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CANADIAN MANUFACTURER

AND INDUSTRIAL WORLD
 DEVOTED TO THE MANUFACTURING INTEREST OF THE DOMINION

Vol. 23.

TORONTO, JULY 1, 1892.

No. 1.

"Old Dyewood Warehouse"

Established Fifty-three Years.

Theo. H. Eaton & Son,
 WINDSOR, ONT.

Importers and Manufacturers of
 PURE DYEWOODS, DYEING DRUGS,
 SOLID AND LIQUID EXTRACTS OF
 LOGWOOD, FUSTIC, INDIGO.
PURE HEMATINE.

Sole Agents for
THE CROWN ANILINE DYES,
 ALIZARINES, ETC.

*Geminon
 Dyewood's Chemical
 Toronto*

**GENERAL DRY-SALTERS
 ANILINE COLORS
 A SPECIALTY**

F. E. Dixon & Co.

MANUFACTURERS OF

GENUINE OAK TANNED

Leather Belting

70 KING ST. EAST,

TORONTO.

Our Electric and Dynamo Belts cannot
 be surpassed for quality and durability.

Large Double Belts made up to any
 width. Send for our Belting Hand Book and
 Discounts.

Why is Our Card Clothing the Best ?

Because we engage the best card setters, best backing,
 (English Oak), best wire, best grinding machinery, and ask
 prices that will permit of our living up to the above.

The J. C. McLAREN BELTING CO., Montreal, Toronto.

Manufacture and Job every line of Textile Supplies.

THE GUTTA PERCHA & RUBBER MFG CO.
 OF TORONTO LTD
 43 YONGE ST. TORONTO.

WAREHOUSE & OFFICE, 43 YONGE ST. TORONTO.

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 about July 1st, to 59-61 Front Street West.

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 BENZO COLORS
 METHYLENE BLUES
- DYEWOODS -

EXTRACTS
 CHEMICALS
 MANUFACTURED BY
 The Berlin Aniline Co.
 The Stamford Manufacturing Co.

AGENTS,
MIDDLETON & MEREDITH
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John Bertram & Sons,
CANADA TOOL WORKS !

Dundas, Ont.

See Advertisement, Page 30.

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Steel Works

Mild Crucible Steel Castings

J. & A. BERTRAM, Makers, Toronto

PATENTS

Preliminary Advice FREE.

Procured in Canada, Great Britain, and Foreign Countries.

Donald C. Ridout & Co.,

Can. div. Toronto

ESTAB'D
 1867.

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The **MALLEABLE IRON CO., Ltd.** Manufacturers **Iron Pipe Elbows, Tees, Couplings, Unions, Bushings, Flanges, S. Cocks, etc.**
 17 to 29 Mill St., MONTREAL.

IMPERIAL BANK OF CANADA.

Capital Authorized - \$2,000,000
 Capital Paid-up - 1,940,807
 Excess Account - 1,020,292

DIRECTORS:

H. S. HOWLAND, President.
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 Robert Jaffray, Hugh Ryan,
 T. Sutherland Stainer.
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Head Office, - TORONTO.

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Ingersoll.	Woodstock.	W.
Toronto.	Cor. Wellington St. and	Laue.
"	Cor. Yonge and Queen	
"	Cor. Yonge and Bloor	S

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Winnipeg. Brandon. Portage la Prairie. Calgary. Prince Albert. Edmonton.
 Branch on New York and Sterling Exchange bought and sold. Deposits received and interest allowed.
 Prompt attention paid to collections.
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 Agents in Canada for "Cheque Bank, Ltd."
 Agents, London, Eng., "Lloyd's Bank, Ltd." 72 Lombard St., E.C., with whom deposits may be made for credit with Head Office or Branches

Largest Manufacturers of STEEL and BRASS STAMPS in Canada.

PRITCHARD & ANDREWS

OTTAWA, ONTARIO.

Rubber Stamps, Stencils, Seals, &c.

SEND FOR PRICES.

Toronto Stamping Co.

MANUFACTURERS OF

Tin, Sheet, Brass, and Copper

STAMPINGS

And Stool Metal Ware.

TORONTO - - ONTARIO.

PILLOW & HERSEY MFG CO.

Manufacturers of every description of Cut Nails, Tacks, Brads, Railway and Pressed Spikes, Horse Shoes, Carriage, Tire and other Belts, Coach Screws, Hot Pressed and Forged Nuts, Felloe Plates, Lining and Saddle Nails, Tufting Buttons, &c., &c.

The Hardware Trade, Shoe and Leather Finding Dealers, and Boot and Shoe Manufacturers, will find the Largest and Best Assortment and Greatest Variety of above Goods always in stock, and can rely on orders being rapidly executed, our facilities for doing so being unequalled.

OFFICE, 106 Mill St., Montreal.

McArthur, Corneille & Co.

MANUFACTURERS AND IMPORTERS,

310-316 ST. PAUL ST

- AND -

147-151 COMMISSIONERS ST.
 MONTREAL.

Offer at closest prices, Pure Olive Oil, Winter Pressed Lard Oil, Extra Fine Spindle Oil and a full assortment of other Lubricating Oils, Greases, Mill Soaps, etc.; also Chemicals, Dyestuffs, Dye-woods, Extracts, etc., etc.

Sole Agents in Canada for

St. Denis Dyestuff & Chemical Co.,

PARIS,

A. POIRRIER, President.

Aniline Colors, Archil Extract, Cachon de Lard, etc.,

British Alizarine Co.

LONDON,

Paste & Dry Alizarine.

Boston Dyewood & Chemical Co.,

BOSTON,

DYEWOODS & EXTRACTS.

COIGNET & CO.,

PARIS,

Glues, Gelatines, etc.

WATSON, WALKER & QUICKFALL

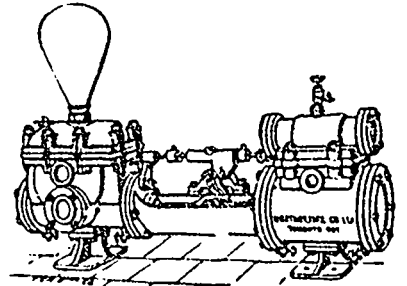
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Millerton, Tannin Extract Co.,

HEMLOCK EXTRACT.

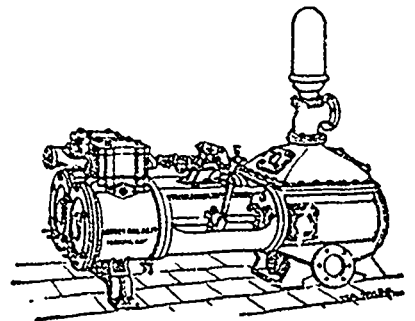
Maintain large stocks fully assorted and will always be pleased to furnish quotations and samples.



Boiler Feed Pump.

Steam and Power

PUMPS

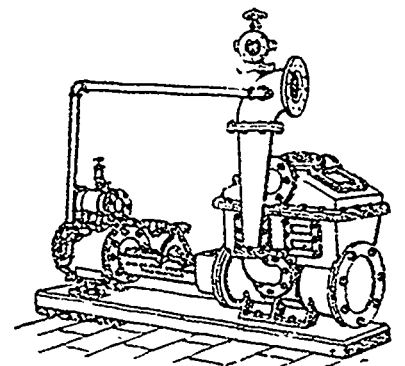


Improved Duplex Pump.

FOR ALL

POSSIBLE

DUTIES.



Independent Condensing Apparatus.

AS BUILT BY

THE NORTHEY MFG CO.

LIMITED,

TORONTO, - ONT.

Write for Sixty-Eight Page Catalogue



ESTABLISHED IN 1880.

Published on the First and Third Fridays of each Month
BY THE

Canadian Manufacturer Publishing Co.
(LIMITED)

Room 66 Canada Life Building, King St. West, Toronto.

TELEPHONE - 1274.

FREDERIC NICHOLLS,
Managing Director

J. J. CASSIDY,
Editor

J. C. GARDNER,
Business Representative.

SUBSCRIPTION. - - - \$1 00 per year

ADVERTISING RATES SENT ON APPLICATION.

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CANADIAN MANUFACTURERS' ASSOCIATION.

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OFFICE OF THE ASSOCIATION

Room 66 Canada Life Building, King Street West, Toronto

"THE CANADIAN MANUFACTURER."

THE first issue of THE CANADIAN MANUFACTURER was on January 1, 1882, and this present issue begins the twenty second half year of its existence. During all these years the paper has been published regularly twice each month, and it has never failed to make its appearance as advertised. As its name indicates, it has always been devoted to the manufacturing industries of Canada and its chief support and patronage has been derived from that source. But none of its revenues have ever been received from this or any other source, except in payment for legitimate services rendered in the way of advertising, and the enviable position it now holds has been fairly earned and won through the painstaking persistence of its management to achieve this result. An inspection of its advertising pages discloses the character of its patrons and friends, and there are cards of business houses there who were patrons in the very beginning, and who have never since withdrawn their favor and support. This indicates the sort of friends we have and what they think of the character and management of the paper. There are numerous other patrons whose business cards have been a regular and enduring feature of our advertising pages ever since they embarked in business. Commencing a decade ago and inspecting the advertisements which have appeared in this journal up to the present time, we

can accurately discover the progress the country has made in material greatness, and the advancement of our manufacturing industries, from what might be called a chrysalis condition to the high state of perfection which now characterizes them. Weakness has given way to strength. Crude and imperfect methods then existed, where now we find the best appliances and the most skilful workmen. Then we imitated others, now we have originality, and if our industrial establishments do not produce as great variety as characterizes other countries, those things that we do produce are the equal in all respects of similar articles made elsewhere. Canada is no laggard in the race for industry's independence and greatness.

Of course we feel a commendable pride in contributing in some degree to the prosperity of Canada. Believing that this prosperity can best be stimulated under the influence of a National Policy—of that fiscal system which encourages the production at home of whatever the country requires which can be made here, we have watched the development of enterprises which have given employment to Canadian capital, occupation to Canadian workmen, and the production of innumerable lines of goods to be consumed at home, instead of seeing our wealth go to build up and support enterprises in other countries. And it is in support of this policy that our best energies are directed.

If, then, the prosperity of Canada and of her manufacturers are so intimately connected, it is evident the greater the prosperity of the manufacturers the greater that of the country. And here comes in our suggestions as to how this general prosperity may be cultivated, continued and increased. It may be done by judicious advertising. Manufacturers engage in business to make money. Money is made by selling goods. Goods are sold to consumers, and the more consumers there are the greater the demand for goods. The way to reach these consumers is to advertise. Consumers who desire to purchase goods study the trade papers to discover who are producing the articles they want. The advertising pages of this journal are an invaluable help to purchasers. Observe the variety of articles which are there offered for sale, almost every important line of goods manufactured in Canada, and many made in other countries. These advertisements are placed there for consumers to read, and they read them, sure. In the management of this journal no time is found for the discussion of anything else than business, and how best to promote it and no space is devoted to the publication of poetry, love stories or idle gossip. No effort is made to circulate it among servant girls and children. It goes into business offices, workshops, factories, foundries, mechanics institutes and public libraries. That is where it goes, and the active, busy men who are to be found in such places are the ones who read THE CANADIAN MANUFACTURER. It is intended for the use of busy men.

A wise man is judicious in the selection of the medium in which he wishes to display his business card, and having made this selection, he will be persistent in advertising his business. Spasmodic advertising may possibly produce favorable results, but not generally. For the best known business men are those who advertise most persistently. Very few men succeed in business who do not advertise it. Men are but grown up children. Children have facts impressed upon their minds

by frequent repetition of them, and this is also true of men. They must be told over and over. If the business man desires to make an impression upon the minds of those with whom he would like to deal, he can best do it by constant, persistent advertising.

That is what we are here for. This journal is a medium between the manufacturer and the consumer. We respectfully invite the patronage of our friends.

MAINTAIN THE NATIONAL POLICY.

CANADIAN manufacturers are told by the *Shareholder* that a strong sentiment in Canada is demanding the reduction of duties on imported goods in common use; and it trusts that "our manufacturers will be found swimming with the stream, and not struggling against a current which they cannot possibly turn." Its conviction that this sentiment exists is formed by what it says are the words of the Finance Minister, as to "helping the country that helps us;" in Sir John Thompson's assurance that the N.P. would not be suffered to act as a screen for unjust monopolies; what Sir Charles Tupper has said about preferential trade within the Empire, and what leading trade journals and independent dailies have set forth as the claims of the farming community. This sentiment has seemingly crystallized into a fixed fact in the mind of our contemporary, the only question with it being the extent of the reduction of the duties and the date at which it shall take effect; and it plaintively cries, "Will the manufacturers oppose the movement?"

If there was really any such "movement," the answer to this question would be quickly given, and with considerable emphasis. We would assure our contemporary that the manufacturers would become quite active in opposing it, and that doing so they would have at their backs a large majority of the voting population of Canada. And the array of defenders of Canada's National Policy would not have to face any new or unknown foe. There would be the same old free trade crowd for a phalanx, with such skirmishers as the *Shareholder* and the "independent" trade journals and dailies, and those whom they represent and speak for.

The Finance Minister, in saying that Canada would help the country that helped her, did not mean that Canada would injure herself to help any other country. We know Mr. Foster better than that. He holds his high position by the grace of the party which believes in the N.P. To betray that party while he is a Minister of the Government, would be traitorous conduct; and he is not capable of being a traitor. So, too, as regards Sir John Thompson, who has declared that the N.P. shall not be used as a screen for unjust monopolies. We sincerely hope the Minister of Justice will act on this his own suggestion, and try to amend an unwise tariff law, so that the Montreal sugar refiners will not be allowed to unjustly squeeze \$750,000 a year out of the people of Canada. It is his duty to Canada, and to the party which placed him in power, to suppress extortion when it appears; but what has his declaration of his against unjust monopolies to do with maintaining the N.P.? So, too, as to what Sir Charles Tupper has said, and continues to say, regarding preferential trade. Either Sir Charles nor any other advocate of that scheme

ever advanced the idea that in establishing it Canada would have to abandon protection, or even to make any material reduction in her tariff schedules. If we maintain our present duties as against British goods, and increase them as against all others, we would be showing a decided preference in favor of Britain, and this is just about the extent to which Canada will go in this matter. We love Britain much, but we love Canada more; and no matter who the advocate of any other policy may be, if it intended to destroy the N.P., he may rest assured of the active intervention and hostility of Canadian manufacturers. As to the "leading trade journals and independent dailies" which affect to speak for the farming community, pretending to say that the farmers of Canada are in favor of breaking down the N.P. which they helped to establish, we do not accept their say so as being of any value whatever. If a trade journal is the mouthpiece of the importers, as the *Shareholder* appears to be, its influence may exist in that direction, but it certainly has no claim to influence with the manufacturers, and its appeals to them are idle. And who ever knew of an "independent" daily paper? Such papers as the *Star* are not independent—they are mugwumps too good, entirely too good to exist on this earth, and yet unfortunately unable to wing their aerial flight to spheres beyond the sun and outside the influence of practical politics. These papers, too, like the goody good trade journals, have no influence in shaping the politics of Canada; to say nothing of their entire inability to destroy the N.P.

