste. Marie, Ontario, Pulp and Paper Co., and who is largely interested in the Lake Superior Power Co. and other concerns on both the Canadian and American sides of the Sault Ste. Marie Falls, makes the following statement: "The Lake Superior Power Company have added to their present investment, the power canal at Sault Ste. Marie, Ont., by the purchase of the rights of the abandoned power canal on the American side of the rapids, and have added to the property thus acquired large tracts of land in addition, sufficient to permit of the construction of a hydraulic canal of about 50,000 horse power. The plans of the construction of this canal have been completed, the specifications have been issued to contrac-

tors, and on July 1st the tenders will be opened and the contracts awarded. The constructions provided for in the specifications consist of a hydraulic canal twenty-two feet in depth and 250 feet in width, terminating in a power station constructed of stone, and extending for a distance of 1,200 feet along the water front. This will be the largest hydraulic plant yet constructed and will contain eighty electrical dynamos of 500 horse power each. The cost of this development will exceed \$3,000,000, without including the cost of the mills and factories, which will utilize the power thus created. One half of the entire power generated by the canal has been sold to the Union Carbide Company for a period of twenty-five years, and the remainder of the power will be devoted to metallurgical uses. The contracts call for the completion of all this work within three years from July 1st, and at its completion it is the intention of the Power Company to continue their operations by large additions to their work on the Canadian side. Mr. Clergue explains that it

is not the intention to begin the construction of a second water-power canal on the Canadian side of the river until the end of the work on the American side of the river is completed, which would be in about three years. The new power canal on the Canadian side will have three times the capacity of the present canal, and it will cost about \$500,000. The reduction works which will be constructed at the Canadian Soo immediately afterward will not cost less than \$1,000,000 more. One thousand men will be employed in the work of construction, and, after the canal and works are completed, the reduction works will give permanent employment at the Canadian Soo to nearly 1,000 men, most of whom will be skilled workmen, receiving higher wages than paid in almost any other industry

The Goldie-McCulloch Co., Galt, Ont., have shipped a large Wheelock engine, boiler, etc., to Messrs. McCulloch & Heriot, Souris, Man.

The E. T. Agricultural Association, Sherbrooke, Que., will erect an additional building on their grounds.

A FREE
Scholarship

in a High Grade Business College is worth winning. **ENTRANCE** and **LEAVING** Candidates for the next examination have the chance this year. By writing to the

CENTRAL BUSINESS COLLEGE
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Stating name, address, teacher, school, and which Examination, all information about competition will be cheerfully furnished. Mention this paper.

Address,
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YONGE AND CERRARD STS., TORONTO.

TORONTO MACHINE SCREW CO.

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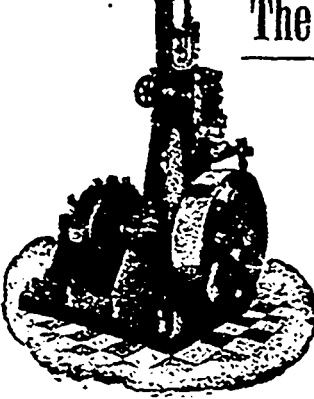



Hexagon AND Square Head Cap Screws.
Steel and Iron Set Screws.
Hanger and Plumber Bolts, Studs, etc.

Send for Price List and Discouints.

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R. C. JAMIESON & CO.
Manufacturers of
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Importers of Oils, Paints, Colors, Turpentine,
Methylated Spirits, Shellacs, Rosins,
Glues, Gold Leaf, Bronze, etc.
OFFICE—13 ST. JOHN STREET.
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MONTREAL.



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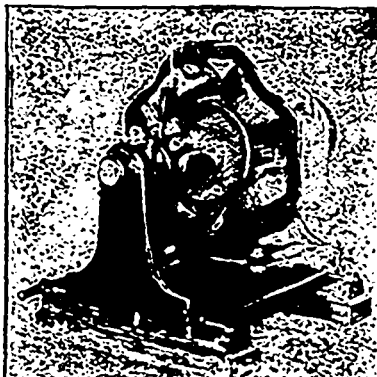
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PERFECT REGULATION,
ECONOMY,
AUTOMATIC LUBRICATION.

For Electric Lighting Mills, Factories, and other purposes where Economy, close regulation and enduring service is required.

Manufactured by..... **R. WHITELAW, Woodstock, Ont.**

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MULTIPOLAR MOTORS AND DYNAMOS

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Direct Connected Plants

FOR ISOLATED LIGHTING.

Head Office and Factory:
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Direct Current Multipolar Generators and Motors

The simplest and most efficient Line of Direct Current Machines ever designed,

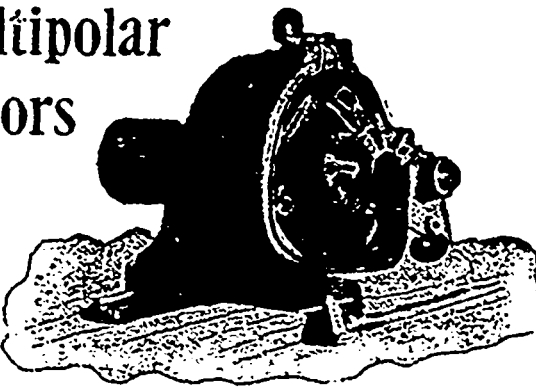
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ECO MAGNETO WATCHMAN'S ELECTRIC CLOCK.

Without Batteries.

Write for descriptive circular to

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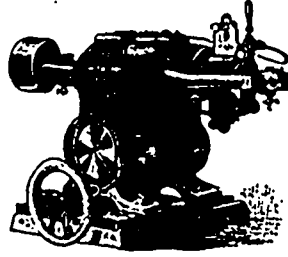
MONTREAL ELECTRIC CO.,
1898 Notre Dame Street,
(Balmoral Hotel Block).

Agents for Province of Quebec.

John Starr, Son & Co. (Limited),
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DYNAMOS AND MOTORS

½ to 100 K.W.

SLOW SPEED MOTORS

A SPECIALTY.

200 Light Dynamo, second hand, cheap.

6 H.P. Motor, second hand, cheap.

½ H.P. Motor, second hand, cheap.

and several others.

22 Adelaide Street West, - Toronto.

The Massey-Harris Co. have completed a brick implement warehouse at Carberry, Man.

Tenders are being invited by the McEachren Heating and Ventilating Co., Galt, Ont., for a stone addition to their establishment.

An arc lamp circuit for the Soulanges Canal is being installed by the Royal Electric Co., Montreal.

The Canadian General Electric Co., Toronto have received an order from the Pembroke Navigation Co., for equipping their steamer Victoria with a complete lighting plant, etc.

N. P. Tanguay, Weedon, Que., has placed an order for a Crocker Turbine complete with gate, draft-tube, etc., with the Jenckes Machine Co., Sherbooke, Que.

