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No. 11.

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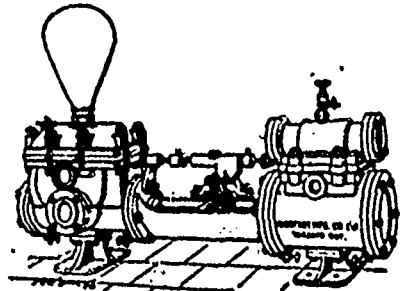
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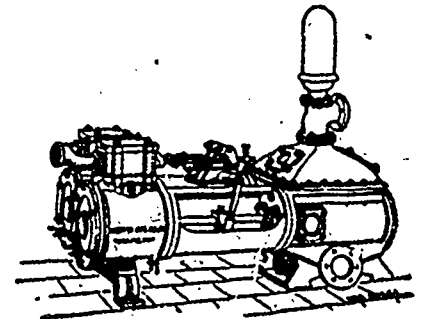
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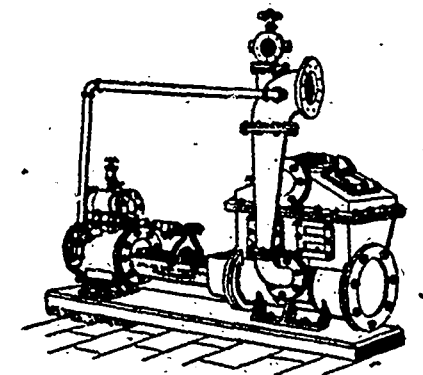


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NO OVER PRODUCTION

The Montreal Herald has been reading the Census Bulletin having reference to the manufacturing industries of Canada, and feels sore and disappointed at the fact that we are fast attaining to independence, or a certain measure of it, in supplying our wants for manufactured articles. It anticipates the early advent of the time when our manufacturing capacity will become so expanded that the supply will overtake the demand and that when that time arrives, because we have not built up a vast foreign trade in the meantime, "a sudden blight will fall upon all our hopes." It tells us that a period of depression will then set in which will drive the mechanic and artisan out of the country; that unless foreign markets can be provided, or a renewed impulse given to agriculture, this point will be reached much more quickly than is generally imagined, and that our manufactures are increasing at a far greater rate than husbandry, as is shown by the census in question. With our manufactures growing so rapidly, it tells us "it is evident our home market will soon be overstocked," and then in a perfect agony of anxiety for our manufacturers, it sets about to find the way of salvation for them. It tells us that treating them as infants will never enable our industries to face the world, that by protection we may put them

in a position to compete with foreigners in our own home market, but that the moment they pass out of the country they will be at a fatal disadvantage - that already the alarm note is sounded, and before many years we shall find ourselves with our agricultural interests stifled and our manufacturing interests languishing through over production.

These lachry-nose wailings remind us of the story of the little girl who was found bitterly weeping because it was possible that she might grow up to womanhood, become a wife, then a mother of a beautiful baby who might suddenly die with stomach ache. Her tears were bitter and her grief inconsolable, nor was she willing to wait a few years for the developments of the future - she would cry now. This is the case of the Herald - it won't wait for the evil day which may never come, but it must have its cry now.

It is quite remarkable that the proprietors of the more than 75,000 industrial establishments existing in Canada should be so ignorant of their own interests as to require the expert teachings of the Herald. These deluded men who have invested more than \$80,000,000 in machinery and tools alone, and who give employment directly to nearly 400,000 hands, and who might be supposed to give intelligent attention to their business, must be instructed by an unfriendly newspaper that they know nothing about their business, and that they should ask the Government to abandon the policy by which their industries were called into existence.

The Herald complains that although our manufacturing industries have attained such large proportions, our exports of manufactured products are comparatively small. The fact is admitted, but it proves a great deal. In 1881 there were but 10,163 establishments in Canada, employing 60,617 hands, engaged in the manufacture of textile fabrics, boots and shoes, clothing, etc, while in 1891 there were 17,650 establishments and 80,662 employees. The increase in establishments in the decade was 73 per cent and in employees 33 per cent, yet our exports of such manufactures were comparatively nil. In the meantime our increase of population was small, and it is apparent that the products turned out from these establishments were all required for home consumption. According to the Herald this large increase in productive capacity must bring the production close up to the consumption, and that progress at this rate must soon result in over-production. But is this a fact? We have many mills in Canada in which bleached and unbleached sheetings, drills, etc., are produced, and which the Herald delights in saying are producing in excess of the demand, yet last year we imported of just these very items 1,214,930 square yards; of gingham and plaids 19,000 square yards, of denims, drillings, etc., 23,261,828 yards, colored fabrics, 544,000 yards, uncolored cotton fabrics, 1,745,315 yards, cotton plush, 788,000 yards, and so on through a long and diversified list. These imported goods cost millions of Canadian dollars, and the production of these gave employment to thousands of foreign workmen. Can the Herald give any sound reason why these goods might not have been produced in Canada, the labor expended upon their production been performed by Canadian workmen? And will it please say if this large importation of foreign textile fabrics which ought to be supplanted by those of domestic production, indicates that "our home market will soon be overstocked?"

Last year our imports of blankets were valued at \$54,000, and yet Canadian blankets are as good as any made anywhere else; we imported of cloths over \$1,500,000, of coatings \$655,000, of tweils \$971,000, flannels \$175,000, hosiery over \$300,000, socks and stockings over \$362,000, worsted goods \$2,384,000, woolen underclothing \$600,000, carpets \$1,270,000, and yet we make about all these things, and of the best quality. Why not let Canada have the benefit arising from the production of such goods? Does it look, in the face of these figures, that we are upon the verge of over-production?

We are kindly informed that by protection we may put our manufacturers in a position to compete with foreigners in our home market, but the moment they pass out of the country they will be at a fatal disadvantage. As we have shown, there is no imminent danger of our home production overtaking the demand, and therefore the *Herald*, like the little girl alluded to, need not become dissolved in tears at the prospect of something dreadful happening in the sweet by-and-bye. Of course, the N.P. was created for the special purpose of enabling our manufacturers to compete with foreigners in our home market, and unless we have this protection it would be simply impossible to manufacture at home and to give large employment to our artisans and workmen. All the goods we require would be made abroad and the manufacture of them give employment to strangers. Before we worry ourselves about foreign trade in our manufactures let us first fully occupy our home market. Let us make all such articles as we can manufacture to advantage at home, purchasing abroad only such things as we cannot produce here. This will give the maximum of employment to both capital and labor, and afford the largest and most profitable demand for our agricultural and farm products. When we have done this it will then be time to consider the question of exporting our surplus manufactures, but not till then. The nation that manufactures for itself prospers. If our manufacturing industries are prosperous our agricultural industries will be correspondingly prosperous. If the farmer's produce is consumed at home he will receive better remuneration therefor than if he had to seek a foreign market. The desirability for a foreign market is that we may sell our surplus products therein. Our surplus products. The home market is the best under all circumstances, for that we can control, and when it is to our interest to do so we can exclude from it the products of other nations.

#### OUR PIG IRON PRODUCTION.

In another page will be found an article entitled "Canadian Charcoal Iron," having reference to the iron manufactured at Three Rivers, Que., to which we invite attention. The facts therein set forth confirm the contention this journal has always advanced that quite as good iron can be made in Canada as anywhere else in the world; and this matter is very timely and of great importance in view of the fact that a strong interest is now being manifested, particularly in Ontario, looking to the establishment of extensive works in Toronto for the manufacture of iron and steel from native ores.

Iron, as we all know, is the chief constituent entering into the manufacture of hundreds of articles of every-day necessity,

including the steam engine, the threshing machine, the plow and the sewing machine needle; and it is no credit to the policy of the country to know that with our inexhaustible stores of ores, fuels, and fluxes, and plenty of capital and skill available to build and operate blast furnaces and iron works, all we have to show in this direction are the furnaces of the Canada Iron Furnace Company, alluded to in the article to which we call attention, and of the Londonderry Iron Company at Londonderry, N.S., which are now in active operation, and of the New Glasgow Iron, Coal and Railway Company, who are building a stack at Ferrona, N.S., and of the Pictou Charcoal Iron Company, who are building a stack at Bridgeville, N.S. It is true we have many establishments for manufacturing steel and iron, but these have to depend entirely upon foreign iron and steel for their raw material, except what is made in the Canadian furnaces here mentioned. A large proportion of the pig made at Londonderry is consumed in industries in which that concern are interested, and when the Ferrona furnace goes into operation the product will probably be all absorbed by the Nova Scotia Steel and Forge Company, at New Glasgow, leaving for the supply of the general demand of the country whatever may be produced at the other works.

And still Canada imported over 81,000 tons of pig iron last year. The Ontario Iron and Steel Company are desirous of erecting furnaces in Toronto which will have capacity to produce probably one hundred and fifty tons of pig per day, but the erection of these works seems to be contingent upon whether the Ontario Government will duplicate the bonus of \$2 per ton offered by the Dominion Government.

The value of such works not only to Ontario but to all Canada is unquestioned, but the fact that the establishment of them is contingent upon something besides the inducements held out by the Dominion Government shows conclusively that the duty of \$4 per ton and the bonus of \$2 is not sufficient to build up a flourishing industry. The bonus is not a sufficient inducement to invest in the industry, even with the backing of a revenue tariff of \$4. It does not perceptibly affect the importation of large quantities of iron, whereas if the duty were increased to six or seven dollars, and a feeling of security prevailed that it would not be lowered for some years to come, we would soon have blast furnaces enough to make all the iron we require.

Further, we import too much wrought scrap and bar iron. We should make more bar than we do, and it should be of a much better quality than what can possibly be manufactured from scrap. We import a great deal of puddled bar simply because it cannot be made in Canada; and the reason why it cannot be made here is because we do not produce the pig from which puddled bar is made; and we do not produce the pig because the industry is not sufficiently protected by the tariff. Wrought scrap is a form of iron more advanced than pig or cast, having had more labor bestowed upon it, but the duty upon it is only \$2 per ton, whereas the duty upon pig and cast scrap is \$4 per ton. The duty upon wrought scrap should be not less than that upon pig iron, and really it should be \$6 per ton. If this were the case the consumption of pig iron, if we had it, would be largely increased, because the puddled bar which we now import in such large quantities would be supplanted by a home-made article.

### A TARIFF PROBLEM.

SOMEbody sent *Grip* a clipping from a New York paper containing a tariff problem, and asked for a solution. The statement was, "You can buy in New York a boy's all wool suit for \$1.20, the duty on which if imported would have been \$1.24. Will some free trade friend show where the 'tax' comes in?" To this *Grip* replied:—

There does not seem to be any direct tax in this particular case, but there may, nevertheless, be an indirect loss to the people of the United States. If, in the absence of the tariff, an equally good boy's suit could have been imported and sold for less than \$1.20, the difference is the measure of the loss. For every such suit imported, an amount of American products of equivalent value would have been exported, and there might have been more profit to the American people in that exchange than there now is in the work of manufacturing boys' all wool suits, and supplying their own home market.

In other words, in the absence of the duty, a suit made, say in Germany, could be sold in the United States for \$1.15, showing a loss of five cents by purchasing the home-made instead of the foreign article. According to *Grip* it would be better to send the \$1.15 to Germany, in American produce to pay for the suit, than to pay the \$1.20 to American workmen for producing it. The American workmen are the near-by home consumers of American agricultural products, and still *Grip* thinks it would be better to market these products in a country across the ocean. Wouldn't the American farmer obtain better net prices at home than abroad? *Grip* wants the American workmen to become American farmers because they cannot sell an article for less than \$1.20 that German workmen can make for \$1.15. And, therefore, it would willingly see the home workmen starve, to the end that the foreign workmen may live.

### THE IMPORTER AND THE TARIFF.

THE *Shareholder* labors under the free trade delusion that the foreign trade of Canada is of such great importance that all other interests should be subservient to it. It admits the necessity for customs duties, but these, it seems to think, should be for revenue only, and that no protective duties should be levied upon any articles which we do not manufacture. It advances this position in the desire to encourage closer trade relations with Great Britain; and it tells us that if we desire to convince the people of that country that our object in taxing their manufactures is to protect our home manufactures, we must restrict our protective taxation to those articles which Canada produces, instead of extending it to those which the country has not yet seen fit to introduce. If this theory had always prevailed there would be but very few manufacturing industries in Canada to day. Under a revenue tariff we had but comparatively few such industries, and such as we had were not in flourishing condition. This was the situation when the N. P. was introduced; but since then we have seen such industries as were specially favored by the tariff spring into existence and grow most encouragingly and satisfactorily, while those which were not thus favored have either struggled along with much difficulty, or have not materialized at all. One reason why we have no vast iron ship-building works similar to those at Cleveland or Bay City is that ships built in Great Britain have free access to our waters, and are allowed to engage freely in our lake and coastwise

carrying trade, while Canadian shipbuilders are compelled to pay duty upon much of the materials which they have to import for use in the construction of ships. According to the theory of the *Shareholder* we should not impose duties upon such materials, thereby enabling our shipbuilders to pursue their occupation unhampered by the tariff, but the contention of the protectionist is that none but Canadian built ships should be allowed to engage in the coasting and lake trade. There are hundreds of industries which have sprung into existence since the N. P. made it possible for them to do so which would never else have materialized. According to the *Shareholder's* unsound theory, we might have protected such industries as we had but should not have encouraged the establishment of others by the imposition of duties upon articles not made here. An illustration of the falsity of this theory is seen in the fact that although Canada is a large consumer of steel rails, and although no duty is laid upon the article, yet we have no steel rail industry, and never will have until the industry is materialized under the inspiration of a protective tariff.

The *Shareholder* contends that "importers as well as the manufacturers—the consumers as well as the operatives, should be afforded some measure of protection." We fail to see any force in this contention. What "protection" do the importers require? In woollen goods, for instance, we know that Canadian factories already established can and do produce goods of equal value to any similar goods brought from abroad, and that to the extent of their production they displace imported goods. Is it this that the *Shareholder* desires the importers to be protected against? Why do these importers prefer to handle foreign goods in preference to similar goods made in Canada? The reason is that there is more money in handling the foreign goods; and if there is any other and less selfish reason we would be pleased to be informed of it. It is true the importers are consumers, and as such they desire to obtain their supplies as cheaply as possible, but they are entitled to no more consideration than any other class of consumers; and they should be content to make some sacrifices for the general weal as all other Canadians do. But the *Shareholder* claims some special favors for them. "What," it asks, "would the commerce of the country be without them?" and it explains that were it not for the imports with which ships come laden, there would be no facilities by which the products of the country could be exported. The fallacy of this argument lies in the undue importance attached to our foreign trade. We should not desire to import any thing which we could manufacture to advantage at home, and we should not export any thing which we ourselves could consume. This is the correct theory, and if it were elaborated and carried out to its fullest possible extent, our foreign trade might not be so large, but we would become richer and more independent. It is very true that there are some agricultural products of which we usually have an excess, but on the other hand there are occasional deficiencies, so that upon the whole we require for our own use about all that we produce. Thus in the fiscal year 1888-89 our net imports of wheat and flour were the equivalent of 506,000 bushels of wheat; of oats, 264,000 bushels; of corn, 3,000,000 bushels; of corn meal, 151,000 bushels, and of rye, 100,000 bushels. So, too, in the following year, 1889-90, our

net imports of wheat and flour were the equivalent of 423,000 bushels of wheat; 113,000 bushels of oats; 3,335,000 bushels of corn; 187,000 bushels of corn meal; and \$37,000 worth of bran and mill feed. In 1891 there were 367,500 persons employed in the manufacturing industries of Canada, an increase of 112,500 over the number employed in 1881. These persons were not producers of agricultural products, but consumers, and to the extent of their consumption of such products the farmers of the country were benefited in their interest more than they were by the consumers of this class ten years before. But the importers of foreign merchandise were not particularly benefited by this class of people, for their wants were supplied from domestic sources; and we fail to see any valid reason why the *Shareholder* should couple the importers and these consumers together in its effort to cripple our manufacturing industries.

