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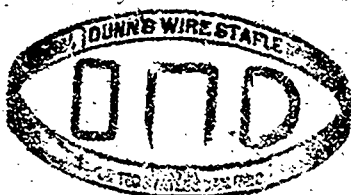
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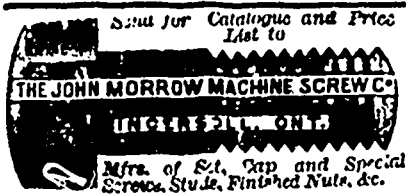
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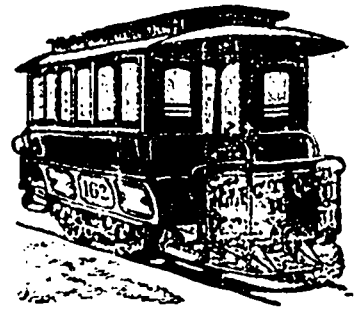
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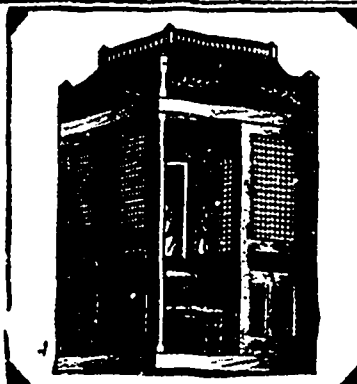
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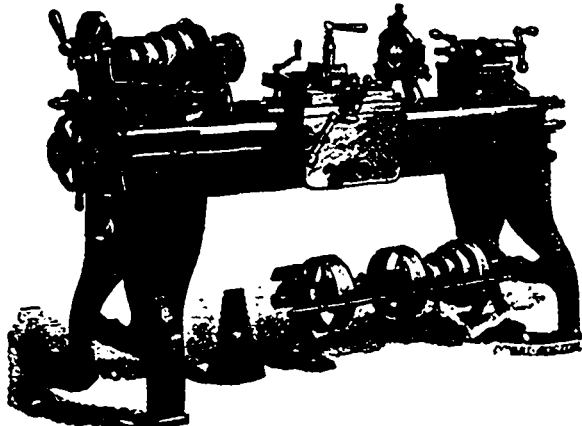
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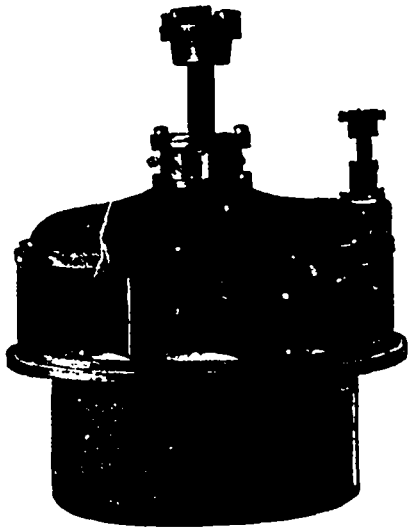
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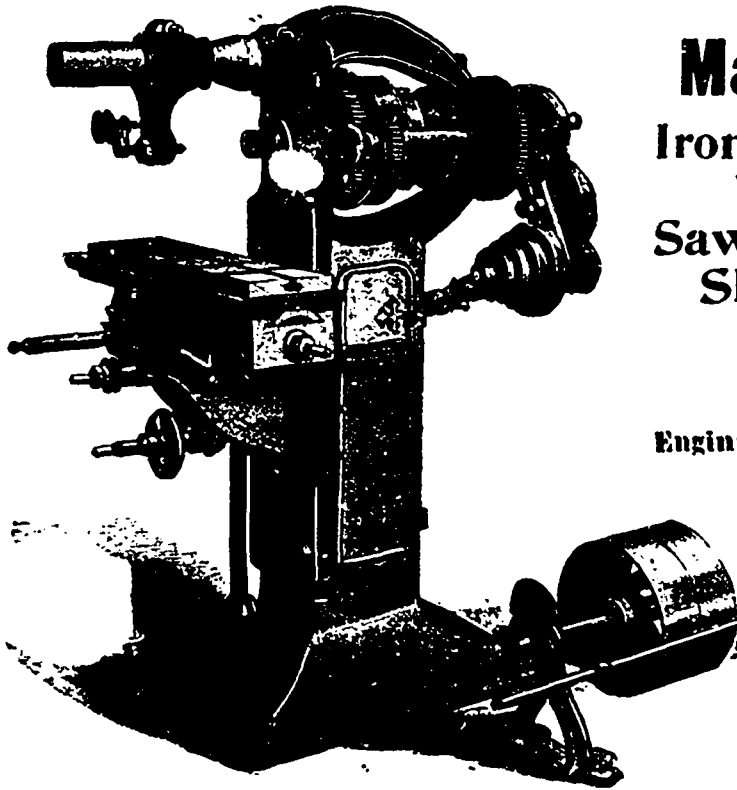
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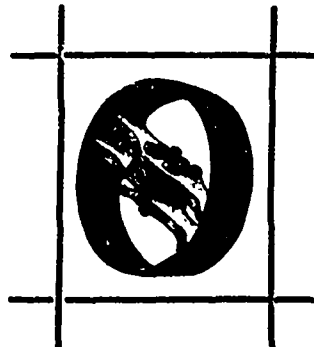
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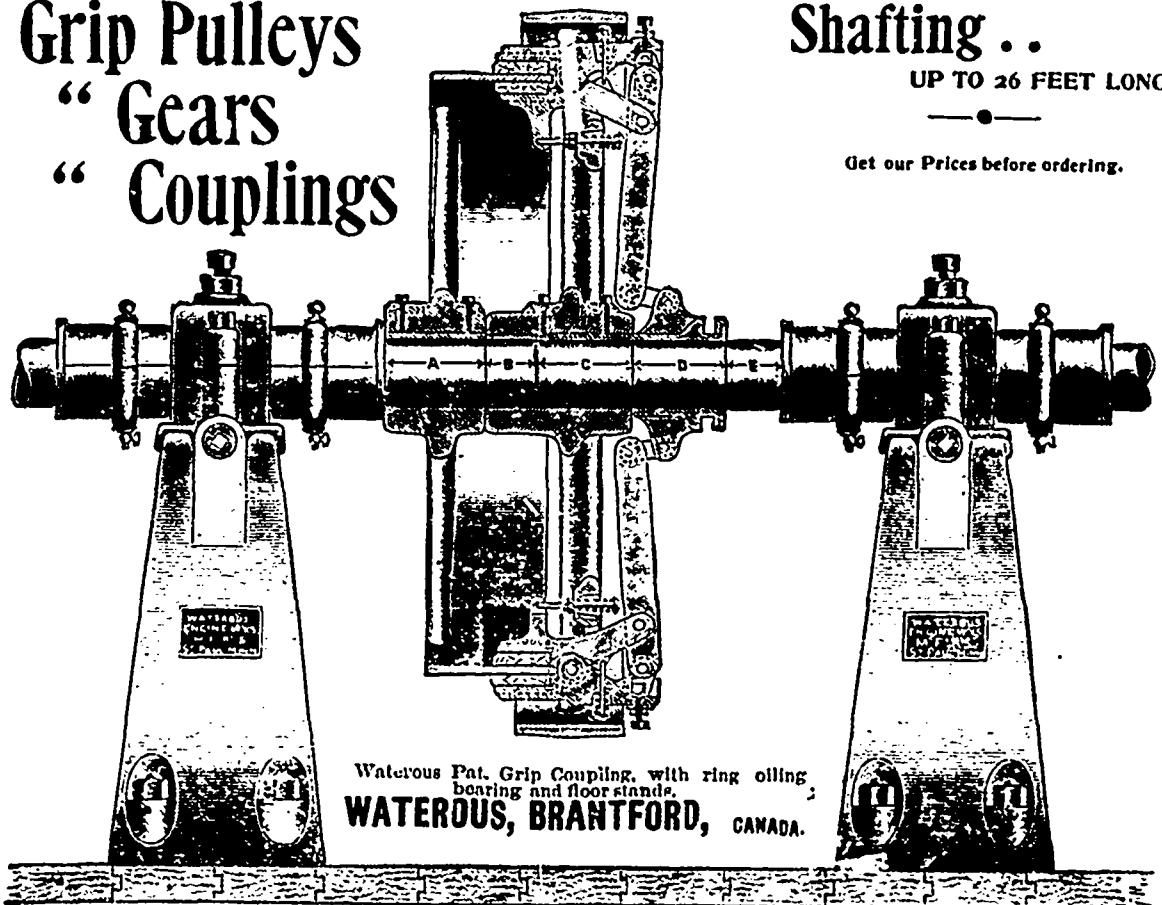
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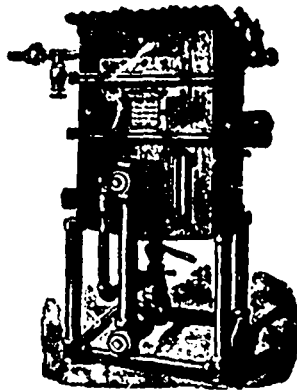
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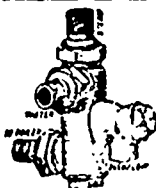
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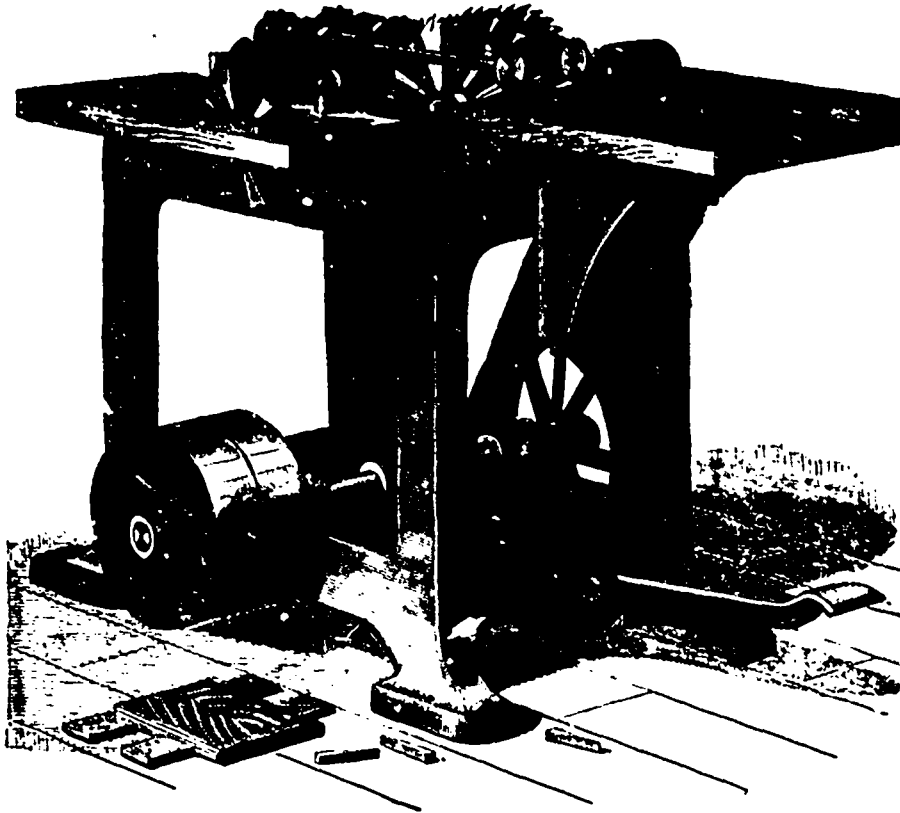
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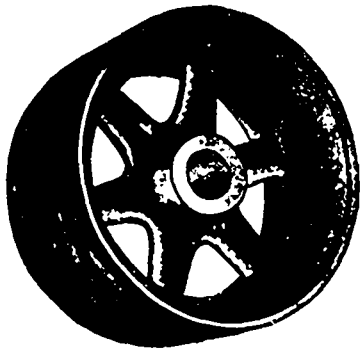
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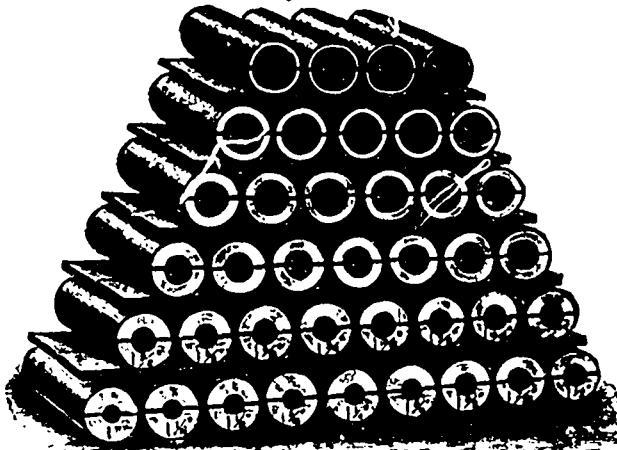
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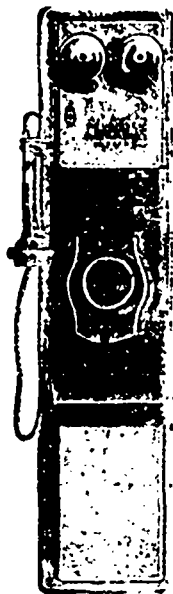
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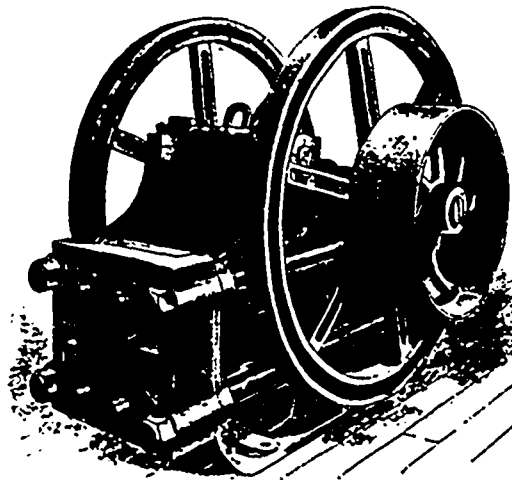
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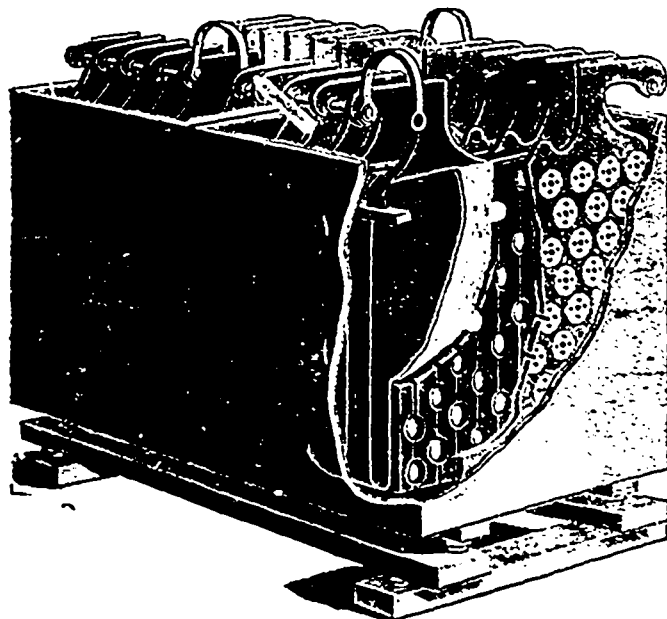
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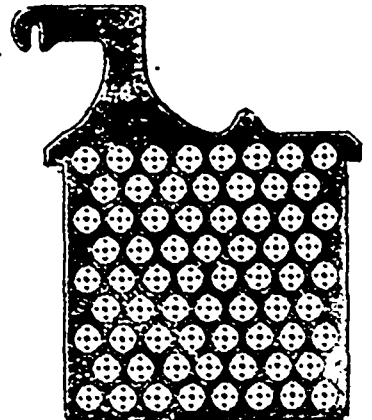
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CANADIAN FOREIGN COMMERCE.

