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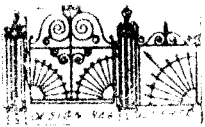
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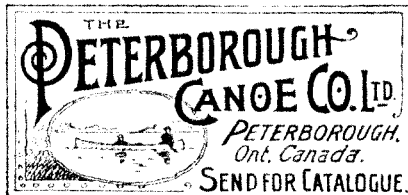
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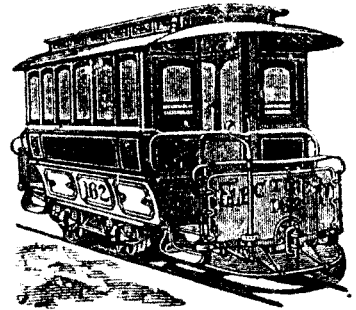
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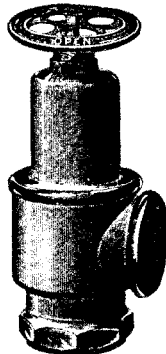
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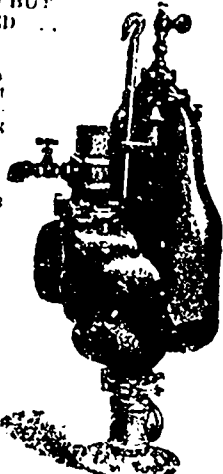
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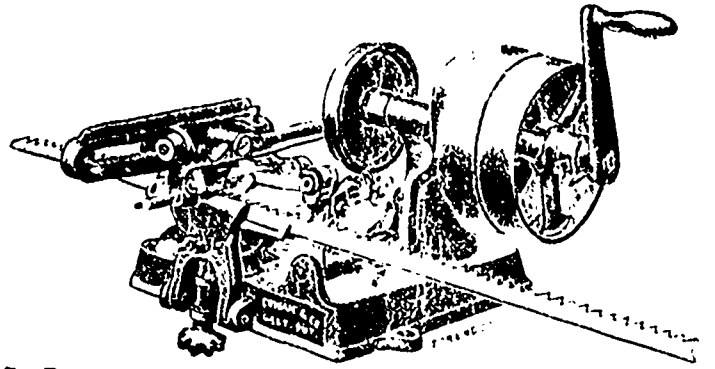


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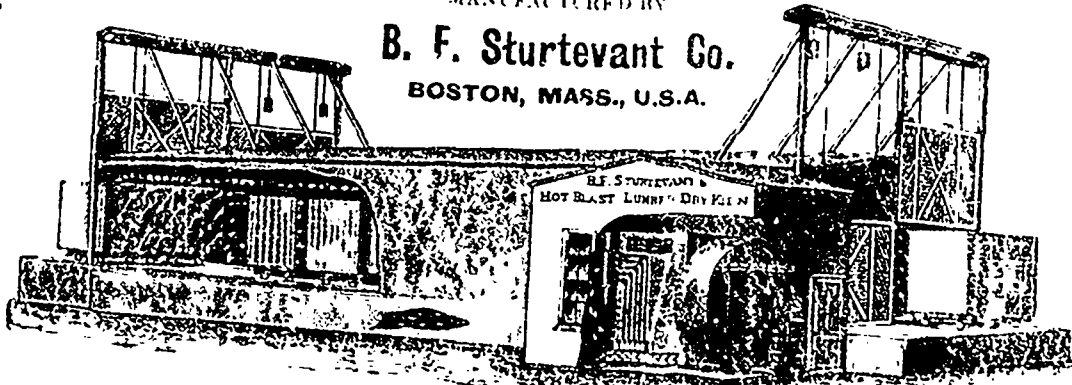
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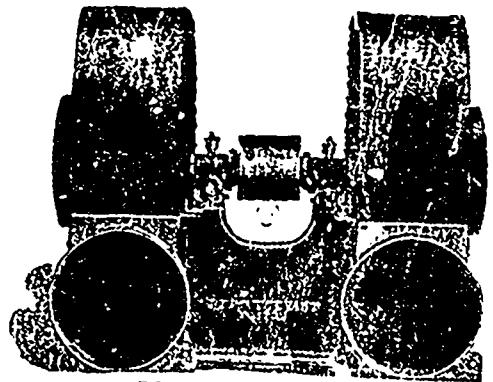
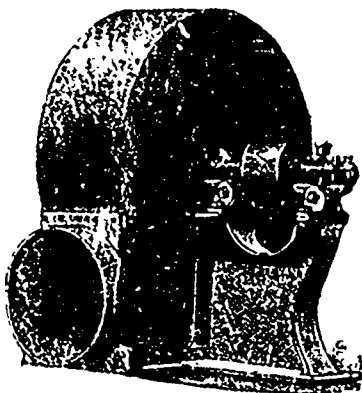
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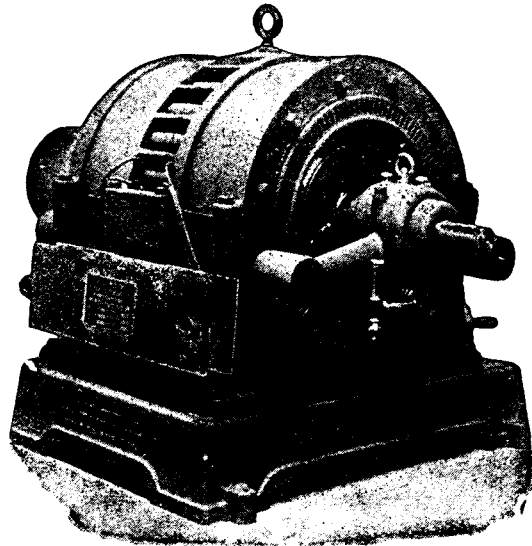
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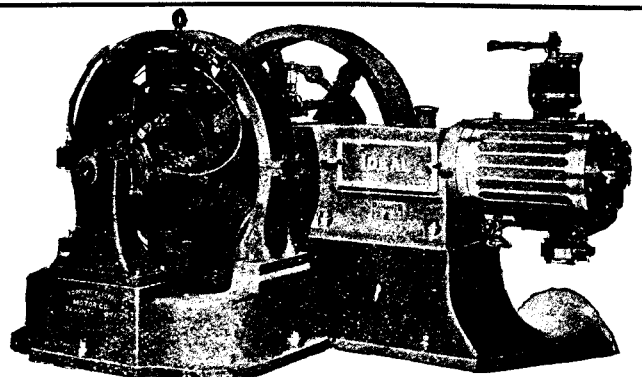
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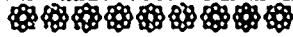


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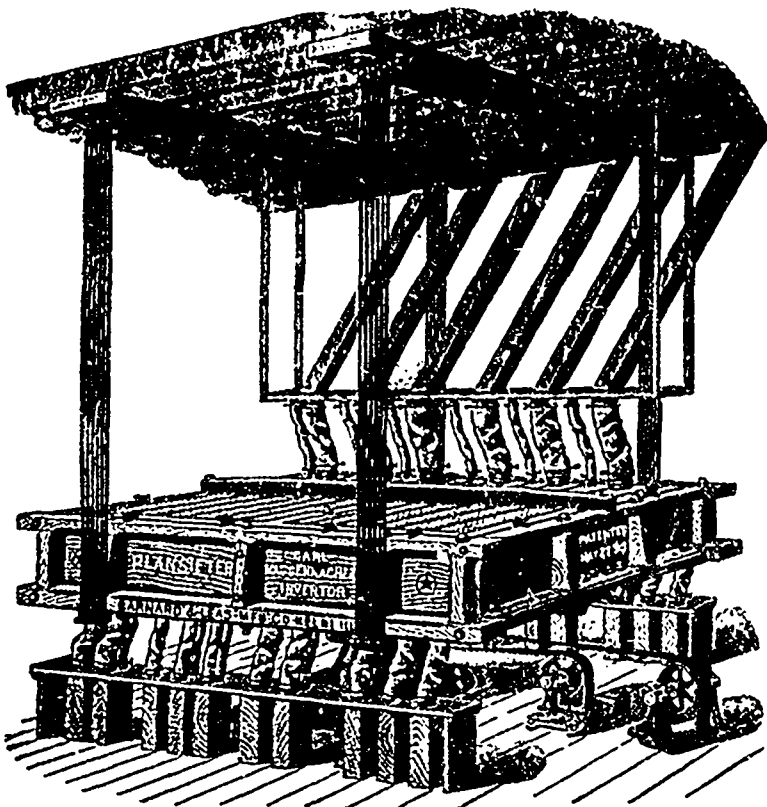


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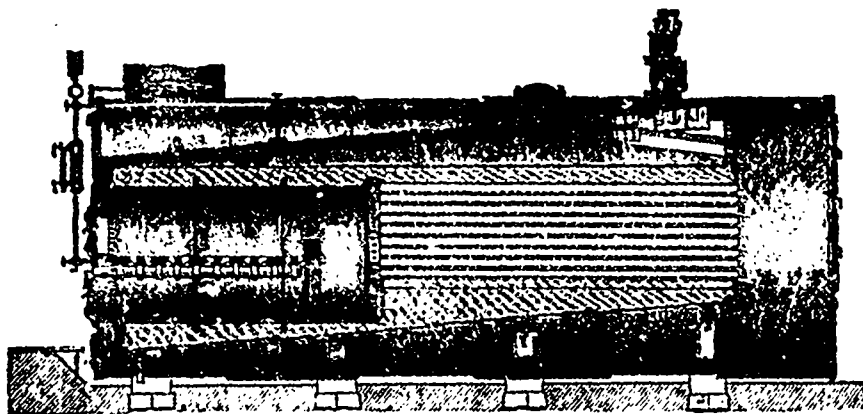
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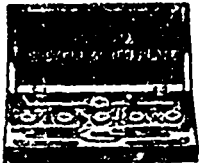
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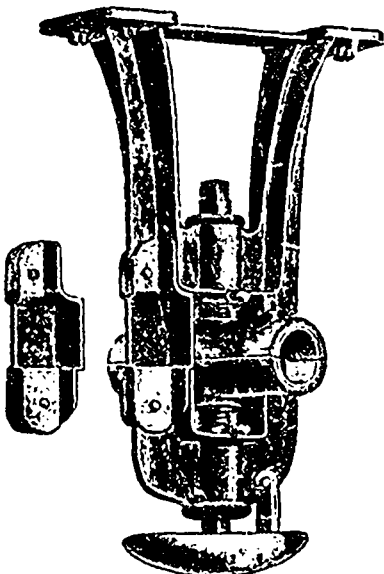
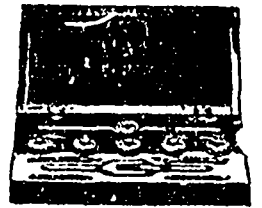
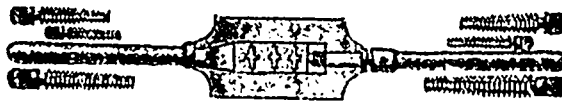
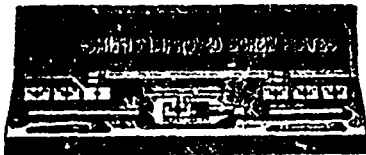


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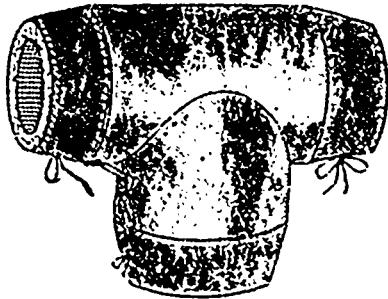
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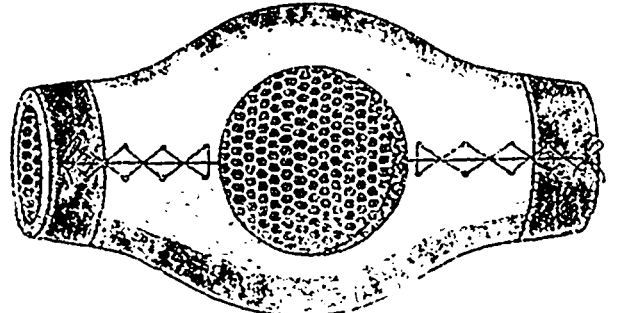
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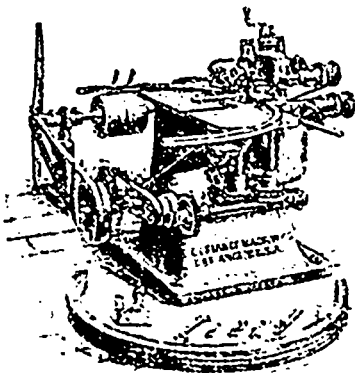
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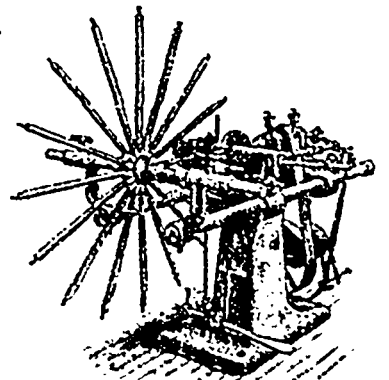
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PREFERENTIAL TRADE WITH GREAT BRITAIN.