The fact is the class of consumers who are most affected by the duty on foreign goods are those who are best able to stand it. The people of Canada generally are well satisfied to clothe themselves with goods made in Canada. They are of most excellent quality and are comparatively inexpensive; while the rich and fashionable who can afford to wear expensive goods, such as are not produced in Canada, can also afford to pay the duty on them. The *Shareholder* tells us the tariff does not reduce the quality of goods manufactured abroad, but that it reduces the quality of the goods imported, and that these goods cannot now be purchased in Canada of the same value for the same money, as they could were a revenue tariff in force; that importers will not bring in the same high quality of goods as formerly because there is no money in it. We have shown that the consumers of these high quality goods are not the masses but the classes, including the importers themselves, who are quite able to pay the duty; and the *Shareholder* is not at all complimentary to its friends when it states that they decline to import quite a high quality of goods as they might otherwise do because they can make more money by importing lower grade goods. The general consuming public of Canada are not interested in this situation.

The *Shareholder* charges us with accusing it of advocating the free importation of articles not manufactured in the country, and declares that it never advanced such an argument—that our deductions are built on a false foundation. Far be it from us to do our respected contemporary any injustice, and we beg to refer it to its own language when it says: "In our present condition as a young country the imposition of customs duties is necessary, necessary as well for revenue as for protective purposes, but let the subject of protection first exist, and then consider and legislate for the protection which it deserves." If this language means anything it means that duties upon an article should not be imposed until it is manufactured in the country.

#### THE STAMP LAWS OF GREAT BRITAIN.

AN analysis of the Stamp Laws of Great Britain, showing the duties imposed on all legal instruments of writing in that country, is interesting. All deeds liable to duty must be stamped within thirty days after their first execution: agree-

ments under hand only within fourteen days, except agreements to let, which are liable to lease duty. The Commissioners have power to mitigate penalties up to three months after first execution. After that time the full penalty must be paid. Articles of clerkship must be stamped before signature or penalty will be imposed. Bills of exchange and promissory notes cannot be stamped after signature. Instruments executed abroad must be stamped within thirty days after arrival in the country. A stamp which, by any words on the face of it, is appropriated to any particular instrument is not available for an instrument of any other description. Except where express provision is made to the contrary, any unstamped or insufficiently stamped instrument may be stamped after the execution thereof on payment of the unpaid duty and a penalty of £10; and also by way of further penalty, where the unpaid duty exceeds £10 of interest on such duty at the rate of five per cent. per annum from the day upon which the instrument was first executed up to the time when such interest is equal in amount to the unpaid duty. No deed can be enrolled, registered, etc., until the same is duly stamped. Except where express provision is made to the contrary, all duties are to be denoted by impressed stamps only.

There are some general exemptions from stamp duties, such as transfers of shares in government stocks or funds; instruments for the sale or transfer of any ship or vessel, or any share, interest or part in any ship or vessel; instruments of apprenticeship, bonds, contracts, or agreements entered into in the United Kingdom for or relating to the service in any of Her Majesty's colonies or possessions abroad, of any person as an artificer, clerk, domestic servant, mechanic, laborer, etc., commissions granted to officers of militia, etc.

Included in the list of dutiable instruments are acknowledgment of right to production of deeds, under seal, 10s. The duties which had previous to the last Act been denoted in instruments by adhesive stamps of the value of 1d., 2d., 3d., 6d., 9d., 1s., and 2s. 6d., or by combinations of such, are to be denoted by postage stamps which must be cancelled by writing on or across the stamp, the name or initials of the canceller, together with the true date of doing so, the penalty for neglect of which is £10. The Commissioners have power to adjudge the proper stamp to be affixed to any deed. Admission as an advocate in any court, £50; admission to the degree of Barrister-at-Law, £50; admission as a member of either of the four Inns of Court in England, £25; admission as a member of Inns of Chancery, £3; admission as an attorney, solicitor, or proctor in any court, £25; admission as a solicitor or attorney in the Court of Sessions in Scotland, if the sum of £60 has previously been paid upon articles of clerkship, £25; if previously admitted as a solicitor in any inferior court, £30; as a procurator or solicitor in any inferior court, if applicant has previously paid 2s. 6d. duty on articles of clerkship, £54 17s. 6d.; in any other case, £55; admission as a burgess into any corporation or company in respect of being engaged in any trade, £1; appointment or deputation granted by Commissioners of Customs, £1 10s.; affidavit or statutory declaration, 2s. 6d.; agreement for a lease, if exceeding thirty-five years, under seal, 10s.; appointment in execution of any power not being a will, 10s. appraisal, or valuation of property, from 6d. to £1, according to valuation; apprenticeship, where there is no considera-



tion, 2s. 6d. ; in all other cases 5s for every £5 of consideration ; articles of clerkship whereby any person first becomes bound to serve as a clerk in order to his admission as a solicitor of the Supreme Court, £80 ; as a solicitor in Court of Sessions, £60. Articles of clerkship cannot be stamped after six months except upon payment of penalties as follows : if brought to be stamped within one year, £10 ; if after one year and within five years, for every complete year, £10 ; in every other case, £50 ; and articles cannot be stamped after execution without a £10 penalty. Audit duty payable by local authorities on auditing accounts, under £20 5s. up to £50 where amount audited is £100,000. Award, or decret arbitral where matter in dispute does not exceed £5 3d. up to £1 15s. where award exceeds £1,000. Bills of exchange payable at sight, 1d. ; promissory notes not exceeding £5, 1d. up to 1s. for £100 and fractional parts thereof. Penalty for issuing or negotiating an unstamped bill, £10. Bills of lading, 6d. ; penalty for issuing unstamped, £50. A copy of a bill of sale cannot be produced in any court, unless original, duly stamped, is produced. Bond, covenant, or instrument of any kind whatsoever for the term of life or other indefinite period, for every £5 and fraction thereof, 2s. 6d. Official bonds of officers of customs and inland revenue, 5s. Bond on letters of administration, 5s. Certificate, to be taken out yearly by every person enrolled as attorney, solicitor, proctor, notary public, conveyancer, £9 ; penalty for practising without certificate, or with certificate improperly stamped, £50. Certificate of registration of a design, £5. Charter-party, 6d. Delivery order, 1d. Exemplification under the Great Seal of the Kingdom of any letters patent or grant, £5 ; under seal of any court, £3. Faculty or dispensation for authorizing any person to act as a notary public, £30. License to use a surname and arms, £50. Lease of dwelling-house where rent exceeds £25 per year, 2s. 6d. Power of attorney to receipt for any sum not exceeding £10, 5s. Penalty for giving or voting under unstamped proxy, £50. Special license for marriage, £5 ; not special, 10s. License from a bishop or other ecclesiastical power to hold office of lecturer, reader, chaplain, church clerk, or sexton ; for licensing a building for the performance of divine service ; for licensing any chapel for the solemnization of marriages, 10s. For any other similar purpose, £2. License for a drunkard's retreat, £5, and for each patient admitted, 10s. Receipts given for or upon the payment of money amounting to £2 or upward, 1d. Any voting paper or instrument for the purpose of voting by any person entitled to vote at any meeting, 1d. ; penalty for giving or voting under an unstamped voting paper, £50.

There are innumerable other circumstances constantly occurring in the every day affairs of life where stamps are necessary, and where heavy penalties are inflicted for not using them. In fact, in England stamps are required from the time of one's birth, when the event must be registered, until the grave closes over the human remains. This is one of the methods by which Great Britain obtains her revenues.

EDITORIAL NOTES.

DR. SKLWYN reports that there are 144 square miles of coal fields in the Crow's Nest region of the Rocky Mountains between the eastern summit and Elk River. The estimates are that there are 25,000,000 tons available on each mile.

He says it is destined to be the most valuable productive coal field in the Dominion.

THE principal mica mines in the United States are in New Hampshire and North Carolina, which produce an excellent quality ; but so far the Canadian has the preference. Mica is very flexible and a good insulator, and finds its principal use in stoves, dynamos and electric motors. For dynamos and motors it comes in strips about one inch wide and from four to eight inches long ; smaller sizes are used for stoves.

A NUMBER of owners of steam yachts in New York intend to utilize them to transport themselves and their friends to the Chicago Exposition by way of the St. Lawrence and Welland Canal. They believe it will be of great advantage to live aboard their yachts, and thus be independent of crowded hotels. It is reported that the owners of many steam barges in Canada will fit them with comfortable living quarters, and carry Canadian visitors to and from the Fair.

THE London *Advertiser* contains an account of a meeting recently held in that city by a joint committee of the City Council and the Board of Trade, to consider the best means of booming that town. A part of the scheme adopted was to send suitable men to other cities to interview manufacturers in an endeavor to induce them to remove their enterprises to London ; and the *Advertiser* wishes God's blessing to all the efforts which may be made in this direction. While the *Advertiser* entertains these pious and laudable sentiments in its local columns, its expressions and sentiments are just the reverse in its editorial columns, for there it is that all the weight and influence of the paper are exerted to break down and destroy the policy of the Government which has done so much for that city in making it one of the most important manufacturing centres in Canada.

SEVERAL changes of importance in the patent laws of the United States are proposed in a bill agreed upon by the House Committee on Patents. Under the bill, it appears, applications for patents are required to be completed within six months instead of two years after the filing of the petition. The right to file a caveat is not confined to citizens of the United States, but is given to all persons. Damages are not to be recoverable which have accrued prior to the six years last preceding the suit. Patentees seeking remedy for infringement are required to bring suit in the first instance against the manufacturer or the vendor of the article, and in no case against individuals who have purchased in good faith articles of a regular dealer in the open market for their own use. This exemption, however, does not apply to corporations or firms.

THE *Globe*, referring a few days ago to a cable despatch which stated that Canada was to be honored on her Majesty's birthday by the elevation of several prominent Canadians to the dignity of knighthood, said :—"It is invidious to name names, but we venture to suggest that 'Sir Hiram Walker of Walkerville' would sound well. At any rate it could not fail to delight a meritorious citizen as well as to increase the popularity of his brand." There is a difference to be noticed



between Mr. Walker and the scurrillous *Globe* writer.—Mr. Walker is a gentleman. This impudent holding up to ridicule of the name of a gentleman not at all in public life, but one of the most estimable men in Canada, is on a par with the *Globe's* unwarranted and contemptible use of the name of the Baroness Macdonald on a recent occasion. The toe of a boot might be made to do good service on occasions of this sort.

SOME of our American contemporaries are crowing over a statement recently made by their Government regarding the large increase of shipments of flour from that country to Cuba under the operation of their reciprocity treaty with that island. It is shown that in the first two months of 1892, after the coming into effect of the treaty, as compared with the first two months of 1891, before the treaty was made, the imports of flour into the port of Havana were as follows:—

	1892	1891
From United States.....	33,643 bags.	5,753 bags.
" Europe.....	160 "	50,255 "

This is a good showing as far as it goes, but we would like to see the figures regarding the exports of American wheat to Spain before and after the going into effect of the treaty. There is an impression that the exports of American wheat to Spain have decreased largely since then, as the consumption of flour in Cuba was largely of American wheat ground in Spanish mills.

In view of the recent utterances of Lord Salisbury the Cobden Club has adopted resolutions declaring that it will welcome all efforts that are based upon sound economical principles to draw closer the relations between Great Britain and her colonies. The resolutions further declare that the club is convinced that a fiscal union of the Empire by differential tariffs levied against the rest of the world, which are advocated in certain quarters, would be politically dangerous and economically disastrous. The only practical fiscal federation of the Empire, the resolutions say, must be based on free trade, and on the self-governing colonies adopting the non-protective policy of Great Britain. But this movement in Britain looking to closer trade relation with the colonies, on the basis of British tariff discrimination, like the soul of the late John Brown of Yankee war memory, will still go marching on, notwithstanding the Cobden Club resolutions.

A CIRCULAR has recently been issued by the Boston Manufacturers' Mutual Fire Insurance Company, showing the results of fires occurring in buildings protected against fires by automatic sprinklers and those provided with other apparatus during a period of fifteen years, extending from Jan. 1, 1877, to Jan. 1, 1892. From the circular we take the following:—

	Fires.	Claims.	Losses.	Average Fire.	Average Claim.
Automatic sprinklers	406	206	\$247,073.38	\$610.03	\$1,202.29
Other apparatus....	1,196	501	8,720,437.98	7,291.33	17,406.06

Automatic sprinklers have their limitations, and may not stop a fire which starts elsewhere and burns to the room where they are installed, although there have been many instances where they performed valuable service under such conditions. They are not suited to the protection of large open spaces or

to deep piles of combustible material. Manufacturing processes generating corrosive vapors, or producing adhesive deposits upon automatic sprinklers, impair their efficiency.

ONE of the prophecies of the advocates of the McKinley bill was that it would induce foreign manufacturers to come to the United States and establish plants in order to compete with Americans on their own ground. The result has already come to pass, for one of the largest Welsh tin-plate manufacturers, W. H. Edwards, has decided to close his tin-house, or finishing department, at Cardiff, and to begin at once the erection of ten mills in the United States. These mills will be followed by others as fast as the business may require. Mr. Edwards will import his black steel plates from his factories at Swansea for the present. Eventually he intends to remove his entire interests to his new home. The firm of Morewood & Co., of Swansea, South Wales, will also establish a tin-plate works in the United States. The firm is an old one, and had been until the McKinley tariff went into effect a prosperous one. The steel plates will be imported and dipped in the product of the American tin mines.

THERE is in the city of Pittsburgh, Pa., quite a big bakery. There is nothing remarkable in this fact of itself, for other cities have big bakeries. The particular establishment in question, however, took pains last year to make a record of the material used during the twelve months, and some of the figures which are presented are quite remarkable in their magnitude. For instance, in the item of eggs alone, 1,985,000 were required to meet the demands—a number which would quite appall even the most industrious old "biddie" that ever cackled in triumph over her latest and freshest production. In the department of fine cake this bakery used over five tons of the highest grade creamery butter within the space of four months. It also consumed the entire milk and cream production of the largest herd of thorough-bred Holstein cows in the state.—*Good Housekeeping.*

This illustrates the value of the near-by home market to the farmer. There are bakeries in all large cities and in small ones also, and they all require eggs and butter. The inhabitants of cities are not producers of these articles, but consumers of them, and it is here that the farmers always find ready sale for their produce and at the very best prices.