The Trade and Navigation Returns for the fiscal year ending June 30, 1894, have just been issued; and from them it will be observed that the foreign commerce of the Dominion in the last fiscal year was remarkably well maintained under the circumstances of the depression of trade in the United States and the fall in prices. Exports were actually of greater value than in any previous year in the history of Confederation. In the aggregate, it is true, the figures indicate a slight decline, being \$117,524,949 as compared with \$118,564,352 in 1893, a reduction of less

than 1 per cent., but it is to be remembered that these totals include both coin and bullion exported, and shipments of American produce through Canadian ports. The real index to the condition of our export commerce is the amount of native produce sold abroad, and this is most satisfactory, the returns being as follows, exclusive of coin and foreign merchandise:—1894, \$ 52,322,390, and 1893, \$101,664,559. These figures are very significant. They conclusively establish the steady development of the resources of the Dominion, the firm foot-hold which our products have obtained in foreign markets, and the comparative immunity from the blighting effects of trade prostration the world over which the diversified character of our products has given us. In no year down to 1893 did the value of domestic exports reach a hundred million dollars. In 1879 it was only \$63,000,000, or not much more than one-half the value of products shipped last year, which fact, taken in connection with the enormous increase in the home market, conveys an idea of the steady development of production that has occurred under the present fiscal policy. Another gratifying feature of the export trade is the remarkable increase during recent years of our sales to Great Britain. The imposition of practically prohibitory duties by the McKinley tariff of the United States in 1890 appears to have given the first forcible impetus to our trade with Britain. Shut out from the American market to which they had long been accustomed to cater, our farmers set about adapting their productions to the British market, with the result that in 1894 we sold to that country to the value of \$68,538,800, or no less than \$30,000,000 more than in 1889, the year before the McKinley tariff came into operation. Nothing could possibly exemplify with greater emphasis the independence of Canada of American tariff coercion than this one fact. On the other hand, of course, we are selling less of our products to the United States. Ontario farmers ceased growing barley when a duty of 30 cents a bushel was imposed on the grain by our neighbors, and what between high duties and trade depression in the United States for the last two years, Canadian exports to that country have suffered a considerable curtailment, the figures being:—

	To Great Britain.	To U. S.
1890.....	\$48,353,600	\$40,522,800
1891.....	49,280,800	41,138,700
1892.....	64,906,500	38,588,000
1893.....	64,080,500	43,923,000
1894.....	68,538,800	35,809,500

Figures like these effectually dispose of the pretence that the American market is the natural Mecca of Canadian merchandise, and expose the folly and fallacy of the policy of unrestricted reciprocity with the United States to which the Liberal party has been so anxious to commit the country. Apart from the two great markets already referred to, Canada sent abroad last year about \$13,000,000 worth of produce. To the West Indies we sent to the value of \$3,443,761, an increase of \$300,000; to Newfoundland \$2,818,592, an increase of \$224,000; to Germany \$2,046,052, an increase of no less than \$1,296,000; to South America \$1,392,285, an increase of \$65,000; to Belgium \$708,455, an increase of \$39,000; and to France \$544,986, an increase of \$280,000. Our export trade with

all countries, save only the United States, was larger in 1894 than in the preceding year, an event which proves a protective tariff to be anything but a hindrance to foreign commerce.

Turning to the import trade an appreciable decline is shown to have occurred in the last fiscal year, due partly to the fall in prices and partly to the cautious buying of importers in view of the quiet condition of business. The value of goods entered for consumption in 1894 was \$113,093,983, as compared with \$121,705,030 in 1893, a decline of \$8,600,000, or about 7 per cent. Yet, the figures are still relatively larger, having been exceeded in only three years since 1875, a further evidence that Canada has not been seriously scotched by the almost universal stagnation of commerce. Imports from Great Britain and the United States fell off in value about ten million dollars, those from the former country diminishing from \$43,148,000 to \$38,717,000, and from the latter receding from \$58,222,000 to \$53,034,000. Imports from the West Indies also fell off considerably, having a value of \$4,244,600 in 1893, and of \$3,677,400 in 1894, the reduction being caused principally by the fall in the price of sugar. The only country from which imports increased to any extent was Germany, the figures rising from \$3,825,700 in 1893, to \$5,841,500 last year. The balance of trade with Great Britain is largely in favor of the Dominion, while in our commercial intercourse with the United States the balance is an adverse one. The character of importation from the two countries, however, is essentially different, manufactured articles chiefly being bought from Great Britain, and raw materials from the United States. In this connection it may be observed that the excess of imports over exports in 1894 was only 4.8 per cent., the lowest rate in the history of Canada except only in the years 1870 and 1880, in the latter of which there was a small excess of exports over imports.

The value of the principal classes of exports in the last two years has been:—

Produce of	1893	1894
The mines.....	\$ 5,625,526	\$ 6,055,894
The fisheries.....	8,941,357	11,412,281
The forest.....	27,632,791	26,504,756
Animals.....	32,775,879	33,046,467
Agriculture.....	27,093,195	26,757,346
Manufactures.....	8,487,271	8,336,312

By far the most important single article of export is cheese, of which the immense quantity of 163,673,885 pounds were exported in 1894, having a value of \$16,267,309.

THE BONUSING SYSTEM.

As there are those in this city who imagine that its prosperity is to be ensured if we will only give bonuses enough to those who wish to locate with us, either in the way of remission of taxation or actual money payments, it may be well to remind them that something is due to those who have borne the burden and heat of the day, and that manufacturers who have been here for years paying taxes are just as much to be thought of as newcomers. It is of course always possible to do business if the seller is prepared to go to the utmost in offering inducements to customers. Even a small amount of commercial talent can effect sales if a sufficient sacrifice be made. It is doubtful,

however, if such a method is for the ultimate benefit of those who adopt it. The plea of those who want to locate newcomers here at any cost is that we cannot expect them to come unless inducements are offered. The policy has been sufficiently illustrated in Ontario. Again and again it has been necessary for the Legislature to do something to check the evil. There have been peripatetic industries the proprietors of which looked out for a good bonus, started their mills, worked up their subsidy, and then looked out for "fresh fields and pastures new." If the natural and commercial advantages of a place are not sufficient to attract manufacturing enterprises, it had better wait till they are. It is no use trying to grow the plant of commerce by the aid of the expensive manure of subsidies. The tendency of these things is to waste the substance of the town in uncertain speculations. —The Mail and Empire.

It is well enough to talk about "natural and commercial advantages" and likewise to denounce the bonusing system, but as far as Toronto is concerned it can never be considered in the race for greatness as a manufacturing centre until there has been an entire revision of the existing system of taxation. It would be quite as easy for a man to lift himself over a fence by his boot straps as for Toronto to attain to manufacturing greatness while pursuing a course which is entirely antagonistic to such success. We quite agree with our contemporary in discouraging bonusing, for the system has a flavor about it that suggests that the beneficiary of it is impecunious, and that he desires advantages granted to him that are not extended to others. For this reason we think bonusing is not only unfair to concerns established without the aid of bonuses, but demoralizing to those who accept such aid. Usually the inducements asked and accepted by bonus-hunters include exemptions from taxation for a term of years. In Toronto this exemption generally includes the plant and machinery of the factory, and sometimes, perhaps, the land upon which the factory stands. Of course, every such exemption means increased taxation upon other taxable land, and so the newcoming stranger is favored at the expense of the old residents. The argument is that the increase of population incident to the establishment of a new industry will more than compensate for whatever it may cost to locate it. As a general thing, owing to fierce competition, a manufacturing concern, perhaps long established, finds the margin of profit between the cost of production and the selling price of the product very narrow indeed, this narrowness owing in a great degree to the taxes imposed upon the plant. How, then, can he hope to compete with the newcomer who is exempt from the payment of such taxes?

It is noticeable that when it is known that a peripatetic manufacturer casts his eye in the direction of a bonus-offering community, such as Toronto, the owners of vacant lots are the most anxious of any to give a factory site, perhaps free of charge or at a merely nominal price, and to obtain exemption from taxation for him. Of course this has the appearance of being exceedingly patriotic, generous and public spirited; and much care is taken to publish the fact. But there is usually a string attached to the business, not intended to be visible to the careless eye, but which means a large advance in value of neighboring vacant lots upon which other factories may be erected, and residences for workmen built. Of course it is a good

investment for the land owner to give away a factory site if thereby his other lots are increased in value.

One of the greatest curses under which Toronto labors is the system by which large areas of vacant lands are assessed for taxation at ridiculously low values. If an enterprising person purchases one of these lots, and erects thereon a comfortable home, he is immediately punished therefore by having to pay much higher taxes than were paid upon the same lot before the building was erected. The presence of the building, however, increases the value of the neighboring vacant lands; and so the landlord fattens upon the increment of wealth to which he contributes not one cent.

If Toronto desires to become a manufacturing centre this pernicious system must undergo a radical change. Manufacturers are not paupers; they should supplicate special favors not extended to the general public. What they desire, however, is that there should be no favored class in the community. They do not desire to be punished for having invested their capital here; and they do not want to see landlords and land sharks fatten upon them. Let all vacant lands and unoccupied premises pay as much in the way of taxes as factories, workingmen's cottages and more pretentious residences. Then capital will flow in and factories spring up according to the natural and commercial advantages spoken of by the *Mail and Empire*. But until this is done bonuses will not avail to make Toronto any more of a manufacturing centre than it now is.

WAR SHIPS ON THE GREAT LAKES.

Our esteemed British lion tail twister contemporary, the *Cleveland Marine Record*, with a burning desire to advance the interest of the ship building industry on the American side of the Great Lakes, finds that the existing treaty between Great Britain and the United States but a slight obstacle that can be brushed away by the movement of the hand. It remarks that a great injustice is being worked upon a large portion of the population of that country by what it calls the nonsensical embargo due to some almost pre-diluvian treaty placed upon the building of naval vessels at lake shipyards; or at least the treaty stipulations standing in the way can only be regarded as such. An easy way to get around the treaty stipulation, our contemporary thinks, is to revise the situation by an international commission organized for that purpose, or committed to the consideration of a commission to be organized to settle the Behring Sea seizures question now pending. If the object can be effected in that way, well and good—if not, then in some other way. To show the neighborly, kind and conciliating spirit in which it discusses the question we quote from it as follows:—

War with Great Britain is impossible from any standpoint. Her star is on the wane, and the next clip she may get from a first-class power will undoubtedly place her hors-de-combat, as the French would say. The "mistress of the seas," etc., dare not at her peril court even a diplomatic embroglio with this great nation, then why should we hold to an ancient and defunct misunderstanding in prohibiting our citizens from competing for national contracts involving the workmanship of at least fifty of the most skilled industries extant?

The open course to pursue is to give notice of the abrogation of the terms of a treaty which ought no longer to be enforced, and the justice in doing so rests in the clause that such treaty stipulations may be closed after due notice has been given by either of the principals to the original agreement.

The only equitable course, then, for the United States to pursue is to grant permission to the immense and valuable lake shipbuilding industry to compete for all government contracts which the waterway to the coast is adequate to accommodate, even if it is, as we now must perforce acknowledge, a waterway through British territory.

The waning of Britain's star is not visible at this time; and the idea is laughable that the United States is a first-class power on the water, or at all likely to place her hors-de-combat. The inference is, judging from what the *Marine Review* says, that because the United States is a first-class power, and Britain is not, therefore whether Britain is willing thereto or not, the old treaty arrangement must be abrogated.

But how are American war vessels built on the lakes to find their way to the ocean except through British territory? Is it proposed to take them through British territory against the consent of British authority? It would not be a neighborly act to attempt to do so, and our contemporary evidently sees difficulties in the way when it suggests that there might be a modification of the treaty even if it goes only so far as to permit American war vessels not intended for lake use to pass through Canadian canals and waterways.