It is a noteworthy fact that the policy of preferential trade within the Empire is being treated with greater unanimity and cordiality by the trade journals of the United Kingdom than by the political press. Among the latter there are many organs of the Cobden school, which, as was to be expected, object to the proposed policy because it is at variance with their pet theory of buying in the cheapest market. Some of the great political dailies discuss the proposition in a half-hearted, non-committal spirit, apparently doubtful as to whether its adoption would tend to their party's interest or otherwise. It is a promising feature of the discussion, however, that so many

of the journals, published in the interest of manufactures and commerce, are enthusiastic in support of the movement, and so outspoken in favor of Imperial commercial federation. This journal, in recent issues, has had the pleasure of submitting to its readers several extracts from editorials published in some of the British trade journals. We find the following able and interesting article in The British Trade Journal, of June 1st. This journal is conducted with great enterprise and ability. Occasionally, it is printed in French, Dutch and Italian, and it is proposed to issue an edition in the Russian language. It has also a Japanese edition which has already reached its tenth issue. In point of circulation and influence among the manufacturing and commercial community, it has no superior. As the article referred to covers so many points connected with the general commerce of the United Kingdom, and the advantages of preferential trade between Great Britain and her colonies, and the difficulties to be overcome in carrying out this policy, we feel that we need not make any apology for publishing it in full, which reads as follows:

During the past month the preferential treatment, which Canada under its new tariff is according to British goods, has been generally discussed; and the question everywhere asked is, will the Government denounce the Belgian and German treaties, which, according to some authorities, stand in the way of the Canadian proposal? It is known that the Belgian Government has protested against the discrimination in favor of the Mother Country; and it is understood that a similar protest has been made on behalf of the German Government through the German Ambassador in London. The German Press is almost beside itself in vehement denunciations of the Canadian policy, and breathes threatenings and slaughter against this country unless the step taken by our Colonists is reversed. Sir C. M. Kennedy, a well-known authority on commercial treaties, and for many years head of the Commercial Department of the Foreign Office, states that on the surface the Canadian act appears to be contrary to the stipulation of the treaties, but he points out that this stipulation was unusual, and in the relations between the Governments between whom it was agreed, one-sided and unequal. The circumstances of the case have materially altered since 1862, inasmuch as more self-government has been conceded to Canada, including the power to regulate its own fiscal policy. Acting on that power, Canada has prohibited the importation of foreign prison-made goods, an export favored by Belgium and Germany. In the next place Canada does not absolutely restrict the reduction of duty to Great Britain, but will concede it to every country which affords similar favorable treatment to Canadian products. That tariff rule has been adopted by the United States, and has to some extent been recognized by the powers which have concluded agreements on that basis with the United States, Great Britain and France being among the number. This view appears to be supported by Wharton, who in his "Digest of International Law," points out that a covenant to give privileges granted to the "most-favored-nation," only refers to gratuitous privileges and does not cover privileges granted on the condition of a reciprocal advantage. This line of reasoning is supported by illustrations drawn from the practice of the United States. Another argument in support of the Canadian policy is to the effect that treaties negotiated in 1862 and 1865 were not intended to be binding on self-governing Colonies to whom fiscal independence has long been granted, but only upon those which are in the relation of dependencies, and who have not self-governing powers and the right to regulate their own fiscal policy. If this construction of the treaties is not sound, then it follows that Great Britain has conceded to Germany and Belgium a right which she has not reserved for herself, viz., power to control the fiscal policy of her own Colonies, and it will be in the interest of the entire Colonial Empire that Canada should

appeal to the Imperial Government to denounce the treaties.

It is not likely, however, that the German and Belgian Governments will acquiesce in this view of the question, strong as it is, from the Imperial and the Colonial standpoint. They are certain to claim their pound of flesh, and to stand upon the literal construction of the instruments themselves, which enact that Belgian and German products shall not be subject in the British Colonies to other or higher duties than those which are or may be imposed upon similar articles of British origin. That the British tariff has since been frequently changed and that the Colonies have been granted greater degrees of autonomy will not be taken into consideration, and therefore the Government has now before it a crucial question. It must either give a year's notice to the foreign governments concerned that the treaties are to expire because they are out of harmony with the altered relations of the British Colonies to the Mother Country, or it must put back the hands of the clock, compel Canada to withdraw its preferential treatment, throw it once more into the arms of the United States, disallow an important power connected with self-government, and admit that it is unable to further the idea of Imperial Commercial Federation, based as this must be on some kind of preferential tariff arrangement. There seems a third way out of the difficulty, but this is one which, if adopted, would knock away the main principle, and all the sentiment of kinship which has been at the bottom of much of the enthusiasm elicited by the Canadian proposal. It is this, that Great Britain should press the Canadian Government to consent to extend to Belgium, Germany, and the other most-favored-nations the privileges already accorded to Great Britain. This would mean a reduction in duties of one-eighth, and afterwards of a quarter on imports, not only from Belgium and Germany, but also from the Argentine Republic, Austria-Hungary, Bolivia, Chili, Colombia, Corea, Costa Rica, Denmark, the Dominican Republic, France, Liberia, Madagascar, Morocco, Muscat, Persia, Portugal, Russia, the Sandwich Islands, Siam, the South African Republic, Spain, Sweden and Norway, the Swiss Confederation, Tunis, Uruguay, and Venezuela—a cosmopolitan list, among which the essence of the contract, preferential terms to Great Britain, would be dissolved into thin air. Let it be observed, however, that the United States is not in the category of most-favored-nations, so that Canada would not be deprived the pleasure of retaliating upon the McKinley-Dingley tariff. Perhaps she would be satisfied if that were permitted her. But all the eloquence which has been expended by Mr. Fielding and others upon closer commercial bonds between Canada and the Mother Country would have been practically wasted.

It remains to be asked what would be the effect of denouncing the treaty obstacles now that the Colonies are more and more regarded as the only certain and steady markets abroad for the manufactured goods of this country? It is a question worthy of the most serious consideration. Other important Colonies may soon wish to follow the example of Canada in offering preferential terms to the United Kingdom. If the Canadian proposal be now rejected, those from all our other Colonies must be rejected, or perhaps it would be more correct to say, they will be "nipped in the bud," and the ideas now being discussed will never come to fruition. The consequence will be that foreign competition in the British Colonies and in India will grow more and more, while at the same time the tariffs of the foreign countries to whom we have opened the doors of our Colonies are being raised. It is pointed out that by denouncing the treaties, we shall be interfering with an export trade somewhat larger than that with the self-governing Colonies. It was upon this plea that Lord Ripon in 1895, after the Ottawa Conference, threw a douche of cold water upon the efforts then being made to push forward the idea of commercial federation between all parts of the British Empire. Much, however, has happened since Lord Ripon pronounced his well-known dispatch to the Governor-General of Canada. The trade of our foreign rivals has made greater encroachments, and it has

become more difficult to trade with our Colonies or with India. Foreign tariffs have been raised, and certain political events have occurred which must inevitably affect our commercial relations. The French have acquired Madagascar, and allowed French goods to enter free, while British goods are made to pay a 10 per cent. duty. Germany has increased its sugar bounties, a proceeding which should be regarded as an unfriendly act, inasmuch as it is aimed at the destruction of our Colonial sugar industry. The United States have again increased their duties, while other foreign countries do not hesitate to pay subsidies and bounties in a way which operates seriously against the manufacturing and commercial interests of the United Kingdom. Their high tariffs maintain prices within their borders, while their surplus goods are sent even at less than cost price into this country and its Colonies. Signs are not wanting that our manufacturing interests are beginning to tire of a policy which thus cripples them. A system giving them preferential treatment throughout the self-governing Colonies, which now take nearly as much as Belgium and Germany, could also be applied to the Crown Colonies and to India, and thus any retaliation from the Continent might be made good by greatly increased business with our own people. But it is a question whether Germany and Belgium could by higher duties seriously affect our trade, seeing that their duties are already so framed that nothing they can, by any possibility, produce themselves, is imported from us. The sole aim of German policy is to shut out every commodity from this country if possible. With this end in view the German Government receives nominal railway charges for conveying coal and iron to the shipbuilding yards. Coal, if for export, is to receive preferential terms. All this is a policy of commercial warfare, and in reality is forcing this country to rely more and more upon its Colonial trade. It is seemingly hopeless to look for better tariff treatment from Germany or the United States, to name but two of our principal competitors. Perhaps in the long run it will be to the best interests and to the stability of the Empire that these nations have adopted such a policy. They force us as a matter of justice that we should be free to accept from our Colonies any offer of reciprocal trade which they may be inclined to make. In all recent commercial treaties this is acknowledged, and we believe that the people of this country will agree that treaties which withhold such a liberty from ourselves and our Colonies, are not in harmony with the spirit of the times.

We have no space for discussing the many important points covered in above article. For the present we would merely refer to one, i.e., that the idea of Imperial commercial federation must be based, as The Journal states it, on some kind of preferential tariff arrangement. On referring to the other expressions on the part of other trade journals which we have seen, we find that although the preferential terms of the Canadian tariff were not given on condition of equivalent preferences on the part of Great Britain, it is universally admitted that the tender of these Canadian preferences and their acceptance by the United Kingdom has created a moral obligation on the part of the latter to adopt some means by which a corresponding preference can be given to Canada.

This journal does not feel inclined to criticise the reported expressions of the Canadian Premier with respect to this subject. We hope for some explanation of the views attributed to him. It seems incredible that any representative of Canada should presume to utter a single word in depreciation of the invaluable benefit which a preferential treatment of our products in the British markets would confer upon the Dominion.

When Uncle Sam passes a law to fire Canadian labor, it is high time for Canada to pass a law to prevent alien ownership of Canadian timber.—Hamilton Spectator.

IS THE POLICY OF PROTECTION DETRIMENTAL TO FOREIGN COMMERCE?

The following extract from the British Trade Journal, London, June 1st, affords a most conclusive reply to the above question:

German trade with foreign countries has taken a signal leap forward. The figures just published by the German Government show that the imports from abroad have risen from 32,536,000 tons in 1895 to 36,407,000 in 1896, or a net value of £212,300,000 to £228,600,000. The exports show a corresponding increase—from 23,629,907 tons in 1895 to 25,718,533 in 1896. The value of the exports has risen from £172,000,000 to £181,580,000. They are the highest totals yet attained by German foreign trade, being far in excess of even 1891.

In a former issue we showed that during the decade of 1881 to 1890, the value of the foreign commerce of Germany increased 10.29 per cent. over that of the previous decade, 1871 to 1880; and that the increase in the United Kingdom during the same period was only 6.50 per cent. The increase in the ultra-protectionist United States was 26.15 per cent. From the above extract, it appears that the increase in the foreign commerce of Germany for 1896 over the preceding year 1895 was, in value 6.73 per cent., and in weight nearly 12 per cent. It is hardly surprising that in view of such a result in Germany, and similar results in other protectionist countries, the manufacturers of Great Britain are rapidly losing faith in the virtue of that free trade policy which formerly worked so largely to their advantage, but which is now operating so seriously to their disadvantage, under the keen and successful competition of foreign industries which have been built up under the policy of protection. In an article in another page quoted from the British Trade Journal of same date as above, the policy of foreign protectionist countries is thus described: "Their high tariffs maintain prices within their borders, while their surplus goods are sent even at less than cost price into this country (Great Britain) and its Colonies."

Our own experience in Canada affords additional evidence in answer to the question under consideration. Although the value of the goods manufactured in the Dominion in 1891 exceeded the value in 1871 by \$226,312,783 (or about 102 per cent.), the value of the foreign commerce, as shown by total imports and exports, increased from \$170,266,589 in 1871 to \$218,384,934 in 1891. It must be observed, in this connection, that during these twenty years there was an immense reduction in the prices of all commodities. Hence it is evident that there must have been a very large increase both in the quantities of produce and home-made merchandise produced and consumed.

SUCCESS OF THE IRON INDUSTRY IN THE UNITED STATES.

A few weeks ago, the Canadian Pacific Railway Company purchased from the Carnegie Company 60,000 tons of steel rails (over \$1,000,000 in value), finding that they could obtain this large quantity from the United States manufacturers, on more advantageous terms than could be secured from British iron and steel works. We append the following clipping from a late number of the Chicago Daily Bulletin:—

The New York Evening Post's London correspondent

cables as follows: "I understand that large orders for steel rails have been placed in the United States by two of the Indian railways at prices said to be £1 per ton below the figure at which the contract could be filled in this country."

Only a few years ago Great Britain's supremacy in the iron trade was so great as to appear unassailable. Now, the United States surpasses her, both as to extent and cheapness of production. What a commentary this affords on the narrow minded shortsightedness of the free trade advocates in that country, who clamored so violently against the protective duties levied on iron and steel; men who could only see the temporary sacrifice which this policy entailed, but were utterly incapable of appreciating the wonderful success which it was destined to accomplish.

As the manufacture of steel rails is perhaps the most extensive and important branch of the iron industry, it is not to be expected that this industry can be successfully established in Canada until such legislation is passed as will secure the manufacture of all the rails that are required for new roads and for the replacement of old rails.

MEN, MONEY AND SHIPS.

Speaking of recent events and present conditions The Montreal Star says:—

Notwithstanding the powerful display of British naval forces at Spithead which so greatly impressed the foreign beholders, its full significance is not even yet realized in some quarters.

The arrival at New York on Wednesday, of the Teutonic, in her ordinary capacity as a regular mail steamer, reminds us of the enormous reserve force which Britain has in her mercantile marine.

Just twenty-four days ago the Teutonic left New York with the mails, crowded passenger cabins and full cargo space; forty-eight hours in Liverpool turned her into a swift-cruiser, armed with quick-firing guns, with her crew augmented by naval reserve officers and men supplemented by 300 boys from the training ships in the Mersey; she was furnished with munitions of war and stores, her bunkers filled with the best smokeless coal and she acquitted herself to the satisfaction of the naval authorities. Yet, in scarcely more than three weeks she is again plying the great ocean ferry with placid regularity.

But the object lesson has been given.

We realize that as in earlier days, England's naval strength is likely to become more apparent the longer any contest lasts in which she may become engaged.

Assuming that disaster should annihilate her great battle-ships and cruisers, it is only reasonable to suppose that the enemy would proportionately suffer, and should the need for calling out Britain's third line of maritime strength arise, a new navy could be put under the St. George's ensign out of the fleets of the Peninsular and Oriental; the British India, the Cape, the West India and the Cunard Mail Lines alone.

Whatever difference of opinion there may be as to the value of the figures of rival statisticians, even the school-boy knows that neither upon this Continent nor the other does any power possess such a reserve of such a class.

One further feature in Britain's favor we are reminded of by the report that her flag has been raised upon one or other of the Solomon Islands—that is, the great coaling station and repairing dock question. Here again Britain and Britain alone is almost independent; and the ports open to her vessels all over the world would be closed to her rivals.

A strong navy is useless to a nation unless her chain of coaling stations and docking facilities extend around the world.

It was not so in the old sailing ship days; so there is still

consolation for the nervous grumbler who fears British supremacy on the sea is not so assured as it was in the days of the three decker and the square rigged frigate.

We may be quite sincere in trotting forth the sentiment that "we don't want to fight," but is not altogether brag to continue the song and add, "but, by 'jingo,' if we do, we've got the ships, we've got the men, we've got the money, too."

The old music hall ditty of 1877, which christened a party "Jingoes," seems much maligned, for, after all, it merely gave bald expression to an indisputable fact.

PROTECTION AND REVENUE.

Conceding that the time will come to the United States when protective duties can no longer be mainly relied upon to produce the revenue required for the needs of the Government, but contending that the time is in the distant future, and that there is no immediate occasion for anticipating the conditions which may then arise, the Boston Home Market Bulletin says:—

The contention in some quarters that it is already necessary to depend more upon internal and other direct taxes to produce an adequate amount of revenue is not supported by the facts. There is not a particle of evidence to show that the higher duties imposed in the new tariff bill are beyond the point of sufficient protection, or would fail to yield abundant revenue; hence there appears to have been no necessity for the recent proposed reductions of duties on many classes of imported articles, and discarding sure sources of revenue in other cases, thereby making an increase of internal taxation requisite.

The McKinley tariff of 1890 produced a surplus revenue, without any duty on sugar. While duties on iron and steel products, including tin plate, have been rendered less fruitful for revenue by the progress of home industry, the imposition of duties on sugar and the needful duties on other commodities, covering old and new industries, would probably raise all the customs revenue required.