THE *Toronto Globe*, discussing the numerical strength of different religious sects in the United States, says: "New England, where Congregationalism was once supreme, now contains a million Roman Catholics against 230,000 Congregationalists. This change is due mainly to the influx of French Canadians." Inasmuch as the increase of population of the New England States in the last decade was no greater than that of Canada, and if the Congregationalists were then "supreme" in numbers, they must have numbered as many then as the Catholics do now, or at least a million. If the accessions to the Catholic Church can be numbered by this difference, according to the *Globe* there must have been 770,000 conversions to it from Congregationalism and not by accessions of French Canadians. But there are probably less than one half of 770,000 French Canadians in New England, therefore it is certain that the change in the religious faith of New England is not, to any appreciable extent, due to the

influx of French Canadians. The *Globe's* guesses cannot bear the investigation of common sense.

Our esteemed contemporary *Farm and Home*, of Springfield, Mass., thus catches on to the beet sugar question:—

The Ohio Legislature failed by one vote, through carelessness, to offer a bounty to manufacturers of one-third of one cent per pound upon all sugar manufactured in Ohio from beets or other plants grown in the State, a bounty of two thirds of a cent upon such sugar being paid to the growers of the beets or other plants from which the sugar is obtained. This is the first instance in which the bounty system has been applied directly to the grower of beet as well as to the manufacturer of sugar therefrom. It is the only fair way, as the greatest obstacle in the way of the sugar industry is to get farmers to grow the beets. The proposed bounty is equivalent to from \$1 to \$1.50 per ton of beets, or from \$10 to \$20 per acre, in addition to the \$4 or \$5 per ton the sugar factory can pay for beets of good quality. This measure is sure to be enacted at the next session in January, in abundant season to help the beet sugar crop of 1893. It would have been too late to have had much influence this year, though it might have assisted the first sugar manufacturing establishment in the State, now being constructed in Findlay, to get the beets it requires. *Farm and Home* hails with delight every reasonable and proper effort to establish the sugar industry, and thus divide among our own farmers and manufacturers and planters the \$100,000,000 now sent abroad annually for foreign sugar.

Our English exchanges give us a deplorable picture of the distress in what is known as the Cleveland iron district, brought about by the strike of the Durham miners. It is said that from 90,000 to 100,000 persons, including children, are now entirely destitute, and barely subsisting on charitable doles. The distress is said to be as great as in the West of Ireland in famine times. Nearly all works of the district are stopped, and the small tradesmen and house proprietors are only a degree better off than the mass, while to meet the distress local poor rates have had to be enormously increased. In Middlesborough the local relief fund is exhausted. This time last year there were in that town 3,000 persons depending on poor law relief; to day there are 14,000. The same state of things is found in all the towns and villages of the district.—*Montreal Herald*.

If any such destitution and distress should unfortunately befall Canada, the *Herald* would immediately and continually charge the event to the N. P. Ireland has enjoyed all the blessings to be derived from free trade ever since its adoption by England, and therefore, according to the free trade theory, that island should be in the enjoyment of the greatest prosperity; but instead of that there is a condition of chronic famine and distress prevailing there, which is now, according to the *Herald*, duplicated and intensified in many parts of England.

The *Coal Trade Journal*, speaking of the advancing prices of anthracite coal, which are likely to become unreasonably high, suggests that crushed coke could be made to take its place for many uses. It says:

As to steam, it goes without saying that bituminous coal meets the demand, but their chief reliance for success is for domestic use, and there it looks as though they had the people. Up to a certain price, they may be able to hold it, but everyone in the trade knows that the increased price of Red Ash coal, together with the avoidance of heat and dirt, has brought, within a few years, gas and oil as substitutes to such an extent that it has seriously interfered with the trade in

that class of coal, especially in warm weather, and it will continue to do so with increasing ratio. Another substitute which I have not seen mentioned is so-called crushed coke, an article growing in demand and practically inexhaustible in its supply. By coke I do not mean that made in gas process, which is somewhat friable, but that known as oven coke and mostly used for smelting purposes. This coke, as you know, is hard, firm and silvery. By the use of simple and not expensive machinery, it can be broken into suitable sizes to any extent for domestic use. It contains about ninety-five per cent. of carbon, the ash is fairly heavy, and the article itself is as clean, if not cleaner, than anthracite, makes a very hot fire, is easily controlled, and after a little practical use will find its way into dwellings for all the purposes that anthracite is now used. The cost of handling will be somewhat more than coal on account of bulk.

This impresses the fact that coke is indispensable for many uses as fuel, and should be placed on the free list. If we are to have the steel and iron works in Toronto that are now being projected, coke will be the fuel which will be used; and coke is absolutely essential in the manufacture of malleable iron. By all means let coke be placed on the free list.

*Good Housekeeping* for June has an attractive frontispiece called "Starting Out in the World," a family group of seven happy children, about to take a carriage ride, the reins in the hands of the oldest brother. It is accompanied by a full-page poem, a parting benison; and every parent, especially every grandparent, will join in the invocation upon the interesting, childish group. The number has the usual household papers, one of the most interesting of which is that in which a writer, who modestly conceals her full name, gives an interesting picture of her home in the wilderness of Washington, far in the North-west. The culinary department is especially favored in this issue, there being a large number of valuable articles; though other interests of the home are by no means forgotten or overlooked. This journal is one of the most desirable guides for the conduct of the family. The experienced housekeeper will not, and others should not, think of doing without it. Clark W. Bryan & Co., Springfield, Mass.

*Outing* for June is as pure and refreshing as the shades and breezes of the woods and waters it loves so well. It is pre-eminently a magazine for the home circle, and richly deserves its great success, for matured and growing minds are alike benefited by its honest teachings, which ever point the way to the safest of all earthly sanctuaries—nearest to nature's heart. The number is superbly illustrated, the frontispiece (famous white-winged *Gloriana*) and many other engravings being artistic gems. The contents are as follows: "Through Muszkoka Marvel-lands," by Ed. W. Sandys, illustrated; "Inter-city and Inter-national Cricket in America," by Thomas Wharton, illustrated; "Experiences in Amateur Photography," "A. H.," by Wm. Hineckley; "Evolution of the Forty-six-footer" (concluded), by Geo. A. Stewart, illustrated; "By Wheel from Havre to Rouen" (concluded), by J. W. Fosdick, illustrated; "June Rides," by Jessie F. O'Donnell; "Harry's Career at Yale" (continued), by John Seymour Wood, illustrated; "Saddle and Sentiment" (continued), by Wenona Gilman, illustrated; "The Maryland National Guard," by Hanson Hiss, illustrated; "From the German Ocean to the Black Sea" (continued), by Thos. Stevens, illustrated; "Nova Scotia as a Summer Resort," illustrated; "Miscellaneous Jumping," by Malcolm W. Ford, illustrated; and the usual editorials, poems, records, etc.

The American Iron and Steel Association has published the eleventh edition of its well-known directory, bringing down to the middle of February, 1892, full information concerning new iron and steel works in the United States and changes in the old works. The present edition contains four features which have not appeared in previous editions. These are the Tinplate Works of the United States, an index to the brands of pig iron, the Iron and Steel Works of Canada, and the Iron and Steel Works of Mexico. This directory not only gives the names and addresses of the works, but also the location and post-office and telegraph addresses, the principal offices and officers of the companies, the date of building or rebuilding of the works, their equipment, the articles manufactured, their

capacity, and the kind of power and fuel used. The works are arranged alphabetically by classes and by States. Besides the classification of the works by industries and the arrangement alphabetically and by States, there is an index to the names of the work and another index to the names of companies and firms, so that any particular establishment as well as a particular class of works can readily be found. The directory is a cloth-bound volume of 298 handsomely-printed pages, or thirty-four more pages than the previous edition (1890) contained. The book is now ready for delivery, and will be sent by mail in a strong flat envelope to all who may order it, thus assuring its receipt in perfect condition. Price, \$4 per copy.

The June *Wide Awake* is a picturesque and altogether delightful number. Elbridge S. Brooks "reproduces" for the boys and girls of to-day a Roman boy's letter descriptive of that gorgeous pageant in the Rome of Augustus' day, when Horace led the children's parade to the strains of his famous secular hymn, and when emperors, senators, matrons, priests and vestals joined the young paraders in doing honor to "Children's Day;" that now famous Franco-American boy-editor, Tello d'Apéry, tells how he "runs" his paper the *Sunny Hour*, and swells his "barefoot fund"; Edith Robinson has a timely and typical Boston story of "How Jack Sailed with Leif Ericsson"; Prof. Charles E. Fay of the Appalachian Club tells "Why the White Mountains are called White"; Samuel Wells, jr., contributes his story of "Bill Fassett and his Last Moose" to the Fair Harvard series, written by recent Harvard graduates; Frances M. Abbott has a capital school story "The Song of the Graduation Gown"; S. G. W. Benjamin, artist and author, tells a stirring tale of the sea "The Adventure of the Twins," and Mary Catherine Crowley has a most unique story-solution of Columbus and the famous egg that "every school-boy" has puzzled over. Two fine new serial stories are begun in this number: "The Coral Ship," a story of adventure by Kirk Munroe, and "That Mary Ann," a delightful girl and boy story by Kate Upson Clark. The poetry of this number is from Louise Chandler Moulton, "M. E. B.," Margaret J. Preston, Cora Stuart Wheeler, Lillian Crawford True, and others, and the "Men and Things" department is as full of good material as usual. The illustrations by Meynelle, Hassam, Laskey, Bodfish, George Foster Barnes, Benjamin, Sandham, Monte and others, are full of strength and spirit, and the number is one that will be read without stopping from cover to cover. *Wide Awake* is \$2.40 a year. D. Lothrop Company, Publishers, Boston, Mass.

A WIDE variety of topics is treated in *The Popular Science Monthly* for June. First comes "The Retreat of Theology in the Galileo Case," in which Dr. Andrew D. White relates how the Catholic Church retired from its former position with regard to Galileo and the revolution of the earth. The recurrence of Decoration-day, with its reminders of suffering and sacrifice, gives timeliness to George L. Kilmer's account of "First Actions of Wounded Soldiers." A sketch of "The Ancient Civilizations of America," embracing the mound-builders and the "palace-builders," is contributed by Prof. J. S. Newberry. In a fully illustrated paper on "The Yucca Moth and Yucca Pollination," the curious operations of one of the insect aiders of plant-fertilization are described by Prof. C. V. Riley. The existence of many and often conflicting State and national laws concerning railroads gives occasion for an article by Appleton Morgan, under the title "Wanted—A Railway Court of Last Resort." In "The Survival of the Unfit," Dr. Henry D. Chapin points out that the vicious and defective classes are becoming a greater and greater burden, and yet no effort is being made to prevent their increase. In "The Relation of Biology to Sociology," the likeness and the difference between society and a living organism are pointed out by Dr. Lewis G. Jans. The question "What are Diatoms?" is answered in an illustrated article by Emily L. Gregory. There is an account of "Korean Mountains and Mountaineers," based on explorations by C. W. Campbell. The essential nature and the source of our "Pestiferous Plants," are popularly stated by Prof. Byron D. Halsted, who is in charge of the exhibit of weeds to be made at the Columbian Exhibition. In "Dust and Fresh Air," T. Pridgin Teale describes means that he has devised for keeping dust and soot out of drawers, cupboards, etc. Carl Vogt writes of "The Colors of Water;" there are also a brief essay on "The Animal View of Man;" and a sketch with portrait of Dr. William Huggins, President of the British Association in 1891. New York: D. Appleton & Company. Fifty cents a number, \$5 a year.

The valuable and timely article "Flowers for June Weddings," by H. H. Battles, gives a peculiar charm to the June *Ladies Home Journal*. The publishers of this popular magazine, ever on the

alert for new features, present in this number the first of a series of articles "Literary Women in Their Homes." The series opens with a delightful sketch, with photograph, of the homo life and personality of Augusta Evans Wilson, the author of "Beulah." Lucy Hamilton Hooper contributes an interesting story, with portrait, of Madam Victorien Sardou, the wife of the famous dramatist. Mrs. William E. Gladstone continues her "Hints from a Mother's Life," and Miss Bradley is interesting and instructive in the "Queens of Westminster Abbey." A serial story, "An every-day Girl," by Sarah Orne Jowett, illustrated by Alice Barber Stephens, opens attractively; "Why our Women Fade" is discussed by Felicia Holt, and A. J. Farry writes of "Your Minister's Wife." Christine Terhune Herrick writes of "The first year of Married Life;" Kate Upson Clark of "The Woman who is Nervous," and Lillian Freeman Clarke of "The Art of Finding Fault." The poetry of this number is contributed by Clinton Scollard, Harry Romaine, Grace Pearl Macomber and Dr. Abram S. Isaacs. Mrs. Henry Ward Beecher continues her reminiscences of her husband. Mrs. Lyman Abbott takes a new departure by discussing topics which are of vital interest, and Mrs. Bottome, in her department of "King's Daughters" is helpful. Palmer Cox gives a full page of his "Brownies." Robert J. Burdette writes "From a New Ink-stand," and Rev. T. De Witt Talmage talks pleasantly "Under My Study Lamp." Mrs. Mallon is instructive on the subject of "Going-away Gowns for June Brides," and "Summer Dresses for Small People." Emma M. Hooper gives much valuable advice in her "Hints upon Home Dressmaking," and Maude Haywood is very helpful in "Art for Art Workers." Ruth Ashmore in "Side Talks with Girls," and Forster Coates in "Side Talks with Boys," are in touch with the girl and boy in both city and country. Miss Parloa gives much seasonable instruction on the art of "Canning Fruits and Vegetables," and Eben E. Rexford is helpful to the amateur gardener in his "All About Flowers." Altogether, this number of the *Journal* is a thing of beauty and excellence, and worth many times its modest price of ten cents. The *Ladies Home Journal* is published by The Curtis Publishing Company of Philadelphia, for ten cents per number, and one dollar per year.

*Scrimer's Magazine* for June continues the series on "The Poor in Great Cities" with an article on "Life in New York Tenement Houses, as Seen by a City Missionary," by Rev. William T. Elsing. Mr. Elsing's article aims to represent the average of life in the tenement houses, and does not give a false impression by accumulating all the startling incidents which have come under his eye in the past nine years. The illustrations have been drawn by Charles Broughton, who represents what he has actually seen. Closely connected with this series is a wonderfully sympathetic account of "The Drury Lane Boys' Club," London, by Mrs. Frances Hodgson Burnett. The remarkable thing about this club is that it originated in the mind of a poor boy himself, who felt the need for such an organization, and who called around him a handful of similarly-minded poor boys, who met for a time in his mother's collar, because, as he expressed it, "if two or three of us stopped a bit to talk on the street the policeman came and told us to move on." By the aid of a young man and woman this club had grown to be more prosperous, though when it came to Mrs. Burnett's attention it was still in very modest quarters. In memory of her own son Lionel, who died not long ago, she recently presented a reading-room to the club. Her account of the origin and growth of the club, and the opening of the new reading-room has all those qualities of sympathy and appreciation with child-life which have made her stories among the most popular in the language. The Rev. David Swing, D.D., contributes to the "Historic Moments" series "A Memory of the Chicago Fire," which is a most graphic word-picture of what he saw and felt on the night of October 8, 1871, when nearly the whole city was swept away. Of particular importance to all great cities is Mr. Thomas Curtis Clark's suggestive article on the solution of the problem of "Rapid Transit in Great Cities." The season of 1891 saw the last drive of cattle on the great trails from Texas to Kansas; and it is the romantic history of these trails that Charles Moreau Harger writes in his article on "The Cattle Trails of the Prairies," which is illustrated with a series of striking pictures by A. Castaigne. An article of unusual picturesqueness is A. F. Jaccici's description of "An Ascent of Mount Etna," made by him in the late autumn after the usual season for such adventures. It is illustrated with his own drawings of scenes along the route, and from the rim of the great crater. Professor N. S. Shaler contributes a fully illustrated article on "Sea-Beaches," in which everyone who visits the sea-shore will find many things to arouse a new interest in his summer outings. The fiction of the number includes the last instalment but one of "The Wrecker," which is approaching a conclusion of wonderful and even terrible strength.