Another Cleveland journal, the *Marine Review*, recently published a letter from Senator McMillan, of Michigan, in which he discussed this question, and in which he expressed the desire that the existing treaty might be so modified that American lake-built ships might be allowed to pass through Canadian waters to the ocean. "It occurs to me," he says, "that even should such vessels be built in the lake shipyards for use on the ocean, the question of getting them to tide water would still remain. This could be accomplished only through the Canadian canals, and you will remember that during the Canadian rebellion the United States compelled the Dominion Government to land its troops and munitions of war on Canadian territory and transport them around the rapids of the St. Mary's river, thus forbidding the use of American canals for military purposes on the part of the Dominion."

The unfriendly act to which Senator McMillan alludes was where a disorderly element in the Canadian North-West was in rebellion against the established government. War was not being waged against another country, the demonstration being to suppress turbulence and to maintain peace; and the refusal of the United States Government to allow Canadian vessels carrying arms and ammunition to pass through their St. Mary's canal was in the hope that the rebellion would result in the disruption of the Dominion. It was an exhibition of meanness and unfriendliness that Canada should not soon forget.

Our tail-twisting neighbors may give notice of their desire to abrogate the treaty to the end that they may build war vessels on the lakes, but their doing so will not secure to them the free passage of such vessels to the ocean. Canada commands the situation.

THE MANUFACTURE OF IRON IN ONTARIO.

Kingston is in a fair way to have a large iron and steel industry. The offer of a company of capitalists from Youngstown, an iron centre in Ohio, to construct and operate a blast furnace, steel plant, blooming mill, and rolling mill, has been accepted by the City Council, subject to the satisfactory settlement of preliminaries and to the citizens' approval of the necessary by-law. The works are to cost \$600,000. The daily capacity of the blast furnace is to be 285,000 pounds of pig iron, that of the steel plant 80,000 pounds of steel blooms, that of the blooming or billet mill 80,000 pounds of steel billet, and that of the rolling mill 80,000 pounds of steel or iron bars. This amount of product is expected to require the labour of from 300 to 500 hands at the works. Kingston is to provide funds to the extent of \$250,000, secured by a first mortgage on plant and stock, and none of the money is to be paid until all the material is on the ground for the erection of the furnace, and then only one-fifth. Until its loan is repaid the municipality is to take all Government bounties earned on pig iron, steel billets, and bars, which are expected to amount to \$100,000 a year. A joint committee of the City Council and Board of Trade made a report in favor of the proposal, and recommended that the company be required to furnish information satisfactory to engineering and financial experts appointed by the city, a report which the City Council adopted. This plan for the establishment of an iron industry at Kingston, says the Mail and Empire, seems business-like, practicable, and promising, and seems to have reputable, responsible men at the back of it, as they are able to refer to R. G. Dun and Company in proof of their financial standing. Kingston ought to be the making of a fine iron centre. On the eastern end of Lake Ontario, and within easy reach of and in full connection with the iron ore of Peterborough, Hastings, and Frontenac, it is conveniently situated for the assembling of its materials and the distributing of its products. Miners, railroads, and farmers outside the city will be benefited as well as the citizens, and the works may be the nucleus of a system of industries that manufacture iron and steel into such finished products as tools, machinery, engines, etc. We wish Kingston no worse. But if it gets the new works it will have the Government bounties to thank for them. It is to these bounties, it will be noticed, the syndicate looks for the liquidation of the loan it asks from the city. The Dominion bounties on pig iron, puddled bar, and crud steel are to be continued five years from the time at which the manufacturing of them is begun, provided that industry is started within the five years following the last revision of the tariff. If enough product is made to realize \$100,000 a year from these bounties, Kingston will soon get back its advance of \$250,000. The Dominion, however, is not the only source of bounties. Ontario also pays a bounty of \$1 a ton on pig iron, but the amount paid out for this purpose is not to exceed \$25,000 a year, and, of course, the Kingston company could get only part of it, as the iron works now going up in Hamilton will soon be earning a portion of it. With negotiations at their present stage at Kingston, and with the progress of construction so far advanced in

Hamilton, it looks as if Ontario wood soon be a producer of iron. And if we once begin to make the iron we will not stop until we have manufactures to work up the product into all its merchantable forms. The launching out into iron making shows that the spell of the depression is broken, and marks the resumption of confidence. The National Policy is developing the iron industry in its good time. It is now attracting capital and enterprise from the United States. A few years ago there were people hardy enough to say that one furnace could produce all the iron we could use in Canada. They therefore objected to iron making being protected. Since then there have been manifold applications of the use of iron, increasing cheapness being one of the causes of their multiplication. In a paper read before the Canadian Institute, Mr. W. H. Merritt showed that we consumed here the product of 27 or 28 blast furnaces. We therefore need that number of furnaces here, and if the National Policy is continued we are pretty certain to get them. Now that the world is beginning to recover from the depression and men take heart, Liberals should stop talking about free trade, for that simply repels confidence. The men who have the courage to go on with their enterprises are sustained by their faith in the common sense of the Canadian people, who are not supposed to be so foolish as to let into power a party committed to free trade.

THE DOOM OF THE BOOM.

The decline of large cities, wherever it has occurred, has always attracted attention, but less heed is paid to the decay of small towns and villages. Mr. H. J. Fletcher, in The Forum, discusses this matter in a very attractive and interesting manner, attributing much of the hard luck of Western towns to railway discrimination in favor of large cities. This may be so to a certain extent, but it should be remembered that city life has great attractions for young people, by which they are drawn away from their rural homes; another and potent cause being that manufacturing enterprises naturally gravitate towards the larger towns and cities where greater facilities for conducting business exist, and where greater economies may be practised.

One by one, family by family, says Mr. Fletcher, the inhabitants of these small towns and villages slip away in search of other homes; a steady but hardly perceptible emigration takes away the young, the hopeful, the ambitious. There remain behind the superannuated, the feeble, the dull, the stagnant rich who will risk nothing, the ne'er-do-wells who have nothing to risk. Enough workers remain to till the soil, to manage the distribution of food and clothing, and to transact the common business of life; but the world's real work is done elsewhere.

Such a silent tragedy is enacted to-day in a multitude of small communities scattered throughout the North-Central States. All these small communities had their period of active growth; many of them, indeed, grew too fast; some dried up and perished. Their people look back sorrowfully to the time when the railroads were built, when the mills were grinding, when town property was worth more than its cost. That happy period was from ten to thirty years ago; the general decline of the small municipi-

palties of the West became most noticeable during the decade from 1880 to 1890. The facts that had been obvious to every one familiar with this region were then tabulated in the census reports.

The States of Ohio, Indiana, Illinois, and Iowa may be selected as representing the richest and best-watered region in the United States. Area for area they probably surpass any other part of the United States in varied general productiveness. In the breeding of horses Illinois is first among the States and Iowa second; in number of cattle Iowa is second and Illinois is third (the first being Texas); in the value of live-stock Iowa is first, Illinois is second; in the number of swine Iowa is first, Illinois is second; in the production of corn Iowa is first, Illinois is second; in the production of wheat Illinois is second, Indiana is third, Ohio is fourth. These States are served by many railroads; indeed, Illinois had the greatest railroad mileage of all the States in the census year and Kansas the next greatest; Iowa came third, though these relations have since changed. Indeed it may be asked whether these States have not an embarrassment of this kind of riches when it is considered that Iowa, with less than two millions of people, has more miles of railroad than New York, with six millions. Yet in these rich States, empires in themselves, and in the finest counties of each, forces are at work to check the growth and stifle the vitality of nearly half their townships.

A map of these States, showing the counties darkened in which the greatest depopulation has occurred, would be blackest in the eastern half of Iowa; in all the northern and western parts of Illinois; in northern, south-eastern, and Central Indiana; and southern Michigan and the southern half of Ohio would be very black indeed. Many counties show an aggregate gain, although nearly every township in these counties, except those containing the chief towns, sustained a loss. In some cases, though a majority of the townships show a slight increase, the falling off in others has been so large as to throw the whole country into the retrograde column. This shrinkage is seen in sharp contrast when it is remembered that during the same period every one of these States gained during this decade very largely in population, the increase in Ohio being 474,000, or nearly 15 per cent.; in Indiana, 214,000, or 10.8 per cent.; in Illinois, 748,000, or 24.3 per cent.; in Iowa, 287,000, or 17.6 per cent.

In Michigan the population of at least half the townships in every county in the four southern tiers, excepting Allegan, is either stationary or declining rapidly; and many of those counties do not contain more than three or four townships that have increased their population by a single soul in ten years. This broad belt of excellent fruit and farming land, with the northern tier in Indiana, which is in the same course of gradual depopulation, is gridironed with trunk-line railroads. A similar area stretches between Chicago and Cincinnati and between Chicago and St. Louis. Indeed of Illinois it may be said that the entire State north and west of a line from Chicago to St. Louis is undergoing a rapid transformation; for its rural population is drawn into the larger cities and to other States and its business industries are moving away or declining. Five great railroads cross Iowa from west to

east, all passing through northern Illinois to Chicago. At least half the townships in almost every county in the eastern half of Iowa, and in many counties almost all the townships, show a decided loss of population.

Many of the older States of the East and South show the same tendencies, probably in less degree; but these North-Central States, by reason of their natural advantages, offer a more striking illustration of the remarkable influences now at work. The rich strip of counties in Iowa, lying along the Mississippi, show utter stagnation during the last decade, 1880 to 1890. These counties have each from fifteen to twenty townships; and each contains one or more towns of sufficient size to have been the beneficiary of the shifting of population. Beginning at the northern boundary of the State, the number of townships in each county that have positively declined during a period of general improvement throughout the country is one hundred and thirty-four. On the other side of the river, in Illinois, in one hundred and seventy-four townships, stretching in an unbroken line along the river from Wisconsin to St. Louis, the same state of things exists. The great waterway from north to south has not in the least checked the tendency to depopulation. East and west, along the great railroad lines, the decline is equally manifest. The counties along the line of the Chicago, Rock Island, and Pacific Railroad from Des Moines to Chicago show two hundred and six retrograde townships; and on east from Chicago to Detroit, along the Michigan Central, one hundred and twenty-five townships are in a like condition. On these two lines of railroad, therefore, stretching from Des Moines to Detroit, a distance of more than five hundred miles, all the small communities, excepting those immediately adjacent to Chicago, have steadily declined in population. Many which are classed as "increasing" show a growth of from only ten to fifty persons in ten years, which, in view of the rapid growth of the cities, might fairly be deemed decline.

The chief productive industries in small Western communities have been the manufacture of agricultural implements, of brick and tile, cooperage, grist mills and flouring mills, foundries and machine shops, saw-mills and mills whose products are made from logs and bolts, the making of furniture, wagons and carriages. Twenty years ago all these trades flourished in almost every village of a thousand or more people. I have been familiar from childhood with one such town where the following branches of manufacture were once in active and profitable operation: 4 flouring and grist mills, 3 saw mills, 5 wagon and carriage shops, 3 woollen mills, 3 furniture and cabinet shops, 1 foundry and machine shop, 2 cooper shops, besides many smaller industries. All the flour mills are silent to-day, though two new ones have sprung up in their places, operated by steam instead of water-power; all the saw-mills are gone; all the wagon and carriage shops are deserted or at best do a little repairing; two of the woollen mills belong to the past and the remaining one does a small business; and cabinet-making is hardly any more a recognized trade. One by one these little centres of industrial activity succumbed to the inevitable; every one of them tells a sad story of heroic struggle with conditions which they but dimly understood and were power-

less to resist. Yet this region is a portion of the State of Iowa where crops never fail and where nature has done everything to encourage a prosperous population.

Unless present tendencies be arrested the future of the small towns is extremely discouraging; and it is very doubtful whether any material change in existing conditions will soon occur. The superior economies of the factory system of manufacture will doubtless continue to operate unfavorably to small industries. One of these economies is the cheap rates of transportation given to large producers and to great competitive centres. The grand march of improvement which is creating many splendid cities will go on unchecked, but for these the villages will be only feeders. These tendencies have long been noticed; indeed, it would have been impossible to travel extensively throughout the West and Northwest without being struck on every hand by the evidences of arrested development in nearly every hamlet. It is not believed that any check in these tendencies was noticeable prior to the panic of 1893.

BRITAIN UNDER FREE TRADE.

On a recent occasion at Sarnia, Ont., Dr. Beattie Nesbitt, of Toronto, made an address in which he discussed the value of the National Policy to all classes of Canadians. Alluding to the desire of Mr. Laurier that Canada should adopt free trade such as they have in Great Britain, he said:—How do they propose to establish it here? Well, Mr. Laurier told us, after the manner of Peel—a little at a time. I am not a free trader. I do not profess to be able to entertain you with beautiful words; to hypnotise you with fine spun theories. I do not understand how to talk fairly to you about the exigencies of commerce; the interdependence of continental exchange, and at the same time rob you of your market and take the bread from the mouth of your son who works in the factory. I am nothing but a plain protectionist. I tell you that I want to see you buy your plough from a Canadian, and I want to see a Canadian get your money. Then when the plough is worn out some of us will have the money. But if you buy your plough from a Yankee he gets your money, and when the plough is worn out neither you nor I have anything. This doctrine may not be orthodox to our Reform friends, but it is the same that Adam Smith, the founder of political economy, taught in his "Wealth of Nations," where he says:—"Whatever tends to diminish in any country the number of artificers and manufacturers tends to diminish the home market—the most important of all markets—for the rude produce of the soil, and thereby to still further discourage agriculture." But Adam Smith was not writing of the present day. He had no opportunity of examining into the condition of the farmers under free trade as they have it in England to-day, and that there are those who differ widely from him as to the manner in which free trade will affect the farmers is seen by the words of Mr. William Mulock, M.P., in his speech to the electors of North York, where he says that "if they will send him to Ottawa they will help to capture the protectionists' citadel, and they will have no more of abandoned farms, but a wave of prosperity will sweep over the country." Mr. Wilfrid Laurier is also full of enthusiasm over the good times coming for the farmer if their policy is adopted. Our Reform

friends say that the farmer is suffering from the lack of population; that if we had free trade it would be cheaper to live here, and we would have a great influx of immigration. England produces actually less food with thirty-five millions of a population than she did when she had seventeen millions of a population. Further than this, her importance as an agricultural nation has been continually on the decline. In 1867 her wheat area was four million acres; in 1887 two millions. In 1868 England produced one hundred and twenty-eight million bushels of wheat, and imported sixty-one and a half millions. In 1888, after twenty years of agricultural prosperity under free trade, she produced only sixty-six and a half million bushels, not half what she raised twenty years before; and she imported one hundred and thirty-two million bushels, more than double what she imported twenty years before. Thirty years ago the English farmer sold two-thirds of the wheat consumed. Twenty years of free trade and the shoe is on the other foot. The English farmer sold only one-third of the wheat eaten by his own people. The peon in Argentine, the serf in Russia, and the countless millions of down-trodden humanity in India, sold the other two-thirds. So much has free trade done for the English agricultural laborer that Mr. William Ewart Gladstone said to President Garfield that he never knew an agricultural laborer to rise out of the condition in which he was born.