The object of a protective tariff is not only to produce revenue but to defend the industries of the country against an unequal foreign competition. We would not want a duty imposed in any case which would not develop a successful home industry and add appreciably to revenue. The whole or part of an existing duty on any article can well be removed when no longer required either for protection or revenue. There are some American products which now have the preference in foreign markets, because of their better quality or greater utility, irrespective of their cost. Some of these have no tariff protection and others but little; and as few or no foreign goods of the same kind are imported there would not be sufficient customs revenue from them to warrant any duties.

But tariff protection must still be afforded to any article which has competition in our home market with a similar article of foreign make; and the number of such articles is yet very large. In fact there are comparatively few of the whole number of American products that have so nearly approached a condition of independence that all tariff protection may be safely withdrawn from them.

There is one possible way in which there can be any great diminution in the volume of imports or in customs revenue on this large class of products for a long time to come, and that is by a reduction of wages to foreign standards. The only other ways would be the raising of foreign wages to the American wage level, which is hardly to be expected; or the entire displacement of foreign-made goods in our market by reason of the superior quality and equal or lower cost of those of domestic manufacture. But this is a problem of the future, and affords no rational grounds for making the new tariff inadequate for either protection or revenue.

Tariff rates must continue to be fixed and adjusted to afford domestic industries a fair and equal chance with com-

peting foreign industries, without compelling a resort to wage reductions, or they will prove lamentably deficient to assure satisfactory results. The operations of the Wilson tariff have demonstrated that inadequate protection is almost as bad as no protection at all, and has had the same disastrous effect upon the government's revenues as upon the country's industries.

THE RECIPROCAL TARIFF.

The regulations in regard to the reciprocal tariff under the Customs tariff of 1897 have been issued by the Minister of Customs, and are as follows:—

"Persons making entry of goods under the Canadian reciprocal tariff of 1897 are required to furnish a separate invoice of the articles entitled to such entry, with a declaration annexed thereto from the exporter or his agent made before a notary public or a commissioner for taking oaths, or the chief municipal officer of a city or town, or a British Consul, or before the president or secretary of the Chamber of Commerce, as to the origin and value of the articles, in the form hereinafter prescribed:—

"Form of declaration. I, the undersigned partner or duly authorized agent of the firm of (blank), do solemnly and truly declare that the articles described in the annexed invoice marked shipped to (blank) per (blank) in packages as detailed below are bona fide the produce or manufacture of (blank); that the said invoice contains a full and true statement of the fair market value when sold for home consumption of the said goods at the time and place of the exportation thereof direct to Canada; that such fair market value includes any bounties, drawbacks, royalties, or charges that may have been, or are expected to be, allowed or paid on the said goods, or is payable on patent rights, or because of the lease of such goods, or for the right of using the same, and that no different invoice or account thereof has been or will be furnished by me or in my behalf."

The following directions are added:—"Where invoices are made out at prices below the fair market value for consumption in the country of exportation invoices must show in a separate column, or otherwise by addition thereto, such fair market value."

THE CANADIAN ALIEN LABOR LAW,

Following is the official text of the Canadian Alien Labor Law, assented to June 29, 1897, denominated "An Act to Restrict the Importation and Employment of Aliens."

HER MAJESTY, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:—

1. 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, parole or special, express or implied, made previous to the importation or immigration of such alien or foreigner, to perform labor or service of any kind in Canada.

2. All contracts or agreements, express or implied, parole or special, 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 immigration or importation of the person whose labor or service is contracted for into Canada, shall be void and of no effect.

3. For every violation of any of the provisions of section one 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, express or implied, parole or special, 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.

4. The master of any vessel who knowingly brings into Canada on such vessel and lands or permits to be landed from any foreign port or place any alien, laborer, mechanic or artisan who, previous to embarkation on such vessel, had entered into contract or agreement, parole or special, express or implied, 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, laborer, mechanic or artisan so brought or landed, and may also be imprisoned for a term not exceeding six months.

5. Nothing in this Act shall be so construed as to prevent any citizen or subject of any foreign country, temporarily residing in Canada, either in private or official capacity, from engaging, under contract or otherwise, persons not residents or citizens of Canada, to act as private secretaries, servants or domestics for such foreigner temporarily residing in Canada; 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; nor shall the provisions of this Act apply to professional actors, artists, lecturers or singers, or to persons employed strictly as personal or domestic servants: 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.

6. The Attorney General of Canada, 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.

7. 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.

8. No proceedings under this Act, or prosecutions for violation thereof, shall be instituted without the consent of the Attorney General of Canada, or some person duly authorized by him.

9. 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.

The formal protests that come from European governments, as well as from unofficial sources in Europe, against our tariff legislation, is a sure indication of the value of the markets of the United States in the estimation of the manufacturers and producers of foreign countries.—Home Market Bulletin.

TORONTO'S GREAT FAIR.

As announced elsewhere, Canada's Great Victorian Era Exposition and Industrial Fair, otherwise known as the Great Toronto Fair, will be opened in grand style on August 30th and will remain open for the pleasure, entertainment and instruction of all the world until September 11th next. This Fair is a national exposition of Canada's resources, and we are assured that the displays to be then made will be more extensive and important than ever before. It gives us much pleasure to know that many of the buildings devoted to displays of machinery and the products of our industrial establishments have, during the past year, been remodelled and improved, and now afford better facilities than ever before to exhibitors, particularly Machinery Hall, upon which several thousand dollars have been expended. The exhibits of machinery and machines in motion will be more numerous this year than ever before. Nearly all the sections and spaces have been already pre-empted. In accordance with the wishes of the exhibiting manufacturers, no premiums are offered by the Industrial Exhibition Association for displays of their products, but in the other departments awards and medals are given, and this year these premiums are to be more valuable than ever before. The entertainments before the grand stand, too, and in the horse ring and elsewhere are to be very entertaining, it being the intention to reproduce in a very elaborate manner many of the events and situations as they occurred in the Queen's Jubilee procession in London last month. As usual THE CANADIAN MANUFACTURER will keep open house at the Fair, where the latch-string will always be found on the outside of the door, and to the hospitality of which all manufacturers and their friends—their sisters and their cousins and their aunts are cordially invited.

EDITORIAL NOTES.

The flexibility of the electric elevator machine has recently been most strikingly illustrated at one of New York's newest sky-scrapers, now being erected in the lower part of the city. Three electric elevators were installed and put in operation while the building was in the very early stages of construction, this being made possible by securing the current from the street lighting system. Rough cages were first operated, serving as hoists for building material and for the various mechanics. Not only has a great deal of time been saved by the early installation of the elevator apparatus, but so efficient has the freight service been that the hod carriers' work has been largely dispensed with, resulting in a saving of money, but, according to the *Electrical World*, at the same time bringing forth a strong objection from the Hod Carriers' Union.

There was a time when many Canadians felt that they were neither appreciated nor understood in the Mother Country. Eminent Canadians came back to us from visits to Great Britain complaining that they were looked down upon as "colonials;" and there was a general feeling, particularly in the west, that Englishmen did not concern themselves about our welfare half so much as we were inclined to care for theirs. But this idea, dying perceptibly of late years, will hardly survive the Jubilee days in the most skeptical of booms. "The Colonies" are the toast in Britain to-day;

and the British statesmen unite in proclaiming that the future of the Empire is bound up with the maintenance of close unity between all its parts. This fact has been clear enough all through the past, but now we are awakened to it, and the air resounds with a universal clamor for closer and closer Imperial unity.—Montreal Star.

Yesterday, the people of St. Stephen, N.B., crossed over to Calais, Maine, and aided their neighbors to celebrate the 4th of July. On Jubilee Day, the Calais people celebrated at the Canadian town. Thus is international good fellowship promoted. There should be more of it.—London Advertiser.

No doubt these little exhibitions of friendliness between neighbors go a certain distance in smoothing the asperities sometimes existing in international life, but we would be better pleased to know that we were not faced with a lot of hostile legislation, such as the Yankee Alien Labor Law, calculated to disgrace the moral ethics of South Sea Islanders

The following is a statement of the finances of the Dominion for the fiscal year ending June 30, 1897:

Revenue.	1896.	1897.
Customs	\$19,681,139 23	\$19,318,363 58
Post office	2,955,187 64	3,226,482 24
Excise	7,865,081 98	9,148,915 21
Public works, including railways	3,586,070 19	3,511,267 94
Miscellaneous	1,532,296 30	1,667,151 55
Total	\$35,659,775 43	\$36,872,170 52
Expenditure	\$30,557,274 02	\$31,237,458 47

The expenditure on capital account has been as follows:

	1896.	1897.
Public works, railways and canals	\$2,385,223 01	\$2,032,464 62
Dominion lands	71,495 85	77,208 42
Railway subsidies	812,449 10	384,955 30
Militia	486,666 66	691,723 67
Total	\$3,755,826 22	\$3,186,352 01

A dispatch from San Francisco to the New York Tribune says:

Many protests against the reciprocity treaty sent to Congress from various interior points of California were obtained through misrepresentation, as growers of sugar beets fancied that the continuation of the treaty would injure their business. The real truth is that the profits of beet sugar manufacture are so great that the factory managers could afford to pay twice what they are now paying for sugar beets and still make big dividends. Beets for which they now pay \$3 a ton make \$10 worth of sugar. Some idea of the enormous profits of beet sugar factories may be gained from the fact that Claus Spreckels' Watsonville factory paid in nine years dividends of \$117 for each \$100 share of stock. Spreckels imported from Germany, duty free, all the machinery for that factory, and he proposes to import machinery for his new Salinas factory, but those who have studied the subject declare that the machinery can be made here as well as in Germany, as the Alvarado factory has been successfully worked with home-made machinery. An effort will be made by those opposed to Spreckels and the Sugar Trust to have a duty imposed on beet sugar machinery.

Alluding to one of the features of the recent Jubilee celebration in London, the Canadian Gazette says:

Mr. Kipling was asked last week if he had any consoling message for his Canadian critics on the subject of his poem.

"Give Canada my love," was his laughing reply, "and tell her I won't do it again." The Poet of the Empire was, by the way, not a little astonished at the United Empire Trade League luncheon last week to find himself dubbed on the guests' list as "Post Laureate of the United Empire Trade League."

Mr. J. Castell Hopkins should not be deprived of any laureate honors that belong to him.

Speaking of preferential trade between Canada and Great Britain, the Manchester, Eng., Textile Mercury says:—

To watch the doings of professional politicians evokes a sentiment of pity for mankind that it should be afflicted with them. The so-called "Conservative" party in Canada was in office for nearly twenty years uninterrupted, and introduced the policy of Protection. The so-called "Liberal" party, in order, we suppose, to be in opposition, proclaimed Free Trade and commercial, if not political union with the United States. The constituencies preferred the former, and placed the Conservatives in office, keeping them there for, to be nearly accurate, say eighteen years. The "Liberals" did not like this, and, thinking they had not "gone it strong enough" for the States, set to work to promote a political union also. They, however, fared worse, for, like the Radical party in this country after taking "Home Rule" under their wing, the country would have none of them. Seeing the mistake they had made they repented, altering their policy by adopting and advancing upon that of their opponents. Here they have hit public sentiment. Their policy now is to encourage trade with this country by giving it preference, a policy which has been endorsed both in England and in Canada. They have thus performed the operation known as "dishing" their opponents, the Conservatives. The latter, in consequence are floundering, and do not seem to know what to do, or to try to do, with the preferential clause of the new tariff measure, which has already come into operation. To this they have offered numerous amendments, but it seems to have escaped them all. To show to what straits they were reduced we give the last resolution offered on the Bill, which was submitted by Mr. McNeill:—"That it is advisable that a Customs arrangement be effected between the United Kingdom and the Colonies, by which the trade within the Empire may be placed on a more favorable footing than that which is carried on with foreign countries; that, while this House regards the reduction of twenty-five per cent. without any compensating advantages in the markets of the United Kingdom as greater than the industries of Canada can at present safely endure, yet as an initial step in the direction of the commercial union of the Empire and in recognition of the many benefits conferred upon Canada, this House will make an appreciable and unconditional reduction in the duties it levies on the goods and produce of the United Kingdom only as soon as the Government and Parliament of the United Kingdom are prepared to take advantage of such reduction." Until men have developed a much higher degree of strength of the moral sentiments of their nature, government by party will always be radically weak, because it compels one side or the other to act in contradiction to their best judgment of what is good for the State. But that is far from being its most serious defect. A much worse illustration of the weaknesses of that system has been offered at home during the past few weeks.

Speaking of the proposition now under advisement by the United States Senate to place a stamp tax on stock and bond certificates, the New York Financial News says that it is a sad commentary on the revenue features of the Dingy tariff, and that it may properly be designated as the first breakdown of the "McKinley Tariff" No. 2. It is an admission, it says, that the new tariff will not produce any more revenue from

duties than the Wilson tariff. It is a confession of the futility of the scheme to make a tariff both protective and revenue producing; it concedes in advance that in the same ratio that the tariff protects by keeping out foreign goods to that same extent it fails to produce revenue. This resort to a stamp tax on bond and stock certificates is a war measure in time of peace; it is possibly the best object lesson we could have as a public educator on the question of tariff. The public will not be slow in perceiving that measures of this character are incident to some fundamentally vicious principle in our fiscal policy. The extra session of Congress was convened for the avowed purpose of revising the tariff to supply—revenue. If the new tariff, so far as it relates to duties on imports, is not productive of any more revenue than the Wilson tariff, it is difficult to appreciate the wisdom of a general overhauling of the old schedules, to which commerce had adjusted itself. A supplementary bill, framed with especial reference to the deficiency, imposing specific taxes on a few articles, would have been capable of enactment in a short session, without any disturbance of business, and with much more advantage to the country. It is now plainly apparent that the purpose of the new tariff was protection and not revenue. However, the country is generous and long-suffering—the people will forgive and forbear, if only we may have a rest for a few years at least. The country has suffered so much from the mistakes of our financiers at Washington, and the process of liquidation has been forced to such an extreme the past few years that there is to-day hardly a vestige of inflation left in property values, and, fortunately we are so near bed-rock foundation that we can inaugurate an era of prosperity in spite of the defects in the new tariff.

Rand McNally's "Monthly" says:

England receives about \$100,000,000 a year from the amounts it has loaned to foreign countries; \$400,000,000 to \$600,000,000 net from its merchant marine, which carries three-fourths of the merchandise that crosses the seas, and \$400,000,000 to \$600,000,000 more from the profits realized by its citizens settled in its colonies or foreign countries and engaged there in trade or manufactures. With these \$1,400,000,000—\$1,600,000,000 received from abroad, which the custom statistics make no mention of, England is able to meet the balance of trade against it, which exceeded \$1,000,000,000 in 1896, and the expenditure of its citizens traveling abroad, which, deductions made of a like expenditure of foreigners traveling in England, are not less than \$200,000,000. There actually remains, therefore, to England, notwithstanding the enormous trade balance against it, an annual surplus obtained from abroad of \$200,000,000 to \$400,000,000.