The National Policy is here to stay.

THE NEWSPAPER BOYCOTT.

THE *London Advertiser* has ranged itself alongside those who contend that Canadian newspapers, particularly those which are allied with the Canadian Press Association, or some of them, should endeavor to break down the manufacture of baking powders in Canada by having the duty removed from the article simply because the Canadian manufacturers do not advertise their goods in these papers, whereas before the N.P. made the industry possible, American manufacturers of baking powder were more or less liberal in dispensing advertising patronage to them.

The *Advertiser* pretends to labor under the delusion that because a duty is imposed upon Yankee baking powder and other foreign goods, the duty is added to the cost of the Canadian article, and that the Canadian consumer is wronged to that extent. We say pretends to labor under this impression, but it certainly knows that no reputable grocer in London, or anywhere else in Canada charges any more for Canadian baking powder than he would charge for the American article if it could be brought into the country duty free—no more than what a similar article would cost in the United States. It can verify this fact any day, and when it persists in proclaiming this exploded free trade idea it does an injustice to its readers. It deceives them wilfully and for a purpose.

There are a great many articles now being manufactured in Canada which are protected by the N.P., and which are not only as cheap in Canada as they are in the United States. In many instances they are very much cheaper. Under a protection of about 25 per cent. against shoes and woollen goods

the *Advertiser* knows that both shoes and woolen goods can be bought very much cheaper in Canada than in the United States. The duty ensures the home market to the Canadian manufacturer, and this being the case, millions of money and thousands of people are employed in these industries in this country, to the exclusion of the products of American capital and labor. Then wherein is the Canadian consumer wronged? Both Canadian capital and Canadian labor employed in these industries contribute to the support of the local government. In London they pay taxes which go to pay for paving and lighting the streets, keeping policemen upon them to preserve order, maintain an efficient fire protection, build schoolhouses and support schools, endow colleges and maintain law and order. But they pay not one cent towards the support of the Dominion Government. But without the protection guaranteed by the N.P., and with an overflowing influx of American products, which would quickly result from free trade with our neighbors, our Canadian industries would be crushed out of existence, and then who would pay the taxes? Certainly not the American manufacturers, for they, living in a foreign country, would be beyond the reach of the local tax-gatherer, and the consumers, those for whom the *Advertiser* expresses so much concern, would be saddled with the additional burden.

It is to be supposed that the Canadian manufacturers of baking powder and many other articles know their business quite as well as it can be told to them by the *Advertiser* and some of the papers affiliated with the Canadian Press Association. If these manufacturers decline to advertise their business are they to be punished therefore to the extent of the destruction of their business? But that is just what the *Advertiser* proposes. Suppose these manufacturers should consider that it might be to their interest to advertise liberally in the *Advertiser* but in no other paper, would it change its tone on this subject, or even uphold the N.P. as far as that industry was concerned? Would it do this, and at the same time covertly or openly encourage the other papers to fight as it now desires them to do? Would the dollars make the difference? And where would this blackmailing business find an end? If the manufacturers didn't happen to have money enough to go around and satisfy all these pocket patriots—these patriots for revenue only—could it be arranged and how that some of the patriots only should receive the pap, and the others refrain from whining? Of course there are newspapers and newspapers, and Canada seems to be troubled this way. Some of these papers pursue an honorable course and are willing to live and let live, but these are not the ones which are represented in this particular matter by the London *Advertiser*. On the other hand there are newspapers the existence of which seems to be through some inscrutable allowance of Providence, just the same as noxious weeds and slimy reptiles are permitted to deface the beautiful earth and make life less worth the living. They are like the Ishmaelites of the desert whose hands are raised against every one whom they think they might bulldoze and blackmail. It is almost impossible to draw a line dividing the most objectionable of these papers from some which are not quite so bad. Perhaps no line should be drawn, for although we are told that the *Advertiser* and others like it are run on high moral principles, and while we observe them busily denouncing manufacturers who will not bestow ad-

vertising patronage upon them, we see their columns constantly polluted by the publication of the most offensive advertisements—so offensive and objectionable that they should be suppressed by the police. The *Advertiser* is open to this charge in that it unblushingly admits the business cards of quacks and so-called doctors and medical institutes for the cure of the most loathsome diseases which can only be brought on by indulgence in the most debasing vices.

And this is the character of a paper which desires to destroy legitimate Canadian industries because the proprietors of them decline to advertise their business in papers whose columns are laden with such disgusting filth.

WHY THE AMERICAN NEGRO SHOULD LOVE BRITAIN.

IN the initial number of *The Republican Magazine* is an article written by Mr James R. O'Beirne, entitled "Why Irishmen should be Republicans," and while we do not profess any large amount of interest in the question, nor whether Irishmen in the United States vote the Republican or the Democratic ticket, we cannot but observe that when an Irishman in that country turns himself loose to discuss politics, it seems to be impossible to him not to open his mouth without putting his foot into it. That is when he has an opportunity to say mean things against Britain. Mr. O'Beirne says:—"No one will dispute that English influence has run rampant through the lines of the parties opposed to the Republican party in the discussion of American politics during the last fifty years, nay more, could the countless dead on both sides during the late war rear their ghastly faces and point Hamlet-like to the cause of their untimely ending, they would indicate the direction as Britainward, and the cause, English gold and greed." The writer tells us that this gold was contributed by British manufacturers to the Jeff Davis traitors in their efforts to destroy the American Union and establish the Southern Confederacy, and this because the Union party, otherwise the Republican party, was the party which advocated a protective tariff, which was against the interests of the British manufacturers. We know that the Democratic party, which was dominant in the South during the time of the rebellion, advocated free trade. Indeed, free trade was one of the chief corner stones of the Confederacy, another being human slavery. The fight was not for free trade, for under all Democratic administrations the United States had suffered from low tariffs—tariffs for revenue only—and that party knew that whenever they could hold the Government they could also place their tariff schedules as close to the free trade line as possible compatible with the raising of the necessary revenue. Therefore a desire for absolute free trade was not the cause which brought on the war. The desire to perpetuate human slavery was the cause, and this Mr. O'Beirne ought to know. But admitting this, that gentle man would fail in making his case against Great Britain, for he knows that although his accusations against Britain and British manufacturers might be true as regards their desire to see free trade established in the United States, or in the Southern Confederacy if the Jeff Davis rebellion had proven successful, Britain would not stultify herself nor retire from her record as the enemy of human slavery by recognizing the would be-

Confederacy and obtaining the free trade that would become established with it. From the day of the firing upon Fort Sumter the establishment of the Southern Confederacy lay with Great Britain. As far as British mercantile interests were concerned this was greatly to be desired, but Britain knew that human slavery and free trade were inseparably connected in the matter, and British greed was not so greedy as to purchase free trade with the Confederacy at the price of human slavery.

It is well enough for Republican orators and writers to declare that their party gave freedom to the negro, but if Britain had been the heartless, greedy nation that these mouthpieces of that party represent her to have been, the Southern Confederacy would have been established. British love of liberty was a stronger element in breaking away the shackles from the Southern slave than Yankee bayonets.

RESTRICTION OF HOME INDUSTRIES.

Our sympathies are extended to the Ontario Iron and Steel Company in that our esteemed contemporary, *The Week*, cannot overcome its objection to the bonus system and consent to the Ontario Government promising to pay that company two dollars per ton on all the pig iron it can produce during the next ten years. It questions whether an industry which cannot live without such extraneous support as this would receive were it put in operation is really worth the outlay; and it is certain in this case the public will need be satisfied that the absence of a sufficient open market is not at least one of the chief causes of the unwillingness of capitalists to invest without such Government aid as would go far to counterbalance any advantage to be derived by the people generally from the establishment of the industry before they will consent to tax themselves in aid of a private company undertaking it.

If there were any force in this argument it would quickly be neutralized when we remind *The Week* that the annual consumption of imported pig iron alone into Canada is largely in excess of any output that might be made from the proposed works, and therefore there need be no anxiety regarding "a sufficient open market" for such output, or for any part of it which might not be consumed at home. With an output of 100 tons of pig iron a day, and operating 300 days in the year, the production of the proposed company would be only 30,000 tons, while the imports of the article into Canada last year aggregated 81,317 tons, from which it is to be observed that if we desired to fully supply our own demand we would require not only one such concern as that here alluded to, but three of them, and that in addition to those which we already have.

It is a favorite pastime with the restrictionists of home enterprises such as *The Week*, to declare that such industries as it would be well for us to encourage would spring into existence and flourish under a tariff for revenue only, otherwise free trade. How does this argument apply to the steel rail industry? Canada is a comparatively large consumer of steel rails, her imports of them in 1891 amounting to 141,193 tons valued at \$3,197,280. In our opinion it was a mistaken idea ever to place steel rails in the list of non-dutiable articles, but the sentiment prevailed that inasmuch as the trans-continental Canadian Pacific road was to be built, and seeing that we had no plant for the manufacture of rails, it would be better to ad-

mit rails free of duty. The answer to this is that inasmuch as the road was to be built chiefly with money advanced by the Dominion Government, the additional so-called burden of the duty would have only come out of one pocket to go into another. If the Government had been as resolutely determined to establish a steel rail industry as it was to build the Canadian Pacific railroad, we would never have found it necessary to import such vast quantities of rails as the Trade and Navigation Returns show we have done. It might be argued that the necessity of the case required that the rails should be produced as rapidly and uninterruptedly as the progress of the road demanded—that it was important that the construction of the road across the continent be in no way retarded. Admitting this, we are confronted with the fact that since the completion of that road our requirements for steel rails for extensions, repairs, etc., amount to considerably more than 100,000 tons per year, our imports last year being, as we have shown, nearly 150,000 tons. We then observe that ever since the completion of the Canadian Pacific road we have been sending abroad about \$2,500,000 annually to pay for steel rails, which amount would have been kept in the country if our Government had so determined.

To supply a demand, then, of only about 100,000 tons of rails per year—and this demand is imperative and constantly increasing—we would require of pig iron for this purpose alone about four times as much as the proposed furnaces of the Ontario Iron and Steel Company could produce. We hope the restrictionists comprehend what this means. This immense production of pig iron would be the raw material for the steel mills, which industry would give employment to very large capital and thousands of workmen.

Having established a steel rail industry capable of supplying all our own demands for the article, we would discover that in the meantime our blast furnace industry had become indispensable to us, and that a great many more furnaces were required to meet the demand for pig iron than that arising for the manufacture of rails. We would also require a much larger production of steel than what was necessary for the rail mills. Mild steel is fast superseding rolled iron for many purposes, and this demand would have to be met by the erection of steel plants for that purpose, and this would call for more blast furnaces to produce the raw material, pig iron.

The facts included in our imports of steel rails last year are interesting. The restrictionists of home industries argue that the cost of the goods is increased to the extent of the amount of the duty. Twelve and a half per cent. of our imports of rails last year came from the United States. No one supposes that the steel rail industry in that country could ever have been established under any other influence than that of tariff protection, and plenty of it. And even under that influence the struggle was long and arduous between the promoters of the infant industry and the British manufacturers, who very freely sold their rails to fill American orders at considerably less prices than they would sell for to other countries. This was in the way of concessions to the American tariff and to break down if possible the industry just springing into vigorous life in that country. It required what some might consider an abnormally high tariff in the United States to set the industry fairly afloat, but it was agreed that it must be established—

that it was essential to the prosperity of the country and the cost was a secondary consideration. The result of this wise action on the part of American statesmen has been most gratifying and successful. That country has entirely ceased to import rails, and, as we have shown, has become an exporter of them - to Canada to the extent of twelve and one-half per cent. of our entire demand.

Canada has never yet produced a steel rail, and she never will until it is done under an influence similar to that which has effected such grand results in the United States. It is obvious then that if we are to have a steel rail industry, or if we are to have any original iron industry, it must be through the influence of a high protective tariff. Previous to the enactment of the McKinley tariff the American duty upon steel rails was \$17 per ton, and an eighth of our imports of such rails came from that country in competition with free trade Britain. This being the effect of protection, we need just such protection in Canada. With a duty of \$17 per ton we would soon be manufacturing at home all the rails we need. Let it be understood that protection to our iron and steel industries—protection that really protects—is the fixed policy of our Government, and the industries will speedily materialize. But there must be no fear or dread on the part of capitalists that this policy may be abrogated or disavowed, no matter what changes may occur in political parties. This should not be a party question; and if the people could be brought to believe that protection would be equally safe under any change of Government, the Opposition would have brighter prospects of success at the polls than they now have. If the duties were placed sufficiently high, and capitalists could be made to feel that there would be no material changes in them during the next ten or fifteen years, we would soon be manufacturing about all the iron and steel we require. There should be no necessity for asking the Government for any bonus upon production. We are not specially favorable to bonuses. What we require is proper tariff protection and confidence in its permanency.

EDITORIAL NOTES.

HON GEORGE E FOSTER, Minister of Finance: Generally right, always honest.

THE first exhibit received at the World's Columbian Exposition at Chicago consisted of 13 logs of timber cut in a Canadian forest and said to measure 145,354 feet.

A SCHOONER is being fitted out at Halifax to go to the arctic regions to get ten or twelve Esquimo families, fifty or sixty persons in all, for exhibition at the World's Fair. Dogs, fishing implements, utensils and everything necessary to show Esquimo life, will also be procured.

THE *Engineering and Mining Journal* says: "It is only seven years since the first electric railway was put into commercial operation in the United States. On January 1, 1888, there were only forty-eight miles of electric roads in operation, while in 1891 there were 2,893. According to the United States census of 1890, there were then 8,123 miles of street railway tracks in the United States, carrying 2,023,010,202

passengers annually. This figure is almost five times the number carried on all the interurban steam railroads."

THE *American Manufacturer* says there is no doubt that the loss of the American market for tin-plates, or even an important reduction in the demand from this country, is a serious injury to the Welsh tinplate makers. The *Industrial World*, the organ of the Welsh tin workers, in its issue of May 20th, says. "The bad prospects anticipated when the tariff act came into force are becoming more visible daily. There can be no doubt that we are now being visited by the gravest and gloomiest period ever known in the annals of tinplate history."

LONDON *Industries* says "It is frequently urged that the high price of coal in any locality militates against the introduction of the electric light. As a matter of fact it is the other way. Where coals are dear electric light cannot be cheap, but gas must be dear. The cost of the coal is only a small item in a central station, but it is a much more serious matter in a gas works. The dearer coal is, the more chance the electric light has of competing with gas. We say competing with gas, but so far electric light is, of course, much dearer than gas. The real competitor of gas is not electricity, but petroleum"

WITH reference to the proposed tunnel to connect Prince Edward Island with the mainland, it is stated by those in interest: "We are going to bore on the line of the tunnel every 500 yards a distance of sixty feet into the bottom all the way over, and to make borings from 100 feet to 200 feet down to the bed rock on either side. These borings will be taken out by steam drills in cores of ten feet in length. When the borings are completed the cores will be boxed up and sent to the Public Works Department at Ottawa for the information of the Government, and also for affording complete information to contractors, should the Government decide to call for tenders."