# \* INVENTIONS. \*

*This department of THE CANADIAN MANUFACTURER is devoted to the interests of inventors, of patentees of inventions, and of manufacturers of patent articles. Patents are granted in Canada for fifteen years, the Government fee for which may be paid by instalments. Arrangements have been made by which the issue of all patents by the Canadian Patent Office and all renewals and extensions thereof will be promptly noticed in this department, and a brief description thereof given. Enquiries on these subjects are invited and will receive prompt attention. No charge will be made for answers by mail when return postage is sent. Information given free regarding patent laws and the obtaining of patents in Canada, United States, Great Britain and all foreign countries. Claims for inventions, as embodied in Letters Patent, also the illustrations of them, will be inserted in this journal at moderate charges. The attention of manufacturers is specially directed to the opportunities for lucrative business which may be acquired by close observation of whatever may appear in this department.*

## CANADIAN PATENTS.

The following patents have been issued from the Canadian Patent Office from April 20 to May 17, 1892, inclusive.

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

### MECHANICAL PATENTS.

- 38,753 Butter tub, C. D. Fillmore, April 20th.  
 38,755 Box making machine, J. F. Gilliland, April 20th.  
 38,756 Preparing fish for use as food, P. W. Schoman, April 20th.  
 38,758 Lamp extinguisher, M. Lajoro, April 20th.  
 38,759 Time safe-bolt retracting device, F. M. Williams, April 20th.  
 38,760 Plumb and level, N. H. Spencer, April 20th.  
 38,761 Smoking pipe, D. M. Poulin, April 20th.  
 38,762 Suspended gate, H. Duporow, April 20th.  
 38,763 Steam-trap, F. Funke, April 20th.  
 38,765 Car coupling, E. W. M. Hughes, April 20th.  
 38,767 Machine for manufacturing panel doors, A. McKay and H. V. Edmunds, April 20th.  
 38,768 Clothes pin, J. A. Johnson and C. H. Grout, April 20th.  
 38,769 Car coupler, C. A. Gould, April 20th.  
 38,770 Sash fastener, C. S. Apple, April 21st.  
 38,771 Car coupler, J. W. Klingler, April 21st.  
 38,772 Musical instrument, H. S. Saroni, April 21st.  
 38,773 Railroad switch, M. Hynes, April 21st.  
 38,774 Bridle bit, H. E. Evans, April 21st.  
 38,775 Railroad crossing signal, H. Y. and J. G. Read, April 21st.  
 38,776 Floor jack, G. Bowler and G. A. Thompson, April 21st.  
 38,778 Flour cabinet, A. A. Tinker and C. M. Evans, April 21st.  
 38,780 Screws, C. C. Holt and T. Hall, April 21st.  
 38,782 Car coupler, J. Callantine and J. D. Baer, April 21st.  
 38,783 Apparatus for destroying garbage, night soil, etc., Dominion Sanitary and Cremation Co., April 21st.  
 38,784 Lubricator, W. and J. Mielding, April 21st.  
 38,785 Nut lock, J. C. and R. H. Grimes, April 21st.  
 38,786 Razor guard, P. D. Murphy and C. O. Chaplin, April 22nd.  
 38,787 Inscription and motto plate, C. M. Underwood, April 22nd.  
 38,788 Washing machine, A. L. Burke, April 22nd.  
 38,789 Sorting nails in machines for pointing horse shoe nails, W. M. Stone, April 22nd.  
 38,790 Pipe coupling and valve, W. T. Messinger, April 23rd.  
 38,791 Attachment to threshing machine, J. Spaetzal, April 23rd.  
 38,792 Vehicle motor, W. H. Thompson and G. Morris, April 23rd.  
 38,793 Combined desk and easel, L. B. B. Hill, April 23rd.  
 38,794 Floorcloth squeezer, W. Keane, April 23rd.  
 38,795 Tobacco pipe, J. Lanhoff, April 23rd.  
 38,796 Nail puller, M. Loftin, April 23rd.  
 38,797 Sash lock, De Mars Sash Lock Co., April 23rd.  
 38,798 Device for interchangably arranging characters, J. Noble, April 25th.  
 38,799 Sight-feed lubricator, R. W. Green, April 25th.  
 38,800 Dress stay, M. P. Bray, April 25th.  
 38,802 Mouthpiece for speaking tube, W. H. Ross and W. Bryan, April 25th.  
 38,803 Corset, F. Crompton, April 25th.  
 38,804 Drag saw rail cutting machines, R. C. Cowan and T. G. Haultain, April 25th.  
 38,805 Revolving hat case, D. H. Sanders and E. O. Wood, April 25th.  
 38,806 Ore concentrator, The Colorado Iron Works and W. H. Bowers, April 25th.  
 38,807 Steam boiler, Campbell & Zell Co., April 25th.  
 38,808 Ribbon roller, F. O. Clarke, April 26th.  
 38,809 Ironing board, J. Gates, April 27th.  
 38,810 Suspender, C. R. Harris, April 27th.  
 38,811 Wrapper for butter, F. Cudney, April 27th.  
 38,812 Combined floating crane and elevator, J. E. Walsh, April 27th.  
 38,813 Draft equalizer, F. W. Reisinger, April 27th.  
 38,814 Shutter bower, H. V. Demerest, April 27th.  
 38,816 Tufting machine, H. T. Shipley, April 27th.  
 38,817 Bag or case containing the materials for making a poultice or fomentation for medical use, E. Kent, Royal Exchange Co., April 27th.  
 38,818 Car coupler, M. J. Althouse, April 27th.  
 38,819 Bridle for paint brush, C. Boeckh, April 27th.  
 38,820 Car coupling, F. Harvey and Kane, April 27th.  
 38,823 Ventilating of rooms, J. M. Bishop, April 29th.  
 38,824 Hose clamp, F. T. Weidaw, April 29th.  
 38,825 Band saw mill, I. N. Kendall, April 29th.  
 38,826 Oil can and filler, E. W. Luce, April 30th.  
 38,827 Water tap filter, J. Mortimer, April 30th.  
 38,828 Car coupler, S. E. Harris, April 30th.  
 38,829 Water motor, J. G. Kerr, April 30th.  
 38,830 Shawl strap, E. G. Wheeler, April 30th.  
 38,831 Automatic reservoir pen holder, J. Oliphant, April 30th.  
 38,832 Molding machine, The Tabor Mfg. Co., May 2nd.  
 38,833 Apparatus for separating yeast, Fleischmann & Co., May 2nd.  
 38,834 Car coupler, M. H. St. Denis, May 2nd.  
 38,835 Traps for waste paper pipes, J. H. King et al, May 2nd.  
 38,836 Railroad frog and switch combined, D. Horne and J. H. Walterlin, May 2nd.  
 38,837 Screw cutting and painting machine, L. Sevigne and E. T. Gilbert, May 2nd.  
 38,838 Swing, G. W. Smith, May 2nd.  
 38,839 Organ stop action, A. and H. B. Marcy, May 2nd.  
 38,840 Resonance chamber for piance, J. B. Mitchell, May 2nd.  
 38,841 Coin vending machine, A. J. Henry, May 2nd.  
 38,843 Levelling attachment for harrow, L. D. Corson and V. S. Barker, May 2nd.  
 38,844 Road locomotive, J. F. Hauscom, May 4th.  
 38,845 Coffin case, W. J. Arthistle, May 4th.

- 38,846 Matter to be used as a medicine for the cure of bowel complaints, J. H. Burkholder, May 4th.
- 38,847 Mail bag, C. Weltmer, May 4th.
- 38,848 Stone crusher and pulverizer, R. D. Gates, May 4th.
- 38,849 Combined ventilator and damper, J. H. Stone, May 4th.
- 38,850 Motor, W. H. Scheer, May 4th.
- 38,851 Over stocking, J. J. Westgate and C. L. Higgins, May 4th.
- 38,852 Cushioned car wheel, B. F. Haugh, May 4th.
- 38,853 Matter to be used for sand brick, and the method of making same, E. H. Lewis, May 4th.
- 38,854 Gravitation alarm, J. D. Vaughan and N. Fretz, May 5th.
- 38,855 Bake pans, C. Schifferly and D. Klotz, May 5th.
- 38,856 Closet Cistern, D. L. Divinnell and Miller Bros. and Toms, May 5th.
- 38,857 Ditto.
- 38,858 Fishingrod and reel, J. M. Finch, May 5th.
- 38,859 Woven fabric, J. Hilton and T. Beveridge, May 5th.
- 38,861 Cutting piled fabrics, The Fustian Cutting Machine Co. (Ltd.), May 5th.
- 38,862 Cigar vent, R. Cohen, May 5th.
- 38,863 Dump bucket, T. Cogswell, May 5th.
- 38,864 Broaching device for casks, G. Gabb, May 7th.
- 38,865 Water motor, A. W. Brash, May 7th.
- 38,866 Crimper for cartridge shells, G. D. Hunter, May 7th.
- 38,867 Automatic hinge for school seats, E. M. Dennis, May 7th.
- 38,868 Axe, B. Beck, May 7th.
- 38,869 Horse detacher for vehicles, C. J. Wulser, May 7th.
- 38,870 Automatic fire extinguisher, R. W. Newton, May 7th.
- 38,871 Haine, A. V. Cronk, May 7th.
- 38,872 Disk-harrow, J. S. Corbin, May 7th.
- 38,873 Pivotal car truck, J. A. Brill, May 7th.
- 38,874 Automatic gas lighting and extinguishing apparatus, N. H. and A. B. Shaw, May 7th.
- 38,875 Ink bottle, W. F. Hall, May 7th.
- 38,876 Railway car, J. A. Brill, May 9th.
- 38,877 Railway car truck, J. A. and G. M. Brill, May 9th.
- 38,878 Street car, J. A. Brill, May 9th.
- 38,880 Sound-signalling and speaking tube apparatus, J. W. Black, May 9th.
- 38,881 Picker stick and mechanism connected therewith, L. Bredannas, May 9th.
- 38,882 Threshing machine, J. E. Ball, May 9th.
- 38,884 Washing machine, J. Kinleyside and R. C. Williams, May 9th.
- 38,886 Pen extractor, W. M. Morton, May 9th.
- 38,887 Clothes washer, H. H. Miller, May 9th.
- 38,888 Bedstead, T. C. Chambers, May 9th.
- 38,889 Thread separator for ring spinning frames, W. R. Graveley, May 9th.
- 38,890 Cant hook band, H. Walton et al, May 9th.
- 38,891 Water elevator and purifier, D. J. Burkholder, May 9th.
- 38,892 Cabinet organ, C. W. Small, May 9th.
- 38,893 Sash lock, G. Gibson, May 9th.
- 38,894 Ditto.
- 38,895 Ditto.
- 38,896 Sash balance, F. P. Jonson, May 9th.
- 38,897 Screen cutting plate, H. B. Keiper, May 9th.
- 38,898 Harrow, G. H. Mackey and W. A. Galpin, May 9th.
- 38,899 Game, B. H. Colby and J. S. White, May 9th.
- 38,901 Opening and locking wicket windows or doors, J. Gatfield and T. Brown, May 9th.
- 38,902 Spring coupling, J. Warnock & Co., May 9th.
- 38,905 Sash lock, J. E. Rose and L. R. Klumpp, May 9th.
- 38,906 Chuck for rock drill, The Canadian Rand Drill Co., May 9th.
- 38,907 Attachment for stove legs, J. B. Morse, May 10th.
- 38,908 Shovel, D. A. Daly, May 10th.
- 38,909 Grain measuring and bagging device, G. A. Metcalfe, May 10th.
- 38,910 Reproducing oil paintings, L. Mayar, May 10th.
- 38,911 Elevator door, W. N. Anderson, May 10th.
- 38,912 Bottle, A. Schon, May 10th.
- 38,913 Making velveteen binding, M. M. Beeman, May 10th.
- 38,914 Sash cord fastener, J. P. Gardner, May 10th.
- 38,915 Scissors for cutting button holes, M. Carmody, May 10th.
- 38,916 Pencil sharpener, J. Siegel, May 10th.
- 38,917 Hydraulic fire escape and extension ladder, J. H. McPartland, May 11th.
- 38,919 Railway signal flag, E. S. Piper, May 11th.
- 38,920 Spring motor, J. A. Adams, May 11th.
- 38,921 Bed pan, W. A. Crandall, May 11th.
- 38,923 Gamo, S. W. Clarke, May 11th.
- 38,924 Thermometer with compensation plates, G. H. C. O. Moller, May 11th.
- 38,925 Carriage top, D. Conboy, May 11th.
- 38,926 Basket, W. H. Spillman, May 12th.
- 38,927 Door and window screen, M. J. Tenney, May 12th.
- 38,928 Combined baby carriage, chair and cradle, S. and T. Lazarus, May 12th.
- 38,930 Key-hole guide, C. H. Holdenby, May 12th.
- 38,931 Windmill, J. McKnight, May 12th.
- 38,932 Trowser hanger and stretcher, C. A. Evans, May 12th.
- 38,933 Engine operated by the explosion of mixtures of combustible vapor or gas and air, H. A. Stuart and C. R. Binney, May 12th.
- 38,934 Ditto.
- 38,935 Shafting for harness, J. W. Jannoy and A. J. Ingraham, May 12th.
- 38,936 Rectal speculum, T. T. Davis, May 12th.
- 38,937 Stovepipe ventilator, C. J. Kettle and J. McCormick, May 12th.
- 38,938 Knock down paper box, E. B. Eddy Co. (Ltd.), May 12th.
- 38,939 Plaster board, J. D. Baker, May 12th.
- 38,940 Faucet for barrels, M. Anthony, May 13th.
- 38,941 Gardening implement, T. W. Breen, May 13th.
- 38,942 Combined truck and ladder, T. Gemmill and J. Dooley, jr., May 13th.
- 38,943 Potato digger, W. Morrow, May 13th.
- 38,944 Squares, F. F. Poole, May 13th.
- 38,945 Rail joint, G. G. Stacy, May 13th.
- 38,946 Clinching horse shoe nail, J. Jones, May 13th.
- 38,947 Dress fitting apparatus, C. Shane, May 13th.
- 38,948 Cash register indicator and recorder, P. Yoe, May 14th.
- 38,949 Steam cooking apparatus, C. Kuschina, May 14th.
- 38,950 Cutter bar, D. Rudd, May 14th.
- 38,951 Dust collector, W. D. Smith, May 14th.
- 38,952 Feed-water heater and purifier, A. Krumholz, May 14th.
- 38,953 Securing guard rails to main line rails, H. H. and N. B. Sponenburgh, May 14th.
- 38,954 Automatic car coupler, C. H. Gohl and E. Rust, May 14th.
- 38,955 Split pulley, G. Campbell, May 14th.
- 38,956 Dumping car, J. J. Souder, May 17th.
- 38,957 Ditto.
- 38,958 Ditto.
- 38,959 Automatic cut-off for gas burners, F. W. Merchant, May 17th.
- 38,960 Bedstead lock, W. B. Darby, May 17th.
- 38,961 Stretcher key, R. H. Graves, May 17th.
- 38,962 Ink eraser, G. W. Pronty, May 17th.
- 38,963 Lubricating gland, J. N. Elliott, May 17th.
- 38,964 Calorific oil generator and heater, D. D. Griffiths, May 17th.
- 38,965 Washing machine, E. Dore, May 17th.
- 38,966 Drain trap, T. J. Kieley, May 17th.
- 38,967 Carriage wheel axle attachment, A. Folsom, May 17th.
- 38,968 Foundation or inclosure for buildings and other structures, R. L. Harris, May 17th.