The Laurie Engine Co., Montreal, have recently installed a high pressure compound Corliss engine and a Kingsley water-tube boiler.

The R. J. Lovell Co., Montreal, have increased their capital stock from \$3,000 to \$40,000.

The Canadian General Electric Co., Toronto, have received an order from the Hamilton Electric Light and Power Co., for a 200 kilowatt, 250 volt multipolar generator for their power circuit.

The Toronto Rubber Shoe Manufacturing Co., Toronto, have removed from 11 Front St., West, to their new premises, 29 Front St. West.

The Canadian Pacific Railway Co. will spend \$250,000 on the enlargement of their Windsor St. depot, Montreal.

The Albert Bell Engine Works, Dunnville, Ont., are preparing a very fine and attractive exhibit of steam yacht engines, boilers, etc., to be shown at the forthcoming Toronto Fair. Mr. Bell has been preparing this exhibit for some time, and it will no doubt excite much interest among yachtsmen and others.

The Westinghouse Electric and Mfg. Co., Pittsburg, Penn., have sent us a very beautiful little book having reference to some of the electric specialties manufactured by them. It treats of "protection," not of the tariff, or any thing of that character—but protection, not in fancy, but in fact—protection from the effects of electricity when it forces itself in disagreeable fashion where and when it is not wanted. Mention is made of Wurts' lightning arresters for alternating current circuits—non-arcing metal double pole station arrester; Wurts' lightning arresters for alternating current circuits, non-arcing metal double pole line arrester; lightning arresters for high potential A. C. transmission circuits; Wurts' lightning arresters for direct current circuits—tank lightning arrester for railway service; Wurts' lightning arrester for direct circuits—single pole station arrester railway service; Wurts' lightning arresters for direct current—single pole line arrester for railway service, line and car use; choke coils multiple spark gap choke coil for street railway service, and flat spiral choke coil. Incidentally, the public are reminded of the utility of the Westinghouse polyphase system of electrical transmission, by means of which can be utilized a distant waterfall and transmit the power many miles, to some well-populated district, where the same circuits may be made to serve for heat, light and power purposes. The Tesla motors, the kind used upon the Niagara Falls circuits, are supreme in their field for the utilization of polyphase currents for power purposes.

To MANUFACTURERS.

Bar Iron, Steel, Boiler Plate, Rivets, Tubes,
Tube Expanders, Hammers, Metallic
Letters and Figures for Patterns.

RICE LEWIS & SON, (LIMITED),
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CORNHOLME MILLS, TODMORDEN, ENGLAND.

BOBBIN AND SHUTTLE MANUFACTURERS.

THIRTY PRIZE MEDALS AWARDED.

HIGH-CLASS WORKMANSHIP. SEVENTY YEARS' REPUTATION.

LARGEST BOBBIN MAKERS IN THE WORLD—(Over 1,200 Workmen).

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BRANCH ESTABLISHMENT:

ATLAS BOBBIN WORKS, GARSTON, LIVERPOOL.

OFFICE AND SHOWROOMS:

14 MARKET PLACE, MANCHESTER.

Advertise in the Canadian Manufacturer.

Plans are being prepared for an addition to the General Hospital at Chatham, Ont., to cost \$3,000. The new buildings for Ursuline Convent there cost \$8,000.

Geo. Haig & Son, Mount Albert, Ont., have purchased from Geo. Reid & Co., Toronto, some new finishing machinery for their woolen mill.

T. A. Code, Perth, Ont., is installing some finishing machines in their knitting factory, supplied by Geo. Reid & Co., Toronto.

About four miles from St. Catharines, Ont., there is in course of construction one of the finest plants for the generation of electrical energy, through the medium of water power, that has yet been attempted in Canada. The Cataract Power Company, who have undertaken the project, is composed chiefly of Hamiltonians. The power house is a substantial brick structure, situated at the foot of the mountain, and about a quarter of a mile from DeCaw Falls. In this power house, within the next few weeks will be installed two turbines, each of 1,500 horse power, and directly connected to these two large generators. When the demand increases two more units of 1,500 horse power each can be installed. From the waste-weir on the Welland Canal at Allanburg the water will be conducted for several miles across the country to the brow of the mountain, and thence to the turbines at the foot through a heavy eight-foot steel

conduit. Thus there will be a head of about 270 feet on the wheels. Electrical power will be transmitted to Hamilton at a potential of 22,000 volts. Such a pressure has never been used before in Canada, and in only a few places in the United States.

The Royal Electric Co., Montreal, are to supply 1,500 h. p. from their Chambly works, to the Dominion Cotton Co.'s factories at Montreal.

The Burgess-Powell Co., of Toronto, has been incorporated with a capital stock of \$3,000 to manufacture proprietary medicines, etc.

The Great North-Western Telegraph Co. is using the Kingsley water-tube boilers in their building in Montreal, installed by E. A. Wallberg.

The Goldie & McCulloch Co., Galt, have received an order for an engine and boiler from A. N. Bishop, Annapolis, N.S.

F. L. Wells' lumber mill at Sarnia, Ont., was destroyed by fire June 13th.

Messrs. A. Cushing & Co., St. John, N.B., have recently shipped to the Electro Marine Salts Co., at Lubec, 600,000 feet of logs and 3,000 pieces of piling.

A new post-office will be erected at Ingersoll, Ont., by the Dominion Government.

The Royal Electric Co., Montreal, have supplied C. E. Campbell, Weymouth, N.S., with a direct connected lighting plant.

Tenders are invited by Chas. Campbell for building a tower and repairing the Presbyterian Church at Richmond, Ont.

Messrs. Power & Son, Kingston, Ont., are inviting tenders for a school building for St. John's Church, Portsmouth, Ont.

The Asbestos and Asbestic Co.'s works near Danville, Que., were burned June 17th.

On June 15th fire in the buildings occupied by the Sherbrooke Yarn Mills and the Whitney Electric Co., at Sherbrooke, Que., did damage to the extent of about \$32,000.

An English company has been formed with a capital stock of a million dollars to work iron deposits at Bay de Vords, Nfld.

The Toronto Type Foundry Co. will purchase a three-storey brick structure in Winnipeg, to carry on a branch business. A complete stock of printing machines, type and supplies are being put in to meet the rapidly increasing trade.

A permit has been granted to Park, Blackwell & Co., Toronto, to erect a brick and stone packing house, four stories high, with cold storage warehouse, on the west side of Bathurst St., to cost \$30,000.

A Kingsley water-tube steam boiler plant has been installed in the Union Card and Paper Company's new works, by G. B. Burland, Montreal, supplied by E. A. Wallberg, that city.