"A DELEGATION has waited on the Ontario Government asking aid for the establishment of a blast furnace in Toronto. The parties moving are the same who, with the efficient aid of Mr. James Conmee, M. P. P., succeeded in inducing the Government to take the action which has resulted in the act which has almost suppressed mining in Algoma. No attention should be paid to these men as they are mostly impracticables whose only interest in mining is that which comes from dealing in undeveloped mining locations."—*Port Arthur Sentinel*.

The *Sentinel* does not seem to know what it is talking about. The assistance asked is for a bonus upon whatever iron the proposed company may produce. No iron no bonus. The important question is, "Is the production of this iron deserving of the bonus?" We think it is.

OUR superlatively wise contemporary *The Week* doubts the capacity of Canada to consume the product of a blast furnace having capacity to manufacture 30,000 tons of pig iron per year. The United States is not an extensive exporter of pig iron, but its capacity of consumption of the article is enormous. Indeed it is, per capita, the largest consumer of pig iron in the world. The number of furnaces in blast in that country on June 1st was 269, the average weekly capacity of which was

175,174 gross tons, or 196,195 net tons. Operating fifty weeks in the year this output would amount to over 9,000,000 tons. If the 65,000,000 people of the United States consume that quantity of iron per year, there is no good reason why the 5,000,000 people of Canada should not require 600,000 or 700,000 tons. And yet the doubt is expressed that we cannot consume five per cent of that quantity. How silly.

THE *Hamilton Spectator* modestly takes credit to itself for having brought about a great reform in the management of the Canadian Press Association, but it tells us that it is still in the power of that Association to decide for a large number of papers that communications shall not be printed unless over the names of the writers. We are not particularly interested in this matter, nor in any action the Association may take regarding it; but we are interested in the question whether the Association really intends to endeavour to influence or force the newspapers included in it to advocate the removal of the duty on baking powders because the Canadian manufacturers of the article do not advertise as liberally as it is thought they might do. And then we want to know, you know, where the modest but influential *Spectator* stands in this matter. It is an undoubted friend of the tariff, but we do not hear its voice crying aloud for the suppression of the move made at the recent Ottawa convention to kill off these Canadian manufacturers. The so-called "organ" of the Association says that this is the scheme, and the *Toronto Week* and *London Advertiser* favor it.

THE *Philadelphia Manufacturer* discussing President Harrison's recent message regarding Canada, says:

The President also points out that there can be no hope for the negotiation of a reciprocity treaty with Canada as long as Canada will not give to us, in return for favors, greater privileges than those that it gives to England without compensation. It cannot be regarded as a good bargain for us that we should pay Canada for privileges which the Dominion gives to Great Britain for nothing. In any case there can be small advantage to us in reciprocity with a country whose manufactured and agricultural products are precisely similar to our own. A free exchange made upon such a basis must result in giving much larger advantage to the smaller country. It may be regarded as settled that, if the protectionists shall remain in power in this country, Canada will have no more unrestricted commerce with this country than she has at present, unless her people will unite their fortunes with ours. Americans are well aware that the necessities of Canada are fast driving her in that direction, under the operation of the McKinley tariff.

And still there are those who preach that we may obtain larger commercial facilities with the United States than what we now enjoy, and still remain under the British flag.

OUR esteemed contemporary the *London Advertiser* is a fervent advocate of a few things, some of which are, free trade for Canada, the removal of duties upon Canadian made baking powders because the manufacturers of them do not advertise them in Canadian papers as the American manufacturers used to do; a higher moral tone for Canadian newspapers, particularly those which are not on its side of politics, and of one of its side issues known as *Wives and Daughters*. This latter is indeed a nice, bright little publication which deserves success;

but we could not but observe in a recent number of the *Advertiser* that immediately beneath a double column ad. of *Wives and Daughters* was an ad. of a patent medicine concern which suggests most vicious habits and how the effects thereof may be eradicated from the human system. The picture "Before and After," explains the business. We suggest to the *Advertiser* that before it again undertakes to teach morality in politics or social life it eliminates from its columns all such stuff. No newspapers publishing such advertisements should be allowed to circulate in the mails, to say nothing of the impropriety of their being admitted into the homes of decent people, where our wives and daughters dwell.

PRESIDENT HARRISON and other American statesmen who talk glibly of non-intercourse between the United States and Canada, might give a few moments' consideration to the following facts:—The value of merchandise received in the United States from British North America (Canada and Newfoundland) for immediate transit through that territory, or for immediate transshipment in ports of the United States to other countries during 1891, was

Received from.....	value,	\$19,780,470
Shipped to.....	"	27,883,023

Total..... \$47,663,493

This means that during that year Canada's foreign trade transacted through American ports (trade with that country not included), amounted in value to the sum stated. This gave large profits to American receiving and forwarding merchants, American laborers and teamsters, and American transportation companies. It might have been of some advantage to Canada to transact business through American ports, but this business could have been done through Canadian ports as well. The ports of Halifax and St. John would benefit greatly if hostile legislation forced this additional traffic through them.

Does the duty increase the cost? The following proves the contrary:—At the recent meeting in Cincinnati of the National Furniture Manufacturers' Association, the Committee on Legislation made some interesting statements. Regarding the virtual prohibition of the importation of German mirror plates by the increased rates of the present law, the report says: "We are now enabled to produce plate glass in this country so cheaply that a much better article can be used at about the same cost, and, as far as your committee can learn, not many manufacturers would use German plates to-day if they were admitted free." The report further says:—"The increase of about twenty-five per cent. in the price of furniture coverings, such as plushes, tapestries or brocatelles, by the McKinley bill was thought to be an injury to the trade at the time of its passage, but the fact is, these articles have been steadily decreasing in price and to-day are twenty-five per cent. cheaper than they were before the change in the tariff. The increase in the manufacture and competition of trade has brought about this result. Twenty-five years ago a plush parlor suit was a luxury; to-day they can be bought as cheaply as the hair-cloth suits."

ALMOST eighty per cent. of the woolen manufacturers of this country have signed a memorial to the Senate protesting

against the passage by that body of the House bill placing wool upon the free list. This memorial has been prepared, not because there is any expectation that the Senate will approve the bill, but simply that the manufacturers may go upon record as repudiating free trade in any form and as protesting against the pretence of the free traders that free wool is desired by the manufacturing industry. Every woolen manufacturer in the United States has cheaper wool to day than he had eighteen months ago, and, unless all signs fail, there is not likely to be any speedy advance. Meantime, the woolen and worsted industries are thriving as they have not thriven for years past, under a tariff which the free traders pretend to regard as oppressive. The manufacturers of this country are not going to accept any mock commiseration this year at the hands of men who last year accused them of being robbers and monopolists. They regard with derision the demand made, in their behalf, for free wool, by men who have accused them of conspiring to put up the prices of the people's clothing. They fully understand that if protection is due to manufacturers it is due to wool-growers, and that no tariff can endure which undertakes to deny to the latter that which it gives to the former. When the wool-duties go, everything goes.—*Philadelphia Textile Record*.

The McKinley duty upon wool is about twelve cents per pound. As the domestic supply is far short of the demand, of course woolen goods are very much higher in the United States than in Canada where there is no duty. And still the Brit papers insist that unrestricted reciprocity with the United States would be a good thing for Canada.

THE CANADIAN MANUFACTURER allows that the tariff enables the sugar barons to extort about \$600,000 per annum, that is to say, if we could buy our sugar in the free market we could get all we could consume in a year for \$600,000 less than we pay to them.—*Toronto Globe*.

One of the great benefits conferred upon Canada is cheap sugar. Look at the following table:

June 27, 1890.	June 27, 1892.
8½ to 8¾ cents	4½ cents.

These figures, taken from the *Globe*, show how great a boon the redundant revenue resulting from the N. P. has enabled the Conservative party to confer upon the people.—*Toronto Empire*.

The *Globe* is simply ridiculous. What this Journal has always contended is that the difference between the McKinley duty in the United States and the higher duty in Canada measures the amount which the Canadian duty allows Canadian refiners to squeeze out of Canadian consumers more than the protection to the industry in the United States. The *Empire* is also endeavoring to mislead in showing what the price of sugar was two years ago and what it is now. That is not the question. Our contention is that the Canadian duty is not low enough, taking the McKinley tariff as a standard, and it is not comprehensive enough judging by that standard. The Canadian duty allows Canadian refiners \$6 per ton more for their services than American refiners are allowed, which is an injustice to Canadian consumers, and the Canadian duty shuts out a very wholesome and cheap sugar which would otherwise enter largely into consumption which American consumers receive free of duty.

SPEAKING of President Harrison's proposed so called retaliatory measures against Canada, because of the so called discrimination in canal tolls against American vessels, the *London Advertiser* says:

The cause for this contemplated action lies in the fact that the Dominion authorities charge United States vessels passing through the Welland Canal 18 cents per ton if they tranship at Ogdensburg, N. Y., while if transshipment takes place at Kingston or Montreal only 2 cents per ton is charged. Serious results may flow from this additional step in the retaliatory trade war between the two countries. This question could have been settled long ago and settled to the mutual advantage of both countries if Canada had an Administration really anxious to make the best of its opportunities. Conciliation, not retaliation or invitations to retaliation, is the proper policy for a country like Canada.

The ignorance of the writer of this stuff is denser than hammered brass. There is no charge upon loaded vessels passing through the Welland Canal, but upon the cargo contained in them. The charge is 20 cents per ton upon such cargo, not 18 cents, and a rebate of 18 cents is allowed upon all such freight as goes to Montreal. This charge is made against all freight whether carried in Canadian or American vessels, and the rebate is allowed in an equally impartial manner. This rebate was intended to benefit a Canadian seaport—Montreal—and there is no reason in the demand that American seaports should be favored by the rebate applying to freight destined for shipment via them. There is no such stipulation in the treaty. Hammered brass is a transparent object compared with the statement that the settlement of this question is within the ability of the Canadian Government upon any other terms than an entire sacrifice of Canadian interests. Why should we allow to the United States more than that country allows to us? Any American vessel is free to load grain at Chicago or Duluth and tranship it at Ogdensburg, but no Canadian vessel is allowed to do so. Now if the United States desires to be favored in the matter of canal tolls that object could probably be accomplished by that country agreeing to accord to Canadian vessels the same privileges American vessels enjoy, but the Canadian Government can do nothing to effect this. Any American barge is free to load lumber at Ottawa, proceeding through both Canadian and American canals, and deliver its cargo in the port of New York, but no Canadian barge is allowed by the American Government to do so. Why not ask the United States to practise some "conciliation?"

WE clip the following elegantly expressed morceau from the editorial pages of the *Canadian Mining Review*.

The prolonged howl for an export duty on nickel and other minerals made by the CANADIAN MANUFACTURER is universally condemned by the mining interests of this country, and fully merits the following timely rebuke of the *Iron Trade Review*:

"The capital of citizens of the United States has developed Canadian nickel and copper deposits, in large part built railroads which employed Canadian labor and required large outlays for materials. The mines have furnished employment to a large number of men; the transportation of their output has been of vast benefit to Canadian railroads. Yet in spite of the fact that her nickel industry has been initiated, developed and encouraged by capital from this side of the border, and the demand for the product created by the United States, with all the benefits to Canada that have flowed from this consummation—in the face of all these facts, there is a movement in Canada to put an export duty on nickel. Assuredly there is need for a wide publication in the land of the Canucks of an ancient fable about the fowl and the golden egg, with a moral about the people who didn't know prosperity when they saw it."

The *Iron Trade Review* is an ably edited journal, quite competent to grasp a situation when one is apparent, and quite in earnest in looking after the interests of its American clientele. But the CANADIAN MANUFACTURER is not accustomed to receive rebukes, whether timely or untimely, from such sources; and it is surprised that the *Mining Review* should become such a strong advocate of anti-Canadian interests. Our views in this nickel matter are these: When capital of American citizens has been invested in Canadian mines, and employed in the development of Canadian industries, it becomes Canadian capital, and the investors of it are entitled to no more consideration than if they were native Canadians. We attach no importance whatever to the fact that they are Americans, and they deserve no more consideration than would be accorded to Canadians doing business in the United States. Setting aside, then, the matter of nationality of these capitalists, the question hinges entirely upon whether Canada should allow these rich nickel deposits to become depleted and exhausted, leaving her nothing on earth to show for them but the holes in the ground from which they were taken; or if, by judicious legislation, we force the erection and operation in Canada of works for manufacturing the crude material into merchantable commodities. Canada is not satisfied with the American arrangement. The golden egg is all right, or will be, when we impose a duty upon our exports of nickel ore and matte equivalent to the American import duty on refined nickel. Impose the duty.

SPECIAL ADVERTISEMENTS.

Advertisements will be accepted for this location at the rate of two cents a word for the first insertion, and one cent for each subsequent insertion.

An elegant Bird's-eye view of the World's Columbian Exposition Grounds and Buildings, in Chicago, in eight colors, size 35 x 45 inches, price \$1.00. The same Engraving, size 26 x 36 inches, price 75 cents. The same Engraving, size 20 x 26 inches, price 50 cents. A Photo-Gravure, Bird's-eye view, 12 x 18 inches, price 25 cents. A map of Chicago, price 25 cents. A pocket map of the U.S., or of any State, or any Canadian Province, price 25 cents. Any of the above mailed to any address, postage prepaid, on receipt of the price named. Any other World's Fair publication mailed on receipt of the advertised price. Bond & Co., 576 Rookery, Chicago.

Send fifty cents to Bond & Co., 576 Rookery, Chicago, and you will receive, post paid, a four hundred page advance Guide to the World's Columbian Exposition, with elegant engravings of the grounds and buildings, portraits of its leading spirits, and a map of the city of Chicago; all of the rules governing the Exposition and exhibitors, and all information which can be given out in advance of its opening. Also, other engravings and printed information will be sent you as published. It will be a very valuable book, and every person should secure a copy.

Our *Animal Friends* is a monthly journal published by the American Society for the Prevention of Cruelty to Animals. If you have children send one dollar to the publishers at 12 East 22nd Street, New York City, and get it for a year. Under its teachings your children will grow up humane and become teachers of other children, thus dispelling much of the heartless cruelty now so common among the young. A merciful man is merciful to his beast. A merciful child will be merciful when grown up. The quality of mercy is not strained, but falleth like the dew of heaven.

The Prize List for this year's Industrial Fair to be held at

Toronto, from the 5th to the 17th September, has been issued. Many changes have been made in the various classes, and about \$2,000 added to the amount of prizes offered last year. The Association have obtained about fifty acres more ground, and a new half-mile track will be constructed, and a monster new grand stand capable of seating over 12,000 people is to be erected in time for the Fair. New stables and cattle pens are also to be erected and many other improvements made at a cost of one hundred and fifty thousand dollars. This year's Fair will evidently be a great one. For copies of the Prize List drop a post card to Mr. H. J. Hill, Manager, Toronto.