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## PATENTS

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G. de G. LANGUEDOC,

### PATENT SOLICITOR,

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Room 7, (3<sup>rd</sup> floor), 180 St. James St., MONTREAL.

William Bruce, Solicitor of

CANADIAN  
AND FOREIGN

### PATENTS,

17 King Street East, - - - Hamilton.

#### SCIENTIFIC PROCESSES.

- 38,757 Treatment of gums and preparation of varnishes therefrom, E. T. H. Smith, April 20th.  
38,764 Impregnating porous bodies, E. T. Greenfield and J. Nagel, April 20th.  
38,766 Treating copper ores and mattes, L. A. Pelatan, April 20th.  
38,779 Explosive compound, A. C. Rand, April 21st.  
38,801 Manufacture of Cyanides, G. T. Beilby, April 25th.  
38,815 Means of manufacturing paper, A. N. Kidder, April 27th.  
38,822 Process of coloring pictures on textile fabrics, A. Ophoven, April 29th.  
38,842 Process of making flexible printing plates, G. S. Partridge, May 2nd.  
38,900 Producing clear wort, Fleischman & Co., May 9th.  
38,904 Non-corrosive application to tinware, I. J. and H. E. Lawrence, May 9th.  
38,918 Production of pure saccharine, C. Fahlberg, May 11th.  
38,929 Manufacture of Asphaltum, J. A. Dubbs, May 12th.

#### ELECTRICAL.

- 38,754 Insulator, L. McCarthy, April 20th.  
38,777 Automatic electric heat alarm, Electric Heat Alarm Co., April 21st.  
38,781 Galvanic battery for electric light, L. Weigert, April 21st.  
38,821 Electric motor, J. T. Wilson, April 28th.  
38,860 Electric forging machine, J. I. Gilbert, May 5th.  
38,879 Electric machine and apparatus for alternating currents of different phases, M. von Dolivo Dobrowolsky, May 9th.  
38,883 Electric fire indicator, T. R. Douse, May 9th.  
38,885 Dynamo electric machine, M. C. Burt, May 9th.  
38,903 Switch tongue adjuster, I. Mowder and C. F. Ingersoll, May 9th.  
38,922 Formation of electrodes for use in primary and secondary electric batteries, L. Epstein, May 11th.

#### CANADIAN PATENT LAW.

FOLLOWING is the text of the bill recently introduced into the Dominion Senate by Premier Sir John Abbott, having reference to the Canadian Patent Act, and entitled "An Act to Amend the Patent Act and Acts Amending the Same":

1. Section eight (a) of the Patent Act, chapter sixty-one of the Revised Statutes, is hereby repealed and the following substituted therefor:—

"8 An inventor who is a citizen of Canada, and who elects to

obtain a patent for his invention in a foreign country before obtaining a patent for the same invention in Canada, shall have the right to obtain a patent in Canada, if the same be applied for within one year from the date of the issue of the first foreign patent for such invention; and, if within three months after the date of the issue of a foreign patent, the inventor gives notice to the Commissioner of his intention to apply for a patent in Canada for such invention, then no other person having commenced to manufacture the same device in Canada during such period of one year, shall be entitled to continue the manufacture of the same after the inventor has obtained a patent therefor in Canada, without the consent or allowance of the inventor; and, under any circumstances, if a foreign patent exists, the Canadian patent shall expire at the earliest date on which any foreign patent for the invention expires."

2. The third sub-section of section ten (b) of the said Act is hereby repealed, and the following substituted therefor:—

"3. Such oath or affirmation may be made before a Minister Plenipotentiary, *charge d'affaires*, consul, vice-consul or consular agent, a judge of any court, a notary public, a justice of the peace, or the mayor of any city, borough or town, or a commissioner for taking affidavits, having authority or jurisdiction within the place where the oath may be administered."

3. Section eleven (c) of the said Act is hereby repealed.

4. Section fourteen (d) of the said Act is hereby repealed and the following substituted therefor:—

"14. In all cases in which the invention admits of representation by model, the applicant, if required by the Commissioner, shall furnish a model of convenient size exhibiting its several parts in due proportion; and when the invention is a composition of matter, the applicant, if required by the Commissioner, shall furnish specimens of the ingredients, and of the composition, sufficient in quantity for the purpose of experiment. If such ingredients or composition be of an explosive or dangerous character, they shall be provided with such precautions as are prescribed in the requisition therefor."

5. Section fifteen (e) of the said Act is hereby repealed and the following substituted therefor:—

"15. No application for a patent shall be withdrawn."

2. Paragraph (b) of section forty-three (f) of the said Act is hereby repealed.

6. Section twenty-two (g) of the said Act is hereby repealed, and the following substituted therefor:—

"22. The term limited for the duration of every patent of invention issued by the Patent Office shall be eighteen years; but at the time of the application therefor it shall be at the option of the applicant to pay the full fee required for the term of eighteen years, or the partial fee required for the term of six years, or the partial fee required for the term of twelve years.

"2. If a partial fee only is paid, the proportion of the fee paid shall be stated in the patent, and the patent shall, notwithstanding anything therein or in this Act contained, cease at the end of



the term for which the partial fee has been paid, unless at or before the expiration of the said term the holder of the patent pays the fee required for the further term of six or twelve years, and obtains from the Patent Office a certificate of such payment in the form which is, from time to time, adopted, which certificate shall be attached to and refer to the patent, and shall be under the signature of the Commissioner, or the signature of any other member of the Queen's Privy Council for Canada acting for him :

"3. If such second payment, together with the first payment, makes up only the fee required for twelve years, then the patent shall, notwithstanding anything therein or in this Act contained, cease at the end of the term of twelve years, unless at or before the expiration of such term the holder thereof pays the further fee required for the remaining six years, making up the full term of eighteen years, and obtains a like certificate in respect thereof."

7. Sub-section one of section thirty-seven (h) of the said Act, as enacted by section two of chapter thirteen of the Statutes of 1890, and amended by section one of chapter thirty-three of the Statutes of 1891, is hereby repealed and the following substituted therefor :—

"37. Every patent granted under this Act shall be subject and be expressed to be subject to the following conditions :—

"(a) That such patent and all the rights and privileges thereby granted shall cease and determine, and that the patent shall be null and void at the end of two years from the date thereof, unless the patentee or his legal representatives, or his assignee, within that period or any authorized extension thereof, commence, and after such commencement, continuously carry on in Canada the construction or manufacture of the invention patented, in such a manner that any person desiring to use it may obtain it, or cause it to be made for him at a reasonable price, at some manufactory or establishment for making or constructing it in Canada :

"(b) That if, after the expiration of twelve months from the granting of a patent, or any authorized extension of such period, the patentee or patentees, or any of them, or his or their representatives, or his or their assignee, for the whole or a part of his or their interest in the patent, imports, or causes to be imported into Canada, the invention for which the patent is granted, such patent shall be void as to the interest of the person or persons importing, or causing to be imported as aforesaid :

"(2) Any question which arises as to whether a patent, or any interest therein, has or has not become null and void, or void, under the provisions of this section, may be adjudicated upon by the Exchequer Court of Canada, which court shall have jurisdiction to decide any such question upon information in the name of the Attorney-General of Canada, or at the suit of any person interested :

"(3) This section shall not be held to take away or affect the jurisdiction which any court other than the Exchequer Court of Canada possesses."

8. Section thirty-nine (i) of the said Act, as amended by section three of chapter thirteen of the Statutes of 1890, is hereby repealed and the following substituted therefor :—

"39. The following fees shall be payable before an application for any of the purposes herein mentioned shall be received by the Commissioner, that is to say,—

Full fee for eighteen years.....	\$60 00
Partial fee for twelve years.....	40 00
Partial fee for six years.....	20 00
Fee for further term of twelve years.....	40 00
Fee for further term of six years.....	20 00
On lodging a caveat.....	5 00
On asking to register a judgment <i>pro tanto</i> .....	4 00
On asking to register an assignment or any other document affecting or relating to a patent.....	2 00
On asking to attach a disclaimer to a patent.....	2 00
On asking for a copy of a patent with specifications.....	4 00
On petition to re-issue a patent after surrender and on petition to extend a former patent to the whole of Canada for every unexpired year of the duration of the provincial or sub-patent, the fee shall be at the rate of.....	4 00

On office copies of documents, not above-mentioned, the following charges shall be made :

For every single or first folio of certified copy.....	0 50
For every subsequent hundred words (fractions from and under fifty not being counted, and over fifty being counted for one hundred.....)	0 25

9. On each application for a patent, a thorough and reliable examination shall be made by competent examiners to be employed in the Patent Office for that purpose. (j)

THE PARTS OF THE PATENT ACT REFERRED TO IN THE BILL.

(The References inserted in the Bill precede the sections quoted below).

(a) 8. No inventor shall be entitled to a patent for his invention if a patent therefor, in any country, has been in existence in such country for more than twelve months prior to the application for such patent in Canada; and if, during such twelve months, any person has commenced to manufacture in Canada the invention for which such patent is afterwards obtained, such person shall continue to have the right to manufacture and sell such article, notwithstanding such patent; and under any circumstances, if a foreign patent exists, the Canadian patent shall expire at the earliest date at which any foreign patent for the same invention expires. 35 V., c. 28, s. 7.

(b) 10. 3. Such oath or affirmation may be made before any justice of the peace in Canada; but if the inventor or the applicant is not at the time in Canada, the oath or affirmation may be made before any Minister Plenipotentiary, *charge d'affaires*, consul, vice-consul or consular agent, holding commission under the Government of the United Kingdom, or before any judge of a court of record or a public notary, or the mayor or other chief magistrate of any city, borough, or town corporate, in the country in which the applicant is at the time he makes such oath or affirmation. 35 V., c. 26, s. 11;—36 V., c. 44, s. 3.

(c) 11. The applicant for a patent shall, for the purpose of this Act, elect his domicile at some known and specified place in Canada, and shall mention the same in his petition for a patent. 35 V., c. 26, s. 12.

(d) 14. The applicant shall deliver to the Commissioner, unless the same is specially dispensed with for some good reason, a neat working model of his invention, on a convenient scale, exhibiting its several parts in due proportion, whenever the invention admits of such model; and shall deliver to the Commissioner specimens of the ingredients, and of the composition of matter, sufficient in quantity for the purpose of experiment, whenever the invention is a composition of matter,—if such ingredients and composition are not of an explosive character or otherwise dangerous, in which case they shall be furnished only when specially required by the Commissioner, and then with such precautions as are prescribed in the requisition therefor. 35 V., c. 26, s. 15.

(e) 15. In the case of withdrawal of any application for a patent, a fresh application, as if no proceeding had taken place in the matter, shall be necessary to revive the claim. 35 V., c. 26, s. 38, *part*.

(f) 43. No person shall be exempt from the payment of any fee or charge payable in respect of any service performed by such person under this Act; and no fee, when paid, shall be returned to the person who paid it, except,—

(a) When the invention is not susceptible of being patented;

(b) When the petition for a patent is withdrawn;

And in every such case the commissioner may return the fee paid less the sum of ten dollars. 35 V., c. 38.

(g) 22. The term limited for the duration of every patent of invention issued by the Patent Office shall be fifteen years; but at the time of the application thereof it shall be at the option of the applicant to pay the full fee required for the term of fifteen years, or the partial fee required for the term of five years, or the partial fee required for the term of ten years :

2. If a partial fee only is paid, the proportion of the fee paid shall be stated in the patent, and the patent shall, notwithstanding anything therein or in this Act contained, cease at the end of the term for which the partial fee has been paid, unless at or before the expiration of the said term the holder of the patent pays the fee required for the further term of five or ten years, and obtains from the Patent Office a certificate of such payment in the form which is, from time to time, adopted—which certificate shall be attached to and referred to the patent, and shall be under the signature of the commissioner, or the signature of any other member of the Queen's Privy Council for Canada acting for him ;

3. If such second payment, together with the first payment, makes up only the fee required for ten years, then the patent shall, notwithstanding anything therein or in this Act contained, cease at the end of the term of ten years, unless at or before the expiration of such term the holder thereof pays the further fee required for the remaining five years, making up the full term of fifteen years, and obtains a like certificate in respect thereof. 46 V., c. 19, s. 1, *part*.



(h) "37. Every patent granted under this Act shall be subject and be expressed to be subject to the condition that such patent and all the rights and privileges thereby granted shall cease and determine, and that the patent shall be null and void, at the end of two years from the date thereof, unless the patentee or his legal representative or his assignee, within that period or any authorized extension thereof, commences, and, after such commencement, continuously carries on in Canada the construction or manufacture of the invention patented, in such manner that any person desiring to use it may obtain it, or cause it to be made for him, at a reasonable price, at some manufactory or establishment for making or constructing it, in Canada,—and that such patent shall be void if, after the expiration of twelve months from the granting thereof or any authorized extension of such period, the patentee or his legal representatives or his assignee for the whole or a part of his interest in the patent, imports, or causes to be imported into Canada, the invention for which the patent is granted; and any difference which arises as to whether a patent has or has not become null and void under the provisions of this section may be adjudicated upon by the Exchequer Court of Canada,—which court shall have jurisdiction, upon information in the name of the Attorney-General of Canada, or at the suit of any person interested, to decide any such question: provided that this section shall not be held to take away or affect the jurisdiction which any court, other than the Exchequer Court of Canada, possesses." 53 V., c. 13, s. 2, part.