EDITORIAL NOTES.

The year 1894 may, we think, be fairly looked upon as the commencement of the period which will witness a great expansion in the mining industry in British Columbia, says Vancouver News Advertiser. Although it has been to a great extent a period of preliminary work, of exploitation and prospecting of the vast treasures of gold and silver which are now known to be hidden in various districts of the Province, the actual production of the precious metals has reached a very considerable total. We hope in the course of a short time to furnish authentic reports of the actual production of gold and silver during 1894. Meanwhile, it is satisfactory to observe that the shipments of gold dust and bullion through the ordinary banking and express channels show an increase over those of 1893; that they were of a larger amount than in any year since 1890, and that the year 1894 is the only one that has shown an increase over that of its predecessors since 1881. The tide has evidently turned and, without taking a too sanguine a view of the prospects, there is good reason to believe that the present year will witness an extraordinary increase in the value of the gold dust bullion, base bullion and gold and silver ores and concentrates exported from British Columbia.

Mr. E. Coatsworth, M.P., of Toronto, has presented a bill in the Dominion Parliament which will be of special interest to organized labor. He proposes to ask Parliament to enact that whenever any association or union of workmen has heretofore adopted or shall hereafter adopt or use any label, trademark, term, design, device, or form of advertisement for the purpose of distinguishing its products, it shall be unlawful to counterfeit such distinguishing mark, to sell or offer to sell goods bearing the

mark. He proposes to bring union labor under the term trade descriptions in the criminal code. Those who have adopted must, to obtain protection, register within six months, with the Minister of Agriculture, paying a fee of one dollar, and in return the department shall furnish certificates of registration. Any one who counterfeits a label is to be punishable, on summary conviction, by a fine of not less than \$300 and not more than \$500, or by imprisonment for not less than one year or more than five years, or by both fine and imprisonment.

Comparing the electric with the steam locomotive as mechanisms, pure and simple, there is a wide difference between them as regards simplicity. On the one hand we have an aggregation consisting of boilers, pumps, cylinders, valves, piston and connecting rods, with reciprocating motions, while on the other hand, the electric locomotive has but a single moving part, the armature, having a rotary motion. It follows that the cost of repairs for a simple mechanism like the electric locomotive would be far below that of the steam locomotive, in proof of which we need only cite the statement of Mr. Alexander Siemens, President of the English Institution of Electrical Engineers, that the electric locomotives operating in the London Underground Railroad ran 60,000 miles without costing a cent for repairs.—Joseph Wetzler, in the *May Scribner*.

The National Policy of earlier times, which was to keep us all from buying things and spread prosperity and abundance among us in that way, is never heard of now. There is an occasional wail for leniency in dealing with something which will make our manufacturers able to give us fair bargains 400 years hence.—*The Globe*.

The *Globe* don't seem to comprehend the environments. Never in the earlier times or at any time did the National Policy keep any one from buying things. Every possible comfort and necessary of life required by the people has been produced at home, the luxuries for the use of the rich, not produced here, and which the common people could do without, being taxed. The idea of protection has not been lost to view, but is as prominently before the people, and in as much favor as ever. There is no waiting for leniency either. The *Globe* may sneer at the manufacturers to its full content, but they are giving consumers fair bargains for their money. With parrot-like persistency *The Globe* enquires if the National Policy has made the people rich, meaning thereby that it has enriched the manufacturers at the expense of the people. Will it kindly mention the names of any industries the proprietors of which have been made rich by the National Policy.

The recent visit of the members of Minnesota's legislature to the iron mines on the Mesabi and Vermilion ranges, and the various iron bills introduced in that body, reflect the quickened interest of the State in the iron industry, in view of the magnitude of the Mesabi deposits. One of these bills provides for bonuses to blast furnaces established in Minnesota for the reduction of native ores, these subsidies to be paid out of royalties to the State from its iron lands. Another appropriates money to establish a State plant for experimenting with electric smelting. A third rebates 25 cents a ton of State royalty on ore reduced with-

in the State. The object of all these propositions is to enlarge Minnesota's iron industry and to make that State more than a purveyor of iron ore. It is the same spirit that has inspired the efforts of the South to establish steel plants, rolling mills, foundries and hardware manufacturing plants within its borders so that it may not be compelled always to send the bulk of its pig iron hundreds of miles to the North, there to meet ship competition that reduces the profits of its blast furnaces to the minimum, if it does not altogether wipe them out. *Cleveland Iron Trade Review*.

A Canadian contemporary says that the best evidence of how American pig iron has captured the Eastern Canadian market in the last year is seen in the absolute lack of business in Scotch pig iron in Montreal this spring. Of course our pig iron makers are extending their market, but it must be remembered that the abnormally low price of pig iron on this side, has been the main cause of so much going to Canada. *American Manufacturer*.

It is announced that the State Department at Washington is preparing an "International Catalog of Exports and Imports" designed to aid commerce between the United States and the Latin-American countries, and will be a uniform system of nomenclature of articles of merchandise. The terms will be published in English, Spanish and Portuguese.

One of the earliest results of the extension of the railways that use electricity for motive power seems likely to be permanent reduction of the rates of transportation for suburban service. In many places the trolley lines are already competing with the steam roads for the daily movement of passengers to places of business in the city from homes in the rural districts. They offer low fares, warm and comfortable cars, fairly swift movement, and the option to reach points in the town to which steam trains cannot go. The older lines will sooner or later be compelled to meet this competition by reducing the cost both of single rides and of commutation tickets; but it may be believed that, in the long run, such reduction will inflict no loss upon companies of either class. No city in the world has near to it more attractive places for rural residence than Philadelphia. Such residence is particularly enticing to persons with small means, excepting that the cost of transportation is so large as to offset considerably the lower rents and the smaller general expense of living in the suburbs. If all fares should be decreased, the inducement to live out of the city would be so much strengthened as to increase the amount of travel far in excess of any additional expense imposed upon the transportation companies. A few more trains and many more people in all the trains would meet all the requirements of the changed conditions. The cheapening of travel by the introduction of the trolley cars, therefore, may in the end benefit both the public and the owners of the roads. *The Manufacturer*.

The *Herald* thinks it has found figures which show that the Canadian woolen industry has declined under protec-

tion. The Canadian woolen industry in free trade 1878 required 4,608,000 pounds of foreign wool to supply its mills. In 1894, which was a somewhat dull year too, it required 7,169,000 pounds of foreign wool, and in 1893, which was a fairly good year, it took 10,503,000 pounds. A decadent industry does not make a record like this.—
Montreal Gazette.

Flax-growing is still to the fore in the Colony of Victoria. Writing to the Melbourne Leader, from Numurkah, Mr. James William says :—

“Yesterday I sent to Jas. Miller and Co. and McLean Bros. and Rigg samples of flax only sown 11 weeks which at 9 weeks I measured, in their presence, 4 ft. 4 in. Part was pulled, part cut with an old McCormick reaper and binder. An old expert pulled some of this last Friday, and in what I cut there was less waste, and I believe this is the first that has ever been cut with a reaper and binder. I intend to put some of it through the common thrasher to save the seed, and also the fibre, as a test. This, I am informed, has never been done before in the colony. I am satisfied the crop will pay a lot better than wheat to export for oil purposes alone, independent of the fibre.”

Canada can grow flax to quite as good advantage as Australia, but the policy of both the Dominion and Ontario Governments to manufacture binder twine by convict labor is a blow at the industry from which it will not recover until existing conditions are changed.

Mr. H. Ogilvie Bennett, president of the General Legislative Council of the Leeward Islands, West Indies, writing to the London Times says that the Queensland

government's action in giving the planters the financial support necessary to enable them to erect central factories has imparted fresh impetus to a movement in that direction in the West Indies, where it has been a hard struggle for owners of even the best equipped sugar plantations to hold their own, and an almost hopeless one for small growers. The canes treated in the present small factories and now giving one ton common process sugar would, if dealt with by a central factory, yield 1½ ton of sugar (Demerara) crystals. This is not all. In islands like Antigua large areas of good cane land are uncultivated. If central factories were established and ready to purchase cane these lands would soon be reclaimed and the export of sugar in a few years be doubled, which would bring an improved demand for labor and a general revival of prosperity. Already in Antigua there is a large body of peasants who grow canes, but they can only get them crushed at neighboring factories after the planters have finished their own crops, and consequently out of season. They have also to pay a large share of the produce for the use of the factory. There is now a strong public feeling that central factories are of vital importance, and it is generally admitted that they cannot be established without government aid.

Some years ago, remarked the Hon. J. C. Patterson at Orillia, it was found that a great deal of mess pork was being imported from Chicago, and a duty was at once put on it by the Government, and it decreased from 2,700,000 pounds to 400,000 pounds, and the result was that the Canadian farmer got possession of the home market. It

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was facts like these which showed the care of the Conservative Government for the farmer. Mr. Patterson contended that while the Liberal leaders were now crying for free trade on the English system, they were inconsistent. All of them wanted free trade except in those articles in which they were personally interested. Mr. Featherston, of Peel, favored protection on pork; Mr. Lowell, of Welland, and Mr. Gibson, of Lincoln, wanted duty on fruits and wine; Mr. McGregor, of Essex, on corn and wine, and Mr. Campbell, of Kent, on corn, wine and flour; Mr. Lister on coal oil, Mr. Casey on flax fibre, Mr. Charlton on canned goods, and Mr. Joseph Martin on mutton. They were, indeed, a happy family.—London Free Press.

The official report of the Collector of Customs at Vancouver, B. C., of the operations in Behring Sea during 1894 states that the catch was made outside the 60-mile protected zone, in latitudes 55, 56 and 58, and longitudes from 171 to 175, operations being carried on from the first of August to the middle of September. On the Japanese coast sealing commenced at about latitude 36 and continued north. There were none of the interruptions of late years experienced by those who operated in territory adjacent to Russian waters, the vessels all keeping well outside the 30-mile zone, mainly operating about 100 miles south-east of Copper Island. On the British Columbia coast sealing commenced at about latitude 37, thence proceeding northward. The fleet returned to port early in May, the close season being then on, and at the end of July those of the ships having the requisite crews of spearmen set off for Behring Sea to try their luck under the new regulations. Considering everything, those who

were in position to make this experiment with any hope of fair reward, did very well, but taking the whole fleet, it is claimed that the season has been barren of profit or advantage, except that of the crews, who were enabled to make fair wages. Of the total of 59 vessels operating, only 32 went into the sea. The season's catch is thus summarized and compared with that of the previous year:

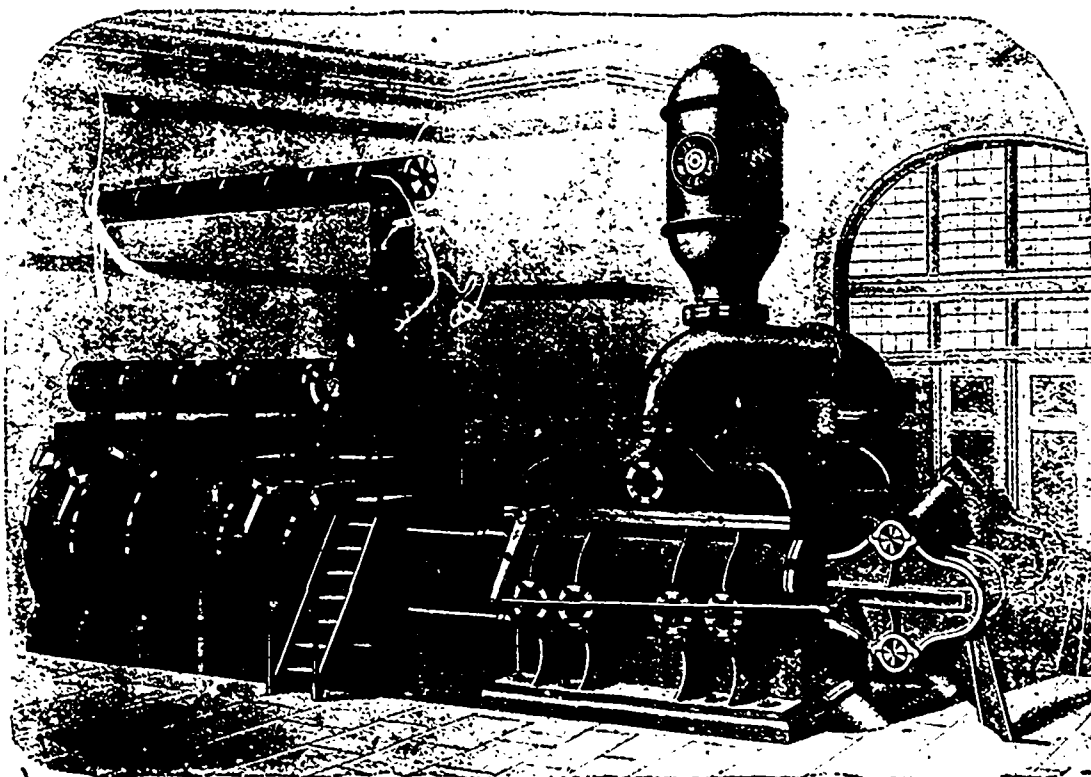
	1894.	1893.
No. of vessels.....	59	55
Men in white crews.....	818	847
Men in Indian crews.....	518	432
British Columbia Coast catch.....	11,703	29,113
Japan Coast catch.....	48,993	29,206
Copper Island catch.....	7,437	12,013
Behring Sea catch.....	26,341
Total Canadian catch.....	94,474	70,332

The low prices for skins have compelled economies in wages and other items, and the business under the pressure of necessity—is now being conducted on a much more conservative and cautious basis than it was when skins were high and profits larger.