Our esteemed contemporary, *The Colonist*, of Winnipeg, Man., is shaking hands with itself because it has entered upon the seventh year of its existence. We also offer our congratulations. Wonderful changes have occurred in that now, fertile, prolific and wonderful country within the time since *The Colonist* made its first bow before the public, and we can with propriety endorse what it says in the following:—"Not only has there been great progress in Western Canada during the past six years, but the prospect for its continuance is brighter now than ever before. Most friends of the North-West are delighted with its progress at present, and yet the indications are that we are only hearing the first mutterings of the great wave of settlement, progress and prosperity which is about to sweep westward over the great prairie land and across the Rocky Mountains into the valleys and bays of the salubrious Pacific Province."

The first number of *The Republican Magazine*, a monthly publication devoted to the promulgation and perpetuation of Republican principles, has reached us. It is ably edited by Mr. Francis D. B. Curtis, whose work on the *Political Economist*, of New York, for the past four years, entitles him to a prominent position in the ranks of the political and economic writers of the day. So long as Mr. Curtis is at the helm our Protective policy will always find a sturdy advocate in the *Republican*. The initial number of the magazine presents a neat appearance and is clearly printed in large type. It is embellished with handsome portraits of T. Jefferson Coolidge, U.S. Minister to France, and of D. Russell Brown, the popular young Governor of Rhode Island. A number of well-known Protectionist writers are contributors to its pages. The *Republican* is published by the Republican Magazine Company, at No. 110 Fifth Avenue, New York. The subscription price is \$3 per annum; single copies, twenty-five cents.

Outing for July fully sustains the great reputation of that excellent magazine of healthful sport and pastime. Text as refreshing as woodland shades, and illustrations as bright as sparkling waters, occupy ninety-six pages, and make the special summer number a particularly attractive one. The contents are—"A Plea for the House-boat," by C. L. Norton, illustrated; "From the German Ocean to the Black Sea" (continued), by Thos. Stevens; "Saddle and Sentiment" (continued), by Wenona Gilman, illustrated by Stull and Watson; "July Rides," by Jessie F. O'Donnell; "Trouting with a Camera," by "Multiplier;" "Cynthia's Joe," by Clara S. Ross; "Shot-putting," by Malcolm W. Ford, illustrated; "The Ballast Fin," by A. J. Kenealy, illustrated; "Woodcock-shooting on the Upper Mississippi," by T. S. Van Dyke; "We Girls Awheel Through Germany," by "Martha," illustrated; "Pickerel-fishing in South Jersey," by John Gifford, illustrated; "The Oar in the Northwest," by H. W. Wack, illustrated; "Harry's Career at Yale" (continued), by John Seymour Wood; "The St. Lawrence Skiff," by C. B. Vaux, illustrated; "The Military Schools of the United States," by Lieut. W. R. Hamilton, U.S.A., illustrated, and the usual editorials, poems, records, etc.

"ANTHROPOLOGICAL Work in America," the activity of which has called forth many pleasant words from abroad, is the subject of the opening article in *The Popular Science Monthly* for July. The writer, Prof. Frederick Starr, sketches the aims and methods of work in this field, and gives portraits of seventeen of the prominent workers. This number contains also the fifteenth article in the illustrated series on "The Development of American Industries since Columbus." It deals with "Leather-making," and points out the advances that American tanners have made in machinery and methods. The writer is George A. Rich, of the *Boston Journal*. Mrs. H. M. Plunkett contributes a stimulating educational article on "Kindergartens—Manual Training—Industrial Schools," showing that these agencies have not yet been appreciated to their full value. There is a chatty account of the "Ways of the Owl," by Frank Bolles, who writes from intimate acquaintance with his subject, and gives pictures of several of his feathered friends. Another illustrated paper is on "Two Rare Monkeys," by Dr. L. Heck. Dr. J. M. Rice writes on "Physiology and the Prevention

PRESIDENT,
W. K. McNAUGHT.

SECRETARY,
J. J. CASSIDY.

TREASURER,
GEORGE BOOTH.

The Canadian Manufacturers' Association.

THE OBJECTS OF THIS ASSOCIATION ARE:

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

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

To maintain Canada for Canadians.

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

CORRESPONDENCE WITH MANUFACTURERS REQUESTED.

Office of the Association: Room 66 Canada Life Building,
KING ST. WEST, TORONTO

J. J. CASSIDY, Secretary.

TELEPHONE 1274.

of Disease," and in the same field Dr. N. E. Yorke-Davis gives some practical suggestions as to "Proper Diet for Hot Weather." One of our young Pacific Coast industries is described by Henry J. Philpott in a paper on "Almond Culture in California." J. Ellard Gore describes "Now and Variable Stars," and some interesting considerations on "The Waste and Gain of the Dry Land" are presented. Galvani, one of the chief founders of our so-called Age of Electricity, is the subject of the usual Sketch and Portrait. In the Editor's Table the importance of "Motherhood" and the need of intelligent preparation—physical, moral, and psychological—for its duties, are vigorously presented. New York. D. Appleton & Company. Fifty cents a number, \$5 a year.

Scribner's Magazine for July contains a striking article about the "Poor in Chicago," by Joseph Kirkland. Mr. Kirkland takes an optimistic view of the conditions of poverty in that city, asserting that "how the other half lives in Chicago is pretty much as it chooses," because sobriety and industry will give to any able-bodied man a comfortable living and a good chance for his children. If men prefer the delights of drink and crime, there are plenty of opportunities for both. The illustrations have been made from life by an artist who spent a month or more among these people. The Historic Moment this month is "The Resumption of Specie Payment," by John K. Upton, ex-Assistant Secretary of the Treasury, and a high officer in that department at the time resumption was effected. The number is particularly rich in illustration—the paper on "The Art of Ravenna," by the Blashfields, being one of unusual artistic merit. Professor N. S. Shaler's article on "The Depths of the Sea" also contains some very curious pictures of the bottom of the ocean. "The Evolution of the City Square," by Samuel Parsons, Jr., shows in a very entertaining way what New York has done and will do toward a solution of the poor problem by multiplying the number of small squares in the thickly-settled portions of the city. All anglers and men who love the woods will be delighted with Dr. Leroy M. Yalo's brief reflections on "Getting Out the Fly-books." There is abundant fiction in the issue, including two complete short stories—"The House Over the Way," and "The Pianner Mares"—with the concluding instalment of Stevenson's romance, "The Wrecker." Mr. Thomas Bailey Aldrich makes in this number a poetical experiment which is, perhaps, altogether new, in taking one of his earlier poems as a text for the long and important one now published under the same title, "White Edith." The earlier poem was published in *Scribner's Magazine* for January, 1888.

The American Iron and Steel Association and its general manager, Mr. James M. Swank, deserve unbounded credit for the most valuable contributions very recently made by it to the iron and steel literature of the world. During the first five months of the current year the Association have published (1) a second and enlarged edition of its *History of the Manufacture of Iron in All Ages*, embracing 574 pages, the historical references and the statistics contained in it coming down to the close of 1890; (2) the eleventh edition of its *Directory to the Iron and Steel Works of the United States*, embracing 298 pages, its contents corrected to February last and including for the first time a list of the iron and steel works of Canada and Mexico; (3) the *Annual Statistical Report* of the Association, embracing eighty-three pages, and containing full statistical information concerning the progress of the domestic and foreign iron and steel industries in 1891 and the first few months of 1892. Altogether these three publications aggregate 955 printed

pages—pages that are all well printed, pages that are filled with valuable facts with which every iron and steel manufacturer and many others should be familiar; pages that have cost thousands and thousands of dollars and the most persistent and painstaking effort; pages that are not marred by prejudice for or against any individual or any locality, and that nowhere, by the presence of an advertisement of any kind, suggest the slightest suspicion of even the remotest acquaintance with the money-making spirit. These books have not been compiled and printed to make money, but to meet the wants of those who seek for and appreciate accurate information concerning the past and the present of the foremost of all manufacturing industries. The *History* tells in a consecutive narrative of the achievements of the early and the later workers in iron and steel; the *Directory* records the names and describes the plants of those who are now in the United States, in Canada and in Mexico adding to the world's supply of these products; and the *Annual Report* tells what has been actually accomplished in the United States and in other countries in the manufacture of iron and steel in recent years, with the prices at which iron and steel have been sold and their commercial movement to and fro.

The art of giving lawn parties, and a score of new ideas for all kinds of out-door fetes, make the subject of an excellent paper by Mrs. A. G. Lewis in the *July Ladies' Home Journal*, the same magazine presenting another striking feature in Mrs. Potter Palmer's exhaustive paper on "Women and the World's Fair." Mrs. Palmer, as President of the Board of Lady Managers of the World's Columbian Commission, speaks with authority upon a subject with which she is entirely familiar. An article which will likewise elicit interest is "A Day in an Adirondack Camp," by Jessamy Harte, the eldest daughter of Bret Harte. Miss Harte makes her literary debut in this number of the *Journal*. Miss Fanny M. Johnson contributes a sketch, with portrait, of Mrs. Edward Bellamy, the wife of the celebrated Nationalist, and Alice Graham McCollin gives the first authentic sketch ever published of Anna Willess Williams, the young lady who posed as model in 1878 for the head of the Goddess of Liberty, which now adorns the face of the U.S. silver dollars. Mrs. Beecher continues her reminiscences of her husband, Harold Godwin is delightfully reminiscent of William Cullen Bryant, and Kate Tannatt Woods of Doctor Oliver Wendell Holmes. "Women's Chances as Bread Winners" in the field of telegraphy are instructively written of by Mrs. Randolph and by J. B. Taltavall, while "Both Ends of a Bell Wire" are charmingly touched by Florence Howo Hall. The Rev. Dr. Talmage takes a new departure by discussing "The Horse and the Race Track." Robert J. Burdette writes pleasantly "From a New Inkstand," and "The Brownies" visit Independence Hall. The fiction of the number includes, besides the conclusion of Sarah Orne Jewett's story, "An Every-Day Girl," two excellent short stories, "The Byrntell Golden Wedding," by Marjorie Richardson, and "The Story of Two Hearts," by Isabel A. Mallon. The poems are by John Kendrick Bangs, Robert Loveman, Annette Rittenhouse and Charles B. Going. Women who love dainty needlework are remembered in a page of exquisitely illustrated designs for table linen, and in "The Revival of Tatting." The other editors fill their departments with all that is interesting and attractive, and altogether there seems no end to the good things in this issue of this popular magazine. *The Ladies' Home Journal* is published by the Curtis Publishing Company of Philadelphia for ten cents per number, and one dollar per year.

* INVENTIONS. *

This department of THE CANADIAN MANUFACTURER is devoted to the interests of inventors, of patentees of inventions, and of manufacturers of patented 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 June 1 to June 13, 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.

- 39,047 Pressure valve, H. Giessenbier, June 1st.
 39,049 Lever track jack, P. A. Harding, June 1st.
 39,050 Concentrating minerals of ores, Gates Iron Works, June 1st.
 39,051 Clutch connection, H. Bunker and J. H. McKeggie, June 1st.
 39,052 Printing telegraph receiving instrument, International Type Telegraph Co., June 1st.
 39,053 Window, F. V. and M. A. Greene, June 2nd.
 39,054 Imparting a mottled, grained, or other appearance to painted surfaces, F. A. Laesecke, et al.
 39,055 Folding bed-couch, P. Horbold, June 3rd.
 39,056 Headlight for steam thrasher, F. H. Wilson, June 3rd.
 39,057 Cushion tire, W. Langmuir, June 3rd.
 39,059 Fruit basket cover, V. H. Carpenter, June 3rd.
 39,060 Car door fastening, F. A. Atkinson, June 3rd.
 39,061 Collar and cuff portfolio, Travellers' Portfolio Co., June 3rd.
 39,062 Ensilage-cutter, H. W. Fleury, June 3rd.
 39,063 Apparatus for the manufacture of illuminating gas, C. B. de Lamarre and A. B. French, June 3rd.
 39,064 Pipe wrench, G. W. Gorsuch and M. B. Miller, June 3rd.
 39,065 Ether motor, P. de Susni, June 4th.
 39,066 Potato digger and picker, G. B. Irwin, June 4th.
 39,067 Reclining chair, W. B. Mitchell, June 4th.
 39,068 Window sash, S. C. Young, June 4th.
 39,069 Sled brake, E. Crosby, June 4th.
 39,070 Sliding window shutter, H. Railh, June 4th.
 39,071 Folding bed bottom, S. Raymond, June 4th.
 39,072 Car coupler, J. W. Latta, June 4th.
 39,073 Piano action, A. D. Dimick, June 4th.
 39,074 Scoop, W. Wells and A. Gray, June 4th.
 39,076 Vapor burning lamp, H. A. Kerslake, June 4th.
 39,077 Ice cream freezer, C. L. Bellamy, June 6th.
 39,078 Hotel room card, L. L. Higby, June 6th.
 39,079 Fence tightener, T. J. Andre, June 6th.
 39,080 Thermostat, A. H. Brintnell, June 6th.
 39,081 Annunciator, A. H. Brintnell, June 6th.
 39,082 Tool for dressing saws, G. C. Ferguson and M. Oswald, June 4th.
 39,083 Car coupling, A. H. Weir, et al, June 6th.
 39,084 Pavement flooring, etc., W. Bremner, June 6th.
 39,085 Window shade bracket, A. Traill, June 6th.
 39,086 Milk separator, J. C. Thibault, June 6th.
 39,087 Horse-shoe, C. Hammelmann, June 6th.
 39,088 Ink-stand, E. Davis, June 6th.
 39,089 Chain, H. E. Kolloy, June 6th.
 39,091 Printing and book-binding machinery, T. Gibson, June 8th.
 39,092 Power storing apparatus for stopping and starting tram-cars, J. J. Hooke, June 6th.
 39,094 Universal shaking machine for the movement cure, C. H. Liedbeck, June 9th.
 39,095 Garment hook, W. H. Hart, Jr., June 9th.
 39,096 Type-writing apparatus, A. Lowe, June 9th.
 39,097 Machine for automatically removing coal and other material, W. Keenan, June 9th.
 39,098 Cutting off paper from rolls, J. B. Young, June 10th.
 39,099 Manufacture of metallized plates or roofing fabric of asbestos or other fibrous material, R. G. Westphalen, June 10th.
 39,100 Dumping car for railways, J. J. Sonder, June 10th.
 39,101 Do.
 39,101 Dumping Car, J. J. Sonder, June 10th.
 39,102 Dumping merchandise car, J. J. Sonder, June 10th.
 Do. Do.
 39,103 Flexible wire mat, T. C. McPherson, June 10th.
 39,104 Hook, E. Dederick, June 10th.
 39,105 Automatic belt tightener, C. Jernander, June 10th.
 39,106 Hydraulic air compressor, W. R. Phillips, June 10th.
 39,107 Shears for cutting hot metal, W. T. Cleveland, June 10th.
 39,108 Extension table, J. Conch and G. W. Williams, June 10th.
 39,109 Dumping car, J. J. Sonder June 10th.
 39,110 Check-book holder, J. L. McGervey, June 10th.
 39,111 Cigarette making machine, J. B. Underwood, June 10th.
 39,112 Sink trap, S. C. Perkins, June 10th.
 39,113 Corner pieces for travelling bags, boxes, etc., W. Roemer, June 10th.
 39,114 Anvil vise, G. W. Harris, June 10th.
 39,115 Price ticket, E. Macklin, June 10th.
 39,116 Medical ointment, P. F. Briere, June 10th.
 39,117 Mantel bed, D. H. Langlois, June 11th.
 39,118 Hose coupling or tie, H. A. White and J. D. Evans, June 11th.
 39,119 Automatic cut-off for gas burners, E. Denno and F. A. Denno, June 10th.
 39,120 Attachment for the filling motion of looms, W. O'Brien and S. M. Thomas, June 11th.
 39,121 Nut lock, D. C. Terry, et al, June 11th.
 39,122 Desk, F. Hawken, June 11th.
 39,123 Hammer, W. Jacoby, June 11th.
 39,124 Cut-off valve and gear, W. J. Cremer and J. Gorham, June 11th.
 39,125 Twin loop for harness strap, T. G. Nelson, et al, June 11th.
 39,126 Duplicating check book, R. J. Oldfield, June 11th.
 39,127 Do.
 39,128 Autographic Register, The Dayton Autographic Register Co., June 11th.
 39,129 Reamer, N. E. Smith and J. R. McPherson, June 11th.
 39,130 Railroad rail, Johnson Co., June 11th.