Mr. Frederic C. Penfield, United States agent and consul general at Cairo, Egypt, has forwarded to the department at Washington a detailed report of the traffic through the Suez Canal for the year 1896, from which it appears that the tolls aggregated the sum of near \$16,000,000. The number of vessels using the great waterway in 1896 was twenty-seven less than in the preceding twelve months, but the tonnage last year was greater, and the receipts were abnormally enhanced by the transit of a great number of Italian soldiers, going to or returning from the Abyssinian war. As in 1895, a few more German ships passed through the canal than in the previous year, while the falling off of British ships was considerable

In 1895, the number of ships flying the British flag using the canal was 2,330, while the number in 1896 was 146 less. As it was, however, Great Britain supplied two-thirds of the total traffic of the Suez Canal in 1896. It is a regrettable fact, says Mr. Penfield, that not one ship under the United States flag passed through the canal last year. In 1895, four war ships or yachts flying the stars and stripes made the passage of the canal.

The statistics of the traffic in 1896 are given in detail in the following table:

Nationality.	Steamers.	Net tons.	Traffic receipts.
Austrian	71	158,751.38	\$289,857
Belgian	1	1,891.22	3,431
British	2,166	5,824,100.13	10,649,130
Dutch	199	382,386.7	699,900
Egyptian	1	2,274.18	7,336
French	218	558,163.96	1,032,010
German	320	773,405.29	1,431,499
Italian	229	399,758.72	806,925
Japanese	10	30,553.79	51,348
Norwegian	38	72,248.76	128,880
Portuguese	7	7,993.74	13,404
Russian	47	129,127.8	288,843
Spanish	63	182,361.79	383,751
Turkish	37	41,289.87	141,221
Total	3,107	8,594,307.33	15,930,435
Total for 1895	3,434	8,448,245.83	15,631,748

Discussing the difference between the principles of the Canadian tariff and the tariff system of the United States the Manchester, Eng., Textile Mercury says:

One of the most remarkable things we have seen in the political world for a considerable time, and these are not few, is the contrast afforded by the action of Canada in connection with its tariff when put into juxtaposition with that of the United States. In the latter there are a thousand domestic interests fighting in its Legislature as to which shall get an advantage over, and at the expense of, the other. But the chief point to which we wish to draw attention is the policy of the two States in relation to commerce with other countries. The United States is hoping to apply "the Blaine Reciprocity Scheme" to as many of the minor States of the world as it can force to adopt it. The principle of this highly moral design is to force the countries which accept it to differentiate in their tariffs in favor of the United States and against other countries, the consideration being that their goods shall be permitted to enter the United States, not on a reduced tariff basis, but that they shall not be penalised. The object is to compel other countries to protect the products and manufactures of the United States in their markets against level competition with those of other countries. And this is the policy, "the great potentialities" of which President McKinley, it is declared, fully sees, and to which in due time he will devote his energies to carrying into effect. It is so wonderful that it transcends all comment. We may therefore look for more squalls from the West, as they will come in due time.

The spirited course taken by Canada, and which has elicited such wide admiration, is diametrically opposite to this, and involves no political injustice to any people or nation. It is to allow a rebate of Customs duties to countries which adopt a tariff as liberal to the Dominion as that of the latter is to theirs. It does not ask any country to penalise the trade of neighboring States in order to favor its own. Here we see the essential difference of the policy of the Dominion from that of the States. The former is a policy of political justice; that of the latter is one of political injustice. The step taken by the younger country is an important one, constituting, as we believe it does, the most influential movement yet made towards the consolidation of the Empire. We need say nothing more to commend it to favorable consideration.

A dispatch from Ottawa mentions that a formal order-in-council has been passed admitting New South Wales to the benefits of the reciprocal tariff, the minister of customs having reported that the tariff of the sister colony is favorable to Canada. Was there ever anything more absurd? New South Wales admits Canadian goods upon exactly the same terms upon which she admits goods from the United States. She treats Canada exactly as she treats all nations of the world, and the pretense that her tariff is "favorable to Canada" is simply silly in the highest degree.—Spectator.

But there does not seem any good reason why Canada should stand even the one-dollar United States duty on lumber without putting a similar export duty on Canadian logs. There is a good deal to be said for an export duty on logs even if there be no American duty at all on lumber—Ottawa Journal.

There is. And if there is anything to be said against it—anything important or convincing—we have failed to see it. The good of Canada demands that her government shall give her the full benefit of her natural monopoly of pine logs, pulpwood and nickel ore. To divide this great advantage with a foreign nation is the height of foolishness.—Hamilton Spectator.

The London, Eng., Spectator takes a pessimistic view of the demand of American farmers for a bounty on wheat grown for export. It says:

As the fairness of the claim must be conceded by every logical protectionist, and as the farmers hold the balance of power between the goldites and the silverites, their demand will probably be granted, in which case the value of wheat in England will sink, like the value of sugar in England, possibly to fifteen shillings a quarter. It is difficult to conceive what would then become of English agriculture. Rents could not be paid. The American advocates of competing in metals must win the farmer's vote, and they can only win by conceding their demand, which, if protection is reasonable at all, must be absolutely just. Why should other industries be protected, and the oldest and best left out in the cold? The expense will delight the friends of President McKinley, who wish to deplete and not fill the Treasury.

The Toronto Globe republishes what it says is an extract from the London Globe as follows:—

"Dear Sur:—You're a dam fraud, and you know it. I don't care a rap for the billet or the munny either, but you could hev got for me if you wasn't as mean as ink. Two pound a week ain't eny moar to me than 40 shillin's is to you, but I object to bein' made an infurnil fool of. Soon after you was elected by my hard workin', a feller here wanted to bet me that you wouldn't be in the House moren a week before you made an ass of yourself. I bet him a Cow on that as i thort you was worth it then. After i got Your Note sayin' you deklined to aekt in the matter i driv the Cow over to the Feller's place an' tole him he had won her. That's orl I got by howling meself Hoarse for you on pole day, an' month's befoar. You not only hurt a man's Pride but you injur him in Bizness. I believe you think you'll get in agen I don't. And what I don't think is of more Konsequence than you imajin. I believe you take a pleshir in cuttin' your best friends, but wate till the clouds roll by an' they'll cut you—jest behind the Ear, where the butcher cut the pig. You're no man. An' I don't think yure much of a demercrat either. Go to hel. I lowers meself ritin to a skunk, even tho I med him a member of Parliament."

Our own veracious Globe informs us that this shining specimen of literary directness was contained in a letter

written by an Australian partizan to an eminent politician whom he had assisted to eminence, but who, on reaching his high estate, forgot the poor man on whose shoulders he had risen. There may be a doubt regarding the bona fides of the characters, and their location, and it is quite probable that the writer of the letter is a disappointed Canadian Grit who in very plain and unmistakable language informs his Member of Parliament what he thinks of him.

The total number of Sunday School scholars in the world in 1890 was 22,508,661. In the United States there are 9,718,432 Sunday School scholars and 123,173 Sunday Schools. Thus it is seen that that country furnishes a large percentage of the Sunday School population of the world.—The Globe.

This, perhaps, accounts for the fact that as far as tariff protection to home industries goes, the people know a good thing when they see it. Sunday Schools are the corollary of protection and vice versa. The more Sunday Schools and the more intelligence, the greater the devotion to protection.

Over-production, brought on by the increased out-put rendered possible by labor-saving machinery, is the most serious and puzzling economic, social and political problem of the day, and a satisfactory solution can be reached only by evolutionary processes. Here is an illustration, reported in a metropolitan paper:

In one of the factories of this city the writer was shown recently a machine on which a boy, not over fifteen or sixteen years old, was doing the work which, until recently, required six men, working by hand. The boy gets \$4 a week. The six men, who were of necessity capable mechanics, could not be had for less than \$1.50 a day, or \$9 a week each. That is, the company now pay \$4 for work that used to cost \$54. It is no wonder that the manufactured articles into which this labor enters can be sold cheap, nor that many mechanics are out of work.

This is a fair example of the development now going on in nearly every department of industry. It cheapens nearly everything that the people have to buy, but at the same time it takes work from men and gives it to machines.—Free Press.

The United States Government is sailing pretty close to the wind in building cruisers for the great lakes to be used for the protection of the revenue. At least that is what they are officially called. One of them, the Gresham, was launched eight months ago, and has been armed with quick firing guns and torpedo tubes. In addition to this she is fitted with sponsons for a heavy primary battery. She develops a speed of sixteen knots and will be an opponent to be reckoned with.

In calling attention to this fact The World says:

This is an invasion of the convention between the Governments of Great Britain and the United States. We in Canada may be pardoned if we suspect the Yankees of building gunboats under the guise of revenue cutters. There are two courses to pursue. Either to build vessel for vessel or enter a vigorous protest. The former will be the most useful policy—the latter the most dignified—and useless.

THE CANADIAN MANUFACTURER has repeatedly directed attention to the violation of an existing treaty by the United States in placing war vessels upon the lakes, and suggesting that whenever one such vessel is so placed the British Government should place two or more similiar vessels upon those waters.

Britain, with the best tariff system in the world, and the United States, with the worst, offer instructive contrasts now that the Americans are in the throes of a periodical revision. Fancy a British merchant going to London to secure a modification of the tariff!—The Globe

It does not appear that British statesmen, representing British merchants and manufacturers, consider their tariff system perfect judging by the efforts they are making looking towards a Zollverein to include all British countries, which effort seems to be within measurable distance, notwithstanding the opposition of Sir Wilfrid Laurier.

In the House of Commons, on the 6th ult., in reply to a question whether, in consequence of the recent action of the Canadian Government proposing to lower the duties hitherto imposed in Canada on British imported merchandise, Her Majesty's Government was considering the advisability of denouncing the treaties of commerce at present existing between this country, Germany, and Belgium respectively, as being under these circumstances inconsistent with the favored nations clause of such treaties, Mr. Curzon said that the matter is receiving the careful consideration of Her Majesty's Government, but he was unable to make any statement with regard to it.—British Trade Journal, London, June 1st

The Canadian tariff proposals giving preferential terms to this country are being stoutly defended in the Canadian Parliament, and in the debate which took place on the 26th May, Mr. Davies, the Minister of Marine, gave an able exposition of the Canadian position. We would commend it to the notice of the German Press. In another column we deal with the matter generally, but we may here give an instance of the character of the attacks made on the Canadian proposal. Export, the organ of the German foreign and colonial trade, appears to abandon the idea of a tariff war with Great Britain. Should the treaty of 1865 be denounced, it would retaliate by forming a coalition, and threatens us with a combination of Turkey, Austria, Russia and Germany against the British position in Egypt.—British Trade Journal.

A leading local manufacturer, in a private letter, thus discusses the Fielding tariff:—"I take this opportunity of calling attention to a favorable feature of your preferential clause towards Great Britain which I have not seen mentioned in the newspapers, and which may possibly not have occurred to you, viz: British manufacturers make for the world and sell to the highest bidder, strictly on the principle of supply and demand. Their prices can, therefore, be ascertained fairly correctly and a Canadian manufacturer proposing to compete against them can tell what he has to do, but in the case of the United States it is quite different, when they have filled up their own restricted and highly protected market they ship the surplus (if any) to other markets, particularly to Canada, and sell for what the goods will bring, often auctioning them without reserve. This not only makes uncertainty as to the value of such goods for duty, but it puts Canadian manufacturers of similar goods into a position of great nervousness and uncertainty. Our travellers are credulous and buyers inveterate "bluffers," to use a mild term, and between them we are induced to sell a great deal too low. I think you will find very few Canadian manufacturers before long who will not testify that they feel vastly more comfortable in competition with British manufacturers with a fifteen per cent. protection, than with twenty-five per cent. against United States manufacturers."—The Globe.

Funny, isn't it? American manufacturers overstock their

home market and sacrifice their surplus in the Canadian market, even in the face of a twenty-five per cent. duty, and the smart Aleck in The Globe thinks that Canadian manufacturers are expected to feel vastly more comfortable in the knowledge that British manufacturers have to encounter a tariff barrier only nineteen per cent. high. Why not make it impossible for any foreign manufacturer to slaughter his surplus products in Canada?

We have just cut down our tariff, and United States labor is profiting as a result. Now the Americans have ordered Canadian labor to be excluded from the United States. At Niagara Falls they are threatening to cancel the charter of a street railway company if it employs Canadians on its line. Pennsylvania has passed an Act laying a tax of three cents per day or \$10 a year, upon every workman who is a foreigner. But Congress has kindly decided to admit New Brunswick lumber free of duty provided United States citizens come over to Canada and cut it. So that while our Government is legislating in the interests of United States workmen, the United States legislation undertakes to rule Canadian labor out of the United States and to instal United States labor in Canada. This free trade scheme is a fraud upon Canada. We must legislate for the protection of our own people, and that right up to the hounds—Mail and Empire.

The clause in the new Dingley tariff providing that lumber from New Brunswick shall be admitted into the United States free of duty if cut by American citizens is an outrageous provision. Practically the United States Senate is undertaking to determine who shall be employed in a Canadian province and discriminating against Canadians in their own country. Side by side with this extraordinary proceeding is the determination to drive out the Canadians employed on the Gorge Railway between Lewiston and the Falls. It is provided also by the new American tariff that goods seeking access to the United States shall meet a discriminatory duty of ten per cent. if carried in any other than American vessels. As an exhibition of national greed and selfishness these measures almost make one despair of civilization. Great Britain and Canada, with a patience that is admirable and a temper that is praiseworthy, have steadily sought to enjoy good trade relations with the United States, but all in vain. The United States, under the influence of the maddest protection, is organizing itself against the world and challenging the world's commercial hostility, and sooner or later the other great nations of the earth will unite in commercial hostility to the United States. We do not claim that the United States is legislating particularly against Canada. Washington is legislating against the world. It is all a pitiful commentary on our modern civilization. But it may be that nothing short of a world-wide commercial war will persuade the United States to adopt a sane and neighborly commercial policy. Some American papers blame Canada for seeking better trade relations with Great Britain. We must seek better trade relations somewhere, or submit to be absolutely cooped up within our own borders. The independent American would hold us in contempt if we did not fight for our own hand and seek honorable means of relief from the pressure of our great neighbor. The truth is that the United States is a very powerful agency in promoting the unity and consolidation of the British Empire.—The Globe.

Some British statesmen are apprehensive of an American export bounty on corn. By foreign export bounties Britain gains every year a large part of the outlay on the navy which keeps her mistress of the seas. If the United States would subsidize grain, it would be a tribute far greater than was resisted in the war of independence. That foolish yielding of tribute after a century of no tribute oratory should make John Bull smile. No project need be regarded as too foolish for Congresses and Parliaments.—The Globe.