THE - - - -

WM. HAMILTON MANUFACTURING CO., Limited

MANUFACTURERS OF

THE "RELIANCE"

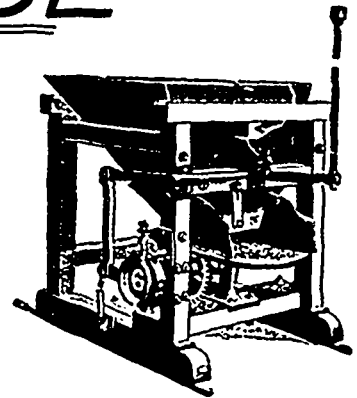
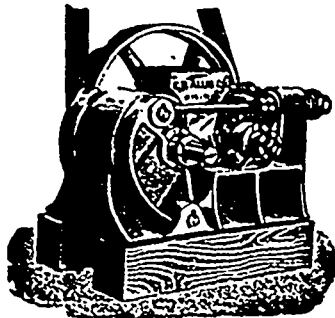
Mining, Milling

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Smelting Machinery

FOR THE DOMINION OF CANADA

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Crushers, Rolls, Jigs, Concentrators, Screens, Stamps, Pumps, Compressors, Hoists, Boilers, Engines, Water Wheels, Etc.

Branch Office

VANCOUVER, B.C.

 PETERBOROUGH, ONT.

The contract for the steel steam tug Fal-mouth was given to I. Matheson & Co. last April by the S. P. Benjamin Company. To-day she is in Hantsport. She will be engaged towing lumber barges. The tug is sixty feet long, with fifteen feet beam and seven feet hold, and as it will be necessary for her to tow under three bridges on the Avon, her smoke stack is removeable, and when so trimmed she measures only seven feet from her water to her top line. She is furnished with one of I. Matheson & Co's first-class compound engines, with a surface condenser and independent air and circulation pumps,

and a steel boiler of a work pressure of 125 pounds to the square inch. She is all fitted with copper and brass pipe—no iron pipes being used. Maritime Merchant.

The St. Lambert's Water Works Co., Montreal, have been incorporated with a capital stock of \$100,000 to construct and operate water works for the purpose of supplying cities, towns, etc.

The contract for the construction of the St. Charles Baromeo Seminary has been awarded to Andre Boninand, Paquet & Godbout, St. Hyacinthe, Que.

Toronto permits have been issued to Drs. Peters and Primrose for a pair of semi-detached two-storey dwellings on College St., to cost \$12,000; to Wilson Phillips for a two-storey brick house on Bedford Road, to cost \$3,000; and to College of Dental Surgeons, for a three story brick addition to the Dental College on College St., to cost \$2,200.

At a recent meeting of the Quebec City Council it was decided to guarantee bonds of \$200,000 for the Great Northern Railway, on condition that the company establish its workshops there, that the line be completed and that a passenger train be run through between Parry Sound and Quebec.

Tenders for the erection of the superstructure of the bridge over North Thompson River, B.C., will be invited as soon as the drawings can be prepared by the provincial public works department. The bridge will be of the Howe truss pattern, 939 feet in length, inclusive of a draw span of 180 feet, with clear openings of 76 feet.

The Canada Clothing Co., Ottawa, has been incorporated with a capital stock of \$100,000, to manufacture clothing, etc.

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COMPOUND
COMPANY

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COMPILED
CHEMICAL
COMPOUNDS

CIVILITY
CAREFULNESS
COMPLETENESS
CONTINUITY

DO YOU KNOW

That you are paying for Boiler Compound all the time whether you use it or not?

IF YOU DO NOT BUY

You will pay your coal dealer more than its cost in the extra Coal you burn.

Zinkolene Saves Money

THE CHEMICAL COMPOUND CO., 311 Temple Building, Toronto.

THE OTTAWA PORCELAIN AND CARBON CO., Limited, OTTAWA, ONT. . . .

MANUFACTURERS OF

CARBON POINTS for all kinds of Arc Lamps, including Cored and Solid Carbon for Incandescent Circuits.

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MOTOR BRUSHES and Specialties in Carbon for Telegraph, Telephone and Electric Light Supplies.

PORCELAIN INSULATORS, Cleats, Door Knobs, and all kinds of Pressed Porcelain for Electrical and Hardware Lines.

ALL GOODS GUARANTEED TO GIVE SATISFACTION.

A Saving.

The first cost is not the test of an actual saving. The truly Economical Manufacturer knows this to be true. For instance, the cheap, trappy Pulley, by its inferior working qualities, is a source of loss to the user the moment it is put in operation, and this loss continues all the time the Pulley is working. You do not get the full or proper results from your power plant. Higher price, though, is not always a sign of better quality, for instance—you may or may not have to pay more for

"THE REEVES" PATENT WOOD SPLIT PULLEY

but in either case you are getting the best value on the market. Because with THE REEVES the saving is continual, in Power, in Time, in Shafting, in Belting, and last but not least, and as a result of all the other savings, a saving in Money. CAN YOU AFFORD TO BE WITHOUT "THE REEVES"? Is the best too good for you? WRITE TO-DAY FOR OUR CATALOGUE AND GET OUR PRICES.

Also COLUMBUS, IND.

REEVES PULLEY CO., Toronto, Ont.

The Royal Electric Co., Montreal, have just shipped a 60 k.w. S.K.C. generator to the Nananco Electric Light Co.

The Cataract Power Co., Hamilton, Ont., will be ready to supply electric power by August 1st.

The Star Line Talc Co., Chattanooga, Tenn., writing concerning their business, say that they have had a good many inquiries from Canada regarding the Acme Jr. acetylene gas burner manufactured by them, and that they are making sales constantly. They also say "we consider THE CANADIAN MANUFACTURER the best advertising medium in that section for making our business known."

Messrs. Buchanan & Rhymas, planing mill men at Goderich, Ont., will plane and dress 1,500,000 feet of lumber to be used in the construction of the grain elevator to be built at that place.

The Robb Engineering Co., Amherst, N.S., have received an order for two engines of thirty horse power each, for running blowers in the works of the Verity Plough Co., Brantford, Ont.

The citizens of Gananoque will vote on a by-law granting \$5,000 to assist in rebuilding the McKenzie furniture factory.

Tenders for the construction of a fire station at corner Notre Dame and Beaudry Streets, Montreal, will be invited.

A gentleman largely interested in the transportation industry, and returned from a trip through Northern Ontario, says that he had found the lumber trade fairly active Waubaushane, Victoria Harbour, and Midland, but at Parry Sound only one mill, that of Peters and Company, was in operation, and from Parry Sound through to the Soo the lumber mills are closed down, with large stocks of lumber on hand, while very extensive shipments of logs are being floated from many points in the district over to Michigan. At Cutler, the Cutler & Savidgo Lumber Company formerly employed over 300 men, and to-day they have a solitary watchman looking after the stock of about sixteen million feet. The large boarding-houses have been closed up, and the population of the village has been reduced to about twenty-five souls. Cutler represents pretty accurately the condition of the lumber trade north of Midland.—Sault Ste. Marie, Ont., Pioneer.