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PATENTS

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CANADIAN AND FOREIGN **PATENTS,**
17 King Street East, - - - Hamilton.

- 39,132 Milk can cover and cooler, N. H. Terens, June 11th.
- 39,133 Sewer ventilating shaft, J. Jolliffe and F. Moses, June 13th.
- 39,134 Automatic car coupler, W. N. Robinson, June 13th.
- 39,135 Nut lock, C. P. Sherman, June 13th.
- 39,136 Foot supporter for telegraph poles, E. A. Streater, June 13th.

ELECTRICAL.

- 39,046 Electric headlight, R. Pattison and D. J. Desmond, June 1st.
- 39,048 Electric switch, F. Davey, June 1st.
- 39,073 Electric controller, F. E. Kinsman, June 4th.
- 39,090 Governor for dynamos, M. S. Conly, June 7th.
- 39,093 Signal device for telephone pay stations, W. Gray, June 9th.

SCIENTIFIC PROCESSES.

- 39,045 Medicine, A. Bouillon, June 1st.
- 39,058 Food product and process of producing same, C. Saville, June 3rd.
- 39,131 Artificial tartaric acid, B. G. Talbot, June 11th.

INVENTORS AND MANUFACTURERS.

It is very noticeable that an inventor when absorbed in the idea of carrying out one of his pet schemes loses sight of everything save the one object in view, of making his machine or invention carry out his idea and accomplish the work for which he has designed it. In this way he is very apt to become narrow in his views, and has little patience with anyone who does not see just as he does. It is natural after spending several years in the study of one subject for him to think himself well informed on that point. There can be no question but that a careful study of any one subject should give a person great advantages over those who only casually look into it, and on this ground, therefore, an inventor has at least one good argument to support his claims. But a great many good men have spent years of their lives in vain, and a great many inventions have remained imperfect and of no practical use through the existence of this idea.

The average inventor is very apt to encumber his invention with a great many unnecessary and impractical attachments. Very few have the means for placing their inventions on the market, and must, therefore, depend on capitalists to develop their ideas. On carrying an invention to a capitalist with a request to manufacture it the average inventor is apt to make the mistake of insisting that

his invention be manufactured and sold exactly in accordance with his own ideas. The capitalist probably knows nothing of mechanics and does not attempt to criticize the mechanical construction and details of the invention. He wishes to know at what price the invention can be placed on the market, and is usually in a position to form an opinion as to whether it can be made a financial success at the price given. On the other hand, the inventor, after having spent an enormous amount of time and labor on the invention, imagines it to be much more valuable than it really is, and thinks it ought to command a price far beyond that named by the capitalist. There are in consequence frequent sharp controversies engendered between the men on such points, which makes it very difficult for them to work together and cause a great deal of unnecessary worry and annoyance in carrying on the business.

It is very common to hear an inventor complain that he is not satisfied with the way his invention is handled, and he wishes to get it in different hands. In many cases he has good ground for making such a complaint, but on the other hand there are very few cases indeed where good sound reasons for making an important improvement will be ignored by a manufacturer. There are a great many companies constantly advertising for articles to manufacture, but as the money risked is theirs, they naturally wish to use their own judgment in regard to the management of the business. Each man has his own ideas and thinks he is entirely right because he sees only his side of the case. In most cases the inventor is very apt to forget how much the capitalist has at stake in his manufacturing, and knowing very little, if anything, of the difficulties and hard work in connection with the business part of a manufacturing enterprise does not realize the importance of this part of the work. He therefore does not attach the value to this department which it deserves.

Another mistake which inventors make is by continually making attempted improvements in their inventions and wishing to constantly change designs of machines already established on the market, and it is very hard for them to understand the reasons given by the capitalist for not making such alterations; they can see the advantages to be obtained by such changes, but cannot understand the objections which are raised by buyers and consumers to continual modifications, and do not, therefore, realize how difficult it is to explain away objections which are thus put forth. The markets of to-day are filled with mechanical devices of all kinds. Points which a few years ago would have been regarded as possessing little significance are now strongly urged both for and against every device placed in the market, and any change, unless it be a very decided improvement, is to-day usually looked upon with great disfavor. Most of the arguments advanced, particularly in railway work, are in the line of adopting more uniform devices for all classes of work, and avoiding the confusion and the annoyance caused by the great variety of designs which are at present being used for performing the same class of work. Some inventors

now realize this fact, and are taking the greatest possible care to perfect their devices before attempting to place them in the market. This is surely commendable as well as the most practical and satisfactory course to pursue.

There are hundreds of patents existing upon principles which are thoroughly sound and good, but the inventor in working out the principle has done so in a manner so thoroughly impracticable, that it would be utterly impossible to manufacture and sell the article with any degree of success whatever. In some of these cases the inventor has spent a great deal of time and money in attempting to put his device on the market, and has not been able to do so, while if he had spent more time in attempting to make the application of his principle in a practical manner he would probably have met with marked success and made money out of his invention instead of losing everything which he put into it. It is not at all uncommon for an inventor when attempting to take out a patent on an invention of actual merit to find that his idea had been patented many years before, and while the same principle was involved it was worked out in so unmechanical and impracticable a manner as to be entirely without merit, this fact making it impossible for him to obtain patents having a wide range. In such cases all that can be done is to take out a patent covering some minor detail and thereby limit what might have been a marked success but for the former inventor, who has not only failed to gain the object for which he was working, but has prevented another from doing so.

Two morals may be drawn from this recital of facts—and which, if heeded, will contribute to the welfare of all concerned, to wit: First, a new device should not be placed on the market until it has been sufficiently tested to demonstrate its ability to well enough accomplish that for which it was designed to justify its use without necessitating any modifications in minor details, and, second, inventors must learn that their ideas worked into a design and capitalized are no longer their own property.—*The Railway Review.*

THE PUBLIC INTEREST IN PATENTS.

The benefits of the patent system are in no sense restrictive, but distributive and world wide. The genius of invention is not so exclusive as is supposed, and its results are amplified and deployed in scope, to which a patent law can fix no geographical limits, nor superior intelligence retain the use. In this sense our patent laws, while protecting the inventor, are equally conducive to the public interest. The interests are reciprocal, with the ultimate outcome of the lion's share of the benefits going into the public basket. It needs no very brilliant or capacious intellect to trace this beneficiary influence, and see in the genius of invention one of the most vital and essential forces of modern progress. As pertinent examples we have Whitney's improvement in the cotton gin. With this missing in the accessories of industry, the cotton culture of the South, producing in 1859 the handsome total of 3,622,000,000 pounds of this staple, it would have required the labor of 3,000,000 of men for one year simply to clean it.

In patented improvements in agricultural machinery and methods of transportation has been secured the settlement and cultivation of the Western States. Under the old regime it would have required the labor of 74,000,000 men and boys to plant, till and harvest the American cereal crop of 1859, with the value of each bushel of grain consumed in transporting it 300 miles.

The statistics of the sewing machine industry are equally significant. This machine became a national factor between 1850 and 1870. In 1850 there were 52,000 tailors in a population of 23,000,000. In 1870 there were 106,000 tailors in a population of 38,000,000, population in these two decades increasing 65 per cent.; but the number of tailors increasing more than 100 per cent. To these figures must be added the employment of some 40,000 persons in the manufacture of the machines, with the almost immeasurable saving of labor in factories and families, and the cost of production.

The locomotive adds a coincident illustration, not only as contributory to public convenience, but to the building up of the industries it was supposed to supplant. In the decades included between 1850 and 1870, during which period the locomotive came into general use, the population increased 65 per cent., the makers of common carriages and wagons increased in number more than 200 per cent. In each of the examples cited, the practical benefits have been distributive and universal, and in whatever direction we may note the deployment, it is without an exception—so far as the invention was identified with public interest. In a report made by Commissioner Simonds of the Patent Office, under date of January 30, 1892, to which we are indebted for the statements and figures

quoted, we find that in 1790, the first year of the patent system in this country, the number of patents granted was but three; in 1791 it was increased to thirty-three, and the total for the decade ending in 1799 was but 250. Our subsequent progress in invention is graphically stated in the fact that in the single year of 1891 no less than 23,000 patents were granted. That invention has played a magnificent part in the development of our material prosperity goes with the telling, and that it has been equally contributory to public good, when not run into extremes, is a fact well known to every thoughtful student of our national life.

PATENT REFORM.

THERE is a great deal of talk about the necessary enlargement and extension of the Patent Office. If our system and laws were what they should be, there would not be need for enlargement of the building. What is needed is a patent system which will insure the inventor a patent when once he has secured his letters from the Government. As it is at present, the granting of letters patent is only the securing by the inventor of a ticket of admission to the courts, and it is for the court to decide whether he has a right to his invention or not. It would seem as though the Patent Office was the place where this question should be settled.

The inventor sends in his application, pays the Government fee for examination and his attorney's fees. The claim is examined and the letters patent are issued. Then in order to prove that he has a right to his patent he must go into the courts, and spend a fortune, only to have his rights set aside. Then he asks, What good is a patent?

It would certainly seem that the millions of money paid into the Patent Office by the inventors of this country, for the purpose of securing protection of their rights, is thrown away.

The testimony of many great inventors tend to substantiate such a belief, and it is a common saying among them that a patent is of no value until it has been through the courts. If this is true, why not do away with the Patent Office entirely, and let the inventor apply to the courts in the first place?

If the Patent Office, after examining a claim, after experts employed and well paid for passing upon the patentability of an article, cannot render a final decision, of what use is it? Why do men pay for having their claims examined and for securing letters patent if not that they expect to be protected in their rights.

As it is the poor inventor has no protection and no means of securing his rights. If he has not money enough to carry his case through the courts he must give up. All his time, labor and money paid for a patent are lost. The Government will not aid him. It does not stand back of his letters patent which it has granted. It simply calls on him for more money, and he must have it or throw up his claim.

Does anyone believe it impossible that a system can be formulated whereby a patented can be protected in his rights, which will render letters patent granted by the Government to be of some value and have some significance? Is it not possible for the Government to decide before issuing a patent whether the inventor is entitled to a patent or not? Would it not be far better, for the country and for the people, if fewer patents were granted, and have them absolute?

Under present conditions there is very little encouragement for men to spend time, labor and money in devising "new and useful inventions," and yet this is the very thing which the patent system was devised and intended to encourage.

While the subject of reform is being discussed, why is not the whole system taken into consideration and put upon a basis which will make it of real and permanent value to the industrial progress of the nation? Why not have a system which means something, and in which there is some degree of protection?

If the fees are not large enough to warrant a sufficient examination to decide upon the claims of the inventor, let them be increased. No inventor would object to paying double or triple the present fee if he could be assured that, if his patent was granted, it would be sustained. Indeed, it would be better for all concerned, and save an endless amount of litigation and the expenditure of thousands of dollars, if such a system were adopted. Then there would be some encouragement for the development of inventive genius.—*Manufacturers' Gazette.*

As might be expected, the list of the Boston Public Library scarcely attempts to enter this field, the articles of the Philosophi-

cal Transactions of the Royal Society of London being almost the only ones which have been entered in the list. It often happens, however, that the greater part and sometimes all of the information to be secured upon certain subjects, is contained in the periodical literature of the day, and the reader who seeks the fullest and best information should be able to consult the original memoirs on the various subjects. Just here we would like to point out that in one important particular English electrical books of the present day are much more satisfactory than those of American writers; we refer to the admirable practice which English authors have of referring the reader to original memoirs and various other sources of information, to which reference may be made by the student who desires to pursue the subject farther than the necessarily limited space of a text-book permits the author to go in his treatment of it.

The growing importance of electrical literature from the standpoint of the public is well shown by the recent publication by the Boston Public Library of a 24-page list of all the works on electricity, not including the telegraph or telephone, to be found in that library. It contains not far from 1,000 titles, and is on the whole an admirable piece of work. Coming from a library of such importance and high standing, this publication has considerable significance, as it indicates that the demand of the general reader for this class of literature is of such a nature that it is necessary to place at his disposal the very best means for ascertaining what the library possesses in this special field. With the single exception of the St. Louis Public Library this is, so far as we are aware, the first attempt to afford material assistance to the general reader of this important field of literature, to which accessions are now of almost daily occurrence. The periodical literature of electricity has already grown to be so voluminous that there is need of a special index to cover publications of this class in the English, German, and French languages.

An experiment showing "molecular bombardment" and the "aurora" may be made by rubbing an incandescent lamp on the clothing, or on paper, leather, sheet rubber or tin foil, when the bulb will become filled with light; if you stop it grows dark. If touched with the finger the filament and the interior will be a bright glow lasting from one to three seconds; if touched again, it is repeated; by drumming or drawing the finger slowly over the glass the light is quite continuous. If rubbed on newspaper in an absolutely dark room, the larger letters can be read at a distance of two or three inches. Fan the bulb with sheet rubber eight or ten inches away, but do not touch the glass, it will light the same quite bright if the fanning is very rapid. The lamps used were the Edison 16 c. p. 20 and 22 volts. Most of the miniature lamps will give the light, but not all; the 110-volt store lamp will not. It is evidently charged through the glass, as the glow will occur if the metal parts are enveloped in rubber. Everything used should of course be dry. It seems to be an electrophorus effect, the discharging only exhausting a section at a time.

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STEEL BELT LACING.