A deputation of the Toronto Trades and Labor Council waited upon the Ontario Government a few days ago, to urge the appointment of Miss Jennie B. Hepburn as a factory inspector. The deputation pointed out that Miss Hepburn had a comprehensive knowledge of the situation as affecting women employed in factories, having given the matter a great deal of intelligent study. Sir Oliver Mowat seemed to think that the youth and good looks of the lady, and the fact that she is unmarried, were not in

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her favor as regards the position sought for her. If it is the intention of the Government to appoint a female inspector, from the well-known high character of Miss Hepburn, and her decided ability to faithfully and satisfactorily perform such official duties as might be assigned to her, we are of the opinion that Sir Oliver would do well to appoint her to that office.

The chief feature of the May Popular Science Monthly is an article by Herbert Spencer, which is announced as the first of a series of ten or twelve on Professional Institutions. Prof. James Sully in his Studies on Childhood now passes from the ideas to the feelings of children, taking up Fear, which he shows is not always produced by the same causes in different children. Prof. Frederick Starr traces the progress of Archæology in Denmark—the country that has given this science many of its leading terms and divisions. Prof. Charles S. Minot, of the Harvard Medical School, contributes a spirited and suggestive essay on The Work of the Naturalist in the World, containing both warnings and congratulations. W. D. Le Sueur discusses Kidd on Social Evolution, criticising what that author says of the attitude of science towards religion. M. Paul Leroy Beaulieu writes on The Office of Luxury, which he regards as a stimulus to exertion. Logan G. McPherson discusses Business, Friendship, and Charity in their sociological relations. Other articles are Race Mixture and National Character, by L. R. Harley; Woman as an Inventor and Manufacturer (illustrated); and Microbes as Factors in Society, by M. L. Capitan. The Editor's Table and other departments are as vigorous and readable as usual. New York: D. Appleton & Company. Fifty cents a number, \$5 a year.

The Canadian Magazine for May is a finely illustrated number containing much good fiction and very instructive, breezy sketches of travel, interesting in their well told incidents and valuable for their information and description regarding places and people. The contents are:—Shipbuilding in Quebec, by Henry Fry; The Underground Railway and one of its Operators, by Thos. E. Champion; The Early Artists of Ontario, by J. W. L. Forster; The Penalties of Genius, by B. St. G. Lefroy; Robert Stevenson, by Hector Charlesworth; The Homes of the Ouananiche, E. T. D. Chambers; Old John's Easter Lillies, by Ella S. Atkinson; Canadian Newspaper Interviews, by P. Spanjaadt; Glimpses of Norway, by Frank Yeigh; The Manitoba School Question and the Remedial Order, by Ed. Meek. Ontario Pub. Co., Toronto.

Scribner's for May contains the first part of the only serial story that Mrs. Humphrey Ward has ever contributed to a magazine entitled The Story of Bessie Costrell, a realistic study of life among the very poor class of English farm laborers. It will run through the May, June and July issues. The great popularity of golf makes particularly appropriate a lively description of the game by Judge Henry E. Howland, of New York. Judge Howland's remarkable skill as a teller of incident and anecdote has enabled him to make of this article on Golf one of the most readable descriptions of the game that have ever appeared. President Andrew's History of the Last Quarter-Century in the United States reaches in this instalment The Downfall of the Carpet-bag Regime—one of the most disgraceful episodes in the history of reconstruction, as well as the most dramatic. Will the Electric Motor Supersede the Steam Locomotive? Joseph Wetzler answers this question in a paper filled with the latest facts that indicate the trend of affairs in the electric world. Mr. Wetzler's position as one of the editors of The Electrical Engineer peculiarly fits him to write on this subject. Robert Grant's series on The Art of Living is continued with a paper on Occupation, dealing with the problem that confronts the American young man and his father. The pictures by Clinedinst are of unusual cleverness.

The Criminal Crowding of Public Schools and Crowded Schools as Promoters of Disease, are two subjects of pressing importance that will be taken up in The Forum for May. Professor J. H. Penniman, of Philadelphia, by a study of school reports themselves of many of our principal cities, shows what lamentable lack of sufficient and wholesome buildings that are—how, indeed, much of the educational work in Boston and New York and many other cities is worse than wasted. Dr. H. D. Chapin, of New York, lays down the conditions that should govern the healthful building and arrangement of school-rooms. The Rt. Hon. J. G. Bourinot, Clerk of the Dominion Parliament, has a very striking comparison of the Canadian and the American systems of government, to show why the American system does not commend itself to Canadians.

Women's colleges receive Dr. Parkhurst's attention in the May Ladies' Home Journal, and the vigor with which he treats the subject is unmistakable. The fact that Florence Nightingale reaches the ripe age of seventy-five this month is made the basis for an interesting sketch of The Angel of the Crimea as she is to-day, showing a new portrait of her and a view of her London home. Edward Bok answers with much force and directness, a page of Problems of Young Men. John Kendrick Bangs is irresistibly funny in his report of the sixth meeting of The Paradise Club. The full score of the Concert Maxurka, by Bruno Oscar Klein, the piano composition which won the

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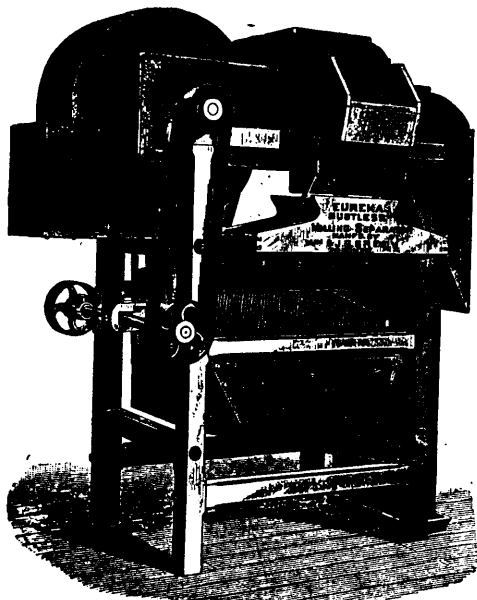
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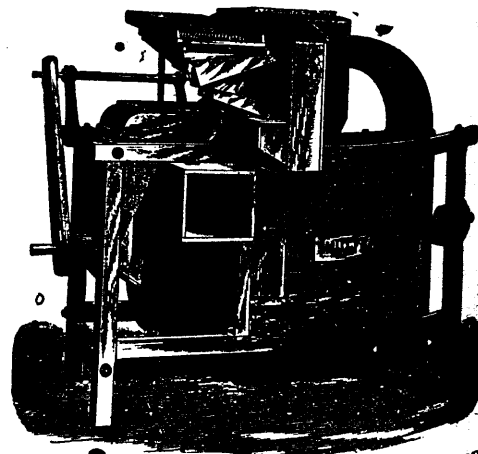
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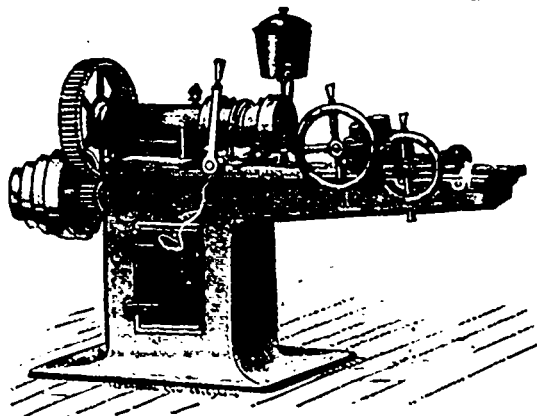
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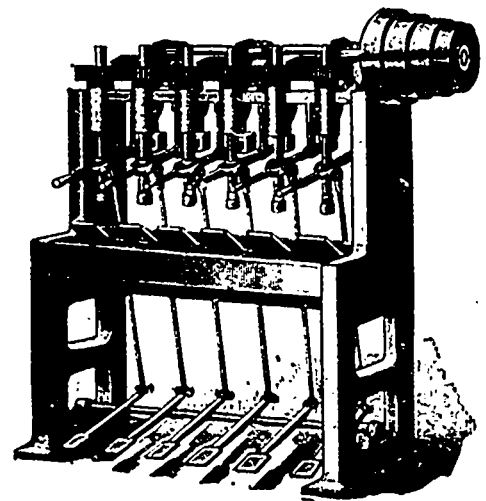


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second prize in the Journal's musical series, is given. Illustrated articles are Mrs. Mallon's Dainty Commencement Gowns and The Silks of the Summer. Ecclesiastical Embroidery, by Harriet Ogden Morison, is illustrated from original designs. The cover of this May Journal is a reproduction of one of Albert Lynch's beautiful girls, set into an artistic frame. This beautiful magazine is sold at ten cents per number and at one dollar per year, by the Curtis Publishing Company, Philadelphia.

Outing for May is a finely illustrated number with much good fiction and many breezy sketches of sports and pastimes. The contents are as follows:—Chestnuts with a History, by Margaret B. Rudd; A Kangaroo Hunt, by R. Monckton-Dene; After Trout in Ireland; A May Day's Canoeing, by Florence E. Wilkes; A Fishing Tramp in North Carolina, by Benj. Rush; Old Uncle Vanderveer, by Edgar Fawcett; The Phantom Trout of Sullivan County, by A. Livingstone; The Paris of China, by Annetta Josefa Halliday-Antona; My Wheel and I, by Jean Porter Rudd; Witmore's Brook, by Arthur F. Rice; Fitting Out for a Cruise, by Captain A. J. Kenealy; Oxford in the Eight's Week, by Evelyn Burnblum; Lenz's World Tour Awheel; The Big Rodeo, by Mary Calkins Johnson; On Summer Seas, by the late Lady Arnold, Illinois National Guard, by Lieut. W. R. Hamilton, and the usual editorials, poems, records, etc.

Canadian Foreign Commerce.

EDITOR CANADIAN MANUFACTURER:—

SIR, While so much attention is being paid to colonial trade matters we desire to direct the attention of your readers to the colony of South Africa.

With the arrangements at present being perfected for direct steamship facilities as between Canada and the Cape it is, in our opinion, opportune that the following data should be placed before the manufacturers of the Dominion.

If the material progress of a country can be gauged by its purchasing capacity then South Africa has every reason to be satisfied with its advance during the past few years. For if there is one feature which comes out more clearly than any other in these statistics it is the enormous increase which has taken place in its imports of British manufactures.

The total exports to Cape Colony and Natal in 1886 amounted to £3,304,132 (\$16,000,000) in 1890 they had grown to £9,128,164 (\$44,000,000).

Remarkable as these figures are as an indication of the phenomenal development of South African trade, their true significance is not realized until comparison is made with the trade returns of the other colonial possessions of Great Britain.

It is a fact of the highest importance that there is no other individual colonial possession of Great Britain which can show such a remarkable increase of trade during the quinquennium, either as regards the percentage, or the actual aggregate increase in value.

	1886	1890
Total exports of British manufacture to		
New South Wales	£7,605,889	£7,334,666
Victoria	6,766,784	7,101,348
South Australia	1,518,152	2,040,559
Western Australia	380,417	464,209
Queensland	2,219,660	2,128,216
New Zealand	4,717,465	8,347,430
Canada	7,546,902	6,827,023
South Africa	3,304,132	9,128,164

It will be seen that the rate of increase has not only been greater in the case of South Africa than in any of the other colonies, but that while in 1886 South Africa occupied only the fifth place as a customer of Great Britain, in 1890 she had overtaken all the other colonies and had attained the foremost rank.

With everything still in its favor there is no reason why South Africa, having once held the distinction of being the largest and most important colonial market for British goods, should not always maintain this unique position, and in course of a few years become facile princeps among the many jewels which adorn the British crown.

There is not an article specified in the following list of imports into South Africa, which Canada cannot supply. In design, value and material we take second place with no other country in the world:

	VALUE IN 1886	VALUE IN 1890
IMPORTS		
Apparel and haberdashery	£540,030	£1,125,769
Arms and ammunition	54,824	90,656
Bags and sacks	9,903	12,798
Beer and ale	36,613	43,793
Biscuits	9,071	18,702
Books (printed)	28,659	61,862
Carriages (railway)	4,280	64,937
Cement	6,880	24,459
Chemical productions and dye stuffs	17,964	65,375
Coal and fuel	68,154	184,874
Corn (grain, meal and flour)	14,833	34,621
Cottons	270,264	458,208
Earthen and chinaware	17,737	47,301
Furniture	21,688	84,165
Glassware	17,257	38,974

ELECTRIC LIGHTING,

ELECTRIC POWER TRANSMISSION,

ELECTRIC TRAMWAYS.

AHEARN & SOPER, OTTAWA,
ONTARIO.

Electrical Engineers and Contractors.

Complete Electric Plants Installed.

Dealers in Electric Supplies, Transformers, Motors, Meters, Lamps, etc., etc.