If bestowing an export bounty on a home product implies a foolish yielding of tribute as The Globe says, it has built up a vast and most wonderful industry in Germany in the growth of the sugar beet and the manufacture of beet sugar; and if John Bull indulges in smiles over the incident, no one, particularly the German people, begrudges him his grim and unsatisfactory hilarity.

A Washington, D.C. telegram of July 1st, alluding to the Dingley tariff then under discussion in the United States Senate, says:

The bill is now completed, with the exception of the reciprocity section and some comparatively minor paragraphs. Much progress was made today in clearing up detached paragraphs heretofore passed over. Only three of these, coal tar, potash and tea remain, so that these items, the reciprocity section and the brief internal revenue and administrative provisions are all that remain of the bill to be disposed of before the final vote is taken.

It should be borne in mind that when the Senate has passed this tariff bill it is returned to the House of Representatives, where it originated, for concurrence in such changes as have been made in it. If the House concurs in the changes the bill goes to the President for his approval and signature, which is necessary before it can become law. It is possible that the new tariff may be passed and go into effect in a few days; or it may be hung up for weeks.

MANUFACTURES OF RUBBER.

Rubber is one of the most useful and staple articles in modern use. There are but few uses to which the wonderful product cannot be put. It can be made as pliable as putty or as hard as wood, and is just as adapted for use as a hair pin as for a golf ball or a waterproof jacket. Few people, however, are as familiar with the process of manufacture as with the product itself.

The larger part of our rubber comes from Brazil, which is the greatest rubber producing country in the world. Here, of course, rubber workers handle their elastic material with an ease and celerity which is a revelation to the man who has wasted the greater part of a forenoon trying to mend a hole in his punctured tire. Although the larger part of rubber manufacturing is done by machinery there is still considerable done by hand. In making up goods for druggists, stationers and surgical supplies the best grades of Para rubber, the best in the world, are generally used.

The ordinary commercial rubber is gray, but its coloring is an easy matter. This is done by mechanically mixing with the rubber, after it is washed and dried, different kinds of pigments—oxide of zinc for white, lampblack for black, golden sulphuret of antimony for yellow and vermilion for red. The rubber mixed with the pigment is run through heavy steam heated rollers into thin sheets.

The making of rubber bands is a simple process. Thin sheets of pure gum are wrapped around a form until it is shaped into a flat tube of the required thickness. This tube is then vulcanized, when it is shipped off the form and run through a machine, which cuts it into strips.

Rubber erasers contain finely powdered pumice stone or emery dust. The abrasive materials are mixed with the rubber mechani-

cally, which is then moulded into shape and vulcanized under steam heat.

One of the most interesting processes in the manufacture of rubber goods is that of bulbs. Long bulbs, such as syringes and atomizers, are made from two pieces of rubber, but round bulbs, such as pumps and balls, are made from three pieces. For cutting the rubber zinc or galvanized iron patterns are used. Considerable care is necessary in this, as the strength of the seam depends upon the smooth fitting of the edges. The three parts for hollow balls may, however, be cut with a die. If the bulb has a neck, small pegs of iron are first prepared by being cemented and wound with strips of rubber as a nucleus.

After the rubber is cut into the proper parts it is then brushed with cement the whole length of the skived edges, and thoroughly heated. The bulbmaker then takes the softened rubber, and taking a prepared peg places the neck on one piece on one side of the rubber core, and another neck piece on the opposite side, then press them firmly together, and, rolling the whole tube-shaped piece between thumb and forefinger, has finished the neck of the bulb. The next process is that of knitting the edges which form the seam. This is done by holding the finished neck toward the operator in his left hand, while with the thumb and forefinger of the right he pinches the edges together for nearly the whole distance around. Into the side aperture, which is left open, is poured a little water or liquid ammonia. The opening is then made still smaller, and as a final touch the maker puts his lips to the orifice, and blows full and hard into the bulb. The softened rubber under this pressure expands, the flattened shape is lost in a fuller and more rounded outline, while the operator, with a quick nip of his teeth, closes the opening, the imprisoned air and water holding the sides apart in symmetrical copulancy.

The partly made bulb is now passed on to the turners, who, armed with scissors with curved blades, carefully circle the seams, cutting away all unevenness, till the whole exterior is ready for the mold.

The bulbs, as soon as they leave the trimmers' hands, are laid in shallow pans filled with chalk. When taken from here, they are carefully dusted with talc, so that the rubber will not adhere to the inside of the mold. A mold worker then takes one-half of the mold in his left hand and with his right gently forces a bulb into it, capping it with the second half. Each bulb, if the pattern worker is skillful, will fit its mold; otherwise the finished bulb is apt to be imperfect.

The molds are run upon small tracks into the vulcanizer. After they have been cured a sufficient time the vulcanizers are opened and the cans are run under an ordinary shower bath, which quickly cools them. They are then unkeyed, the molds twisted open and the bulbs taken out. If the work be well done, the swelling of the liquid within its rubber prison has exerted so intense a force that every line and letter within the mold is reproduced upon the outside of the bulb, while the sulphur, combining with the heat, accomplishes the vulcanization.

The final process takes place in the cylinder room, where in slowly-revolving tumbling barrels the bulb undergoes a thorough scouring. When taken out of the cylinders, the dirty yellow color which the bulbs bore on leaving the mold has disappeared, and they are now smooth, white and finished. The neck being cut off the required length, the bulb is ready for market or for the various fittings which accompany it as adjuncts to the syringe or atomizer.

POWER OF AIR

In the great manufactories, on the railroads and in the big foundries compressed air has, of recent years, demonstrated its usefulness in so many ways that to be deprived of it now would entail incalculable loss to producers the world over.

In these places its simplicity has been its greatest recommendation. A rubber hose is the only connection necessary between an air machine and a supply pipe. No other force can be so easily applied. The bursting of the hose would injure nothing, no scalding as from steam. No insulation of pipes is necessary as in using electricity. Air can be controlled, like water, by a simple stop-cock. In many shops the cranes for moving heavy loads are operated by air. Cylinder lifts are also used, the air is turned on beneath the load, it is raised, and by the crane caught and carried to its destination.

In the foundry, air lifts are in general use to lift the cores, to take the patterns from the molds and to place the cores in position. The power can be manipulated with such delicacy in this work that molders can follow the most complicated patterns with a heretofore

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unknown accuracy. In pouring the molten metal air is also used, and when the castings are completed air lifts them to position. A blast of this same compressed air is then laden with sharp sand and the castings are quickly and neatly cleaned.

Great cannon are controlled by air when they are mounted on the modern disappearing carriages, while on the other extreme the little automatic hammer which the dentist uses in filling teeth is operated by the same force. On the same principle as the dentist's hammer the rock drill and the big riveters used in putting bridge parts together are operated. For working in marble the same class of tool is employed successfully. An automatic facing tool which prepares the stone slabs is controlled by one man. Figuratively speaking he "presses the button," and the air does the rest. A little plunger inside the tool strikes 20,000 blows a minute when the air is admitted to it.

One man using a compressed-air knife can shear three sheep or clip three horses in less time than he could handle one with the old hand tools, and the work is better.

In some shops air is now used to operate rotary motors, and through them drills, roammers and screw cutters. By the aid of one of these machines two men are able to tap the holes and put in 700 boiler bolts in a day.

The great shears which are used to hite the end of steel bridge beams are often handled by a cylinder and piston worked by air at fifty to eighty pounds' pressure. Jacks for lifting cars and houses are controlled and operated by compressed air. Machines for cutting the tops of tin cans are worked in the same way. Air brakes on trains are

among the greatest of modern improvements in railroading. And on the railroad it is used in a thousand and one other ways. The conductor signals to the engineer by a compressed air contrivance, the fireman rings the bell by another, and the switches are locked and changed by air power. The plush cushions in the sleepers and parlor cars are cleaned by means of a hose that projects the compressed air against them with great force. This same style of hose is used to clean the carpets and mats and blow the fine particles of dust from the cracks and crevices of the cars that could never be reached by a duster or a cloth. This is the secret of the clean cushions on the modern railroad cars—cushions which, by the way, seems especially constructed to catch and retain the dust.

The principle which is applied in cleaning castings by sand-laden blasts of air is also employed in painting and whitewashing. Many people will remember that the great World's Fair buildings were painted by this means, and the Manufacturers' Building, the largest structure on the grounds, was kalsomined inside of thirty days by the use of a spray machine which covered 31,500 square feet of surface in twelve hours. The cologne atomizer used by my lady as a toilet adjunct is constructed upon precisely the same principle as these air painting machines. Coal cars are now painted at the almost incredible rate of one every ten minutes in this way, and it is claimed that the painting is done far better than it could be by hand, because the pigment is driven into each crevice with terrific force.

Artists are beginning to employ the same principle for use in decorating silks and satins, china and porcelain, for coloring maps

and even a is said for making entire pictures. The air blast is controlled so accurately by the artists' thumb that it is said no brush can produce such perfect shadings.

With sand and air ships are cleaned of barnacles and rust, castings are polished and stone is cut and carved, glass is made opaque and figures are carved in it. Compressed air is used by bakers in making aerated bread, in sugar refineries to mix syrups, in breweries to drive beer from one tank to another, in saloons to force the amber fluid from the collar to the bar. It is used for making ice, beating eggs and sprinkling clothes. In fact, compressed air has come to be almost as necessary an adjunct to the civilization of the day as electricity, steam or any of the great forces now controlled by progressive man.

THE EARLY HISTORY OF MALLEABLE CAST IRON.

According to a historical note which preceded the paper on "Malleable Cast Iron" read at the recent meeting of the British Iron and Steel Institute by Mr. G. P. Royston, the making of malleable castings in iron appears to have been first carried out about 200 years ago. The earliest mention of it is found in a treatise published in the year 1722, and entitled "L'Art d'Adoucir le Fer Fondu." This treatise contains an account of the work done by the author, Reaumur, the distinguished French savant, in this field; his description of the process is almost identical with that of the method employed to-day in and around Birmingham.

Whether Reaumur was the first to be aware of the action of the various oxidising

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H. J. HILL, Manager, Toronto.

agents is not quite clear; but as he introduced this manufacture into France, and as it is not known to have been used in England at this time, it is reasonable to ascribe to him the credit of the invention. In 1804 a patent was granted to Samuel Lucas, of Sheffield, for the working of this process in England. Previous to this, many attempts were made to soften iron castings by Englishmen. In 1769, Joseph Ashton, of Birmingham, obtained a patent for the softening of cast iron by heating in a slow fire for the manufacture of nails. Again, in 1783, George Mathews, of Broseley, patented the same process for use in the making of cannon, anchor, chains, rollers, and forge hammers. He says: "When annealed the articles were as malleable and tough as hammered or wrought iron." This process differs from Reaumur's in that the carbon is not abstracted from the iron, but changed from the combined to the graphitic form. The finished material generally goes under the name of "black-heart" iron. The patent list contains another interesting specification, which was filed in 1852 by Jean Ernest Beauvalet. He softened cast-iron bars and made them into malleable iron by heating them in a cementation furnace with oxides of iron, manganese, copper, and zinc. The bars were made into steel by only partially effecting the oxidation of the carbon, and a uniformity of composition was obtained by heating them subsequently with charcoal.

Before Reaumur instituted his process, said Mr. Royston, the use of iron was not possible for making malleable articles of intricate shape by casting. Beautiful work has been done in the olden days, when labor was somewhat cheaper, by forging the wrought iron into shape; but the value of

the articles must have been almost as great as if cast in the coarser but more easily-meltable metals—copper, silver, and gold. The introduction of this process marked a new era in the history of commerce, by making possible the cheap production of many articles which are almost necessary to civilization. As a practical result of recent experiments, he added, it is now possible to accomplish in a few hours an operation which has previously required as many days. Indeed, a steely material may even be obtained by merely heating the white iron up to a somewhat higher temperature than that usually employed, the change being practically instantaneous. And, further, the experiments tend to show the probability of a complete softening effect, that is, the production of malleable iron, being attained with the same speed as in the case of harder or steely material.

AN EPOCH IN RAILROADING.

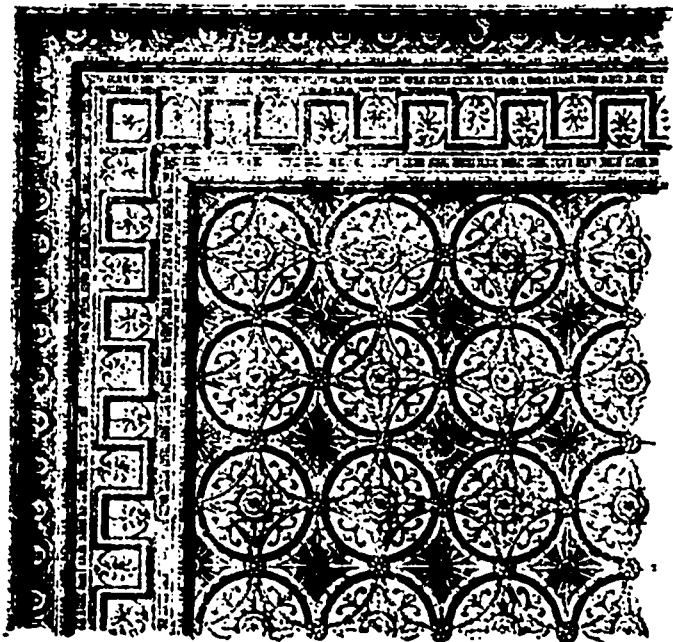
Speaking of an epoch in railroading which was issued last month in Hartford, Conn., when the new third-rail system between that city and New Britain, Conn., was opened to public business, the *Electrical World* says:—Almost exactly ten years ago the first important street railway electrical equipment was put in service in Richmond, Va. There were few then who felt sure of the success of that ambitious attempt to do away with the familiar mule, and none who would have dared to prophesy this more ambitious attempt to replace the steam locomotive in ten years. Yet, to-day, the success of the Connecticut line is looked upon as a matter of course, the wonder being that it was not sooner operated by electricity rather than that it is so operated now.

Ten years between the opening of the two roads have seen the growth of an enormous industry, and the evolution of a highly perfected type of machinery. In them the electrical industries have made wonderful strides forward in both completeness and importance. Invention, however, has been confined to details in this field. The railway motor of 1897 is not electrically different from that of 1887, though marvelously better mechanically. There has been practically no advance in methods of conduction, and the dynamo is only a trifle more efficient, while mechanically stronger and simpler.

President Clark, in a newspaper interview concerning the section of railway just opened, made some very conservative remarks concerning the future of electric traction under steam railroad conditions. He said: "That the locomotive will follow the old stage coach, and be relegated to the scrap heap is by no means determined, but that the motor car will soon supersede the locomotive on suburban commutation routes seems probable."