The accompanying illustration is descriptive of the Bristol Patent Steel Belt Lacing, manufactured by the Bristol Manufacturing Company, Waterbury, Conn. The cut represents the



lacing ready for application, and also shows a finished joint. The lacing consists of continuous zig-zag strips of steel, so proportioned as to give maximum strength with a minimum amount of

material. In the application of it no special tools are required. The wedge-shaped points when driven through the belt force the fibres aside without cutting them, hence the ends of the belt are not weakened as when holes are punched. This lacing, when made for single thickness belting, is manufactured in lengths of from one to three inches, varying by quarter inches, and is packed in boxes containing 100 each. For belts wider than three inches, two or more lacings should be used.

To apply, square the ends of the belt and butt them closely together on a piece of soft wood, keep in position by tacking the ends of the belt to the board. Place the lacing upon the joints as shown in the cut, tap lightly to mark where the spurs will enter the belt, then make the necessary holes with a pointed awl. Replace the lacing and drive it through. Turn the belt over upon the pulley or some convenient piece of iron, tap the spur ends lightly that they may become embedded in the belt, thus securing a double hold, and clinch by bending the spur towards the joint. Avoid excessive hammering at the bend. Run the clinch side of the belt next the pulley.

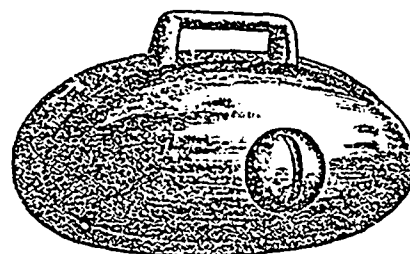
This lacing is made in four sizes for leather belts differing in thickness from split leather to double leather, and in four sizes for cotton, rubber and woven belts differing in thickness from two to six ply.

This method of fastening the ends of belts is exceedingly simple and perfect. It makes smooth and elastic joints, and is easily and quickly applied.

For further information apply to the Bristol Manufacturing Company, Waterbury, Conn., or to Mr. C. F. Ragot, Hamilton, Ont., the Canadian agent.

TROTTING HORSE TOE WEIGHT.

The accompanying illustration is of the Horseman's Favorite trotting horse toe weight, manufactured by the James Smart Manufacturing Company, Brockville, Ont.



All drivers of trotting horses know the value of a toe weight. Such articles have been in use for a number of years past, but this is a great improvement on anything heretofore brought out. The weight is in two pieces, the lower one being fastened to the hoof by ordinary wood screws, the upper piece being

secured to the lower by a machine screw. Both pieces are easily renewable, and either one or both may be taken off when the horse is at rest. It will be observed that there is a loop in the top of the weight. One object of this is that a strap may be passed through it and around the leg of the horse, for greater security. But many horsemen use boots upon the hoofs of their animals, and this loop is convenient for passing a strap through, and secured to the boot to keep it in place. This weight is entirely new, just having been patented and placed upon the market by this company. It is made in five sizes, weighing respectively 2, 3, 4, 6 and 8 ounces. It is made of brass, the upper piece being beautifully burnished.

Mr. F. BEAMISH, manufacturer of American gray plaster, Port Hope, Ont., has retired from this business in favor of his son, Mr. W. E. Beamish who will hereafter conduct the same. The output of plaster by this concern last year was about 1,000 tons.

Captains of Industry.

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

The D. F. Jones Manufacturing Company, Gananoque, Ont., have recently made a carload shipment of shovels to Mexico.

The new flour mill being built at Portage la Prairie, Man., by the Lake of the Woods Milling Company, is nearing completion.

The grain elevator being built at Miami, Man., by Carson Bros., with a capacity of 30,000 bushels, is being pushed to completion.

The St. John, N. B., City Council have appropriated \$150,000 towards the purchase of land and the erection of a grain elevator.

The Cobourg Woolen Company, Cobourg, Ont., have recently added several new looms and other machinery to their woolen mills.

MESSRS. MASSEY & LANSING, manufacturers of paper pulp, etc., Waterdown, N. Y., will establish a large branch of their works at or near Ottawa.

The kiln house of the Hamilton and Toronto Sewer Pipe Company, at Hamilton, was damaged by fire to the extent of about \$1,500 on June 25th.

The Nova Scotia Steel & Forge Company, New Glasgow, N.S., are building a large machine shop and foundry to be used in connection with their works.

The Trinidad Asphalt Company of Toronto has been incorporated with a capital stock of \$100,000 to manufacture asphalt for use in pavements, roadways, etc.

Mr. S. A. BUCKLE, Port Hope, Ont., has begun the manufacture of fly netting in connection with his lace works. He is turning out large quantities of both articles.

The Citizens' Telephone and Electric Company has been incorporated at Rat Portage, Ont., for the purpose of generating electricity for commercial purposes.

The Ridgetown Canning Company, Ridgetown, Ont., has been incorporated with a capital stock of \$25,000 to engage in the business of canning fruits, vegetables, etc.

The McLaughlin Carriage Company, Oshawa, Ont., inform us that they are quite full of work, their productions at this time being about seventy-five vehicles per week.

The Cobourg Mat and Matting Company, Cobourg, Ont., have begun the manufacture of woolen stair carpet in various styles and are now turning out some fine lines of goods.

The Macfarlane Shade Company of Toronto has been incorporated in this city with a capital stock of \$100,000 to manufacture window shades, shade cloth, window trimmings, etc.

The Niagara District Fruit Preserving Company, of St. Catharines, Ont., has been incorporated with a capital stock of \$30,000 to can and preserve fruits, vegetables, meats, fish, poultry, etc.

The North American Mill Building Company, of Stratford, Ont., are refitting the flour mill of Mr. J. R. Defoe, at Napanee, putting it in most thorough condition, including full roller process machinery.

The Ontario Iron Fencing Company, Picton, Ont., whose factory was destroyed by fire on June 18th, at a loss of \$11,000, are rebuilding their works and expect to be again in full operation during the current month.

LYMAN BROTHERS & COMPANY, Toronto, have been incorporated as a stock company with a capital stock of \$150,000 to take over and continue the business of Messrs. Lyman Bros. & Co., manufacturers of drugs, medicines, etc.

The St. Timothee Manufacturing Company, Montreal, has been incorporated with a capital stock of \$50,000 to acquire and operate the St. Timothee woolen mills at St. Timothee, Que., and the St. John's hosiery mills at St. John's, Que.

MESSRS. R. DAVIS & SON, ship builders, Kingston, Ont., have just completed an elegant steam yacht built by them for Capt. C. C. Newton, Montreal. She is 60 feet long, 10 feet beam, has compound condensing engine and cost \$7,700.

The powers granted by the Government to the Breithaupt Leather Company, of Berlin, Ont., have been extended, enabling the company to carry on its operations in Toronto and Listowel in addition to the places named in the letters of incorporation.

MESSRS. PATTERSON & CORBIN, street car builders, St. Catharines, Ont., inform us that they are pushed with work, manufacturing horse and electric street cars for Yarmouth, N.S., Winnipeg, Man., Sarnia, Ont., Toronto Junction and other points.

Mr. T. W. SEEDS, Trenton, Ont., desires to sell his planing mill and sash and door factory at that place. The works are thoroughly equipped with the best improved machinery all in good order, and a first class business is being done. See advertisement elsewhere.

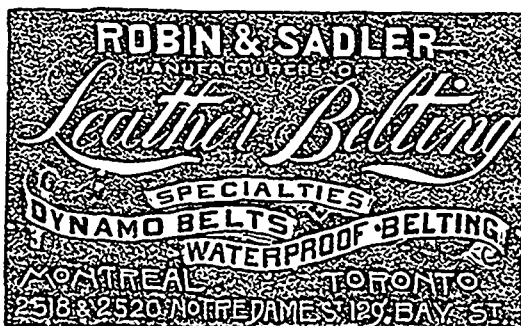
Mr. J. M. BROOKS, Oshawa, Ont., is offering to let a very fine building in that place well suited for manufacturing purposes. The building is of brick, two stories high, 75x25 feet, with 25 h.p. steam engine and a line of shafting, with ample railroad and shipping conveniences.

Mr. E. B. SALYERDS, proprietor of the Preston Brush Works, Preston, Ont., informs us that his works are now very busy manufacturing machine and furnace brushes. These goods are well and favorably known to all machinery and steam power users in the country.

The Rat Portage and Keowatin Electric Street Railway Company has been incorporated with a capital stock of \$300,000, to build and operate a street railway in these towns, and to engage in the supplying of electric energy for the purpose of producing heat, light and power.

The Canadian Mineral Wool Company, recently formed in Toronto with a capital stock of \$10,000 to acquire the business previously conducted by Messrs. Gast & Co., manufacturers of mineral wool pipe and boiler covering, etc., have received their letters of incorporation.

Mr. A. W. SPOONER, Port Hope, Ont., is asking the attention of machinery users to the "Copperine" manufactured by him, and which is claimed to be the best machinery box metal made. It ensures cool bearings, no hot boxes, and is guaranteed to be as represented. This is a strictly Canadian product and cannot be excelled by any maker, or in any country.



Established in 1848.

STEEL.

Singer, Nimick & Co., Ltd.

PITTSBURGH, P.A., U.S.A.

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), Flow Steels, Crucible, Open Hearth and Bessemer Flow Steels, Finished Rolling Flow Colts, Rotary Harrow Discs, Round, Square and Flat Machinery Steel, Springs, Axles and Steel Tire, Agricultural Steel Cut to any desired pattern.

Represented by

Mention this paper.

MR. HUGH RUSSEL, Temple Building, 185 St. James St., MONTREAL.

Messrs. A. SCHNEIDER & Co., Toronto, call attention to the fact that they are manufacturers of Tuerk's patent water motor. This machine is made in different sizes and is admirably adapted for light manufacturing purposes, particularly in cities and towns where water pressure may be had. Further information regarding these motors may be obtained by application to Messrs. Schneider & Co.

THE G. & J. Brown Manufacturing Company, Belleville, Ont., have a very attractive business card in our advertising pages having reference to the lines of article manufacture by them. They are bridge builders, engineers, boiler makers, machinists and foundrymen, and are manufacturers of railway contractors' supplies, frogs, diamond crossings, switches, hand cars, velocipede cars, double and single drum hoists, etc.

THE Belleville Canning Company, otherwise Messrs. Carson, Morden & Auning, Belleville, Ont., who recently took over the foundry building previously occupied by Messrs. Hart & Smith, that city, having made all necessary preparations in the way of machinery, appliances, etc., have begun their canning operations on an extensive scale. Their factory now includes a two-story building 66x35 feet, another 170x66 feet and still another 200x66 feet.

THE Cant Bros. Co. of Galt have been very busy lately, having got a large order for some wood working machinery from Messrs. Dowling & Leighton, of Harriston, who were recently burnt out. The order includes a double rip and cut-off saw, a dado machine, a Stengel automatic dovetailer, a combined rip and cross-cut saw, a surface planer, a tenoning machine, a two-spindle borer, with the necessary shafting, hangers, and their new solid web wood split pulleys.

THE James Smart Manufacturing Company, Brockville, Ont., are manufacturers of "Perfection" cook stoves and ranges, and heating furnaces, and these goods enjoy the unique distinction of being made entirely from original designs, and moulded from original wood patterns. The company very confidently place them in competition with the best productions of Canadian makers duplicated from American styles and patterns. They are Canadian throughout.

THE J. C. McLaren Belting Company, Montreal, manufacturers of general mill supplies, have a very attractive card in our front cover having reference to the card clothing manufactured by them. They explain why they claim their card clothing to be the best made. Because they engage the best card setters, use the best backing, made of English oak leather, use the best wire, employ the best grinding machinery, and sell their goods at prices which permit them to make this claim.

OUR readers will observe that the Masson Manufacturing Company's factory at Oshawa is offered for sale. This establishment is large, substantial and well adapted for many kinds of business. There is a two-story brick building 300x45 feet, and another—one story—180x65 feet. Any changes which might be deemed necessary could be made at small expense, and the machinery now there is also for sale. The railway facilities are excellent. We refer to our advertising pages for further particulars.

THE Gibbard Furniture Company, Napanea, Ont., is the outcome of the amalgamation of the concerns of Messrs. Gibbard & Son and Fraleck & Crouch, both of that place. The new concern have just completed the erection of a fine three-story stone and brick factory building 80x60 feet, which will be equipped with the best and most modern machinery, and used in the manufacture of fine furniture. A large hot air blast plant is a feature of the concern, to be used in seasoning lumber and heating the buildings.

MR. A. P. MENDE, New York City, has sent us a sample of the work done with the one-dip dyes manufactured by him. It is a beautiful clear, clean shade of stone drab, and there is not the slightest evidence of two shades in the cotton and woollen filling. In fact, no process, no matter how long continued or expensive, could produce a more uniform dye than the sample before us. Manufacturers, no matter what goods they are making, would do well to write to the above address for further particulars.

MR. W. H. FROST, proprietor of the Smith's Falls, Ont., Malleable Iron Works, manufacturers of malleable iron castings for agricultural implements and other purposes, carriage hardware, etc., informs us that he is making large additions to his works, included in which is a new moulding shop 240x60 feet, and an additional six ton furnace, thus increasing his capacity of output to 2,400 tons per year. Other improvements in the way of buildings and machinery are being added to enable him to meet the demands of his fast increasing trade. The new works will be in active operation by October.

THE G. & J. Brown Manufacturing Company, Belleville, Ont., have just completed a new steel bridge over Jeannette Creek, about ten miles from Chatham, Kent County. It is constructed on steel piles instead of oak, and while the cost is not very much greater, the foundation is practically indestructible. This company are now at work on a steel swing bridge at Chatham, which will be completed by the middle of July, also a steel bridge, 150 feet span, for Baden, Ont. This company built the splendid bridge over the Bay of Quinte, which is the longest bridge in Ontario and the longest highway bridge in Canada—the floor of the bridge being 1,918 feet, and the embankments leading to it about three-quarters of a mile long.

THE Gananoque Carriage Company, Gananoque, Ont., are extending their operations by building large works at Brockville, Ont. The new factory will be of brick, four stories and high basement, 200 x 60 feet, with wing of same character, 180 x 60 feet. It will be equipped with all necessary machinery and appliances of the most modern and desirable description, steam heated throughout, and lighted by electricity. The business of this concern has increased so much of late that it was found that the Gananoque factory was entirely inadequate to accommodate it. The Brockville factory will be in operation in October. This concern have recently made a large shipment of their products to Barbadoes and another to Jamaica, West Indies.

THE Crossen Car Manufacturing Company, Cobourg, Ont., have begun the manufacture of street cars for all systems, and are prepared to do a large business in this line. They are also very busy building both passenger coaches, sleepers, dining cars and freight cars for regular railway traffic. A recent production of this character is a dining car for the Canadian Pacific Railway which is not only very elegant but somewhat different from other cars as generally constructed, in that the doors are sliding instead of being hung on hinges, an obvious advantage where space is so valuable; and in the substitution of recessed alcoves between the windows, in which are convenient shelves for the mirrors as now generally used. This company are now building twelve sleepers for the Canadian Pacific intended specially to accommodate the traffic expected to be carried over this road during the forthcoming World's Columbia Exhibition at Chicago.