Hardware and cutlery.....	38,199	122,383
Hats.....	36,532	71,718
Implements and tools.....	22,189	72,080
Leather, wrought and unwrought.....	196,221	403,823
"saddlery.....	24,725	116,028
Linens.....	16,756	28,692
Machinery.....	40,133	404,188
Medicines, drugs.....	25,032	66,499
Metals, iron, etc.....	172,057	982,886
Musical instruments.....	7,989	20,154
Painters' colors and materials.....	15,450	40,917
Paper of all sorts.....	37,990	69,028
Pickles, vinegar and sauces.....	43,290	81,171
Provisions (meat).....	47,446	42,863
Silk, manufacturers of.....	11,846	16,401
Soap.....	55,761	61,181
Spirits.....	33,226	63,322
Stationery (other than paper).....	28,083	54,970
Wood, manufacturers of.....	7,792	11,674
Woollens and worsteds.....	66,701	271,187
All other articles.....	102,364	541,721

Province of Lourenco Marques..... 5
 Nyasaland..... 1

This marks the steady growth of South Africa; and it should be remembered that with the exception of a limited number of old established offices in the Cape Colony, nearly all the remaining branch banks on this list have been opened within the last few years.

After quoting statistics showing the growth and progress of South Africa, Mr. Mitchell remarked that surprising changes had occurred and had still to occur there. If, however, one would intelligently contrast the condition of the country at successive decennial periods, he would see that its material progress was never in doubt, and that its march although often slackened has never been permanently arrested.

M. B. & Co.

ELECTRICAL ENTERPRISES (Continued.)

GEORGE WHITE-FRASER, ELEC. ENG.

It is the most usual enquiry, among intending electrical investors, as to which system "is the best." Meaning by that, which particular make of machinery is in all its features electrically and mechanically the most scientifically designed and thoroughly constructed? This is a matter on which the average non-professional person is quite incapable of giving any opinion, and in which he is entirely at the mercy of an agent. As a matter of fact, it can hardly be said that any of the better known makes is appreciably better than the rest. The electrical, magnetic, and mechanical design of electrical machinery rests on well established principles, which are perfectly wellknown to, and practically applied by all educated engineers. A and B being competing manufacturing companies, with practically equal capitals, engaged in manufacturing the same class of machinery for the same market, will turn out pretty nearly equally good results; because it is absurd to suppose that the one of them is able to engage all the best talent, leaving only second and third rate men for the other. There is not the slightest apriori reason why the machinery made by a small firm or company should not be just as good as that made by a large one. The principles of construction are equally applied by the engineers of both companies and, so far as the purchaser is concerned, after he has guarded against deception by retaining professional advice, the "best" system is that which is offered to him at the lowest figure. By neglecting to avail himself of the competition in the open market, therefore, the purchaser attains only one result,—i.e., he directly injures himself. In the matter of the operation of electrical enterprises, also, every day practice falls very short of those methods that would be indicated by a clear comprehension of the subject. It is hardly to be expected of the average business man, whose time is

The foregoing should furnish interesting and impressive reading to our enterprising manufacturers, and should, for immediate and profitable advantage, be more suggestive than an interchange with any other section or colony.

Banking, shipping and all other facilities furnishing direct relations are now being provided by our firm, and further information in this matter can be obtained from us.

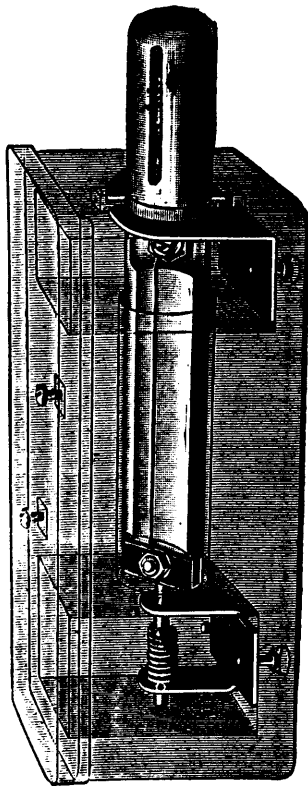
MURDOCH, BARBER & CO.,
 Colonial Agents.

NOTE.—For the further information of readers interested in the foregoing:—We observe in our advices just received as contained in the Union Line Gazette, an article on "Banking in South Africa" was read by Mr. L. J. Mitchell, General Manager of the Standard Bank of South Africa, Limited.

In the course of his address Mr. Mitchell stated that the number of banks and branch banks open for business at the close of last year was 171, distributed as follows:

Cape Colony.....	82
South African Republic.....	42
Orange Free State.....	20
Natal.....	16
Bechuanaland.....	2
Rhodesia.....	2
Zululand.....	1

The Packard Transformer



Packard Transformer Fuse Box Complete.

(2-3 SIZE.)

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

The Packard Electric Co., Ltd., MONTREAL.
 MAKERS OF PACKARD LAMPS AND TRANSFORMERS.

fully occupied in his own particular line, that he should be able to study up combustion, steam, electricity, and to acquire such a grasp of the principles of a science, whose foundation is pure physics; and whose method of expression requires an intimate knowledge of the higher mathematics, as to be in a position to state that he thoroughly comprehends those conditions under which electrical machinery will operate "best." If such a man—who is necessarily intelligent—cannot afford the time to study these conditions, how is it to be expected that a working mechanic, without any real education, and very little leisure, can do so? And if the electrical enterprise be placed in the hands of operatives to whom electrical economies are a sealed book, how can such an enterprise run successfully? It is unfortunately in the hands of such men that we find a very large proportion of the smaller power stations throughout Canada, and it really is very wonderful that they do as well as they do. While it is true that a good knowledge of the principles of mechanics is necessary for the designing electrical engineer, and that a thorough acquaintance with the economies of steam is required in persons who must superintend electric lighting stations, it by no means follows that a mechanical is also an electrical engineer; or that a man who is competent to look after simple steam engines, is ipso facto an "electrician." There are, undoubtedly, analogies between steam, and electrical, generation, distribution, and utilization, but these go only so far; and it is in the region in which steam phenomena have no electrical analogues, that the want of scientific knowledge and experience in those responsible for management, can have the most prejudicial effects or results. The knowledge and experience of the ordinary mechanic who has "run" sawmill engines, and the like enables him to care for engines, boilers and dynamos as far as he can see, or hear; but a small waste of heat around the boiler somewhere, a trifle of wear in the valve-seat, or piston rings, or eccentric, which are matters that, unless quite large, are not at all very noticeable, will introduce a constant waste of power, aggregating in the course of a few months a surprising-

ly large sum of money. The usual mechanic had neither technical education enough to appraise the value of a small constant waste nor experience enough to detect it, or remedy it. Similarly with the man who is styled the "electrician." This man's duties are to do for the electrical system, what the engineer does for the steam plant; he must care for dynamo, instruments, lines, lamps and carbons, etc.; must detect and stop leaks and generally manage it. The idea of "management" implies technical training, a knowledge of every detail, and experienced supervision. Electric machinery being intended primarily for the production of light, it is evident that a manager should study the principles of lighting. Light is radiant energy, and a manager should study how to convert heat energy into radiant with the least waste. Incandescent lamps and arc carbons are means for this conversion, and are therefore a very important feature of an electric lighting system. The qualities of these features that will produce the best results largely depend on the peculiar local conditions; and what is best for one case need not necessarily be best for another. This radiant energy is produced by the electric current, which requires, for its economical generation and satisfactory use, a thorough study of electrical principles. In complete comprehension of all these principles means their misapplication; and this in turn means simply—waste of power and unnecessary expendi-

MACHINERY FOR SALE.

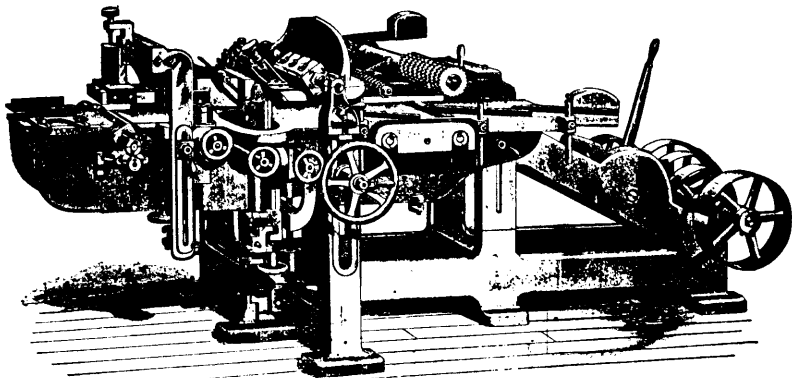
For quick turnover we will sell very cheap the following S. H. machinery:—2 Portable Engines good as new; 1 3 h p. Upright Engine; 1 Stationary Engine and Boiler 25 and 30 h.p., good order; 1 20 x 24 Iron Planer; 1 Large Iron Drill 20"; 2 Iron Lathes 18" and 12" swing; 1 Boiler, 10 ft. long x 24 inches diameter, 12 3-inch tubes; 1 Engine, Beckett & Kelley build, cylinder 5x9 horizontal, with all connections. This plant will be sold very cheap. May be seen running. Also new machines of every description at bottom prices.

We also have a medium size Planing-Mill in Toronto fully equipped with the most modern machinery, which we will sell on easy terms, or will give a long lease to reliable party.

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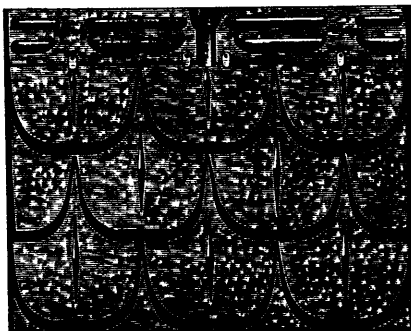
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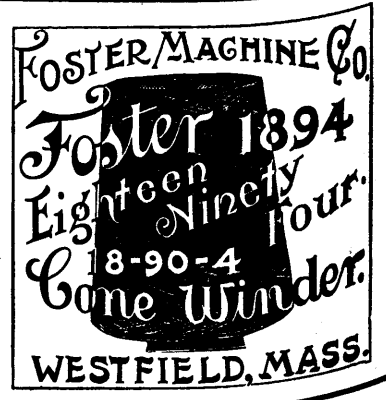
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Guaranteed to be Water, Wind, Storm, Fire, and Lightning Proof.

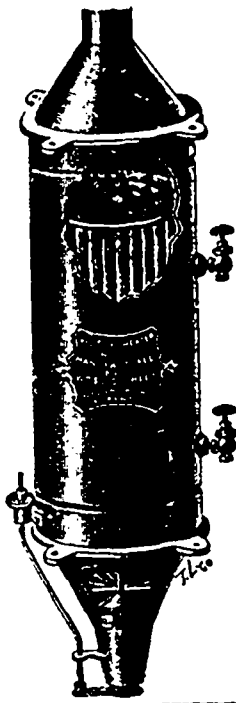
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In answering please mention this paper.



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**THE VICTOR
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The benefits secured are

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**UNIFORM
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**.. IMPORTANT ..
TO LIGHTING STATIONS.**

OUR NEW

ALTERNATING CURRENT INDICATORS

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

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ELECTRICAL INSTRUMENT CO.

Sherbrooke, P.Q., Canada.

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CINCINNATI, O., Nowotny Electric Co.

HALIFAX, N.S., John Starr, Son & Co. Ltd.

NEW YORK CITY, Geo. L. Colgate, 136 Liberty Street.

SAN FRANCISCO, CAL., California Electrical Works.

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L. A. W.

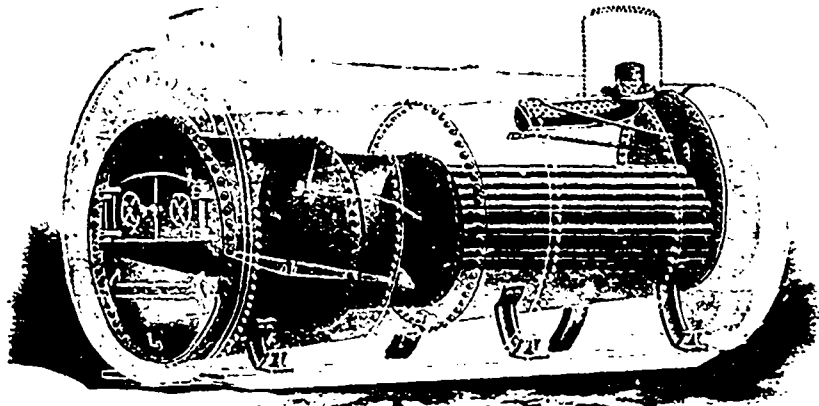
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1 16x42 Reynolds' Corliss Engine

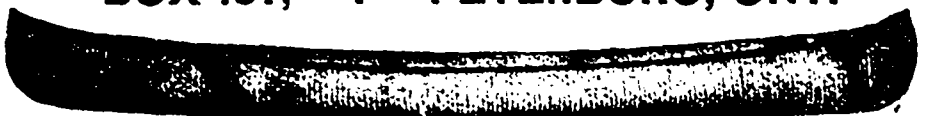
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We build Canoes of CEDAR, BUTTERNUT, BASSWOOD and other woods, for Paddling, Sailing, Racing, Fishing, Etc. Skills of all sizes.