(i) 39. The following fees shall be payable before an application for

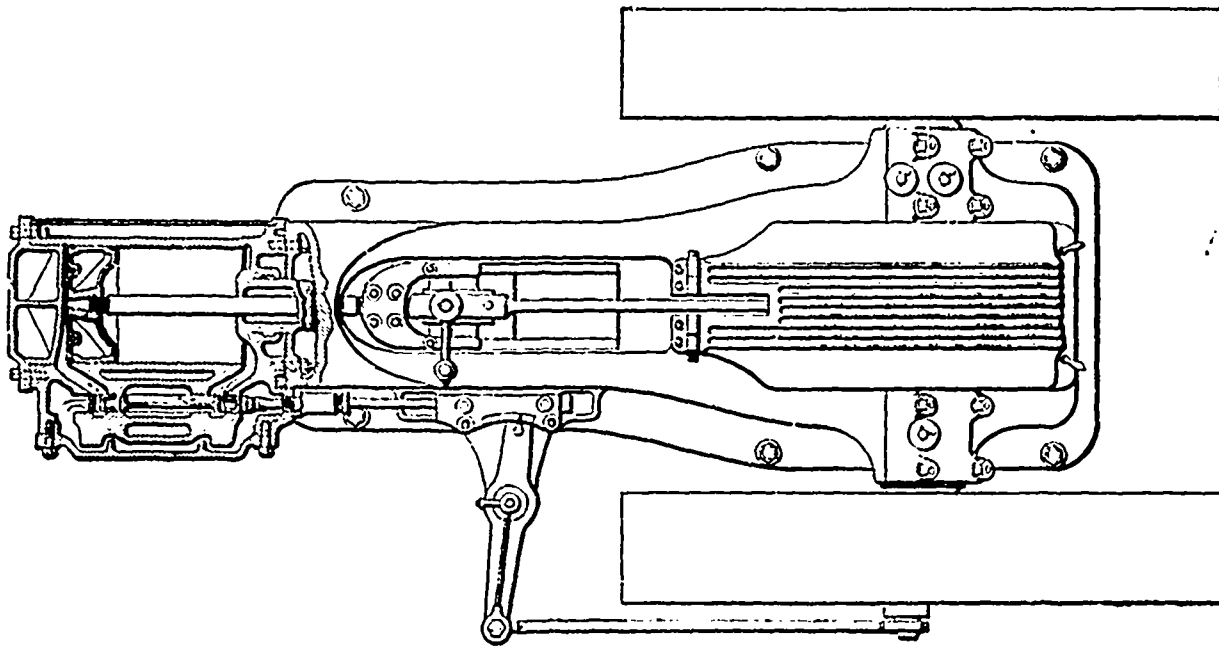
any of the purposes herein mentioned shall be received by the commissioner, that is to say:—

Full fee for 15 years.....	\$60 00
Partial fee for 10 years.....	40 00
Partial fee for 5 years.....	20 00
Fee for further term of 10 years.....	40 00
Fee for further term of 5 years.....	20 00
On lodging a caveat.....	5 00
On asking to register a judgment <i>pro tanto</i> .....	4 00
On asking to register an assignment or any other document affected or relating to a patent.....	2 00
On asking to attach a disclaimer to a patent.....	2 00
On asking for a copy of patent with specification..	4 00
On petition to re-issue a patent after surrender and on petition to extend a former patent to the whole of Canada for every unexpired year of the duration of the provincial or sub-patent, the fee shall be at the rate of.....	4 00

On office copy of documents, not above mentioned, the following charges shall be made:

For every single or first folio of certified copy....	\$0 50
For every subsequent hundred words (fractions from and under fifty not being counted, and over fifty being counted for one hundred).....	0 25

(j) A new clause.



THE ROBB-ARMSTRONG ENGINE.—FIG. 1.

THE "ROBB-ARMSTRONG" ENGINE.

We herewith illustrate a new single-valve automatic engine recently brought out by the Robb Engineering Co., of Amherst. In general appearance it does not differ greatly from several popular high-speed engines, and no radical departure has been made in principles of construction, the aim being to combine as many as possible of those points which have proven best in practice, with such improvements in details as have been suggested by observation, and experience with other engines. In other words, it is not an attempt to develop a new species, but to advance one step in the evolution of that already highly developed machine, the American high-speed engine. The following is a brief description of the main features:—

The frame is of the Porter type with double-disk crank; it has considerable sectional area, carried well above the centre line, and is particularly thick at the top, thus bringing the metal in the direct line of strains between the cylinder and shaft bearings. The engine weighs a little over 100 pounds per horse power, not an unusual weight, but the metal is distributed to give the greatest

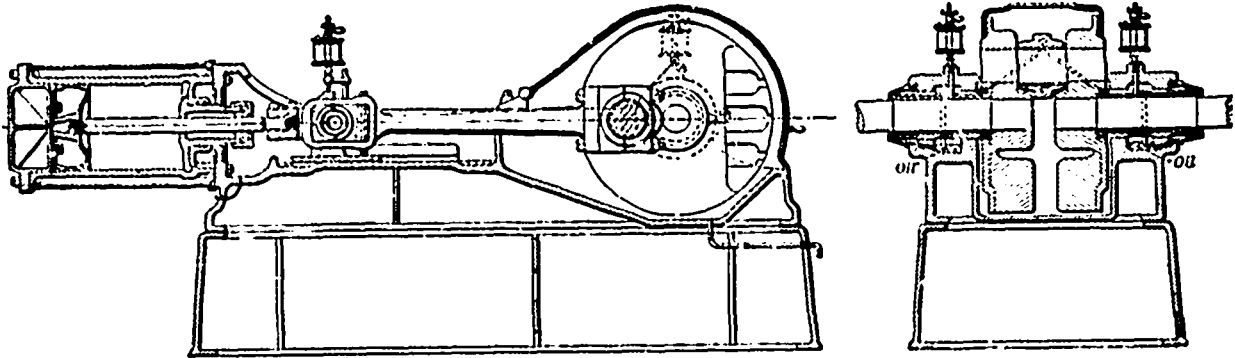
attainable stiffness, and without much regard to the "anvil principle," the foundation being expected to furnish all the weight required in that direction at less cost.

The crank is built up of cast disks and forged steel pin and shafts, the peculiar arrangement of the crank permitting the fits of the shafts and pin in the disks to be very long, without separating the shaft bearings unduly, as is shown in the cross-section at the right of Fig. 2; the counter-weight is of equal moment with the reciprocating parts. The shaft bearings run in cast-iron shells, babbitted; they are not provided with means of adjustment for wear. The bearings are finished by grinding operations of great delicacy, and are round and parallel within a limit of variation smaller than the average machinist will usually detect, even with the aid of the micrometer. The shafts are made to gauge, and the shells are interchangeable, as are the other parts of the engine; hence, a duplicate set of shells may be kept for emergencies. The crank is covered by a cast-iron case, shutting it completely in except at the slot through which the connecting rod works. The crank disks are without the usual finished flanges on the periphery, the crank case being designed to have a substantial and finished

appearance, and free access is given to the crank-pin box, when the hinged crank case is raised. The crank pin is oiled through two half inch holes, one extending from each side of the crank to the centre of the crank-pin, all oil wasting from the inner ends of the shaft bearing being instantly carried to the crank, while all oil wasting from the outer ends of shaft bearings is caught, and by a ring riding on the top of shafts and dipping into the oil below, is returned again and again to the bearing, until it finds its way to the crank-

index finger attached to this arm, as shown in plan view, Fig. 3, shows, by the graduations over which it passes, the movement of the valve, and thus is of assistance in valve setting.

A small sight-feed oil cup, directly over the centre of the rocker arm, supplies oil through a tube to the outer end of the arm. The eccentric rod is hollow, being, in fact, a piece of hydraulic pipe, and through it the oil passes to the eccentric pin, any oil finally escaping being caught and held in the flanged fly-wheel.



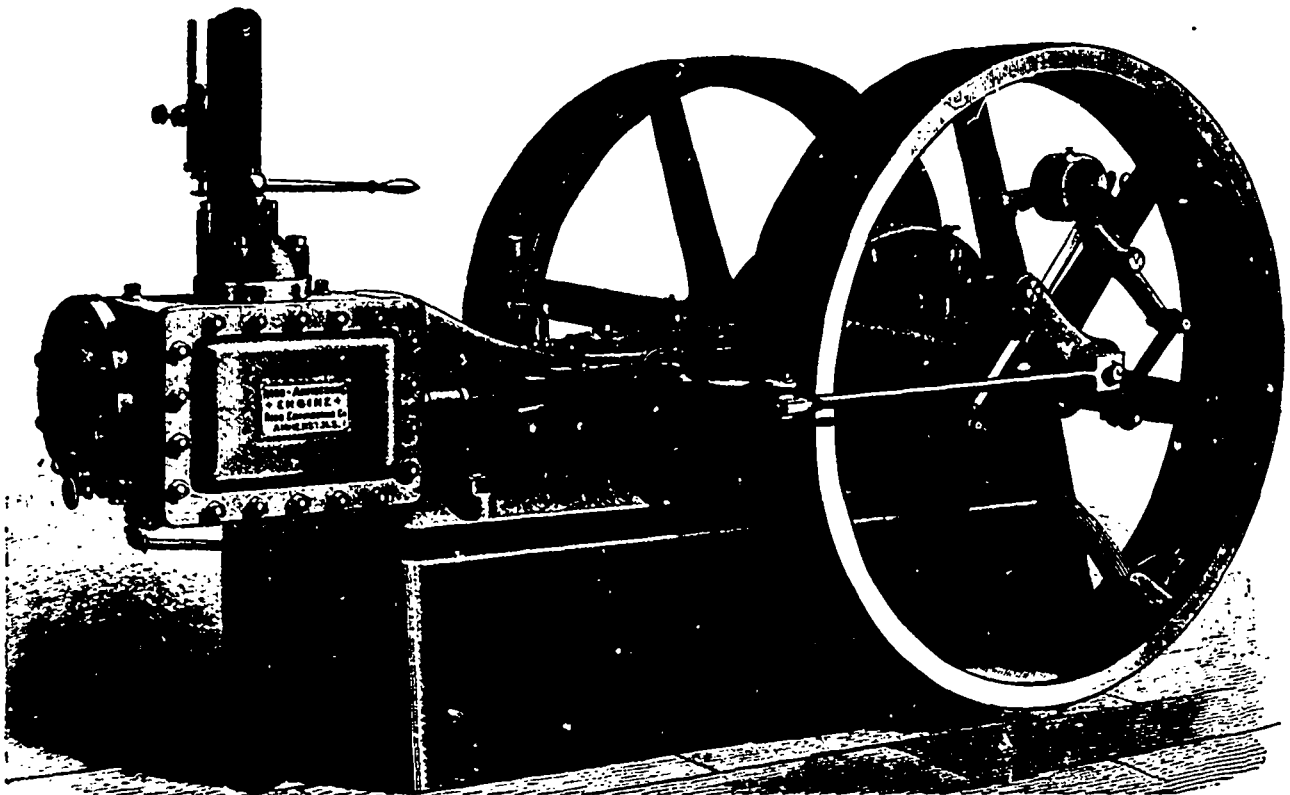
THE ROBB-ARMSTRONG ENGINE.—FIGS. 2 and 3.

pin and escapes to the crank pit, to be drawn off and filtered. In practice the crank-pin does not need oiling other than as stated, but a sight-feed oil cup is provided in addition to those oiling the shaft bearings, which will, if desired, feed oil direct to the crank-pin through one of the half-inch holes before mentioned.

The fly-wheel governor is a modification of the Straight Line, and, together with the valves, is used by arrangement with the

The centre bearing of the rocker arm works in a bath of oil so arranged that it is constantly flooded, and so that no oil can escape to the floor, any overflow draining to the crosshead guide, and finally to the crank pit.

The crosshead is a single steel casting, of the "Slipper" type, the bottom of the slipper being babbitted. The piston rod is being secured by being gripped in two places, about two inches apart, one



THE ROBB-ARMSTRONG ENGINE.

Straight Line Engine Co.; the oiling devices mentioned will also be recognized as essentially "Straight Line."

The eccentric rod, so called, although there is no eccentric, has ball and socket bearings at each end, the balls being case-hardened and ground, and the sockets or boxes of phosphor bronze. The rocker arm, by which the eccentric rod drives the valve, is horizontal, with a vertical axis; there is no twisting strains on either of its bearings, a straight line passing through all three of them. An

place being threaded and the other a parallel fit. The crosshead is split and is gripped onto the rods by bolts; this proves very good, in that it can be taken apart and put together again without getting out of line more than permissible in the highest grade of engine work—a point in which the usual methods of securing piston rods to crossheads (with the exception of the taper fit and key) are often faulty. The crosshead pin is of cast-iron, as it is believed that, in connection with the large and long bearing, it is the best material

for the place. The connecting rod is a steel forging, the crank end being of the "Marine" type, while the crosshead end is mortised for boxes, which are cast-iron, lined with babbitt. The adjustment is by a wedge and adjusting screws.

The habbitt used in the engine is made from eight parts Banca tin and one part each of antimony and copper. The piston is a single casting with sprung rings; it is made extremely light, both to save the cylinder from wear and to make it the "breaking-down piece;" though amply strong for all legitimate loads it is expected to be weaker than other parts, the idea being that it is the best thing to break, when experiments to determine the compressibility of water are being made with it. The exhaust passages are jacketed by air spaces from the cylinder, and from the live steam in the steam chest. The throttle is a modification of the "Coffin Valve" used by the Straight Line Engine Co., but is operated by a lever instead of a wheel, or ball handles.

The workmanship is intended to be equal to that of any other engine built. The firm also build cheaper automatics, but this engine was brought out to fill a demand for which they have previously been obliged to import the best and highest priced American engines. The engine was designed and its manufacture organized by Mr. E. J. Armstrong.

THE Polson Iron Works Company successfully launched the Dominion cruiser *Curlew* from their shipbuilding yards at Owen Sound on May 23rd. This vessel is the almost counterpart of the cruiser *Constance*, built by the Polson Company at Owen Sound, and launched last November. The dimensions of the *Curlew* are—length 125 feet, beam 19 feet 8 inches, depth of hold 11 feet 3 inches. The engine is compound vertical, cylinders 18 and 36 inches diameter and 24-inch stroke, with boiler 10 feet 9 inches diameter and 10 feet 6 inches long, to carry a steam pressure of 115 pounds. She is intended for fishery protection and revenue service in the Maritime Provinces, and her armament will include three Nordenfeldt quick firing guns. The Polson Company are at work upon a third cruiser for the Dominion Government similar to the *Constance* and *Curlew*. The materials are all on hand and in a forward state of preparation, and the hull is now being constructed on the blocks just vacated by the *Curlew*, the boiler, engine and machinery now being nearly completed at the company's machine works in Toronto.

MR. A. P. MONDE, New York, manufacturer of fast carmine dyes, etc., and of a one-dip dyeing process for printing on cotton, wool, mixed fabrics, etc., informs us that his carmine colors are vegetable dyes, producing all mode shades in one dip as well as printing direct on cotton and all vegetable fabrics. They also combine with coal tar dyes, making them faster. By means of these combinations any desired shade can be produced, but should be dyed and printed upon the usual mordants. His one-dip merino colors are of the same nature, but are prepared differently, being, as yet, only applicable for mode shades. The printing and dyeing with these colors is, we are informed, no higher in cost than with anilines. Another advantage in the use of them is offered in matching shades and in delivering ready combined dyes, thereby saving time and labor to the dyer. These color dyes may be used either cold or up to 150° F., no boiling being necessary. Mr. Monde is making in the same line fast colors for fur and wool hats, which, however, need boiling.