THE Globe File Manufacturing Company, Port Hope, Ont., are making a specialty of manufacturing the American pattern of horse rasps, with plain, tanged and beveled edges, which are giving much satisfaction to those who have used them. An evidence of this lies in the letters of recommendation which the company have received from a large number of such users, and which are reproduced in a circular issued by them. Other specialties manufactured by this concern include a full line of veterinary dentists' rasps and files, nickel and plain plated tooth rasps and files with removable bits and detachable handles, etc. The excellence of the machinists' files manufactured by this concern is well known in Canada, but for the purpose of increasing the demand for them, and to introduce them where they may not be now used, the company will give free of all

WILM KNOX.

JOHN H. ELLIOT.

KNOX & ELLIOT,

Architects, Engineers, & Mill Constructors

OFFICE: 19 Queen St. East, Toronto.

"PERFECTION"

Stoves, Ranges, and Furnaces

Enjoy the unique distinction of being made entirely from original designs and original wood patterns. We confidently place them in competition with the best American productions duplicated by Canadian makers.

WRITE US FOR PARTICULARS.

The Jas. Smart Manufacturing Co., Ltd.
BROCKVILLE, ONTARIO, CAN.

cost a specimen one-fourth dozen of them to any who will apply for them.

The Hastings Saw Mill Company, New Westminster, B.C., a few days ago made a shipment of six car loads of timber which was remarkable for the sizes and lengths of some of it. On two cars were loaded four pieces, each 30x24 inches square, 58 feet long; two pieces 18½x16 inches, 50 feet long, one piece 30x24 inches, 54 feet long; two pieces 8x6 inches, 50 feet long, and one piece 21x12 inches, 55 feet long, the whole aggregating 20,289 feet. On two other cars were loaded two pieces, each 30x24 inches, 54 feet long; three pieces each 24x24 inches, 30 feet long; one piece 21x21 inches, 55 feet long; four pieces each 24x18 inches, 30 feet long, and five pieces each 24x12 inches, 49 feet long, the whole aggregating 20,741 feet. On two other cars were loaded only three pieces, each of which was 36x36 inches, 60 feet long, the total measurement of which was 19,440 feet. This train load of mammoth Canadian timber was hauled over the Canadian Pacific railroad, and was consigned to a Montreal firm.

Mr. A. W. SPOONER, Port Hope, Ont., who is the sole proprietor for the Dominion of Canada of the well-known disinfectant Phenyle, informs us that there is a very large demand for that article at this time. Being manufactured by a secret process,

which is patented, the formula of it is not given, but the great success with which it is received in the United States and in Canada is a guarantee of its excellence. It destroys offensive odors; is certain death to insect life; prevents contagious diseases, particularly those which originate from foul premises, and is a preventive of sickness among hogs and other animals. If sprinkled on the floors of residences before carpets are put down, no moths or other insects will abide there. It is invaluable in the sick room in destroying unpleasant odors. It is particularly useful in factories where large numbers of people are congregated, in keeping the atmosphere of closets and privies pure and wholesome; and like effect will follow its use in breweries, collars, warehouses where rags are stored or sorted, in glue rooms, stables, and in fact in any place where impure air exists and where it is desirable to remove it. It is used extensively in the large meat packing houses in Chicago and Kansas city, many of the railroads use it, and the health departments of many cities prefer it to any other disinfectant. It is put up for family use in pound packages, packed in convenient sized boxes for the retail trade. It is also packed in large pails and barrels in bulk for the convenience of large users. Being a powder it is preferable to carbolic acid or any other fluid, and it is cheaper.

BELTING

Patent Rolled Shafting,

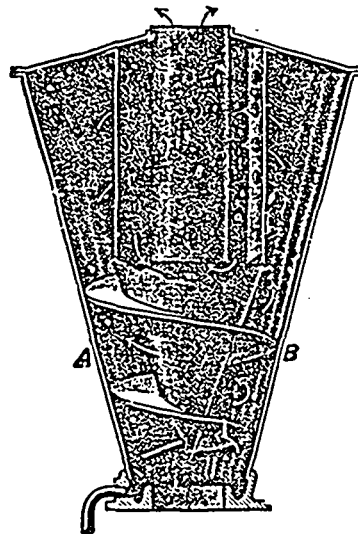
Hangers AND Pulleys,

Wrought Iron Pipe and Fittings.

RICE LEWIS & SON
Limited,

General **HARDWARE** Merchants,
TORONTO.

SIMPSON'S PATENT CENTRIFUGAL EXHAUST HEAD



FOR EXHAUST STEAM PIPES.

Scrawing Flanges included with every Head.

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.

ATTENTION, DYERS!

One Dip Fast Colors and Black

FOR ALL PLAIN AND MIXED FIBRES.

SHADES MATCHED. YOU CAN DYE

Cotton Warp and Wool Filling in One Dip

With my colors and save time and money.

ALEX. P. MENDE, 14 Water Street

Manufacturer and Importer.

NEW YORK CITY

For Sale!

Planing Mill, Sash, Door, and Blind Factory

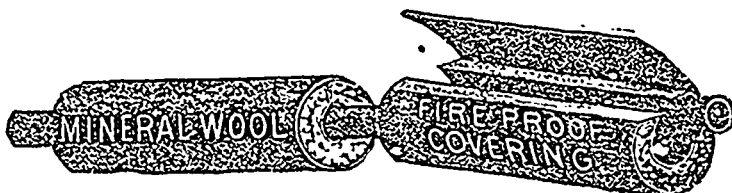
MACHINERY AND EVERYTHING COMPLETE.

With 25-Horse Power Engine, 30-Horse Power Boiler. All improved Machinery and in good repair. A first-class business. Ill health the reason for selling. For further particulars apply

T. W. SEEDS.

TRENTON, ONT.

LAMBIN'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 Densening and Fireproofing buildings. Covering Hot Pipes and Boilers saves forty per cent. in fuel.

EXCLUSIVE DEALERS AND PATENTEES,

Canadian Mineral Wool Co., 122 Bay St., Toronto.

SEND FOR CATALOGUE.

BRITISH COLUMBIA PAPER-MAKING PLANT.

The Victoria, B.C., *Colonist* says:—The bark Armadno has just discharged a very large and extremely valuable portion of her cargo, which consists of the principal machinery for the new paper mill at Alberni. It has all arrived safely, with the exception of two small breakages which can easily be made good.

The machinery belonging to the company makes up four separate plants—a wood pulp plant, a paper-making plant, a bag making plant, and a saw-mill outfit. The pulp mill consists of one massive chipping machine, with heavy chipping disc 6 ft. 6 in. in diameter, which will chip logs up to 8x18. The knives are fixed to the disc, which revolves at the speed of 180 per minute, and will dispose of about twenty tons of logs per day. Connected by a conveyor with this machine is another, equally heavy and massive, for crushing up the chips as they are made, the object attained by this severe crushing being that the wood is better prepared for the boiling, the fibres being all opened out and partly disintegrated.

The next operation is the boiling of the chips in a globular revolving boiler, of which there are two in this plant. These boilers are each about seven feet in diameter, and very strongly made. A large manhole with suitable bolts, etc., closes the opening by which the chips are filled in. The liquid to boil the wood being first introduced, the boiler revolves, and when the mixture has been sufficiently boiled, the lids are taken off, and the boilers automatically empty themselves into small wagons placed below to receive the fibre, which is now partially reduced to the consistency of pulp.

If the wood is a soft or non resinous fibre, or in case of waste paper being utilized, the next process is to fill the boiled material into two large Kollergangs or granite edged runners. The running stones are five feet in diameter by 18 inches wide. These machines have self-acting attachments for keeping the pulp always in front of the running stones. In the process for strong fibres the boiled material is poured into oval beating machines in which a heavy roll of metal with steel knives on the circumference revolves at a speed

BRUNNER, MOND & CO., Limited, Northwich, Eng.

Manufacturers of **PURE ALKALI** Guaranteed 58 degrees.

The Strongest and Purest Form of **SODA ASH** in the market, and the most Economical Form of **SODA** for the Manufacture of



Glass, Paper, Wood Pulp, Soap and Starch

Also for **PRINTERS, BLEACHERS** and **COLORS.**

WINN & HOLLAND, Montreal,

Sole Agents for the Dominion of Canada.

Established 1890.



IF YOU WANT A LACE LEATHER

Write to **Heldman Bros., BADEN, ONT.**

For Machine AND FURNACE BRUSHES



Write to **PRESTON Brush Works**
E. B. Salyerds PROP.
PRESTON, ONT.

THE POLSON IRON WORKS CO., Ltd.

Capital, \$300,000

HEAD OFFICE, TORONTO

Builders of the Celebrated BROWN AUTOMATIC ENGINE.

Single, Tandem and Triple Expansion. Specially Designed for

ELECTRIC LIGHT PLANTS.

12,000 Horse-Power

of these Engines built by us are NOW IN USE IN **ELECTRIC LIGHT PLANTS IN CANADA**

of 200 per minute. This roll circulates the pulp around the oval tanks and grinds at the same time.

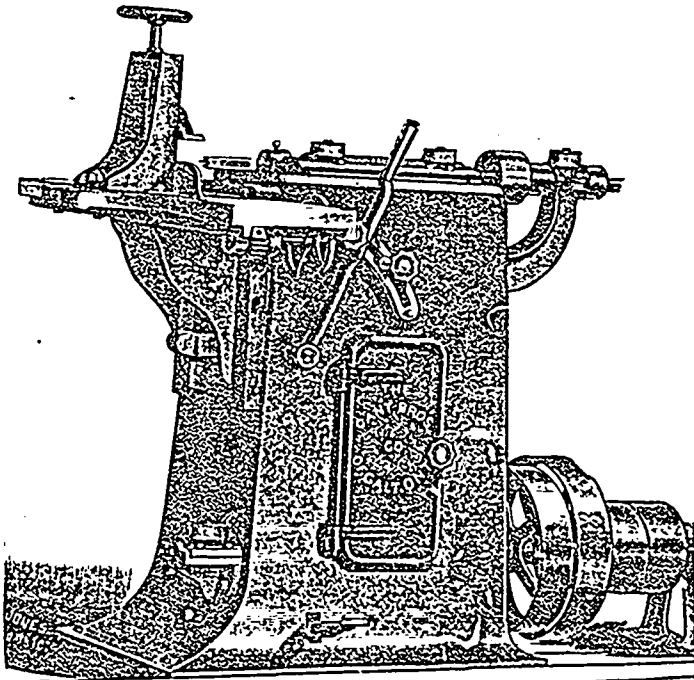
When the pulp is sufficiently reduced, it is emptied by a valve at the bottom of the tank into a cast iron circular receiver, and then kept in constant motion. In connection with this part of the mill there is also a rag and rope-cutting machine, capable of preparing ten tons of rags, etc., daily, also steam tanks for soaking waste papers, taking out the ink from printed papers, and preparing both for manufacture.

The paper making machine marks the second process in the formation of the liquid pulp into the sheet of paper. This operation is performed by straining the pulp through a special machine, which separates all the knots or lumps from the finer pulp. This machine consists of a massive brass receiver, the bottom of which is covered with slots of the necessary width, by which a joggling motion is given to this receiver. The paper-making machine consists of that portion in which the wet pulp is first received. This is made up of a fine iron framework, copper and brass rollers, and an endless piece of brass wire cloth; also two thick, endless bands of India rubber. The formation of the wet pulp into the damp sheet of paper is continuous.

After leaving the wire cloth the paper, in its first stage as paper, is passed on endless blankets through heavy press rollers, and thence under and over five steam-heated drying cylinders. These thoroughly dry the sheet of paper as fast as it is made. The paper is then passed through a stock of calendar rolls, and wound on a spool—the sheet of paper, as finished, is often five feet wide by any length wanted.

The machine for cutting the reels of paper into square sheets is a large and heavy one. It is intended to be used when the manufacture of paper necessitates a much larger and wider paper-making machine than the one described above. This cutting machine will cut a sheet 112 inches wide, or any width down to six inches, and any length from nine inches to 144. The paper, in passing through, never stops, the knife that makes the cross cut is a revolving one.

The paper bag machine is a marvel of ingenuity. It is designed to make any size of bag, from the one to hold four ounces of chocolates up to the one for twenty pounds of sugar. The machine works at a speed of sixty to 250 bags per minute, and will also print any-



Hollow Square Chisel Morticer

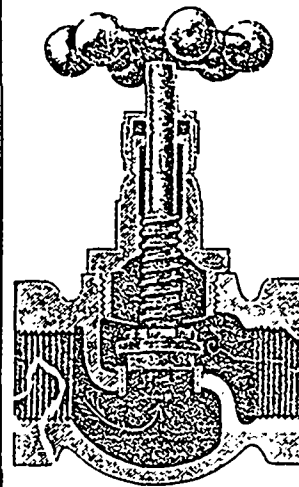
FOR MORTICING IN HARD WOODS

CANT BROS. CO., Ltd., GALT, ONT.

thing wanted on the bags as they are made, the printing capacity being 10,000 per hour. The bags are pressed, pasted, dried, printed and delivered ready for the market all at the one operation.

The boilers and power machinery are already at the mill site, at the first rapids on the Somass river, Alberni, where everything will be in running order by July. The saw-mill machinery all came from the east, and is the very best obtainable, as, in fact, is every part of the plant.

The Paper Company has entered the field well equipped for business, and the care with which all purchases have been made reflects credit on the officers and shareholders, the latter being Messrs. W. P. Snyward, J. S. Yates, Thomas Shotbolt, Joshua Davies and F. A. Bonnett.



DRAPER'S

IMPROVED

Globe Valve

Constructed to prevent Seals 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. Seals, etc., are pushed back and the faces meet with nothing between to injure them. Send for prices and particulars to

T. Draper, MANUFACTURER
BALL VALVES

For Various Purposes,

Oil and Salt Well Supplies, Etc.

PETROLEA - - - ONTARIO.

Safford (Patent) Radiators

FOR

HOT WATER & STEAM HEATING

Lead the World

MADE IN

ALL SIZES and HEIGHTS

Send for Catalogue

MANUFACTURED ONLY BY

The Toronto Radiator Mfg. Co.

TORONTO, - - - ONTARIO.

Branches:

Montreal, Quebec, Winnipeg, Victoria, B.C.

WHEN WERE YOUR

Boilers

Last Inspected?

ARE THEY IN
SAFE

WORKING ORDER?

THE BOILER INSPECTION and Insurance Company of Canada.



CONSULTING ENGINEERS.

G.C. ROBB, Chief Engineer. A. FRASER, Secy. Treas.

HEAD OFFICE

TORONTO.

SIR ALEX CAMPBELL, K.C.M.G. PRES.
(Lieut. Govr. of Ontario)

JOHN L. BLAIR, Esq. VICE PRES.

ARE YOUR

Boilers

GIVING THE

GREATEST POWER

AT THE

Least Cost?