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

... WRITE FOR CATALOGUE ...

ture of dollars and cents, reducing, as before, to expensive waste. These wastes may not be in the least observable, being through the very nature of the case concealed and widely distributed. Many of them are permanent, being caused by faulty design of station and bad proportioning of machinery, lines, etc. These could have been obviated at the outset by an experienced designing engineer. More of them develop from day to day, in the usual course of operation through natural wear and tear, and can only be detected at the outset by those trained in the business. The most satisfactory method of detecting these wastes is by watching their effect on the expenses of the station, and to be able to do this successfully, and to intelligently trace an observed increase back to its cause, requires a very highly developed system of book keeping and station records. This system, while introducing no extra expense into the cost of the business, is of immense importance as enabling the manager to at once detect and remedy a defect before it assumes serious proportions. The main features of station accounting are the same as those of any other business, but the details are its own peculiarity. A station should be debited the coal, wages, oil, etc., interest, depreciation, taxes, etc., and credited the amount of current it sends out on to the line. If this latter record be not kept (as in fact it usually is not) how can the station know what it is doing? It is no good simply debiting the station coal, wages, etc., and crediting it the money collected for rental of lamps; for this money represents the electricity actually consumed and converted into light, whereas the coal represents the amount of electricity it is possible to generate. Between these two amounts there certainly is a theoretical connection, but experience shows that there may be a very large discrepancy. The proper method of accounting will record, not only the amount of electricity possible to be generated by so much coal, but the actual amount generated, and there after the actual amount used and paid for. The records may show wastes between the first and second items, or between the second and third, which can therefore be investigated and stopped. And all the above constitutes "management." Now, how is it to be expected that the kind of man usually engaged as "electrician," and paid \$35 or \$40 or \$50 a month is going to be able to do all this? He is qualified neither mentally nor by education, nor by experience. From the foregoing it will appear evident that the methods of design, construction and operation of electrical power houses would be the better of remodelling. Regard an electric light or railway station as a whole; design it in such a way that it shall be properly fitted as such, and that every detail in its construction shall bear a due proportion to the rest; these proportions have long been settled by experience. Allow business principles to govern in the selection of machinery, take advantage of the competition of the

market, and take salt with the assertions of manufacturing companies and their agents. Lastly remember that electricity is not a toy, nor an automatic arrangement that requires no knowledge or experience to run it properly. Electric lighting and electric railways are a business, for the proper prosecution of which are required high intelligence, good education, both general and technical, constant watchfulness and study, and experience.

Diamine Brilliant Blue G.

Wm. J. Matheson & Co., New York and Montreal, have sent us a sample card illustrating their Diamine Brilliant Blue G., regarding which they say that it is one of the recent additions to their series of Diamine dyes, and that it has already met with great success. In comparison with all the direct blues heretofore put on the market by them it has the advantage of being purer and more brilliant in shade. Regarding the use of it Messrs. Matheson say:—

Cotton is dyed at the boil with the addition of 10 to 20 per cent. common salt or Glauber's salt or with 10 to 15 per cent. common salt or Glauber's salt and three to 5 per cent. soda. The latter method is, however, only to be recommended when Diamine Brilliant Blue G. is dyed in combination with dyestuffs which require an addition of soda. Rinsing after dyeing is advisable for deep shades. If the

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Dealers in and Manufacturers of

WOOLEN MACHINERY. MILL SUPPLIES.

Specialties:

English H & T Steel Card Clothing.

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DODGE WOOD SPLIT PULLEYS

Best Oak Tanned Belting and Lace Leather.

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MANUFACTURERS OF

STEAM ENGINES,
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Water Wheels, Flouring and Saw Mill
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Fire and Burglar-Proof Safes, Vault
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Wood Rim Split Pulleys, Friction Pulleys,
Friction Clutch, Couplings, etc.

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MANUFACTURERS OF

SUPERIOR CHILLED ROLLS.

Perfect Surface, Deep Chill, Hard,
Tough, Durable, Guaranteed
Free From Flaw.

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Iron Rolling Mills,
Rubber Works,
Paper Mills,
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For Rolling
Iron, Steel, Cold,
Silver, Brass, Copper
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Have the Largest and Most Complete
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GUARANTEED 58 DEGREES.

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SOAP, GLASS, PAPER,
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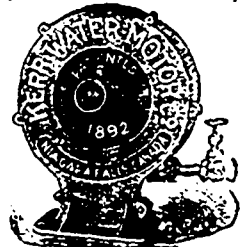
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1/8 TO 25 HORSE POWER.

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



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

Our Motors are sold on their merits.

Our prices are low.

Write us. Enquiries solicited and cheerfully answered.

KERR WATER MOTOR CO., NIAGARA FALLS, CANADA.

FOR SALE

1 plain slide valve 15 h.p. Engine with pump and heater; 1 steel Boiler 30 h.p. 10' long, 42" shell with 40.3" tubes including settings, fronts and all connections complete. Both the above are in first-class order and in use but a short time, having been very carefully used. 1 Eclipse Planer and Matcher 24" knives; 300' Shafting 1 1/2" with hangers; 100' Shafting 1 1/4" x 2" with hangers; 75' Shafting 2 1/2" with hangers. Wood and Iron Pulleys, all sizes; Belting, new and old.

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HEMOLIN PATENTED

THE Cheapest Black-producing Dye for Wool on the Market. Has all the advantages of Logwood with none of its inconveniences. Can be Lye'd in one Dip, or may be employed in Wool Dyeing as a self-color, or in combinations, wherever Logwood is used, by following practically the same recipes.

This is not a mixture, but a pure product for which patents have been granted in U. S. A., Great Britain, Canada, Germany, France and Austria, and use in these countries has increased constantly since its introduction.

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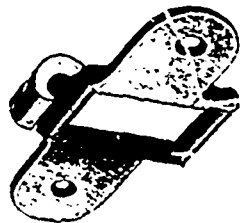
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COTTONS—Grey Sheetings, Checked Shirtings, Denhams, Cottonades, Tickings, Bags, Yarn, Twine, etc.

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FLANNELS—Plain and Fancy Flannels, Overcoat Linings, Plain and Fancy Dress Goods, etc.

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WESTERN OFFICE. TORONTO, ONT.

Have just completed their new manufacturing building, providing additional floor area of 40,000 square feet, and have secured the sole right for the manufacture and sale in the Dominion of Canada of the celebrated

S. K. C. TWO PHASE Alternating Current System

as manufactured by the

STANLEY ELECTRIC MANUFACTURING COMPANY,

Pittsfield, Mass., U. S. A.

Acknowledged to be the only complete and perfected system by which light and power can be supplied from the same generator and circuit.

GENERATORS

HAVE no moving wire,
no collectors,
no brushes.

Greatest Efficiency, Extreme Simplicity. Best Regulation.

MOTORS

Self-starting, simple, efficient, have no commutators.
Superior in many ways to direct current motors.

TRANSFORMERS

The Stanley Transformers are standard.
All others are compared with them.

They are the most efficient, best regulating and safest.

All S. K. C. Apparatus made from drawings, patterns and details of construction as used by The Stanley Electric Manufacturing Co., Pittsfield, Mass.

The manufacture will also be continued and extended of:

**Arc Dynamos, Arc Lamps, Railroad Generators, Railroad Motors,
Direct Current Generators and Motors, Station Equipments
and Instruments, Switchboards, Wire,
Electrical Appliances.**

Correspondence solicited for

Electric Lighting, Railway, Manufacturing and Mining Work,
Isolated Plants. Central Stations. Long Distance Transmission
Of Light and Power.

water used contains much chloride of lime, an addition of soda is required in dissolving as well as dyeing with the color.

Diamine Brilliant Blue G. is about equal to our other diamine blues in its fastness to light and to washing. In fastness to hot ironing and alkalis it equals our Diamine Blue B. X. and is therefore better than many of the competing dyestuffs. By treating dyeings of Diamine Brilliant Blue G. for one-quarter hour at the boil with 1 to 3 per cent. sulphate of copper (bluestone) an exceedingly good fastness to light is obtained. This treatment renders the shade somewhat duller and redder.

CAPTAINS OF INDUSTRY.

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

- Mr. P. Benteau will start a distillery at Windsor, Ont.
- Drinkwater Bros. have purchased a saw mill at Alloa, Ont.
- The Dunville, Ont., Electric Light Co. will erect a power station.
- The Hamilton Storage Battery Co., Hamilton, Ont., have obtained a charter.
- Mr. A. E. Miklin, Acton, Ont., has commenced the manufacture of moccasins.
- The Carnduff Elevator and Milling Co. will build a steam elevator at Carievale, Assa.
- J. W. R. Terry's large grist mill at Brighton, Ont., was destroyed by fire on April 16th.
- Messrs. Beecroft & Sloan have purchased J. E. Moore's planing mill at Flesherton, Ont.
- Mr. J. H. Falconer, Victoria, B.C., proposes to erect a fruit canning factory at Kamloops, B.C.
- C. B. Dayfoot & Co., Georgetown, Ont., are adding improvements to their factory, among which is a water motor.
- W. C. McDonald's tobacco factory, Montreal, Que., was destroyed by fire, April 25, loss about \$250,000. The factory will be rebuilt.

Jas. Sinclair, Shelburne, Ont., has erected a tannery at that place. Messrs. Snyder & Jennings, Huntsville, Ont., have dissolved partnership.

The Quebec Street Railway Co., City of Quebec, are applying for permission to introduce the storage battery system.

J. C. McFarlane & Co. have been granted a bonus of \$15,000 for the erection of a cigar factory at Acton Vale, Ont.

Tenders are called for from persons willing to undertake the lighting of the streets of St. John, N. B., with electric light.

Messrs. D. J. Ayer & Sons', glove manufacturers, Moes River, Que., partnership consists of D. J., A. C. and Wm. D. Ayer.

The Union Shoe and Leather Co. has been incorporated with a capital stock of \$45,000. The chief place of business will be Winnipeg, Man.

Messrs. Gilmour and Hughson, Ottawa, Ont., are applying for incorporation to carry on the business of lumberers and manufacturers of pulp, paper, etc.

The plant and building of the C. R. S. Diarick Paving Brick Co., on the Weston Road, Toronto, was destroyed by fire on April 27th; loss about \$6,000.

Canada Chemical Mnfg. Co.

Manufacturers of

- Sulphuric, Nitric and Muriatic Acids, Commercial and Chemically Pure. Mixed Acids for Explosives, Liquid Ammonia, Glauber Salts. Copperas, Muriate Tin, Tin Crystals, Acetic Acid, Nitrate Iron, Bisulphite Soda, Acid Phosphate for Baking Powders and General Chemicals. Fertilizers, Etc.

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Buffalo Lumber Dry Kilns



The Largest Drier in America is equipped with a "BUFFALO" Hot Blast Apparatus.

THE OWNERS ARE ENTHUSIASTIC

All Users of Buffalo Kilns write letters similar to this one "The Kiln answers every purpose to perfection; the Dry Rooms are run with exhaust steam at mere nothing in the way of cost, compared with the old way. Your arrangement is very simple and easily managed, besides being a money saver in operation. We are able, with the Kiln you sent us, to dry soft woods in three days, and hard woods in five days. That's good enough for anyone."—SMITH BROS., Sayre, Penn.

Send for Catalogue.

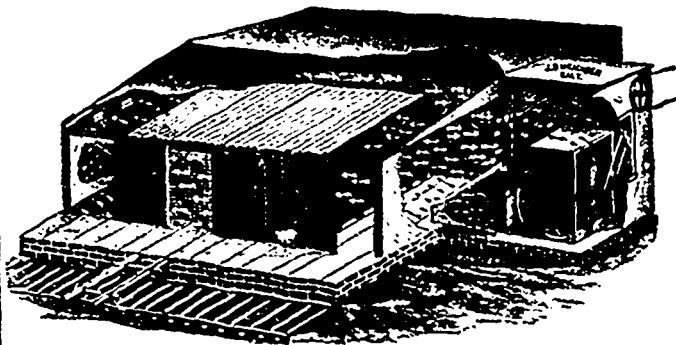
BUFFALO FORGE CO., Buffalo, N.Y., U.S.A.

SOLD IN

- TORONTO, ONT., BY F. W. PETRIE.
- BRANTFORD, ONT., BY CANADIAN MACHINERY & SUPPLY CO.
- MONTREAL, QUE., BY CANADA MACHINERY AGENCY.
- CHICAGO STORE, 22 and 24 WEST RANDOLPH STREET.

McEachren's System of Drying, Heating and Ventilating

Under Recent Patents.



CHEAP AND EFFECTIVE.

Highly approved of by practical men.

The following is a specimen of letters received from customers:

Ottawa, April 1, 1895.

J. D. McEachren, Esq., Galt, Ont.

Dear Sir,—Replying to your enquiry regarding Dry-Kiln purchased from you last summer, we beg to state that our lumber is stained hardwood, principally birch, which is put through a chemical process thereby rendering seasoning a very difficult operation. We tried to have it dried in the several styles of kilns used by factories in this district, all of which failed to take the moisture out of the core of the wood. In August last we put in one of your kilns with a capacity of 10 cars, or 30,000 feet and since that time have seasoned most satisfactorily about 20,000 feet. The boards come out free from checks and warps and we are now thoroughly convinced that it is the only dry-kiln in the market which fills the bill both as to efficiency and economy.

Yours truly,

McRAE Bros. & Co.

For particulars address

McEACHREN HEATING AND VENTILATING CO.,

GALT, ONTARIO.

The Cork Company of Canada is applying for incorporation, and propose to erect a factory in Toronto.

The corporate name of the Whaley-Royce Piano Co., of Toronto, has been changed to The Standard Piano Co.

A cheese factory is to be established at Cannington Manor, N.W.T. Sidney Brockmann is secretary of the new company.

Mr. Aloyes Bauer, Waterloo, Ont., will immediately rebuild his shoddy mill at that place, which was destroyed by fire on March 14.

Small Bros., Dunham, Que., propose to start a branch factory in Smith's Falls, Ont., for the manufacture of a new and improved sap pan and arch.

The Deschenes Electric Co., Hull, Que., are applying for a charter with a capital stock of \$60,000 to manufacture electricity for heat, light and power.

The Ontario Paving Brick Co., Toronto, has been incorporated with a capital stock of \$50,000 to manufacture paving materials, brick, cement, tiles, terra cotta, sewer pipe, etc.