He might have gone further and said that the disappearance of the steam locomotive from crowded suburban lines is not only probable but necessary. As soon as the railroad companies are fully aware of the immense superiority of electric propulsion for this class of trains its installation will become merely a question of ability to obtain the necessary machinery. The electrical profession owes a debt of gratitude to President Clark for his courageous action in blazing the way for the motor on suburban passenger lines.

The epoch-marking significance of the Connecticut road cannot be overestimated. Its assured success will mean the immediate



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practically fire-proof, are highly artistic, do not harbor vermin or the germs of disease, and possess splendid acoustic properties in addition to many other points of excellence over any other form of interior decoration.

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equipment of a great number of systems of short line roads now inadequately operated by steam locomotives. It is not to be assumed that this line will be the prototype of succeeding installations, for its equipment is obviously crude and even experimental, but it will certainly demonstrate in an unmistakable fashion the enormous advantages of electricity over steam for this class of work, and thus perform a pioneer service of incalculable benefit to electricians, railroad companies, and the people at large.

PAPER BOTTLES.

Some years ago there was started in this city a company for the manufacture of paper bottles, says the New York Mail and Express. It was not the success that its promoters intended it to be. There was great difficulty in getting the right foothold. It was pointed out that paper was being used very extensively in the manufacture of car wheels, rowing shells, wash basins and half a dozen branches of the decorative art, but nobody would believe that the bottle scheme could possibly succeed, and there the matter was dropped as far as outside capital was concerned. Since that time another company has managed to push forward the idea with some degree of prosperity. Now still another company is about to be formed and the manager of it says that it will have to be a success, because there is too much money behind the concern to make it otherwise.

This manager was asked what paper bottles were available for, and he answered quite promptly, but not altogether sarcastically: "Everything that glass is used for. We are now negotiating for the purchase of some of the finest machinery to be found in a newly

established shop. We have this to claim for our bottle; it cannot be broken unless with unnecessary force. That is just where the saving is to come in. No more leakage or breakage, and consequently less loss to not only the consumer, but the merchant as well. We intend to make a big bid for the foreign trade. The wine merchants of Europe lose an immense sum annually through breakage in a ship's hold or otherwise. No matter where the glass bottles break, they are broken, and the loss is just as great all around.

"We can make a paper bottle for about one-half the cost of glass bottles, and, in addition, they will be found perfectly water-tight, as well as air tight. We have made innumerable experiments, and in all of them we found that, while it was comparatively easy to make papier mache air tight around wine, it was not so easy to do so in the case of beer. Why this is so, the brewers may explain. But we have overcome that difficulty too. Another point that should be remembered in the manufacture of paper bottles is that there is little danger of freezing. Still another is that in packing them away absolutely no straw, waste or such is required, and the absence of these means a large saving in space. In the next few years you will find paper bottles all over the world."

The following description of a method for covering an iron pulley with paper is contributed by Mr. John A. Shoemaker to Power.—Take one pound of flour, one pound of white glue, $\frac{1}{4}$ pound Peter Cooper liquid glue, two ounces sal soda, $\frac{1}{2}$ ounce powdered borax, $\frac{1}{2}$ ounce sal ammoniac, $\frac{1}{2}$ ounce alum, two quarts of soft water. Dissolve the glue in the water, first by boiling, then add the Peter Cooper glue, etc., and last the flour

with water, so as not to form in lumps, and stir in well; then boil fifteen minutes, and apply to pulley and paper as hot as possible. If the pulley has a crown face, cut the paper in two strips so that it will be flat on the pulley; if straight face put on full width of paper, and then a two-inch strip on top to make a crown, which will make the belt run well on the centre of the pulley. Before applying make a strong solution of hot water and washing soda, and wash the face of the pulley well, to remove all grease, and if the face is rusty, rub well with sandpaper or emery. Apply the paste with a clean paint brush. I have found this to work well, and get much more power from the same belt.

In making paper pulp signs after the pulp is shaped into letters of desired size and character, they are treated chemically so as to harden and toughen them. By variations of the chemical treatment the letters can be made to resist the action of oils as well as water. After going through this stage in the process the letters are trimmed at the edges to remove any roughness, and either decorated in imitation of oak, walnut, maple, cherry, or, as is principally intended, treated with either a ceramic or a Japanese enamel finish, the latter being very like in all respects to the regular enameled letters, now in use. (Of course the embossed and otherwise decorated letters in imitation of fancy woods are for interior signs, whereas the enameled ones are for exterior, they being qualified to resist rains. The pulp letters weigh but very little compared with enameled pottery material. It is claimed that when the pulp letters are cemented to plate glass they are unmovable unless a certain chemical is applied to dissolve the cement.—The Paper World.

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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 in 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 important 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, bolting, 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, alkalis, 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.

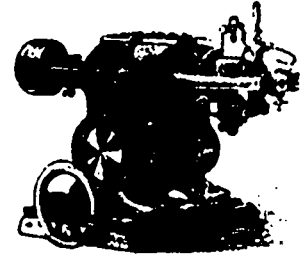
The Waterloo Engine Works Company, Brantford, Ont., are installing a forty h.p. engine and a fifty h.p. boiler in the lumber and planing mills of Thomas Brothers at Jerusalem, Ont.

The carriage suspension bridge over the Niagara River just below the falls is to be replaced by a steel arch bridge 500 feet long, which, it is said, will be the longest of the kind in the world.

The Kingston Elevator and Transit Company, Kingston, Ont., is being incorporated with a capital stock of \$150,000, to do a general elevator and forwarding business.

Mr. R. H. Harris, Brantford, Ont., has purchased the right to manufacture the Card detachable bicycle crank in Canada and has arranged with the Vokes Hardware Company, Toronto, to manufacture the same.

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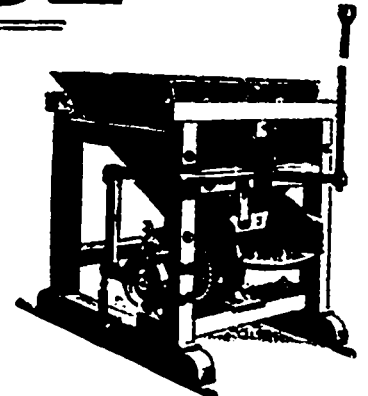
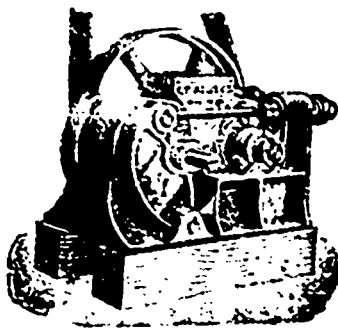
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Amongst the contracts recently taken by Messrs. Paquet & Fortin, of Levis, according to the Quebec Chronicle, are a railway branch for the Laurentide Pulp Company a mile and a half in length and west of the St. Maurice River, which is to be completed in a few weeks; a branch of the Great Northern Railway, ten miles in length, to the north of Three Rivers, and a bridge over the

Shawenogan River, five miles and a half from the Grande More bridge. It is to be 370 feet in length and 85 feet high. The superstructure is to be of steel and is being made by the Dominion Bridge Company. They are also building three miles of railway and track to reach the place called Conlee Lavergne, and three miles further up than the Shawenogan River; also a steel bridge

500 feet long and ninety two feet high, over a branch of the Shawenogan.

A condensed milk factory has been in successful operation for the past three months at Baldwin's Mills, near Coaticook, Que. Between 2,000 and 3,000 pounds of milk are handled daily, but the factory has a capacity of 10,000 pounds per day. The product will be known as the Canadian brand.

The Dominion Coal Co., has added two additional steamers to their fleet of colliers plying between gulf ports and Sydney, C.B.

The Chicoutimi Pulp Company are making rapid progress in the construction of its mill at Lotbiniere Falls, Que. From 250 to 300 men are employed.

A by-law authorizing the Mayor to borrow \$10,000 to install an electric light plant has been ratified by the ratifiers of Magog, Que. Water power will be used.

It is possible that two new factories will be erected here at once. Wm. Hess, of Buffalo, was here recently looking around for a suitable site for a building to use in the manufacture of beds and mattresses. A large bicycle firm have also had representatives here, and we understand it is the intention of the firm to soon commence work here. - Niagara Falls, (Ont.), Record.

The Drummond Colliery at Westville, N.S., will supply 6,000 tons of coal to the Prince Edward Island railway.

The Central Bridge and Engineering Company, Peterborough, Ont., will build a bridge across the Otter river at Calton, Ont.

The Duvall-Miller manufacturing Company, Toronto, has been incorporated with a capital stock of \$100,000, to manufacture grain cleaners and separators.

The People's Coal Company, Toronto, will construct what they say will be the largest coal handling plant in Canada, the guaranteed capacity of the plant being 120,000 tons per annum.

The North-West Elevator Company, Winnipeg, Man., have bought the elevator at Glenboro, Man., owned by Smith & Co., and will remodel and enlarge its capacity to 30,000 bushels. J. W. Cochrane is also building an elevator at Glenboro.

The assets of the insolvent pipe company, William Clendenning & Sons, proprietors, which comprised the plant in St. Henri, Que., has been sold by the Sheriff to the corporation of St. Henri. The town has voted a bonus to secure transfer of the plant from Montreal to its limits.

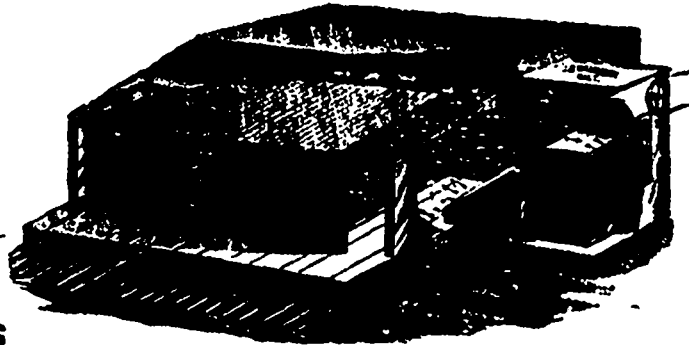
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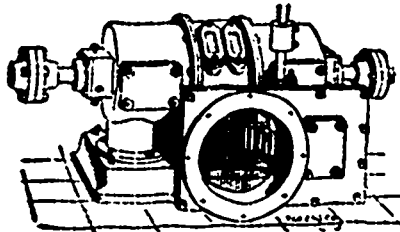
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WRITE US FOR PARTICULARS.

The Canadian Pacific Railway Company will make Golden, B.C., a divisional point and establish workshops there.

Messrs. Stuart and Harper, Winnipeg, Man., have been given the contract from the Arrow Milling Company, Birtle, Man., to overhaul their mill. A new universal bolter will be put in to take the place of the present reel system.

The first sod of the Crow's Nest Railway was turned at Lethbridge, N.W.T., July 14th. Contracts for the construction of the first fifty miles from Lethbridge have been let. Construction outfits are on the ground and work will be pushed with great vigor.

A stained glass memorial window was recently presented to the Waterous Engine Company, Brantford, Ont. by their employees. The centre piece contains a portrait of the late Charles H. Waterous, founder of the works. The window has been placed in the front of the company's new office building.

We have received from the Clayton Air Compressor Works, New York, their new catalogue, treating of air compressors of every type, for all pressures and for every purpose to which compressed air can be applied. This catalogue, besides fully illustrating and describing the concern's various patterns of single and duplex compressors and appliances used in connection therewith, gives much valuable information to engineers and concerns contemplating the adoption of compressed air, now so widely used in mining operations, and which is beginning to be appreciated in machine shops also. The article on The Widening Use of Compressed Air, by Whitfield Price Pressinger, is given in full.

The possibilities of building up in Canada a profitable industry in the manufacture of linens have been frequently discussed. An attempt at linen manufacture was made in Ontario during the Civil War in the United States, but when the war had closed and the cotton market resumed normal conditions, the venture met with an untimely end. The wives of the French-Canadian farmers of the Province of Quebec for almost two centuries had been weaving flax into linen, with which to make household fabrics and garments. But the industry in Canada has never successfully passed the domestic stage. The flax grown in this country is not, it appears, well suited to the purpose of linen manufacture. Canadian flax-growers have recently been attempting to gain a foothold in the Irish textile market, but with little better success than in former years. The Belfast correspondent of the Draper's Record says: "Canadians have recently been offering flax to Belfast merchants. Hitherto the States have taken the entire production of Canada, principally for coarse threads, but, owing to the prohibitive tariff, the Canadians are compelled to seek out a fresh market. Canada has been doing her best to encourage imports, and we should reciprocate by taking her flax. The samples sent were, on examination, however, found too coarse for this market, and they were withdrawn. I understand they are preparing themselves to meet the demand from this side." A year ago the Ontario flax interests formed an association, with the object of extending the market for flax grown in Canada. This association should now be active in acquiring information as to the exact nature of the needs of the Irish market, and if found practicable take the steps necessary to develop an export trade in flax. Monetary Times.

The West Kootenay Power and Light Company, limited, recently organized to develop the water power at the falls of the Kootenay ten miles from Nelson, B.C., have closed a contract for supplying the hydraulic and electrical machinery to develop 2,000 h. p. This initial generating plant will consist of two machines of 1,000 h.p. each and will be supplied by the Canadian General Electric Company, Toronto. The current

will pass through step-up transformers, raising it to 20,000 volts, at which pressure it will be carried to Rossland, a distance of thirty miles, where it will be reduced to a low pressure suitable for transmission to the motors used in connection with the different mining operations, operating tramways, hoists, pumps, drills, compressors, etc. The machinery is now in course of construction and the plant will be in operation in the fall.

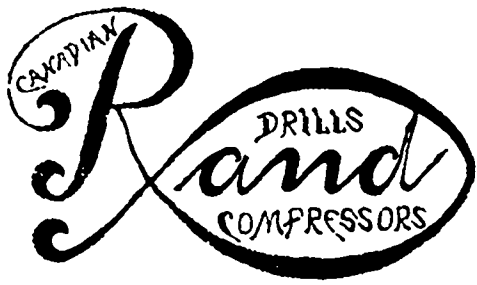
Although only 2,000 h.p. is to be developed this season the company will ultimately utilize the full power of the river at that point, estimated at from 8,000 to 10,000 h.p. The Central Bridge and Engineering Company, Peterboro', Ont., have been awarded the contract for the construction of a steel bridge about 100 feet long over the Madawaska river at Calahogie, Ont., for the Kingston and Pembroke railway company.