The Hudson Bay Knitting Co., Montreal, have been incorporated with a capital stock of \$50,000 to manufacture knitting goods, etc.

The projects on foot for the erection of new pulp mills or the enlargement of existing ones are so numerous as to give warrant for the belief that exports of pulp and paper will soon be valued at millions yearly. Canada has the greatest spruce forests in the

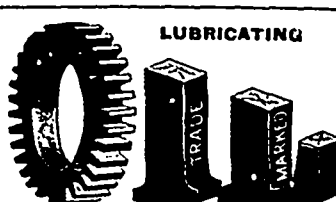
world, and Mr. Hardisty of the Eddy Co. recently said that the supply of spruce in Europe is becoming exhausted. Canada, he thinks, when the exhaustion becomes more marked, will become the chief paper producer for the world. Meanwhile Canadian paper makers seem disposed instead of lowering prices and making a bid for world-wide trade to charge all the consumer will stand in a home market hedged about by high protective duties. Our exports of pulp-wood last year were valued at \$711,152, all of which, except \$33,000 worth shipped to England, went to the United States. Of manufactured wood pulp the total export was valued at \$741,950, of which Great Britain took \$164,138 worth. At Sault Ste. Marie Mr. Clergue expects shortly to have the largest pulp mill in the world, while several very large mills are being constructed in the spruce districts of Quebec. It is scarcely too much to say that paper and pulp making are among the great coming industries.—Toronto Globe.

Messrs. John Taylor & Co., Toronto, owners of the Morse Soap Works, have opened a branch of their concern in Montreal and Messrs. John and M. J. Taylor are registered as proprietors.

The Londonderry Iron Co., Londonderry, N.S., will supply about 1,000 tons of 12 inch and 24 inch cast iron water pipe for the city of St. John, N.B.

GEO. REID & CO.,
Dealers in
Textile Machinery and Supplies,
TORONTO, ONT.,
Have bought and are offering for sale at great **Bargains** the entire machinery of the Campbellford Woolen Mill (which they are now taking out), also
A 4-Set Mill (Running), A 2-Set Mill (Running), and Three 1-Set Mills (Running).
Write at once for Prices and particulars.

EMERALD-BOILER-OIL
1-16 of an inch of Boiler Scale adds 15 per cent. to the fuel account. Emerald Boiler Oil gives the most perfect results with all kinds of water. It's a Pure Petroleum Extract. It is an effective agent for removing scale from Boilers.
"ATLANTIC RED" "BAYONNE" ENGINE.
"CAPITOL" CYLINDER. "RENOWN" do.
The Very Best that is Made.
All information and Samples Furnished Freely.
The Queen City Oil Co., Limited,
SAMUEL ROGERS, President. TORONTO.



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Head Office and Factory—
VICTORIA SQUARE, - MONTREAL
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WESTERN TRADE:—
Our Mr. R. M. W. McLaren, in charge of Galt Branch, will be pleased to give quotations as well as receive orders.

STORAGE BATTERIES
THE LIGHTEST. THE STRONGEST. THE BEST.
If you use Electricity wo Batteries Repaired and Recharged can save you Money. at Reasonable Rates.
The Croftan Storage Battery Co.
W. M. H. NELLES. CANADIAN BRANCH. REIN WADSWORTH.
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CORRUGATED SHUTTLES
FOR WEAVING FROM COP?
WE MAKE THEM. Write for Prices and Samples.
JOHN HOPE & CO., LACHUTE SHUTTLE and BOBBIN WORKS, LACHUTE, QUE.
THOMPSON & CO., Manufacturers of **BOBBINS and SPOOLS**
FROM SELECTED STOCK.
Correspondence Solicited Orders Promptly Filled..... • **SHERBROOKE, P. Q.**

GUN COTTON.

The process by which so common and harmless a substance as cotton is converted into a high explosive is a comparatively simple one, remarks a contemporary. Pure raw cotton or ordinary cotton waste is steeped in a solution of one part of nitric acid and three parts of sulphuric acid. The nitric acid is the one which renders the cotton explosive, the presence of the sulphuric being required only to absorb the water, thus allowing the other acid to combine more readily with the nearly pure cellulose of which cotton consists. After the cotton has soaked in the acids for several hours, it is taken from the pots and squeezed through heavy rollers to extract all the superfluous acid which it has not absorbed. Then it is washed carefully and thoroughly, still with the same object of removing the free acid. If any of this remained, its tendency would be to cause chemical changes in the gun cotton and decompose it. Formerly, this washing was the last process resorted to for the removal of the free acid, but a few years ago Sir Frederick Abel found that the cells in the cotton fibre so absorbed and retained the acid by capillary attraction that the washing failed to extract it entirely. To remedy this and make the gun cotton more pure it is now, after being washed, passed through a machine similar to that which grinds up the rags in a paper mill. Here it is crushed thoroughly and afterwards washed again until the last trace of free acid disappears, and the cotton comes out in the form of a soft, white pulp, closely resembling the pulp of which paper is made. This concludes the process of actual manufacture, and it now remains only to convert the gun cotton into the most convenient form for the use to which it is to be put. If it is to be employed in making powder it is dried and stored away

in pulverized form; but if it is designed for filling torpedoes it must be compressed to a certain density and moulded into the shapes which will best enable it to be packed into the torpedo heads. These shapes vary according to the design of the torpedoes and the method of packing. Sometimes they are discs and sometimes cylinders, flat squares, or cubes. If uncompressed and dry the gun cotton would be extremely light, weighing no more than ordinary cotton wadding; but when made into the above forms it is compressed to the density of about 1, or in other words to a density of an equal amount of water. The percentage of moisture remaining in the gun cotton when it is packed into torpedoes varies between 15 and 20. So safe from explosion, unless detonated, is a brick of wet gun cotton that it may be placed upon hot coals. As the moisture dries off from the outside, the cotton flakes off and burns quietly. Perfectly dry gun cotton when confined in a strong case will explode with great violence if exposed to a temperature of about 320° Fahr. Detonation, or the firing of explosives by intense shock, is a modern method, for until thirty years ago the application of heat was always used to bring about an explosion. It has now been discovered that detonation produces a more powerful effect than explosion by means of heat. In detonating the wet gun cotton in the torpedo heads, the primer of dry gun cotton which is used weighs only a pound or thereabout. It is placed in contact with the wet mass, which in a Whitehead torpedo consists usually of about 250 lb. Then, by means of a fuse and fulminate of mercury cap, a flame is shot through the disc of dry gun cotton. This explodes instantly, and with it the entire mass of the wet cotton, producing tremendous results. The question of precisely how detonation takes place—that is, how so small an initial explosion can suffice to decompose an unlimited quantity of high explosives behind it—has caused much

argument and many speculations. Bertolot gives as an explanation that "the shock of the primary explosion communicates to the layer of molecules in the immediate proximity an enormously active force, whereby the 'molecular edifice' is shaken to pieces and the initial force is augmented to a degree corresponding to the heat evolved by decomposition." A new shock is thereby produced in the next layer, and the action is repeated and so propagated until the whole molecular system is completely destroyed.