THE Forest Silver Bronze Packing Company, New York, have sent us an illustrated circular and price list having reference to the silver bronze rod packing manufactured by them, and inform us that this packing has been working on the rods of marine, locomotive and stationary engines of the highest class for over two years, with results which guarantee it to fulfil all the claims which they set up for it when applied to the piston or valve rods of any steam engine, irrespective of steam pressure or piston velocity. These claims are: Its applicability to any ordinary stuffing box without change of gland; it can be applied to any rod without disconnecting; it is perfectly steam, air and water tight without the use of soft or fibrous packing; it does not touch the walls of the stuffing box, so cannot crowd or bind the rod; is specially adapted for high temperatures, and it seals by perfect contact instead of by excessive pressure on the rod. In its construction this packing is used solid where the owner disconnects his engine so as to take the seat, valve and cap rings over the end of the rod and on tail rods, and when used sectional the seat, valve and cap rings are made in halves, screwed together with steam tight joints which never corrode, and can be put onto the rod or taken off in five minutes by simply starting and setting up half a dozen screws. The yellow metal case and silver bronze wearing rings are made sectional in the solid as well as in the sectional, and can be removed and placed at will.

## Captains of Industry.

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

MR. T. E. DUNSFORD will build a 300 barrel flour mill at Glenboro, Man.

MESSRS. J. & R. RICHIE will erect a 100 barrel flour mill at Edmonton, Man.

THE town of Balder, Man., will grant a bonus for the erection of a flour mill at that place.

MESSRS. GEORGE WHITE & SONS, London, Ont., are building an addition to their machine works.

A FARMERS' elevator will likely be built at Roland, N.W.T., west of Morris, on the Northern Pacific.

MESSRS. EDGENHILL & BELL, of Toronto, contemplate establishing a stained glass factory at Winnipeg, Man.

THE steam saw and planing mill of Messrs. J. & A. Carson, at Pictou, N.S., was destroyed by fire May 21st.

THE biscuit factory of Messrs. Bean & Westlake, at Woodstock, Ont., was seriously damaged by fire May 21st.

FIRE in the pattern shop of Messrs. Lamo Bros. foundry in Montreal on May 22nd did damage to the extent of about \$6,000.

A GRAIN elevator of 50,000 bushels capacity will be erected at Glenboro, Man. The mayor of that town will give further information.

THE saw, shingle and lath mills of Messrs. W. J. & H. W. Foulds, Hastings, Ont., were destroyed by fire May 29th; loss about \$10,000.

THE London Machine Tool Company, London, Ont., inform us that their shops are very full of work, and that the outlook for business at this time is better than it has been for some time.

THE Hobbs Manufacturing Company, London, Ont., are experiencing a very gratifying start out in their new departure in silvering mirrors, glass beveling, leaded work, church windows, cathedral tints, etc.

MR. H. W. PETRIE, Toronto, has just sold a complete outfit of machinery and appliances for a soap factory now being established at Calgary, N.W.T., including steam engine, boilers, tanks, kettles, shafting, pulleys, etc.

THE proposition has been made to establish a floating dry dock at Vancouver, B.C., and the *News* says a company is in course of formation with that object in view. The dimensions would be about 75 feet by 225 feet.

THE woolen mill of Messrs. A. Meadows & Co., Woodstock, Ont., which has been idle for several months, has been put in thorough repair, and considerable new machinery added, and has again been started up under the superintendence of Mr. C. W. Cunningham.

THE London Chemical Manufacturing Company, London, Ont., are building a three story brick addition to their works 61x50 feet. The lines of chemicals manufactured by this company will be greatly increased, which they were unable to do before for want of room.

THE John Morrow Machine Screw Company, Ingersoll, Ont., inform us that they are enjoying an unusually fine trade at this time. They are manufacturers of set, cap and special screws; studs, finished nuts, etc., catalogues and price lists of which will be sent on application.

MESSRS. F. FITZGERALD and H. J. MINHINNICK, of Hamilton, Ont., are forming a stock company with \$50,000 capital to establish a tile factory in that city for the manufacture of ornamental tiles for flooring, hearths and other architectural purposes. About fifty hands will be employed.

MESSRS. LAKE & BAILEY, Hamilton, Ont., will abandon the flour mill in that city which they have been operating for some time, and erect a very fine large new mill there, of cut stone and brick, and equipped with the best and most modern machinery. They expect to occupy this mill before the end of the current year.

THE Perth Flax Mill Company, Stratford, Ont., will build a bin-

der twine factory. The city of Stratford has passed a by-law exempting the company from taxation for ten years. Mr. John Hogarth, manager of the company, informs us they will build their factory this summer and be manufacturing twine by December.

The Melita Milling Company, Melita, Man., have an offer from a capitalist, says the *Enterprise*, to furnish the requisite amount of money to erect a 200 barrel mill, to be in operation early in September, providing the municipality will grant a bonus of \$2,500 to defray the expense of laying pipes to bring the water from the river.

J. & J. LIVINGSTON, Baden, Ont., manufacturers of Linseed Oil, Oil Cake, etc., are about putting up a large addition to their works. It will be a brick building 100 x 62 feet. This building is to be used exclusively for the manufacture of linseed oil. The old building that was used for that purpose will be used for storage purposes.

MR. R. DENNIS, manufacturer of ornamental and architectural wrought iron work, London, Ont., is enlarging his works by the erection of a large brick building. He makes a specialty of bank and office fittings, iron railings and fences, etc., and have recently made a large shipment of these to Winnipeg, Man., and Vancouver, B.C.

The Magee Manufacturing Company, London, Ont., manufacturers of woodenware, etc., are starting a factory in Montreal where they will manufacture their patent nail keg. This factory is now being equipped with a 100 h.p. steam boiler and sixty h.p. engine, and some sixty hands will be employed. Their London factory will be kept running on their regular work.

ESTATE of John Battle, Thorold, Ont., request attention to the Battle cement manufactured by them. This well-known cement is specially adapted in the building of abutments and piers for bridges; concrete for foundations, cement drain pipes, cisterns, floors for cellars and stables, breweries and distilleries, milldams and aqueduct work; sewers, and all mason work in moist or wet places.

MESSEURS. RICHARDSON & WEBSTER, manufacturers of dairy supplies, St. Mary's, Ont., are having great success with their new patent steel gang cheese press. The patent was only issued February 25th last, and already they have placed over forty machines in cheese factories in different parts of the Dominion and a number in the United States. The firm have a large number of orders on hand.

The first large steamer built in British Columbia has been launched at Victoria from Turple's ship building yard. She was built by the Dunsmuirs and will ply between Victoria and Comox. She is 180 feet over all, over 30 feet beam, 11½ feet depth of hold, and has passenger accommodation for fifty first-class passengers. Her machinery was manufactured by the Aibion Iron Works, Victoria.

The American Mill Building Co. of Canada at Stratford are doing the following: altering J. R. Stuart's flour mill at Mitchell, putting in new and modern machinery. Have just put in a lot of new machinery in the mills of the Woods Milling Co., Portage la Prairie. Also overhauled and put in new outfit of the most modern and improved machinery in the mills at Otterville belonging to S. B. Lossing.

The Dodge Wood Split Pulley Company, Toronto, say to us: "We have shipped and sold in actual number 2,430 pulleys during the month of May, which we think is as good a recommendation as we can offer users of pulleys. The 'Dodge' patents, like other good things, are being imitated and infringed upon, but the public as a rule are coming to headquarters." The Dodge Company carry a complete stock of their pulleys in all sizes at their city warerooms, 83 King St. West, and can give the trade prompt delivery.

The Hobbs Hardware Company, London, Ont., will have their new factory for glass bevelling, silvering and bending, and the manufacture of mantels, ornaments, etc., in operation shortly. Their new factory is 285x140 feet, and they expect to have it in operation before the end of June. This branch of their business will be known as the Hobbs Manufacturing Company; will employ from 75 to 100 hands, and will turn out everything in the line of mirror plates, plate glass, bevelling, silver plating, bending and some very fine lines in mantels and over-mantels.

Five of industry is what the Fredericton, N.B., Farmer calls the business of Mr. Alex. Gibson. The total number of workmen now employed in his cotton and lumber branches reaches about 1,300. Of this number 500 are engaged in the cotton mill, 65 in the lath mill, 40 in the shingle mill, 90 in the saw mill, 30 in the brick yard, 380 on the lumber drives, 25 on the booms on the Nashwaak River, and some 30 or 40 at his Blackville mill. Mr. Gibson has been in Marysville for about thirty years, and in that time has manufactured something like six hundred million feet of lumber, all of which has been cut on the Nashwaak waters.

### LANKIN'S PATENT.



## What is Mineral Wool?

A Fire and Frost-proof Insulating material, blown from rock. Used for covering Steam, Hot Water, and Hot Air Pipes, Boilers, and Furnaces, and for Desulfuring and Fireproofing buildings. Covering Hot Pipes and Boilers saves forty per cent. in fuel.

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Patent Rolled Shafting,

Hangers AND  
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## SIMPSON'S PATENT CENTRIFUGAL EXHAUST HEAD

FOR EXHAUST STEAM PIPES.

Screwing Flanges included with every Head.

No wet floors or sidewalks. Thoroughly entraps water and grease from the Exhaust Steam without back pressure. Utilize the water of exhaust steam.

Save your roofs by keeping them dry, and avoid the nuisance created by spray from exhaust pipes blowing on pavements, etc.

It should be used by all Rolling Mills, Blast Furnaces, Breweries, and Manufactories using Steam.

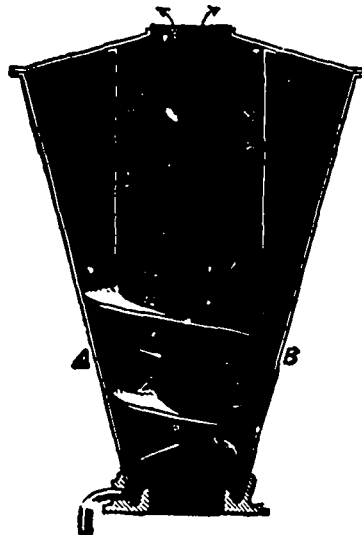
Centrifugal Steam Separators, Centrifugal Oil Extractors, Centrifugal Exhaust Heads, Keystone Double and Single Plunger Belt Pumps. Keystone Feed-Water Heaters and Purifiers.

List of Prices and Sizes of Exhaust Pipe Heads on application to

**Keystone Engine & Machine Works**

W. L. SIMPSON, Proprietor.

Fifth and Buttonwood Sts., Phila., Pa.



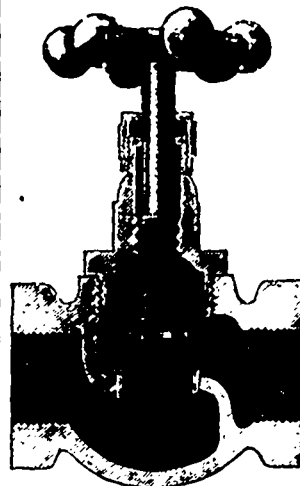
The Cant Bros' Company, Galt, have just brought out what they describe as a solid web wood split pulley. The usual style of pulley with arms raises a considerable amount of wind and dust, which must necessarily affect the speed and smooth working of the pulley. The centre of their pulley, however, presents a solid surface, and runs, therefore, with the greatest ease and smoothness. From its special construction also, the hub being chambered, it gets a better grip of the shaft than some others made; while, in addition, the various layers are well fastened together with glue and wire nails, so that there is no chance of the pulley bursting asunder.

MR. R. DENNIS, manufacturer of wire and iron work in all branches, London, Ont., has a very attractive business card on our back cover in which he alludes to some of the specialties manufactured by him. Included in these he mentions artistic bank and office railing in all the new and antique bronze and other electro finishes; grills, elevator enclosures, wire and iron fencing, stable fittings, etc. Other articles manufactured by Mr. Dennis are iron stairs, fences, doors and gates; cresting, finials and vanes, balcony and gallery railings, iron bedsteads for hospitals, fire escapes, wire window guards, wire screens, coal and sand screens, lawn furniture, wire door mats, wire baskets, etc.

MR. FRED. T. TREMBLECK, manufacturing jeweler, of London, Ont., has recently organized the Canada Smelting and Refining Company, of which he is the manager, and is erecting works for the purpose of recovering the precious metals contained in the sweepings of floors of establishments where gold and silver are worked up, including manufacturing jewelers, silver-plating works, mirror platers, etc.; and assaying ores of precious metals will also be done. The works include ten furnaces and heavy crushing machinery. We are informed that this is the first enterprise of this character undertaken in Canada. Mr. Trembleck will continue his business of manufacturing gold rings, of which he makes a specialty, and in which he gives employment to some thirty hands, his output of these being about 50,000 a year.

The Bristol Manufacturing Company, Waterbury, Conn., have sent us a circular having reference to the Bristol patent steel belt lacing manufactured by them, and which they say is the most perfect fastening for all kinds of belting. This lacing consists of a

continuous zigzag strip of steel, so proportioned as to afford the greatest strength with the least amount of materials. In applying it no special tools are required. The wedge-shaped points when driven through the belt force the fibres of it aside without cutting them, hence the ends of the belt are not weakened as when holes are punched. This lacing, for single thickness belting, is made in lengths from one to three inches, and is packed in boxes containing 100 inches each. It is made in four sizes for leather belts of different thicknesses, and in four sizes for rubber, cotton and woven belts. They also make a copper lacing for paper manufacturers, which they inform us is a perfect substitute for twine sowing in fastening ends of canvas or felt dryers on paper machines. It requires



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Constructed to prevent Scales or Grains of Dirt being caught between faces at point of closing.

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

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For Various Purposes,

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**Singer, Nimick & Co., Ltd.**

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Manufacture all kinds of

Tool Steel, Hot and Cold Rolled Sheet Steel, Hammered and Rolled Steel, Saw Plates, "Soft Steel Centre," "Iron Centre," "Iron Back," "Soft Steel Back" (extra thick face), Plow Steels, Crucible, Open Hearth and Bessemer Plow Steels, Finished Rolling Plow Cutters, Rotary Harrow Discs, Round, Square and Flat Machine Steel, Springs, Axles and Steel Tire. Agricultural Steel Cut to any desired pattern.

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no special tools to apply, does not burn out and saves time. Packed in boxes containing 100 inches.

The Pedlar Metal Roofing Company, Oshawa, Ont., have sent us a circular having reference to the Pedlar metal shingle manufactured by them. Speaking of the practical features of this roofing, we are told that it embodies a radical departure from old methods, discards all soldered or riveted joints, all tight loop or hook joints; side lock a novelty, being an open loop which, used in connection with many other improvements, makes it exceedingly perfect, easily applied and very cheap. It is warranted to be water, wind and storm proof in any roof where wooden shingles can be used. Ample provision is made for expansion and contraction by heat and cold. Leakage is impossible. Beautiful in design. Improved side lock enables workmen to apply with ease and accuracy, an important feature. Made of Siemen's hard rolled sheet steel, coated on both sides with best oxide of iron and linseed oil, or galvanized. Specialties manufactured by this company are Pedlar's metal shingles, metal coilings and panels, metal crestings, metal lathing, metal brick and metal stone for siding, metal clapboards, etc. Estimates, prices and plans given on application as above.