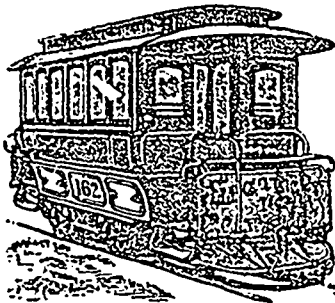
← PATTERSON & CORBIN →

FINE

ELECTRIC CARS

OUR

SPECIALTY



ST. CATHARINES, ONT.

MANUFACTURERS OF

Horse and Trail Cars

OF

EVERY DESCRIPTION

THE MONARCH ECONOMIC BOILER

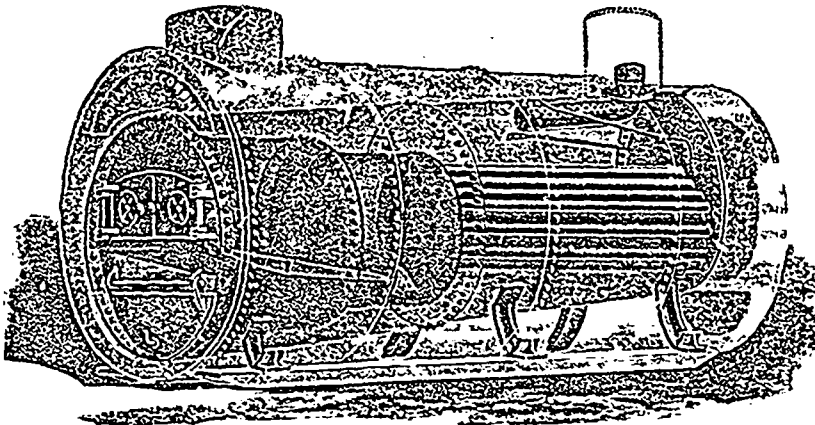
Patented Can. May 6, 1866;
Feb. 10, 1887.

Patented U.S.A. Oct. 7, 1886.
Aug. 23, 1887. May 8, 1888.

Is the strongest and most
Portable Boiler

in use, and its high economy
in fuel makes it especially valuable
to gold miners

Tested evaporation 10.25 lbs.
water per pound of ordinary
Nova Scotia coal.



Manufacturers of

**The Robb-Armstrong
Automatic Engine,**

The Hercules Engine,

Saw Mill, Electric Machinery

BELTINGS,

PACKINGS, OILS, Etc.

Robb Engineering Co.

LIMITED,

Successors

A. ROBB & SONS

AMHERST, N.S.

HENRY NEW, Pres. J. H. NEW, Vice Pres. A. E. CARPENTER, Sec.-Treas.
TORONTO



THE HAMILTON AND TORONTO

SEWER PIPE CO'Y,

(LIMITED,)

HAMILTON, CANADA.

Successors to The Campbell Sewer Pipe Co. and The Hamilton Sewer Pipe Co.

—MANUFACTURERS OF—

Steam-Pressed, Salt-Glazed
VITRIFIED

SEWER PIPE

FLUE PIPES, CHIMNEY TOPS and SMOKE PREVENTIVES.

Established 1860.

Established 1872.

THE
Accident Insurance Co.
OF NORTH AMERICA.

NEW FEATURE:

Joint Insurance for Partnerships.

Important to Manufacturing Firms.

MEDLAND & JONES, Gen'l Agents,
Mail Building, TORONTO.

The Bell Telephone Co.
OF CANADA,

MANUFACTURERS AND DEALERS IN

Telegraph and Electrical Instruments,

Electro-Medical Apparatus, Fire Alarm Apparatus,
Electrical Gas Lighting Apparatus,
Magnets for Mills, Burglar Alarms,
Hotel and House Annunciators, Electric Call Bells, &c.

For further particulars apply to

No. 12 HOSPITAL ST., - MONTREAL.

A. ALLAN, PRESIDENT.

J. O. GRAVEL, SECRETARY-TREASURER.

F. SCHOLDS, MANAGING DIRECTOR.



The Canadian Rubber Co. Of Montreal
and Toronto.

CAPITAL = \$2,000,000

MANUFACTURERS OF

First Quality Rubber Boots and Shoes, Superior Quality Rubber Beltings,
including The Forsyth (Boston Belting Co.) Seamless Rubber Belting,

For which We are Sole Agents and Manufacturers in Canada.

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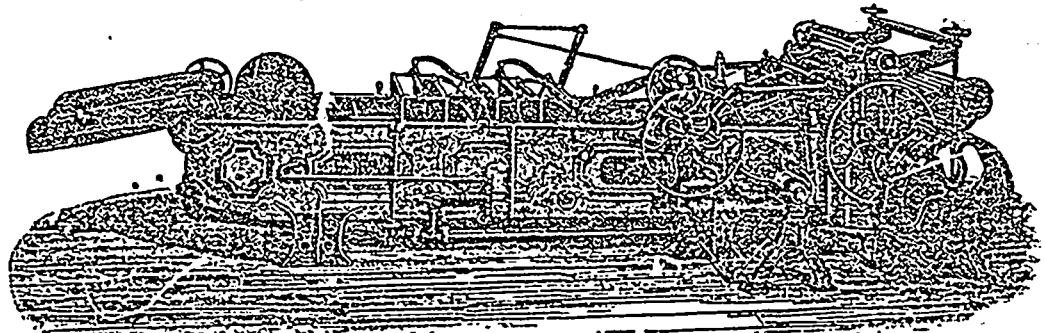
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A
Five
Years'
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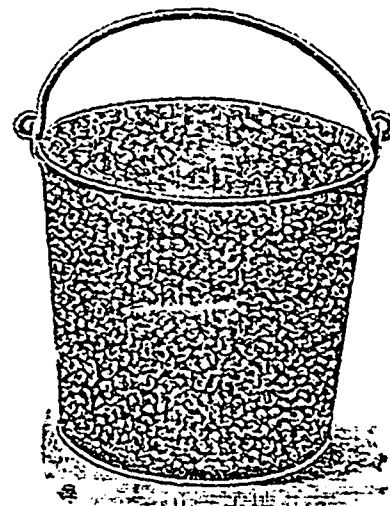
Income	\$207,486.49
Increase over previous year	\$36,069.06
Gross Assets	437,959.11
Increase over previous year	86,219.16
Insurance Reserve for the protection of Policy-holders	289,045.00
Increase over previous year	71,795.00
Surplus on Policy-holders account	135,307.63
New Business written in 1891	2,111,100.00
Insurance in force Dec. 31, 1891	7,414,761.00

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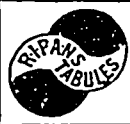
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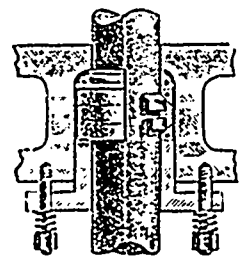
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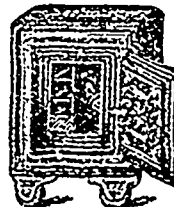
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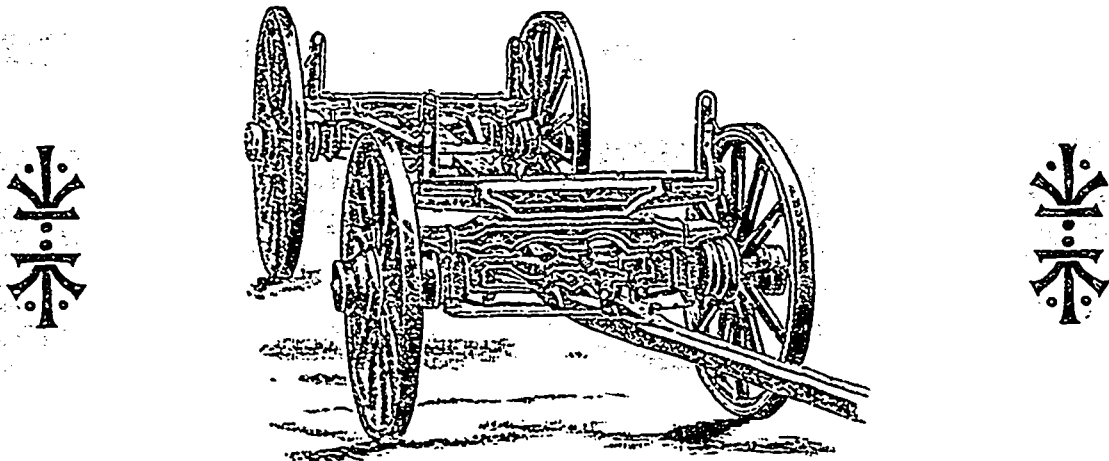
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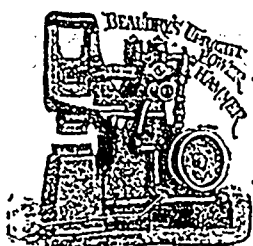
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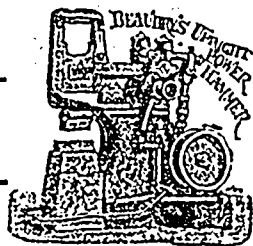
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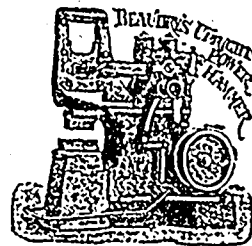
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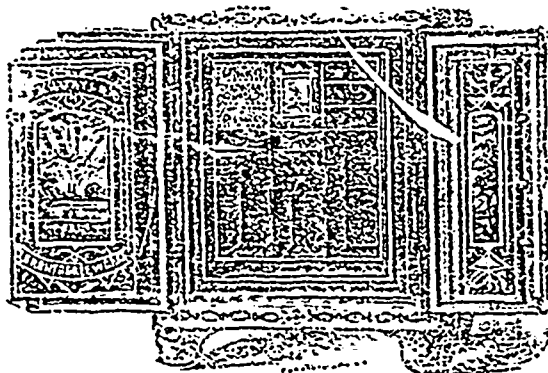


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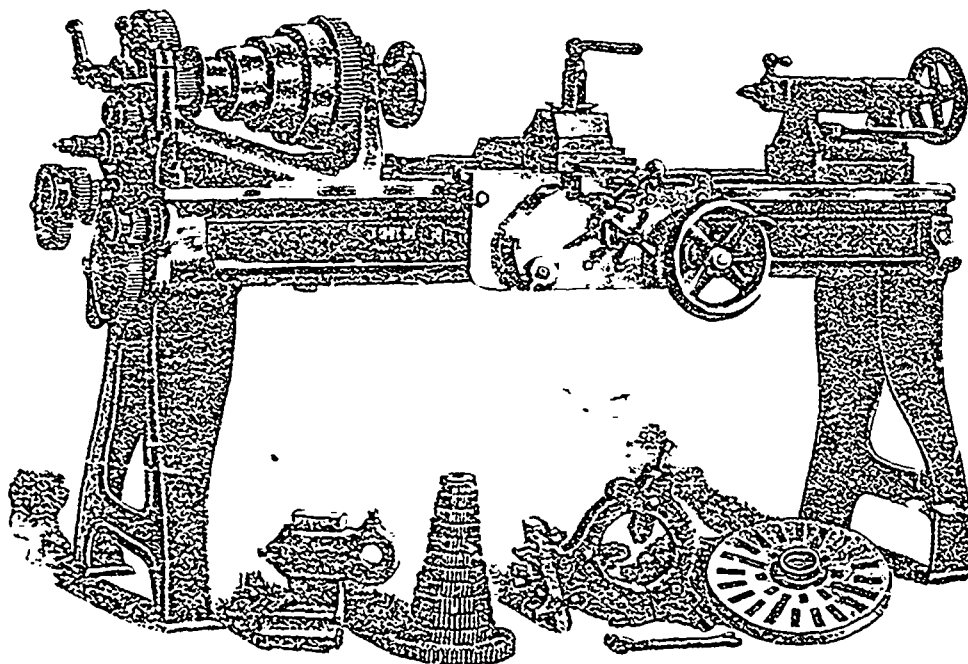
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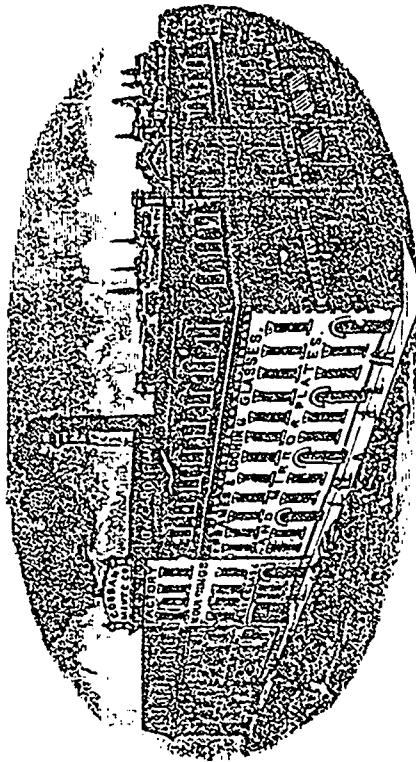
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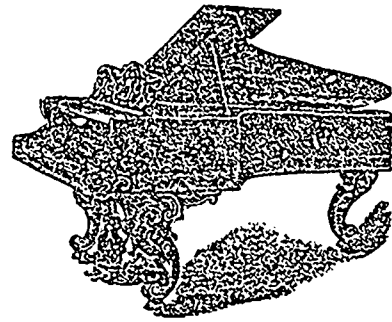
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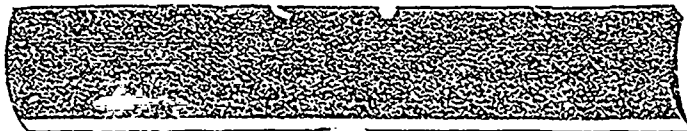
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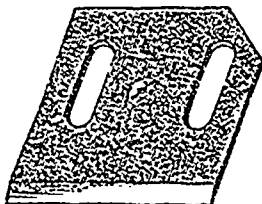
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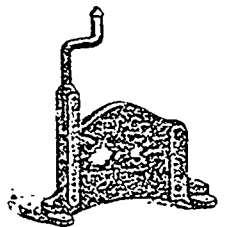
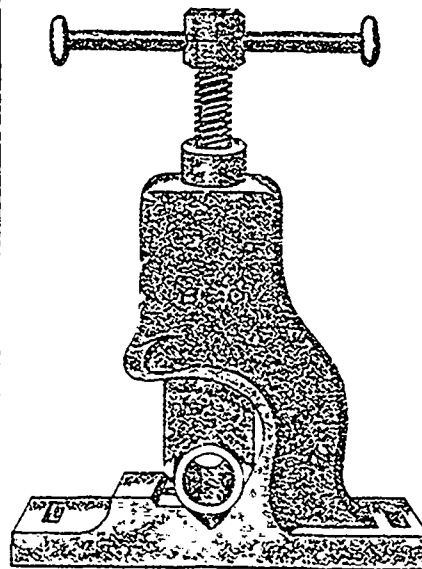


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