BELT FASTENINGS.

One frequent cause of trouble is the wretched manner in which belt fastenings are often made. There are shops where good jobs are the rule and bad work not tolerated,—except in belt lacing. The belt ends are not cut square, and the consequence is that probably one edge is longer than the other, and the short edge has to do most of the work.

There are cases where the ends are truly squared, but, by reason of the absence of proper clamps, there is a gap between the ends, and consequently twice in each belt revolution (once on each pulley) there is a jog or slip as the open space is carried around the pulley by the exertion of its neighboring portions. The "flip, flip" of such place is a familiar and incessant sound in too many establishments where the slightest "squeak," as an indication of a rubbing journal somewhere, would be followed by a deluge from a long-nosed squirt-can charged with olive oil and sulphur or graphite.

It is only when the saw stops in the log, or the planer beds halts mid-way, that the belt gets any attention.

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JAPANESE ELECTRICITY.

There are three electric railways projected in Kobe district in Japan. One is to be 15 miles in length, extending from Koko to Amagasaki. The company has a capital of 500,000 yen (\$249,000) and the work is to be completed within two years. The time for beginning the work is not fixed.

Another line is to be between Amagasaki and Osaka, five miles. The company is to have a capital of 300,000 yen (\$149,900). The charter has not yet been granted. The promoters of these two roads are Mr. Shinyemon Konishi, of Itamicho, Kawabe-gun, Japan; Mr. Ki-ichiro Kosone, of Minato-cho, Kobe-shi, Japan, and 28 others.

Another road is projected to run from Kobe to Armina, 15 miles. The capital is 300,000 yen (\$149,900). The date for commencing the work is not fixed. The promoters are Mr. Ki-ichiro Naka, of Arino-mura, Arimagan, Japan; Mr. Shigezo Yamamoto, of Fuki-mura, Kobe-shi, Japan, and 18 others.

THE ADULTERANTS OF SUMAC.

A paper containing matter of some interest to tanners appears in the last number of the proceedings of the Chemical society, by A. G. Perkin and Wood, who have been working in the Clothworkers' Research Laboratory of the Yorkshire College, on the various adulterants of sumac. The samples which they have investigated were mostly received from Mr. Genadius, Director of Agriculture, of Cyprus.

One of the least objectionable of these materials consists of the leaves of the Pistacia Lentiscus, an evergreen shrub, which is very abundant in the island. These leaves called Shinia, "Schinia," or "Skons," are much used in the Levant as a tanning material in place of sumac, and yield a bright colored and satisfactory leather. Experiments in the Leather Industries Laboratory give a result of 11.3 per cent. tannin, or about half that contained in genuine sumac, and the color of the leather produced was good, though not quite equal to that of sumac. The leaves contain a coloring matter, "myricetin," which is identical with that of sumac, and as the leaves are very abundant and cheap it seems probable that it might be advantageously introduced into England as a tanning material in its own name, either ground or as an extract. Further experiments in this direction are in progress at the Yorkshire College.

The second adulterant consists of the ground leaves and stems of two Tamarisks: Tamaris Gallica and T. Africana ("Brusca"). Its coloring matter is different to that of sumac, and its tannin apparently similar, but only in small quantity, not exceeding 8.4 per cent. The amount of sample available was not sufficient to carry out practical tanning experiments.

Some of the Pistacias, and especially the P. Terebinthus, yield small galls, which contain a good deal of tannin and a trace of yellow coloring matter, allied to that of the Shinia.

The leaves of the Ailanthus Glandulosa were also investigated and proved an objectionable adulterant as, although analysis shows the presence of 11.9 per cent. of the tannin allied to that of sumac, experiments in the Leather Industries Laboratory proved it to be worthless as a tanning material, as the skin, though stained a deep color, was practically untanned.

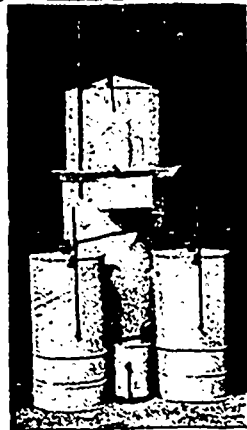
The ground leaves of the common fig are frequently put into sumac. They contain minute traces of a yellow coloring matter but are almost devoid of tannin and skins treated in the infusion remained untanned, although they were stained a dirty olive color.

"Gambuzzo," the stalks of the genuine sumac, which are ground and mixed in, contain the same tannin and coloring matter as the sumac leaves, but in much less quantities.

The authors also investigated one or two other materials containing tannin. "Broach leaves" are small leaves from a narrow evergreen shrub not identified botanically, but employed in South Africa in place of sumac, and now also replacing the so-called Cape sumac, Golpoon compressum, which is becoming scarce. They were found to contain 19.9 per cent. of a catechol tannin, and produce a leather of excellent color, very similar to sumac, and are evidently a valuable tanning material. The

yellow coloring matter resembles that of sumac but is not identical with it. A smaller quantity of yellow coloring matter, similar to that of the broach leaf, together with ordinary tannic acid, is contained in the bearberry leaves, which although of no importance commercially, are said to have been used in the north of Europe for tanning purposes.

Mangrove extract from Coriops candolleana is found to be quite devoid of yellow coloring matter.—The Leather Manufacturer.



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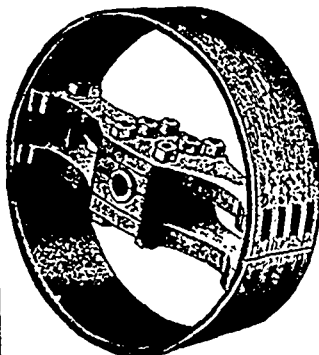
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The soft flexible rice paper of the Japanese has been recommended for such purposes as the water and ice bags of the sick room, the claim being that this material supplies a satisfactory substitute for rubber at a sixth of the cost. Some air cushions exhibited at the Berlin Society of Internal Medicine by Professor Jacobsohn were capable of supporting a permanent weight of over three hundred pounds, while being air-tight, flexible, very light and remarkably durable. They were made of several layers of the paper, joined by resin, with an inside finish of Japanese lacquer.