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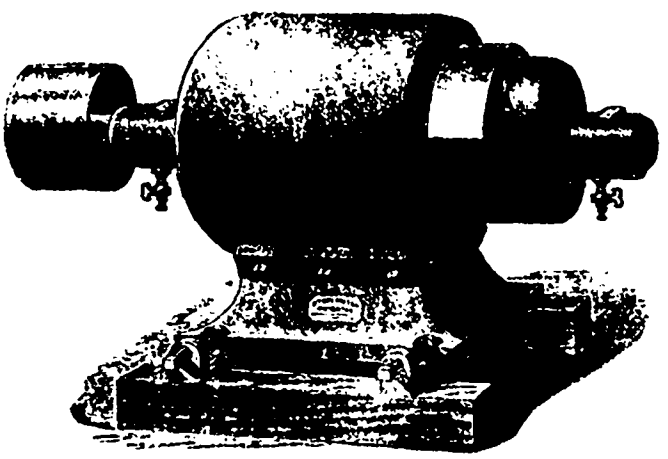


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Work has begun on the canal of the Canadian Power Company at Niagara Falls, Ont.

The A. Sabiston Company, Montreal, is being incorporated with a capital stock of \$50,000, to carry on the business of lithographers, etc.

By reason of the desire of Mr. Frick to be relieved from details of the business, a change in the organization of the H. C. Frick Coke Company is announced and went into effect on the first of the present month. The office of Chairman of the Board of Directors has been created, and Mr. Frick was elected. Mr. Thomas Lynch, formerly general manager, was elected president of the company, and Mr. W. C. Magee, formerly general sales agent, was elected vice-president. Mr. G. B. Bosworth, formerly secretary and assistant treasurer, was elected vice-president and treasurer, and Mr. M. M. Bosworth, formerly assistant secretary, was elected secretary. Mr. Lynch, the new president, has been associated with Mr. Frick since 1876, having been employed as superintendent when Mr. Frick leased what was known as the Valley Coke Works. At that time, what is now the Frick Coke Company had but 750 ovens and about 700 acres of coal. In the short space of twenty-one years it has increased to over 13,000 coke ovens, and over 40,000 acres of coal. Mr. Lynch has steadily risen, until he has now been made president of the company. Mr. W. C. Magee has been with the company since its purchase of the Schoenmaker interests. Mr. G. B. Bosworth has been with the company for over nineteen years, and Mr. M. M. Bosworth has seen a service of seventeen years. Owing to the promotion of Mr. Lynch to the presidency of the company, Mr. O. W. Kennedy, who has been his assistant, has been made general superintendent in charge of the works, the office of general manager having been abolished. American Manufacturer.

The Hammond River Lumbering Company, Robertson, N.P., is being incorporated with a capital stock of \$25,000.

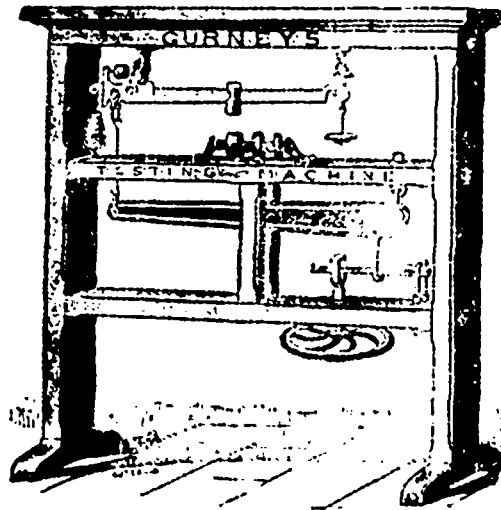
The capital stock of the Cockshutt Plow Company, Brantford, Ont., has been increased from \$100,000 to \$250,000.

The St. Raymond Company, Montreal, has been incorporated with a capital stock of \$50,000, to develop water power at St. Raymond, Que., to manufacture wood pulp, electrical machinery, etc.

Machinery hall at the Ottawa Exhibition grounds will be considerably enlarged to allow of larger exhibits.

FOUNDRYMAN'S TESTING MACHINE

A Durable and Effective Machine for the Use of Foundrymen in Testing the Strength of Best Iron, and ascertaining the Best Mixture of Iron for any work, thus showing positively which is the Best Iron for the Requirements. Can be done in a few minutes. . . . SUBSTANTIALLY CONSTRUCTED. HIGHEST CLASS OF WORKMANSHIP. CAPACITY, 5,000 POUNDS. . . .



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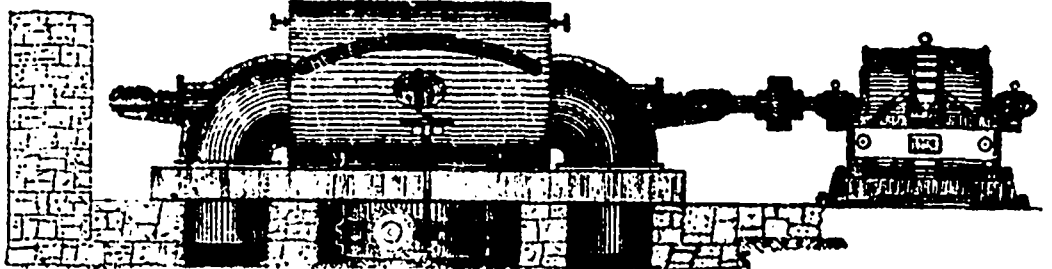
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Under 50 feet head to **ELECTRICAL GENERATOR**

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**HYPOSULPHITE SODA,
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NEW & GOOD SECOND-HAND WOOLLEN MACHINERY

**SHAKE WILLEYS, TEAZERS, RAG PICKERS, GARNETTS,
AUTOMATIC FEEDS, WASTE CLEANERS, CARDS, CONDENSERS,
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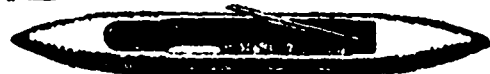
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NEFF & WOOD

PUBLIC ACCOUNTANTS, AUDITORS
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Room 500 McKinnon Bldg., Toronto

The Thompson Electric Company, Hamilton, Ont., will install an electric lighting and power plant for the city of Chatham, Ont. Park Bros., Chatham, will furnish the boiler and engine.

Nearly 40,000,000 feet of lumber, 8,000,000 lath, 850 cords railroad ties and nearly 900 cords cedar posts have been received at Oswego, N.Y., from Canada, since the opening of navigation.

The recent increase of traffic on the Canadian Pacific Railway has been so heavy that the company have been unable to construct in their own shops a sufficient number of new cars to handle it, and they have placed orders with the Crossen Car Company, Cobourg, Ont., and Rhodes, Curry & Co., Amherst, N.S., for a large number of cars with instructions to complete them as soon as possible.

J. Gregory's saw and grist mills at Rothsay, Ont., were destroyed by fire a few days ago.

J.B. Snider, Waterloo, Ont., manufacturer of furniture, recently shipped three carloads of furniture to the Dutch Reformed Church, Woodstock, Cape Colony, South Africa.

Messrs. Dow & Curry, oatmeal millers, Pilot Mound, Man., will increase the capacity of their mill.

Wm. Taylor has begun the manufacture of drain tiles at Carlton Place, Ont.

The Moncton, N.B., school board will build a new school house containing fifteen or twenty rooms.

Upwards of \$50,000 is being expended in Sandon, B.C., on the erection of buildings. The Harris-Annuance block now nearing completion will cost about \$35,000.

At Hastings, Ont., July 5th, are destroyed John Kelly's carriage and blacksmith shop, W. T. Tate's cabinet shop and dwelling, town hall, and Presbyterian church, loss about \$15,000.

The Dodge Wood Split Pulley Company, Toronto, have recently filled orders for the following: Complete outfit of pulleys for the new saw mill of the Montague Paper Company, Lake Megantic Que., a complete equipment of pulleys for the new saw mills at Fenelon Falls, Ont.; several large wheels for the new electric plant at Rat Portage, Ont. They are also putting up the Gillies Bros. mill at Sand Point, Ont. They report an increased demand for their pulleys from the larger mills, showing that Canadians are becoming better acquainted with the merits of the Dodge pulley and are now adopting it more generally for work which they once thought they were not intended for. Their new catalogue will be sent on application. Address, Dodge Wood Split Co., 74 York st., Toronto.

The Montague Paper Company, Turner's Falls, Mass., have about completed their new mill at Lake Megantic, P.Q.

The tender of the Central Bridge & Engineering Company of Peterboro', Ont., for a sixteen foot bridge at King street, London, Ont., has been accepted.

The Cariboo Hydraulic Mining Company, Quesnello Forks, B.C., recently shipped to New York a gold brick weighing 4,100 ounces and valued at \$72,000.

The Canadian General Electric Company, Toronto and Peterboro', will make the generator for the Sherbrooke, (Que.) Electric Street Railway. It is to be of 270 h.p. and ready to operate about August 1st.

Messrs. Copp & Co., Hamilton, Ont. have received an order from Dufferin County Council for seven road machines

At a recent meeting of the directors of the Face Solid Steel Car Wheel Company, Perth, Ont., the following officers were elected - A. T. Wilson, president; John Poole, vice-president; W. A. Moore, secretary. It was decided at the meeting to secure the services of a competent mechanical engineer to take charge of the works.

We have received from Messrs. Wm. J. Matheson & Co., 182 Front St., New York, very handsome samples of Anadonaphtol BD, and Azotol C, for black prints.

Canada Chemical Manufacturing Co.

Manufacturers of

Sulphuric, Nitric, and Muriatic Acids — Commercial and Chemically Pure.

Mixed Acids for Explosives

Liquid Ammonia, Glauber Salts,

Copperas, Muriate Tin,

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Iron. Bisulphite Soda,

Acid Phosphate for Baking Powders and General Chemicals.

Fertilizers, etc

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Better than... **A POT OF MONEY**

For any Young Man or Woman 14+

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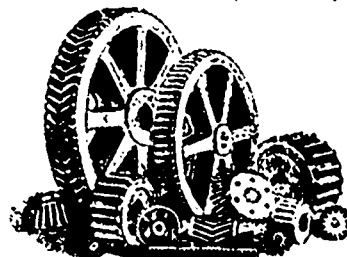
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THE DOWNER PATTERN WORKS, J. M. DOWNER, Prop.

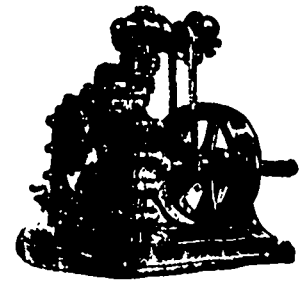


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STEADY AND EVEN MOTION,

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Attachment Direct to Fans, Blowers, Centrifugal Pumps, Stokers, Steering Gear, Etc.

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CLIMAX TIMBER GAUGE

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MOST COMPLETE MACHINE IN THE MARKET

Will Not Break...

If Log Strikes Roller.

Guaranteed Not to Clog With Sawdust

Dial plate divided-cent any thickness

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A GOOD CHANCE FOR INVESTMENT.

An Electrical Engineer of wide experience desires a partner, with capital-knowledge of Electrical work not necessary—to take 1/3 share in purchasing and installing a modern Electric Light system in some good live town or city at present without same, or only having an Arc system. Such a plant managed in a thoroughly efficient manner, would yield large profits and make a splendid investment.

Address, N.Y.Z., Canadian Manufacturer.

Sir Francis A. Abel, general director of the Imperial Institute, London, Eng., writes that the Associated Carriage Builders of England desire to be informed if a supply of ash wood can be procured in Canada suitable for use in carriage building in England, or of any other wood that can replace it for that purpose. The price obtainable in London would be from 2s to 3s 9d per cubic foot. Canadian manufacturers and dealers should investigate this opening for trade.

The Manitoba Elevator Co., Winnipeg, Man., are building a 25,000 bushel elevator at Burnside.

The property holders of Cornwall, Ont., have adopted a by-law authorizing the raising of a loan of \$98,000 for the purpose of buying the waterworks system of the town from the company now operating it.

The steamer Simonside recently cleared at St. John, N.B., for Sharpness, Scotland, with a cargo of over 3,000,000 feet of deals, said to be the largest cargo of deals that ever left that port.

The city council of Grand Forks, B.C., will borrow \$20,000 to build a waterworks system, electric light plant and fire system.

The Packard Electric Company, St. Catharines, Ont., on their blotters for July call attention to their type L transformer. An accompanying folder gives illustrations and full description.

The Lion Brewing Company, Rossland B.C., has been incorporated with a capital stock of \$60,000.

The Quartz Creek Water Supply Company, West Kootenay district, B.C., has been incorporated with a capital stock of \$25,000 to construct and operate a waterworks system for the locality in and about Quartz Creek.

An account of the new fireproof paper prepared by L. Froben, of Berlin, shows the production of a valuable article for industrial and other purposes. Ninety-five parts of asbestos fibre of the best quality are washed in a solution of permanganate of calcium and treated with sulphuric acid, the fibre being thus bleached. After treating the fibre in this manner, five parts of ground wood pulp are added and the entire mass placed in the agitating box, with an addition of some limewater and borax. After being thoroughly mixed the material is pumped into a regulating box and allowed to flow out of a gate into an endless wire cloth, where it enters the usual paper making machinery. Paper produced in this way, it is reported, will resist even the direct influence of a flame, and may be placed in a white heat with impunity. Ordinary paper may be made fire-proof by treating it with a fluid consisting of thirty-three parts manganate of chloride, twenty parts ortho phosphoric acid, twelve parts carbonate of magnesia, ten parts boric acid and twenty-five parts chloride of ammonia in one quart of water; this solution is applied several times, and paper saturated with it will resist great heat and the direct influence of flame for some time.


The fame of the Krupp works at Essen, Westphalia, as the vastest industrial establishment in the world, appears to be still maintained. At present the establishment

consists of two steel works with fifteen Bessemer converters, four steel works with Siemens-Martin open hearth furnaces, iron, steel and brass foundries; puddling, molting, reheating, and annealing furnaces; draw benches, a hardening and tempering department, file manufactory; rolling mills for plates, rails and tires; railway spring and wheel manufactory; steam hammers, forges, axle-turning shop, boiler shop, engineering, and repair shops. Besides the above and many other departments at Essen connected with the making of cannon, there are steel works at Aunon, in Westphalia, three collieries in Westphalia, besides participation in several others; 547 iron mines in Germany, various iron mines in Bilbao, in Spain; four iron works, including one at Duisburg, one at Engers, one at Neuweid, and one at Sahn; various quarries of clay, sandstone, etc., four steamers, and artillery ground at Meppen, Hanover. The property owned extends over nearly 2,500 acres, and the number of hands employed in the mines and steel works is about that figure. There are altogether 1,500 furnaces of various kinds, twice as many engines and machine tools, twenty-two roll trains, 111 steam hammers, two hydraulic presses, 263 stationary boilers, and 421 steam engines, representing together a force of 23,139 horse power.

The Weir Specialty Company, Toronto, has been incorporated with a capital stock of \$3,000, to manufacture foods, confectionery and bakers' and confectioners' supplies.

Wm. Waghorn has commenced the manufacture of drain tiles at Newport, Ont.

ATLAS METAL **FACTS**



Speak louder than words, and

ATLAS does not rely on empty talk for its UNSURPASSED REPUTATION.