The Waterous Engine Works Company, Brantford, Ont., recently supplied some of their 48x16 inch grip pulleys to the Sandwich, Windsor and Amherstburg Electric Railroad for use in their power station at Windsor, Ont. The Waterous Company have received a letter from Mr. Erwin Lloyd, engineer of this railroad, in which he says: "In reply to your inquiry re the Grip pulleys furnished the Sandwich, Windsor and Amherstburg Electric R.R., I would say that they have been in my charge since they were put in last fall. The 48x16 has been running continuously since that time, driving our road dynamo, and during snow and sleet storms has been subject to very severe tests. One case in particular, I might mention, occurred one Sunday night when the road was blocked with snow, and we started out a plough with four motors attached. They could only make a short run before getting stalled. They would back out and race at the drift and strike it at full speed. This sudden and unusual load would sometimes almost bring our 150 h.p. engine to a standstill, but the pulley held right up to its work, although I expected to see it or the belt go to pieces every minute on account of the terrible strain. In fact the work was so severe that it loosened the crank pin of the engine. One great feature in your pulleys is that the adjustment can be made at all times without

stopping the shaft, which in our case is invaluable, as we run twenty-four hours per day and seven days per week. On the night in question our engine was at times demonstrating 240 h.p. on the electric indicator."

#### CANADIAN CHARCOAL IRON.

The Canada Iron Furnace Company, manufacturers of "C.I.F.," Three Rivers charcoal pig iron, whose head offices are at Montreal, and whose works are at Three Rivers, Radnor, Lac-a-la-Tortue and Grand Piles, all in the Province of Quebec, have sent us a circular having reference to the iron manufactured by them, and containing testimonials of some of the users of this iron doing business in Ontario. This circular informs us that the company's new blast furnace at Radnor Forges is now complete and in operation, producing daily from the famous ores found in that vicinity upwards of fifty tons of high class charcoal pig iron. This is a happy revival of what was probably the first iron industry ever established in America, tests of these ores having been made at this place prior to the year 1700, and restores to the Canadian market a native iron, which in strength and purity has never been surpassed by the finest grades of Swedish and Salisbury irons. In the consumption of this iron it will be found that although the first cost of it is slightly higher than that of the best grades of coke iron, yet the saving in waste castings and the loss of work expended thereon effected by its use will alone far more than offset the extra first cost. Besides this, an important factor to be considered is that castings can be greatly reduced in weight from the present standard by reason of the extra strength of this iron, and the saving effected thereby. In considering this question of price, consumers will admit that there is no real economy in using exclusively cheap grades of coke iron. A reputation for producing high grade work pays, and really first-class castings cannot be produced from low grade iron. This iron is especially recommended for the manufacture of castings which are to be subjected to water pressure; also for steam cylinders, electric dynamos, superheating Swedish iron, malleable iron work, agricultural implement castings, high quality stove plate, etc. The harder grades of this iron are invaluable in the manufacture of chilled car wheels, chilled rolls, plow points, etc. The company have used this iron extensively in making chilled car wheels, and they inform us that they have found it to be unequalled by any

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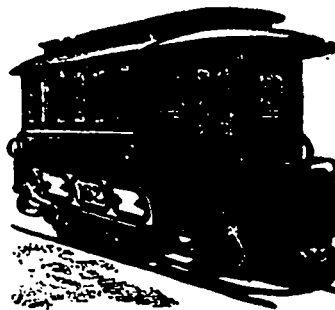
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charcoal iron they have ever handled. We quote from some of the testimonials received by the Canada Iron Furnace Company from well known and reliable Canadian manufacturers, who have used the "C.I.F." iron. Mr. Moses Parker, iron founder of Montreal: "I make a specialty of manufacturing rolls for iron rolling mills, using this iron as a mixture, and find it to be close, tough and of required hardness. I send a few shavings turned off a roll made from Nos. 2 and 3 iron, which show the tough quality of it." Mr. C. H. Waterous, manager of the Waterous Engine Works Company, Brantford, Ont.: "We have for the past two years been using 'C.I.F.' iron, especially in our cylinder and valve castings for our engines. Previous to using this iron we used Salisbury iron, and we find that the 'C.I.F.' iron is at least equal for this purpose, and from our experience, better. Our experience with the iron has been entirely satisfactory." Mr. John Abell, Toronto, says: "I like this 'C.I.F.' charcoal iron; it makes strong and clean castings, good for special work." Mr. J. M. Taylor, manager of the Toronto Radiator Manufacturing Company, Toronto: "We melt

ten per cent. of 'C.I.F.' charcoal pig regularly, and find that we get a stronger iron and of a more malleable nature than with any other iron we have heretofore used. Our irons require to be of the very best qualities in every particular, and we exercise the most careful attention in our mixtures." Mr. Wm. H. Frost, proprietor of the Smith's Falls Malleable Iron Works, Smith's Falls, Ont., says: "I am using Nos. 1, 2 and 3 'C.I.F.' charcoal iron in every heat, and consider it first-class for malleable iron purposes." It will be borne in mind that Salisbury is the very highest grade of American charcoal iron. The testimony of the manufacturers here quoted and of many others, is of the utmost importance as proving that Canadian charcoal iron is equal in every respect to the best Swedish and American brands.

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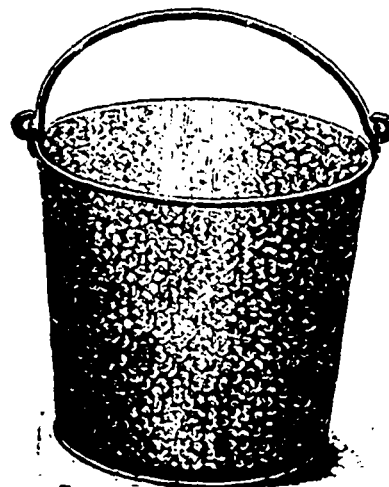
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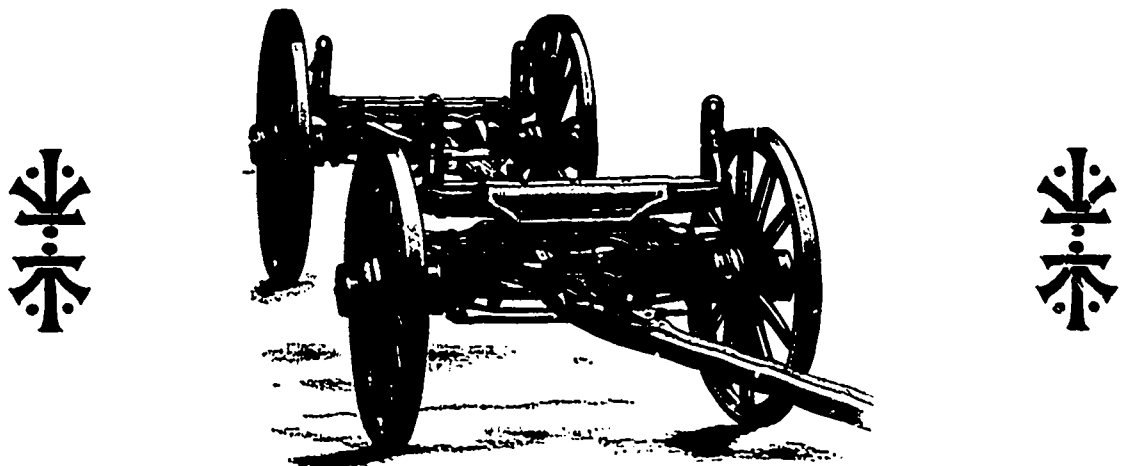
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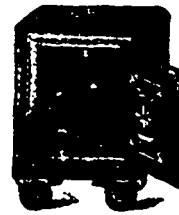
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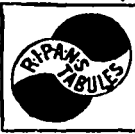
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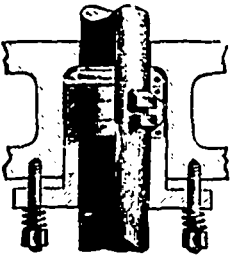
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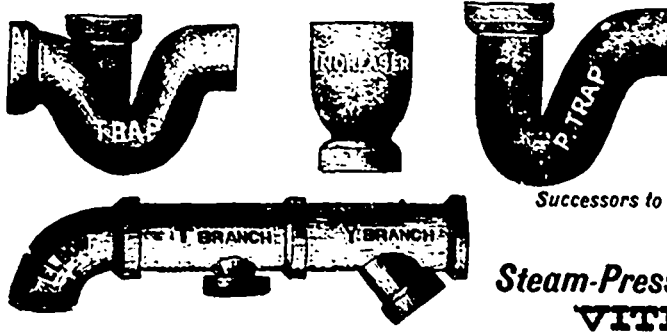
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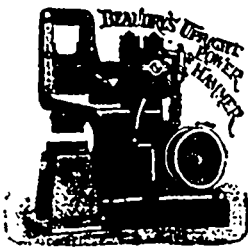
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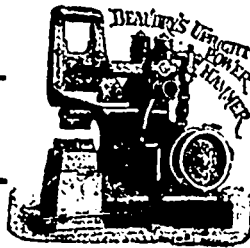
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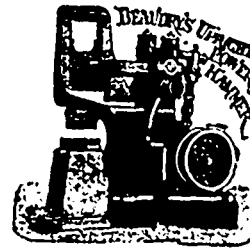




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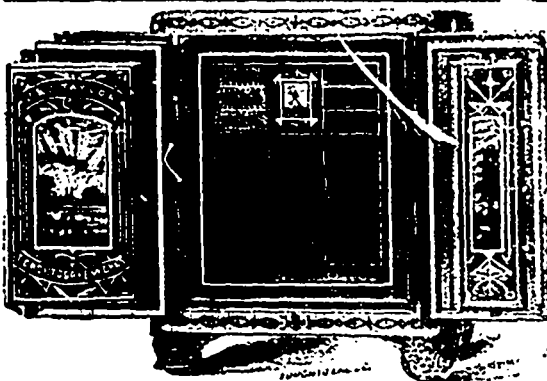


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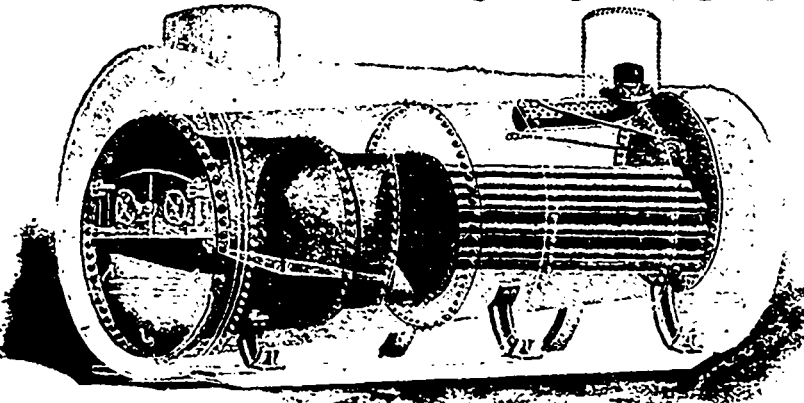
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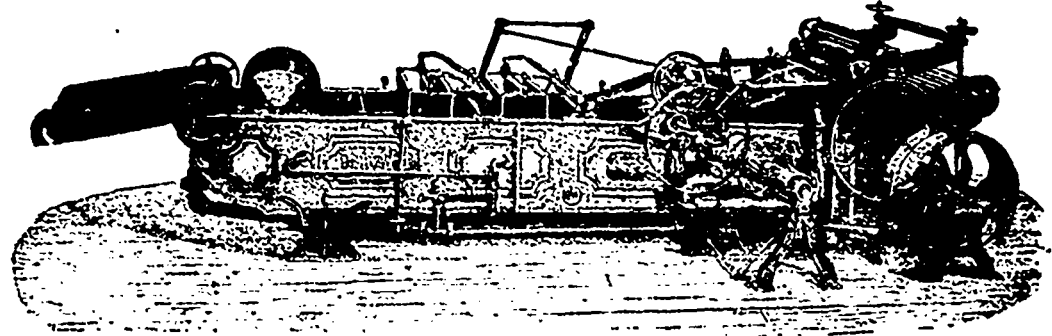


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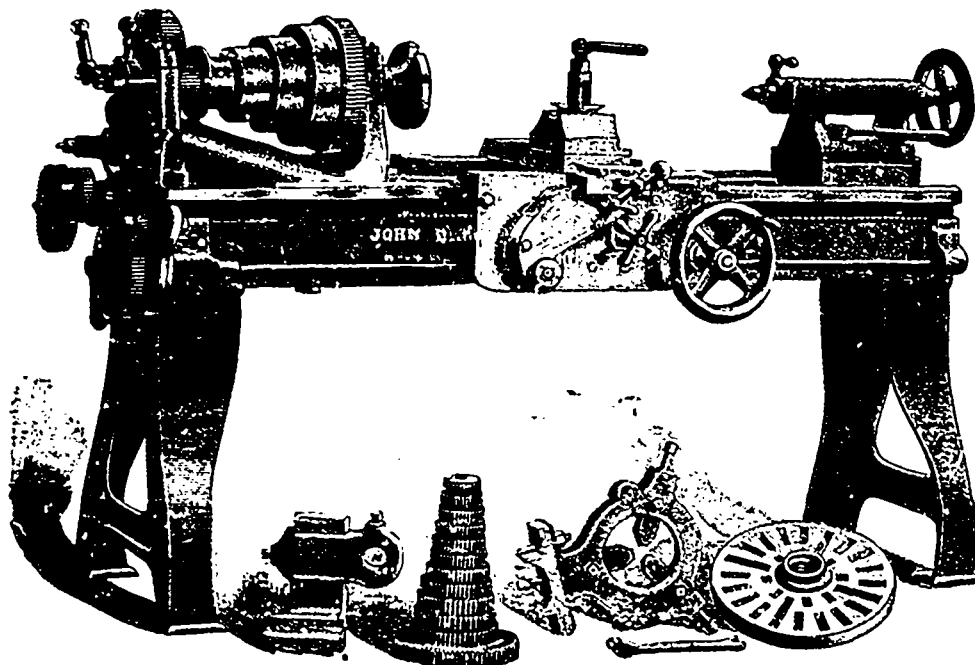
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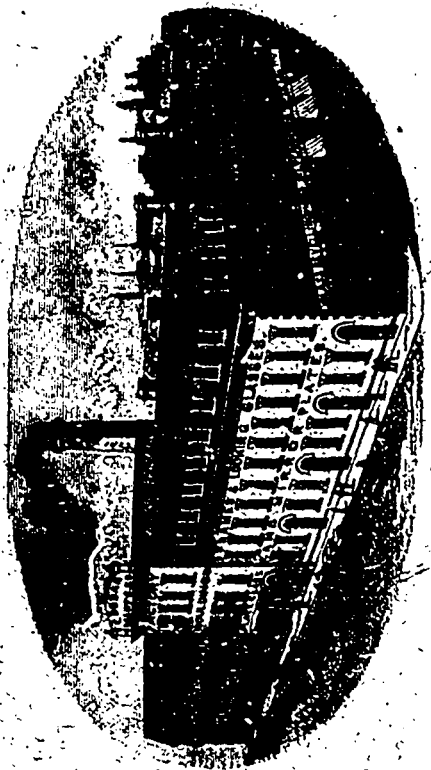
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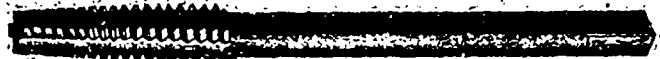
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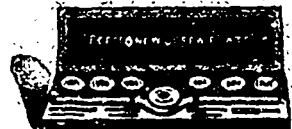
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