A creamery in Newark, N. Y., is using skim milk in the manufacture of a product for putting the glazing on fine quality paper. The Standard Butter Company of Oswego has not commenced the manufacture of their product which is to utilize and create a value for their skim milk and thus allow the payment

of better prices for milk. The product is a sizing on fine quality papers. Heretofore a fine quality of glue with other compounds has been used, but it was recently discovered that a much better and cheaper sizing could be made from skim milk. The Standard Company has now made a five-year contract to some large paper manufacturers. At the creamery in this village, in charge of H. Haster, the new product is now being made. The skim milk is put in a vat, treated with chemicals and heated until curd is formed, then the curd is washed and pressed and shipped to the headquarters at Oswego. There the curd is ground fine and put in a large and improved drying kiln, where it is dried in about twelve hours, then bagged, and is ready for shipment.—Merchant Sentinel.

An "asbestos leather" has been patented in France. According to directions contained in the specification, the asbestos is first care-

fully carded out until the fibres are parallel, and all short ones are removed. The mass of straight fibres is then immersed in a solution of India rubber, in benzole, for example. When the solvent is evaporated the India rubber adheres to asbestos, which is embedded in it with extraordinary force, and the product is said to be as strong and durable as good leather. The new substance is thus a kind of "insertion" in which there is a more intimate and close union between the India rubber and the substance imbedded in it than is the case with the usual kinds of insertion goods.

A new textile material has lately come much into use in America for various purposes, but principally for the interior fittings of railway carriages. It resembles morocco leather. This "Pantastote," as it is called, has a leather-like surface on one side and a textile fabric on the other, and yet it differs very much from what is known as "American cloth." It is made of double texture so that one holds and reinforces the other, its tensile and torsional strength is greatly increased, and it is claimed to be superior to any material of but single thickness. It is non-absorbent, it is not liable to injury from rain or sponging, while it is said to be uninjured by frost or any ordinary degree of heat. It is altogether free from rubber or celluloid or other odorous material.

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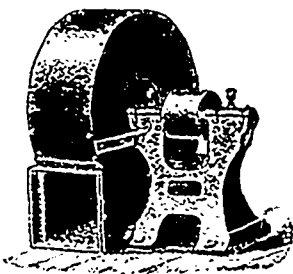
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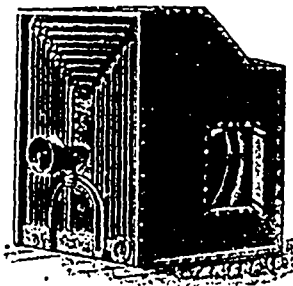
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DANGERS IN MATCH FACTORIES.

In the British House of Commons, the other day, Sir Charles Dilke called the attention of the Home Secretary to a recent inquest at Bow, on the body of a match dipper, aged twenty-two, who died from necrosis of the jaw, due to the use of the more dangerous kind of phosphorus employed in the manufacture of matches, and asked whether the time had not come to prohibit the production of matches involving so much danger to the workpeople. Sir M. W. Ridley said that, as, since the passage of the act of 1895, no other case of necrosis had been reported, he did not think he would be justified in preventing unconditionally the use of yellow phosphorus. He promised, however, to make further inquiries.

It is asserted positively that in the large factories where matches of this dangerous kind are produced, the unfortunate workers are promptly dismissed on the first indications of disease. Many of them as a consequence do all in their power to conceal their condition, as dismissal implies the impossibility of finding work elsewhere. It is believed that many deaths never come under the cognizance of a coroner's jury.

The Salvation Army have endeavored to counteract this evil by starting a match factory in which none of this dangerous yellow phosphorus is used, and it has been demonstrated that no case of match-maker's leprosy has ever occurred there, while girls who have been discharged from other match factories, suffering from the first symptoms of necrosis, have not only been able to work there, but have recovered their health.

J. D. Graves, representative of the Heinz Pickle Company, of Pittsburg, Pa., has been in Hamilton for several days interviewing gardeners and others about the establishment of a branch factory there. Last year the company talked about establishing a branch there, and the city council decided to grant the company certain concessions, but the company concluded not to proceed with the matter just then. After Mr. Graves has made satisfactory arrangements with the gardeners it is likely that a new proposition will be made to the council.—Hamilton Spectator.

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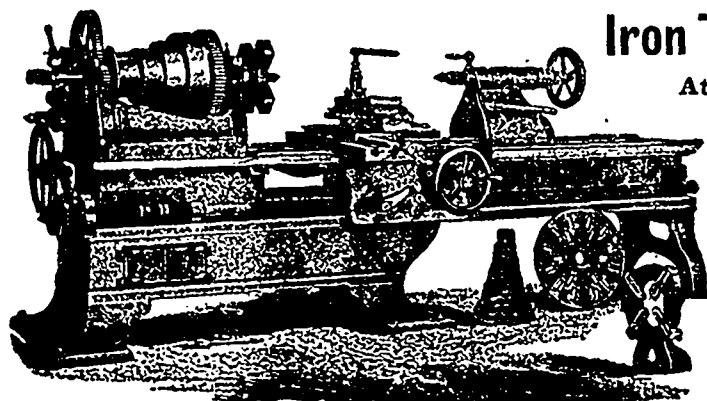
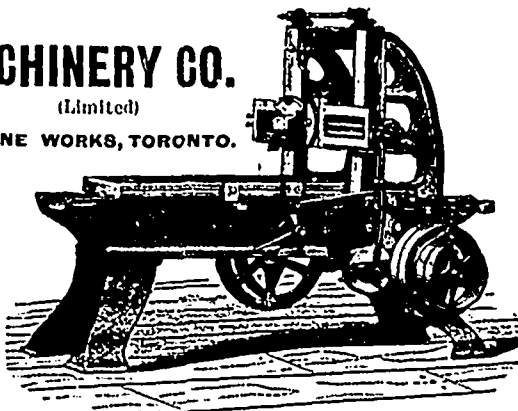
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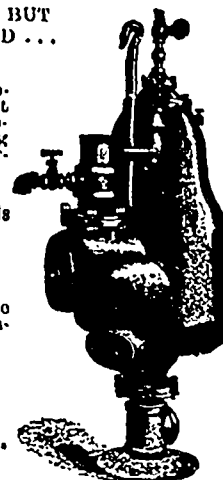
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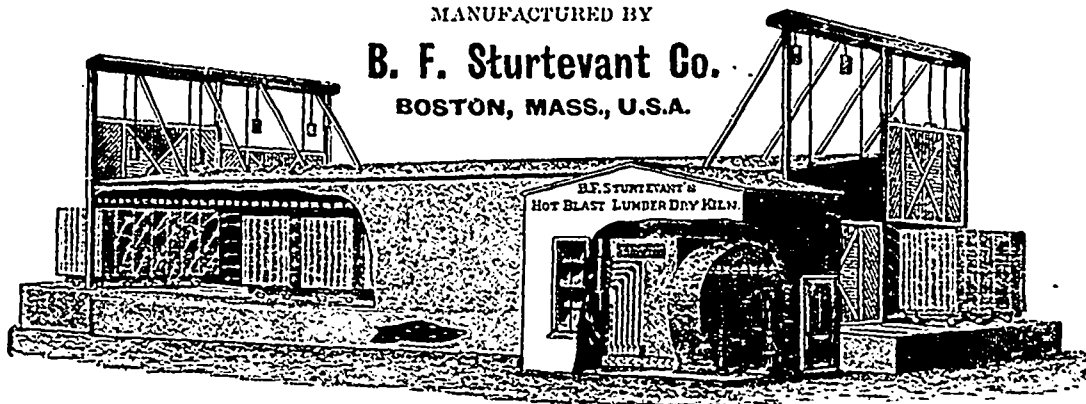