It Has Been Undeniably Proved that **ATLAS METAL** is Superior to all and has stood under Enormous Pressures and Phenomenal Speed.

TRADE MARK. TRY **ATLAS METAL** WHERE ALL OTHERS HAVE FAILED.

WE CHALLENGE A TEST
Against any Anti-Friction Metal on the Market.

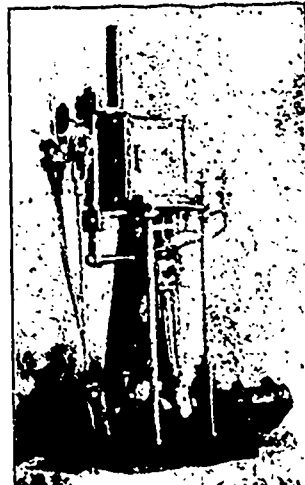
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318 ST. PAUL ST., MONTREAL, QUE.

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Galvanized Steel Pails
FOR FIRE PURPOSES ONLY.
NO HOOPS TO FALL OFF.
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Maker of
YACHT ENGINES, 1 H.P. to 50 H.P.
Safety Water Tube BOILERS
PROPELLER WHEELS
Stationary Engines and Boilers

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Patterns and Models of every description. Inventors assisted in perfecting their inventions. Good work. Close prices. Estimates given.

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TELEPHONE 2326.

The high level bridge at Hamilton, Ont., built by the Central Bridge and Engineering Company, of Peterborough, Ont., has been opened for traffic.

H. M. Fowd's woollen mill at Hastings, Ont., was burned a few days ago. Loss about \$2,000.

A big effort is being made by the British Columbia canners to secure in Central and Southern America not only a new market for their canned produce, but also opportunities for the sale of frozen fresh salmon. The New Zealand Shipping Company's steamer Tekoa is chartered to sail from Vancouver on September 20th next. She will make a number of Central American ports and dispose of a cargo shipped thither, but her chief places of call will be Valparaiso and Buenos Ayres. The Tekoa will then carry the remainder of her cargo to Liverpool and London. The vessel is a speedy one of 3,000 tons burden and equipped with excellent refrigerators for cold storage. She will take at least sixty thousand cases of canned salmon, beside fresh fish and other commodities, to Spanish America.

An interesting experiment is being made this year by the Carlisle Canning Company, of Victoria, B.C., operating salmon packing

establishments on the Skeena river, which will be watched with interest by the trade and by the general public as well. A real or fancied objection has long been entertained to the tins commonly employed for sending the preserved salmon to the markets. It is said to flavor the fish injuriously, and the advent of a casing of some other material than metallic has for some time been awaited. Hoping to meet all objections in this regard, the Carlisle cannery people have adopted a porcelain jar, which promises to give admirable satisfaction. It will some what increase the price of the salmon to the consumer, but it is hoped that the superior quality of its contents will be sufficient to give it a large share of the market. If these expectations are realized it is probable that the majority of the competing canneries will adopt similar receptacles next season.

SCARLET E. C.—WOOL RED B.

Messrs. Wm. J. Matheson & Co., 182 and 184 Front St., New York, in their bulletin No. 59, call attention to above colors as follows:—We beg to call your particular attention to our Scarlet E.C., which is of great interest and value for the dyeing of

wool, silk and leather. Scarlet E.C. resists alkalis, acids, and sulphur and is exceedingly fast to light. It possesses great tinctorial power, and yields shades which are distinguished by their brightness and intensity.

Wool is dyed in the usual manner with addition of Glauber's salt and sulphuric acid, silk in boiled off liquor acidulated with sulphuric acid.

On ordinarily tanned leather Scarlet E.C. is dyed without any addition, or with a slight addition of sulphuric acid.

On cotton well covered shades are obtained with addition of alum.

Under the denomination of

WOOL RED B.

we beg to offer you a product which is distinguished by its bright bluish shade and great fastness to milling, and which is a valuable addition to our various brands of Milling Red, so well introduced for various kinds of goods. Wool Red B may be dyed either (1) direct in acid bath, or (2) on chromed wool, or (3) in acid bath and then fixed with bichromate of potassium. The after treatment with bichromate of potassium renders the shades faster to milling than when dyed direct in acid bath.

The dyeing on chromed wool is principally applied for compound shades produced with Wool Red B in combination with our Anthracene Colors or with logwood. A combination of Wool Red B and Anthracene Acid Brown yields very cheap claret shades which may be shaded at will with Anthracene Yellow, etc.

The fastness to light of Wool Red B is very good: it penetrates very easily, and hence is very valuable for the dyeing of heavy felts, cloths, etc.

NEW ANILINES.

Acid Violet 4 B. G. Extra—Acid Violet 2 B. Extra—The latter shade dyes very level and does not precipitate in concentrated solutions, the solution remaining clear. The first named color has a very clear shade, and being very cheap may supercede some of the older brands.

Sulphon Cyanines, form one of the leading branches of the color industry. This class of color may be worked by the simplest of all methods, and producing such fast shades, that they answer the highest demands. Sulphon Cyanines are much in use in slubbing wool dye houses, a fact which puts forth various requirements as regards to fastness. The leading brands are:—Sulphon Cyanine 1 and 3 R. and lately added are, Sulphon Cyanine 3 R. Extra and 5 R. Extra—somewhat redder and fuller, otherwise similar to the earlier brands.

Sulphon Acid Blue B. and R. —Two new wool-dyeing products. Both qualities are pure bright shades of excellent fastness as compared with other acid blues. Goods dyeing easily level; dye with Glauber Salts and Sulphuric Acid. Goods dyeing level with difficulty, dyeing lat. with Acetate of Ammonia and finally adding Acetic Acid, which completely exhausts the bath, is recommended. By working Sulphon Acid Blue with Victoria Black, a navy of extraordinary fastness to light is produced. These new blues are fast to steaming and being so are suitable for melange printing.

Fastness to washing and rubbing very good; to milling not so good—fastness to light almost equal to Alizarines.

Pluto Black B. R. and G. The market, although not lacking in suitable direct cotton blacks, is still without standards having certain properties, as no doubt felt by certain

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HIGH GRADE PIG IRON

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**Economy in Use of Water, Great Power
Equal Efficiency at any Gate-Opening
Steadiness and Strength of Motion
Sensitiveness to Change in Gate-Opening
Ease for Regulation by Governor
Strength and Durability
Freedom from Trouble with Step
Not Clogged by Ice
Accessibility to all Parts**

ST. CATHARINES,
February 9, 1897

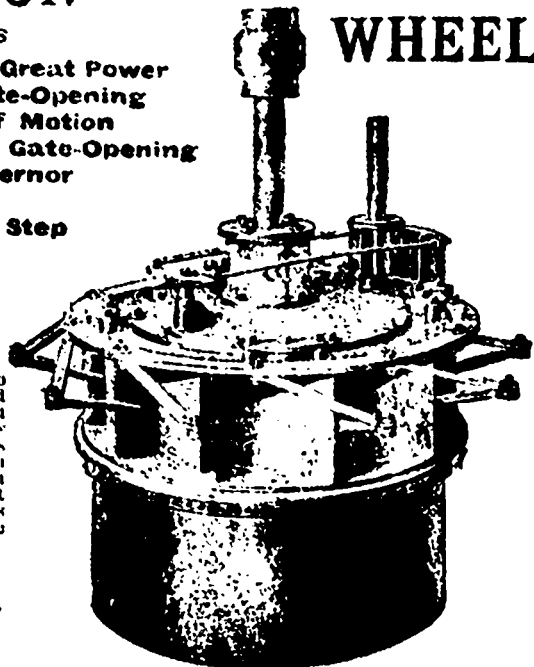
Messrs. Wm. & J. G. Greey,
Toronto.

GENTLEMEN.—Your favor of the 5th to hand. Have been away from home, and hence delay in answering your letter. You ask us how your Dominion Wheel compares with the . . . Well, Sir, the comparison is this—we have been using two . . . 33 inch diameter, double wheel— and your 51 inch Dominion wheel we put in December last gives us as much power as both, and does not use but very little more water than one of the 33 inch wheels. Yours truly,

COOKE & SON

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**WM. & J. G. GREEY
TORONTO**



dyers. One of the properties is a better fastness to light. The recent adoption of this class of direct dyeing cotton colors for gentlemen's suitings has no doubt produced this want. Three brands of Pluto Blacks, B. R. and G. are offered by the company, all of which are very fast to light. All brands exhaust the dye-bath well, and as soon as a demand is established and increased the price will be materially reduced, making it one of the cheapest blacks on the market.

Induline R. Extra—Since Induline B. R. has been brought out, an attempt has been made to produce a brand of greater brightness and purity. Being successful, Induline R. Extra is now ready to be placed upon the market. This new brand will also be found useful in leather coloring.

Croceine Orange G. N.—Complaints having been recently made regarding Croceine Orange G. that it pptd. in the bath and goods dyed were found to rub, an improved method in the manufacture has been resorted to. Croceine Orange G. N. being produced. This color does not precipitate or rub off when dyed. It is also of great clearness and good solubility.

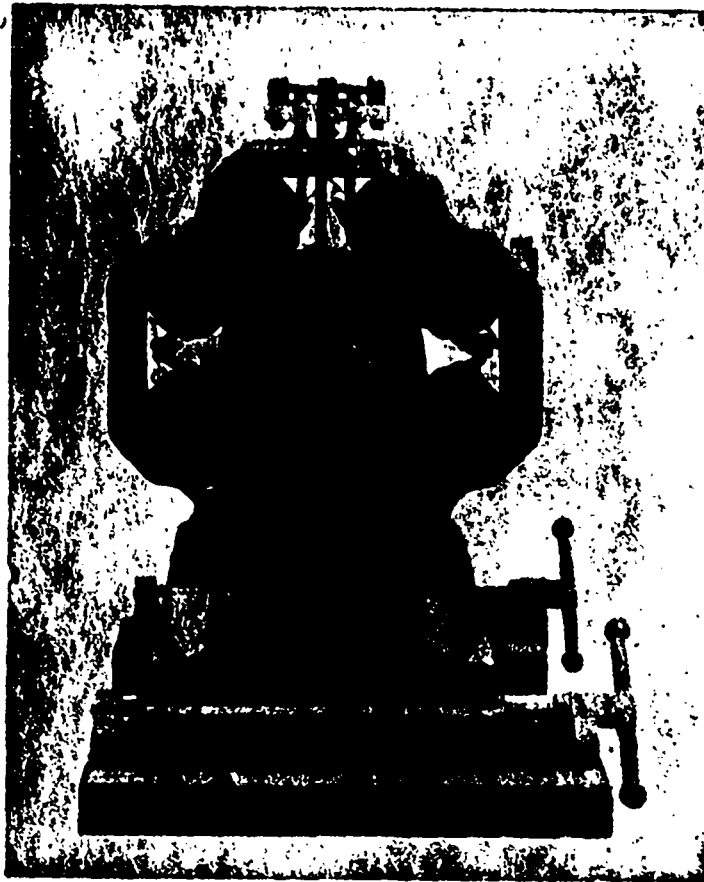
NEW ALIZARINES.

Alizarine Cyanine W. R. S. Powder—The practical value of this color especially with respect to fastness to wearing, is acknowledged, now that the after chroming process with Fluoride of Chrome, has been firmly established and can be worked satisfactorily. As a proof of this we might mention that Alizarine Cyanine W. R. S. has been adopted for the dyeing of Army cloth, and with best success on moltonain, in combination with Brilliant Alizarine Blue.

For prices, samples dyed skeins, etc., apply to the Dominion Dyewood & Chemical Co., Toronto, sole agents for the Farbenfabriken, vorm. F. Bayer & Co., Elberfeld, Germany.

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OF LONDON, Limited, - LONDON, CAN.



New Type Direct Current Multipolar Dynamo. Made in 110. 250 and 500 Volts

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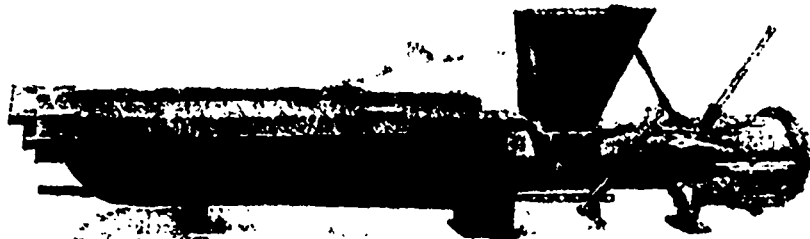
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Improved Jones Under-feed Mechanical Stoker

Perfect Combustion. No Smoke. No Ash.

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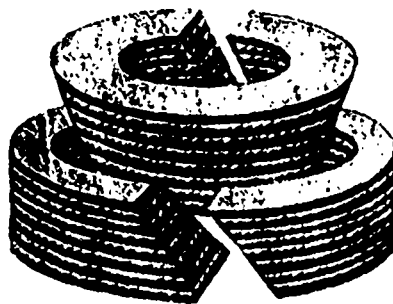
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Noiseless Running, Require No Attention,
operated with water at a pressure of 30 pounds
and upwards.

Reliable intending purchasers can have our Motors on
trial by writing us, stating water pressure available, power
required and class of work to be done.

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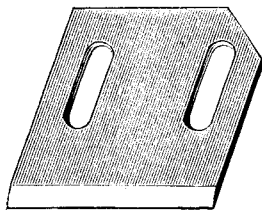


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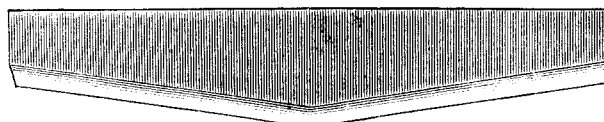
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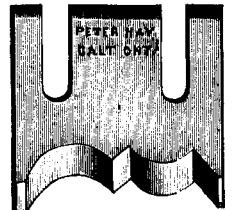
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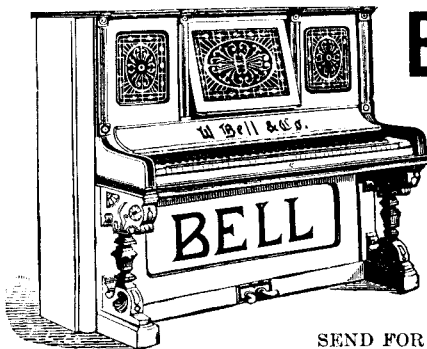
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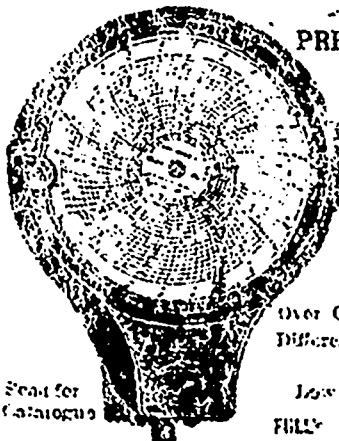
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