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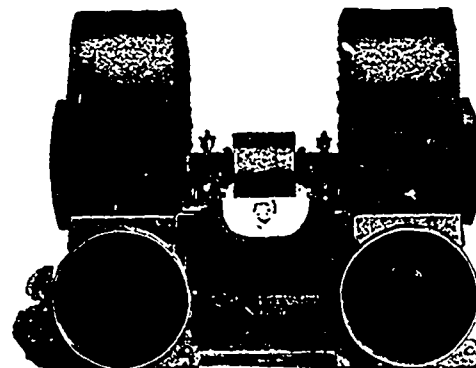
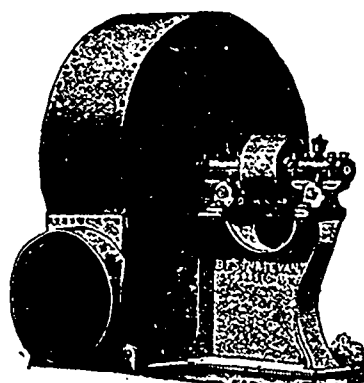
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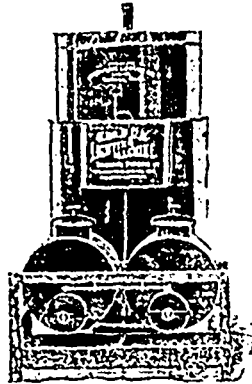
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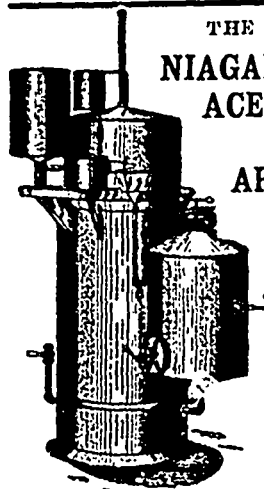
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DIAMINE COLORS ON MERCERISED COTTON LININGS.

Messrs W. J. Matheson & Co. 182 Front St., New York, have sent us the following memo. regarding Diamine colors on Mercerised cotton linings:—

Mercerised cotton linings are dyed in the usual manner, but as they will take up the dyestuffs quicker than unmercerised goods, the following method of dyeing should be adhered to:

Charge the dyobath with: 1 per cent. soda, 1 to 2 per cent. Turkey red oil and the necessary dyestuff. After having dyed during ½ hour add: for light shades 2 to 5 per cent. phosphate of soda, for medium and dark shades 3 to 8 per cent. Glauber's salt, for Black 15 to 20 per cent. Glauber's salt.

For dyeing light shades it is best to start lukewarm and, after the addition of the phosphate of soda, to raise the temperature to 120 to 140 per cent. F. Also for dark shades it is advisable not to enter boiling, but to start at about 120 to 140 F. and after addition of the Glauber's salt to gradually raise to the boil.

If for some reason or other Turkey red oil cannot be used, soap may take its place, in which case the proportion of soda should be increased to 2 to 4 per cent. according to the quality and quantity of water used.

UTILIZING SAWDUST.

Mr. V. L. Emerson, of Baltimore, Md., is promoting a company for the purpose of utilizing sawdust by reducing it to metallic carbon and then into calcium carbide for the manufacture of acetylene gas. While in Ottawa recently Mr. Emerson said: "I have succeeded, after several years of laboratory work, in producing carbon in metallic state, free from any of the objectionable properties, of great density, and practically chemically pure, and converting same into calcium carbide. The raw material from which the carbon was produced was supplied to me by W. C. Edwards, from his mills at Rockland. Some of the samples run as high as 92 per cent. in carbon, which is about 10 to 20 per cent. better than the best coke. It may be readily understood that carbide manufactured from carbon of such purity, is not contaminated with the baser metal, and a pound of carbide so manufactured will produce a much larger quantity of acetylene gas than carbon manufactured from coke. With carbide that will produce five cubic feet of gas per pound and carbide at \$60 a ton, the light produced is the cheapest artificial light known. Even in the impure state that the calcium carbide is now produced from coke, the demand cannot be supplied at a price of \$70 per ton, and in the last few days I have received letters from several consumers in the States, requesting me to buy a few carloads for them in Canada, as they were not able to supply their wants in the States, and I find that the manufacturers here are unable to supply even the home trade.

"From a commercial and chemical point of view, my processes and mechanical apparatus practically occupy the same position in the conversion of the cellulose tissue of wood into metallic carbon, as the Charles Bessemer process does in eliminating the carbon in the process of manufacturing steel. In the Ottawa district natural conditions exist that best suit to carry out the possibilities of the process, in the manufacture of such articles as calcium acetate, calcium carbide, asphalt, light and heavy oils, in fact those series in which carbon acid and oils are components.

"To-day there are thousands of machines in the United States for producing acetylene light that are standing idle for the want of carbide, while the demand for the light is rapidly growing. On the other hand there is sufficient waste material in the Ottawa district, when converted into metallic carbon and electrically smelted with lime to form calcium carbide, to produce 500 tons daily at an average profit of \$30 per ton. Personally, I am convinced that the demand for calcium carbide will increase as well as the calcium acetate, at a more rapid pace than a plant can be built to manufacture it. I have found my experiments to recover what is known as 'ye-products' that the complex molecular composition may decompose quite differently and yield different sets of products according to the conditions which govern the destructive distillation. The most important of these modifying conditions is that of temperature, and it is with this end in view that I have designed an apparatus to produce the desired conditions in order to recover without requiring any particular skill and at the same time operate mechanically and continuously so as to dispense with hand labor. By this method I am enabled to produce a large series of products, acetate of calcium being an important one greatly in demand in the manufacture of printed goods, wall papers and so forth. It is worth \$1.25 per 100 pounds f. o. b. New York. Each cord of sawdust produces about 170 pounds. At the same time many oils that are staple articles in the manufacture of paints and varnishes are produced, as well as creosote, which is extensively used in preserving timbers used in docks, canals, foundations and railroad ties and so forth. Nearly all the products are extensively used in the arts and are very staple in the market. The carbon, owing to its great state of purity, seems well fitted to take the place of the expensive willow charcoal used in the making of gunpowder, while the light oils act as a splendid solvent for rubber, and will take the place of the more expensive oils used for that purpose.

"We will be able to manufacture a superior product of carbon from the waste products of the mill for between 25 and 50 cents per ton, while the soft charcoal produced by the old system and contaminated with impurities costs from \$3 to \$20 per ton, which is practically prohibitory in the manufacture of calcium carbide where the carbon from that source enters into the composition."

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Silver may be tested by an application of nitric acid. If the metal contains copper, the solution will have a blue or green tint; if pure it will be unaffected by the acid.

Floors may be cleaned by an application of a preparation of logwood chips, which may be made by boiling 1 lb. chips in 1 lb. water. The liquid should be laid on evenly with a soft rag or brush. When dry the floor should be rubbed over with a solution of sulphate of iron. This may then be polished with beeswax and turpentine or varnished. If the latter plan is adopted it will be desirable to give a rub over with a rag dipped in turpentine to take off the very bright and new appearance.

A good furniture paste suitable for dull polished furniture, is made of yellow wax three parts, turpentine four parts, white wax one part, and white soap one part. The soap should be dissolved in fifteen parts of boiling water, after which the other ingredients may be added, the whole being stirred until well mixed. Let the mixture stand a few days before using.

Black marble may be polished by a preparation of lime water, linseed oil and turpentine, applied with a rag. A pad moistened with methylated spirit is used for finishing off.

Old brick or stone work may be pointed with a cement made of Portland cement, lime and white sand in equal parts. Add water and make requisite consistency.

A mixture of ultramarine blue with French zinc white makes a good imitation of cobalt.

A useful stopping for water pipes is made of

ten parts each calcined lime, resin, cotton wool, and three parts linseed oil varnish.

Indelible ink without the use of silver nitrate may be made by grinding one and three-quarter grammes of aniline black well with sixty drops of strong hydrochloric acid and forty-two to forty-three grammes of alcohol.

It is stated that plaster may, by a very simple process, be hardened so that it can be used for flooring purposes. The recipe given consists in mixing six parts of plaster with one part of fresh slaked white lime sifted. After being laid down and smoothed off it should be allowed to dry, when it must be saturated with a solution of sulphate of iron. This gives it the color of rusted iron, which, when rubbed over with linseed oil boiled with litharge, assumes the color of mahogany. If desirable it may be varnished.

Paste may be preserved from mould by adding a little pulverised blue stone while hot.

A good paste for paperhangers' use is made by dissolving 1 oz. of alum in 1 quart of warm soft water. When cool add flour to make it about the consistency of cream, then add a half-ounce of resin, and 1/2 oz. of sugar of lead. These are the right proportions for a bucketful of paste.

When papering on white-washed walls it is necessary to first size the surface. Use good glue size, to which must be added a pint of malt vinegar to every gallon of the size. The vinegar acts upon the whitening and causes the paper to adhere strongly and permanently.

The most serviceable paints for iron are those consisting of ferric oxide as their base; the principal of these being made of brown hematite. These paints can be used on rusty surfaces, as the rust becomes incorporated with the paint.

To impart a golden color to brass, dissolve a mixture of muriatic acid and alum in water, and

then steep the articles in the liquid for a few seconds.

How to anneal brass or copper.—In working brass or copper it will become hard, and if hammered to any great extent will split. To prevent cracking or splitting, the piece must be heated to dull red heat and plunged in cold water; this will soften it, so it can be worked easily. Be careful not to heat brass too hot, or it will fall to pieces. These pieces must be annealed frequently during the process of hammering.

Polished steel articles may be preserved from rust by covering with a mixture of powdered lime and oil, or with a preparation composed of 1 part resin and 3 parts of lard.

Cast iron can be hardened as easily as steel, and to such a degree of hardness that a file will not touch it. Take one half-pint vitriol, one peck of common salt, one half pound saltpetre, two pounds alum, one quarter pound prussiate potash, and one quarter pound cyanide potash; dissolve in ten gallons of water. Heat the iron to a cherry red and dip it in the solution. If the article needs to be very hard, heat and dip the second and even the third time if found necessary.

Copper can be colored in the following manner:—It is first moistened with a dilute solution of ammonium polysulphite and dried. The free sulphur is then brushed off. If the copper is then treated with a dilute solution of sulphide of arsenic in ammonia it takes a golden yellow hue. This can be changed to brown by further treatment with a solution of sulphide of arsenic in ammonium sulphide. If sulphide of antimony is used instead of sulphide of arsenic, various shades from the palest pink to dark red can be obtained.

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in Toronto. The old warehouse on the corner of Yonge and Colborne streets was for thirty-three years the location of the business. In 1889 the firm were obliged to find larger quarters, and they then erected the warehouse at present occupied on Wellington street west.

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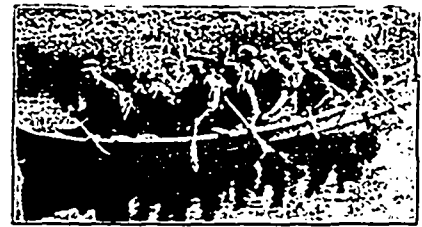
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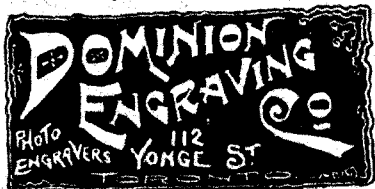
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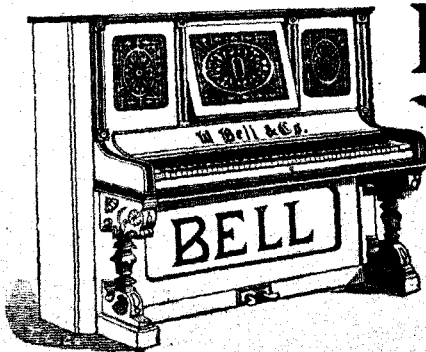
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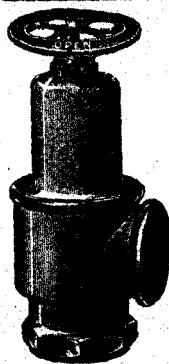
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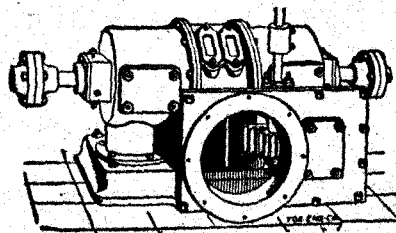
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