The Toronto Electric Motor Co. started business in Toronto two years ago in a small way, manufacturing electric motors, since which time they have increased their capacity to over four times what it was at the beginning. Their output of motors and dynamos for the two years amount to over 200 machines, representing about 1,000 horse power. As an indication of how their work is appreciated a dynamo has recently been sent them from Campbelltown, N.B., and an American motor from Winaipeg for repairs, the parties knowing the value of the work done by this company from machines being operated in those places. On Monday of this week six motors were delivered and two sales made. On Tuesday two were delivered and five sales made; three for Brantford and two for Ottawa, with the complimentary remark that "your motors are running famously." Mr. J. C. McLachlan, the manager of the company, is one of the best known men in the electric business in Western Ontario. Their new office is at 109 Adelaide St. West, Toronto.

T. G. STEWART, Electrical Expert. G. M. ARNOLD, M. E. F. J. CROSS, E. E.

STEWART, ARNOLD & CO.,

CONSULTING ELECTRICAL ENGINEERS

... AND ...
MANUFACTURERS OF ELECTRICAL APPARATUS

And Dealers in all kinds of Electrical Supplies.

We make a specialty of
ARMATURE AND ARC LAMPS. All Work Guaranteed.
Repairs Promptly Executed.

164 KING STREET WEST.

AUBURN WOOLEN CO.....

MANUFACTURERS OF PETERBOROUGH, ONT.

FANCY TWEEDS, ETC.

Selling Agents, D. MORRICE, SONS & CO., Montreal and Toronto

HAMILTON COTTON CO.

Hamilton, Ontario

DYERS, BLEACHERS

AND MANUFACTURERS OF

Warp Yarn, in Beam, Chain or Skein, White or Colored.
Single and Double Yarns, Cop Yarn, Single and
Double Hosiery Yarn in all Colors, including genuine
"Fast Black."

PAUL FRIND & CO., - TORONTO

Selling Agents for Beam Warps

The Toronto Lock Co., of Toronto, are applying for supplementary letters patent to increase the amount of their capital stock from \$3,000 to \$25,000.

The Oliver Typewriter Co., of Toronto, are applying for incorporation with a capital stock of \$50,000 to manufacture typewriters and typewriter's and office supplies.

The Hamilton Change-Maker Co., Hamilton, Ont., are applying for incorporation with a capital stock of \$20,000 to manufacture change-making machines, cash registers, etc.

The Geo. Gillies Co., Gananoque, Ont., are applying for incorporation with a capital stock of \$125,000 to manufacture wares of iron, steel, nickel, brass, copper, etc., including carriage hardware, wire, etc.

Steamboat, Railroad, Electric and Mill Supplies.



100 Bales A1 White Cotton
Waste 7½ cents per pound.

FRANKLIN CYLINDER,
ENGINE and DYNAMO OILS

Rainbow Sheet and Gasket Ring;
and Spiral and Square Flax Packing.

WILLIAM C. WILSON, 24 Front St. East,
TORONTO.



We Manufacture
INCANDESCENT DYNAMOS,
ARC DYNAMOS,
AND MOTORS,
ANY VOLTAGE.

Our record is not equalled
by any manufacturer.

Our Success our Proof.

107 and 109 Adelaide Street West,
TORONTO, ONT.

Penman Manufacturing Co., Ltd.

.... PARIS, ONT....

Manufacturers of...

Hosiery, Shirts, Drawers
Glove Linings and Yarns

Selling Agents: D. MORRICE, SONS & CO., Montreal and Toronto.

ROSAMOND WOOLEN CO.

...ALMONTE, ONT...

Fine Tweeds, Cassimeres and Fancy Worsted Suitings
and Trouserings.

Guelph Woolen Mill Co., Ltd.

GUELPH - ONTARIO

Manufacturers of

UNDERWEAR, HOSE, WHEELING, FINGERING and WORSTED YARNS
EIDERDOWN FLANNEL, Etc.

Selling Agent: DONALD FRASER, MONTREAL: E. H. WALSH & Co., TORONTO

Thomas McClay's new roller mill at Woodstock, Ont., will start running this week.

The Perce Fishing Co., Perce, Que., has been incorporated with a capital stock of \$25,000 to manufacture fertilizers, oils, skins, etc.

The Imperial Brush Mfg. Co., Montreal, are applying for incorporation with a capital stock of \$140,000 to manufacture brushes, brooms, etc.

Nash's new sawmill at South Edmonton, N.W.T., has been completed and put in operation. Walters & Humberstone's mill at the same place will soon be completed.

A number of capitalists of Ottawa, Ont., have been in Jamaica, W. I., negotiating for franchises to construct electric railways in Kingston and at other points on the island.

The Huntsville and Lake of Bays Transportation Co. are applying for incorporation with a capital stock of \$25,000 to establish an electric railway between Lake of Bays and Peninsula Lake, Ont.

The business of the J. C. McLaren Belling Co., of Montreal, hitherto carried on as a private enterprise, will be taken over by a joint stock company, with capital stock of \$99,000. Applicants for the charter are, among others, D. W. McLaren, Alex. Walker, B. S. Sharing, Joseph Ryan and Gordon W. McDougall.

The Erie Mills owned by Jno. Campbell, St. Thomas, Ont., are being improved by the addition of a new plant, and their interior remodelled for the reception of machinery of the latest and most improved patterns. The capacity will be increased from 500 to 600 barrels per day. The Goldie & McCulloch Co., Galt, Ont., will supply the engines and boilers.

The following electric railway companies received assent to their incorporation in the Ontario House this session:—The Brantford, Port Dover and Galt Radial Company; the London Radial Company, which is intended to extend to a number of the villages, etc., west of London; the St. Thomas Radial Company, which is to extend southward to Port Stanley; Kingston and Gananoque Railway Company; the Hamilton, Burlington and Lake Shore Railway Company; the Hamilton and Niagara Falls Railway Company. Among railways seeking incorporation or amendments to their Acts are the Grand Valley Railway, which has been incorporated. So has the Guelph Railway Co., and power is given to the city of Guelph to confirm an agreement with George Sleeman; the Windsor, Amhurstburg and Lake Erie Railway, the Hamilton Valley City and Waterloo Railway are both incorporated likewise.

TORONTO CARPET MNFG. CO., Ltd.

TORONTO

Were awarded Gold Medals at the World's Columbian Exhibition, Chicago, for their

INGRAIN

and --

"Imperatrix" Axminster

CARPETS

SEVEN QUALITIES OF INGRAINS

Kensington Art Squares, Axminster Mats, Rugs, Squares, Body Border and Stairs.

Esplanade and Jarvis Sts., - Toronto

The Canadian Colored Cotton Mills Co.

FALL 1894

Cinghams, Zephyrs, Cheviot Suitings, Flannelettes, Dress Goods, Skirtings, Oxfords, Shirtings, Cottonades, Awnings, Tickings, etc.

NOW READY SEE SAMPLES IN WHOLESALE HOUSES

D. Morrice, Sons & Co.

... AGENTS ...

MONTREAL and TORONTO.

The British American Dyeing Co. are putting new dyeing apparatus in their works at Verdun, Que. It will be used largely for piece dyeing for manufacturers.

A joint stock company has been formed at Binscarth, Man., for the purpose of manufacturing cheese. They have secured the building and plant of the Assesippi Cheese Company and intend moving the same to Binscarth.

Messrs. John Starr, Son & Co., Halifax, N.S., inform us that they are meeting with excellent success with their Unique telephones, which are giving universal satisfaction wherever used. This concern has put out a large number of them both in Canada and in the United States. As an evidence of their superiority the Imperial War Department at Halifax have adopted these telephones after thorough competitive tests and are now equipping their forts with these standard instruments.

Messrs. Cowan & Co., of the Galt Foundry, Engine and Machine Works, Galt, Ont., inform us that they have lately booked and shipped the following orders.—Large planer and matcher to St. John's, Que.; 65 h.p. engine and boiler to Toronto; and a medium size planer and matcher to St. Francois, Que.; dimension saw tables to Windsor, London, Cookshire, and Chatham; rip feed saw tables to London and Chatham; a moulder to Merlin, Ont.; planer to Danville, Que.; improved rapid surface planer to St. John's, Que.; full outfit for planing mill to West Potten, Que.; large patent revolving bed planer to Princeton, Ont.; tenon machine and mortice machine to Sackville, N.B.; combination saw bench to Burk Falls, Ont.; band saw to Tweed, Ont.; planer and matcher and band re saw to Liverpool, N.S.; heavy planer and matcher to Broms Corners, Que.; grinding machine and boring machine to Dunham, Que.; band saw and wood lathe to St. John, Que.; planer and sand papering machine to Montreal; Large Moffat heater to Toronto; moulder and panel raiser to Chatham, Ont.; heavy planer and matcher and boring machine to Maxville, Ont.; full outfit of machinery to Bryson, Que.; veneer planing machine to Toronto; 60 h.p. boiler to Meaford, Ont.; 50 h.p. Corliss engine and boiler to Brantford; 65 h.p. Corliss engine and boiler to St. Mary's. They say that the sale of their new patent matching heads is unprecedented, the demand being so great that they had to get special machinery to turn them out quick enough, having shipped as high as ten set in one day.

GEO. WHITE FRASER,
Consulting Electrical Engineer.

C. E., D. T. S.,
A. Am. Inst. Elec. Eng.

Electric Railways and Electric Light Construction Superintended.
18 Imperial Loan Building, Toronto.

ALEX. P. MENDE & COMPANY 14 Water St.,
NEW YORK,

MANUFACTURING CHEMISTS.

FAST ONE DIP COLORS, F Dyeing and Printing of Cotton, Woolen, Mixed Fibres, Etc., etc. SHADES MATCHED.
BLACKS AND CHEMICALS O
German Finishing Paste Cordage and Carpet Size
German Warp Dressing Shade Cloth Colors and Size
Cotton and Merino Softeners Belt Dressing
Wool and Cloth Scourers, etc., etc.

The Industrial Economizer Apparatus patented, for reclaiming the valuable products from waste waters. Apparatus in operation at our works. Patented June 26th, 1894.
This means a saving to you of thousands of dollars every year.

I. Butler & Co. Distillers of Benzole, Naptha,

and Manufacturers of Carbolic Acid and Varnish.

303 Front St. East, - - - TORONTO.

FERGUSON & PATTINSON

PRESTON : : : ONT.

Manufacturers of....

Fine and Medium **TWEEDS.**

M. S. McKay, Galt, Ont., is building an additional brick store room to his woollen mill.

The Garden City Carpet Mfg. Co. of Ontario, St. Catharines, Ont., has been incorporated with a capital stock of \$10,000.

M. Lefebvre & Co., of Montreal, manufacturers of beet root sugar, propose to erect a factory at Leamington, Ont. The proposed factory will employ 300 hands four months in the year, and fifty hands the year round. The machinery will cost \$215,000. The factory will use 500 tons of beets a day. The refuse will feed 2,000 head of cattle. The factory complete will cost \$350,000, and of this sum the farmers will be asked to take \$150,000 in shares.

Messrs. I. Matheson & Co., New Glasgow, N. S., have sent us a very neat pamphlet having reference to gold mining. Their object in presenting this pamphlet to gold miners and others interested is to show their specialties to mining machinery, so that parties contemplating the erection of mining or milling plant may know exactly what they offer; and to assist them in replacing such parts as are most subject to wear, with the least delay and at the lowest cost. They have no new inventions to bring before their patrons, but manufacturing as they do for the most successful mining men, they claim that the machinery they offer is up to date, and those who may have dealings with them may rest assured that they will get no experimental designs when what they require is standard mining and crushing appliances. This class of work is not always to be judged by its first cost, for it is a fact that the mill cheapest in first cost is often the most expensive in maintenance. The cost of the machinery, after all, is the smallest part of the cost of a complete mill; and the difference in cost between a poor mill and a good one is little more than the difference in cost of machinery alone. But the cost of maintenance is entirely another matter. It goes on, a steady outlay, increasing rather than diminishing, as long as the mill works. To illustrate this they take the case of two twenty-stamp mills of which the buildings, shafting, rock breakers, etc., are practically identical. In one, however, the mortars, cam shafts, cams, stems, tappets, heads, shoes, dies and plates, together with the engine and boiler, cost, say, \$3,000, while in the other the same things with a few improvements cost, say, \$4,000 to \$4,500. The difference in cost of the two mills will be under \$1,500. But the first will be doing good work if it crushes 600 tons per month, at an expenditure of, say, \$175 to \$200 for fuel alone, while the other will as easily crush nearly double that quantity in the same time on an expenditure of from \$75 to \$90 for fuel; the wages being about the same in both cases. They are always ready to give prices and, if necessary, submit plans and estimates to intending purchasers.

Extensive improvements will shortly be made to the Walton woollen mills, Dunnville, Ont.

A Moyer & Co., Palmerston, Ont., are remodelling their bolting system, taking out all the old reels, and putting in a new line of flour bolts to be manufactured by The Stratford Mill Building Co.

F. Glebe, Mildmay, Ont., whose mill was recently destroyed by fire, has nearly completed rebuilding. He has given his contract for machinery to The Stratford Mill Building Co. for a complete line of machinery for 75 barrel mill.

The Board of Trade, Montreal, have ordered another Robb-Armstrong automatic high speed engine, of 80 h. p., being the fourth engine of that character placed in that building. The sale was effected by W. H. Nolan, manager of The Canada Machinery Agency, 321 St. James St., Montreal, the Province of Quebec agents of The Robb Engineering Co., Amherst, N. S.

The Great Northern Transit Co.'s new steamer *Majestic* was launched from the shipyards of the Collingwood Dry Dock Co., Collingwood, Ont., in April. The machinery was designed by Messrs. Logan & Banks, of Toronto and Cleveland, and built by John Inghill & Son, Toronto. The dimensions of the *Majestic* are:—Length 27 feet, beam 35 feet 10 ins., depth of hold 13 feet 4 ins., tonnage 1600. She is built entirely of white oak and steel, the main deck being of British Columbia Douglas fir. 65 tons of 3-4 steel were used in her keels and arches, 55 tons of 3-4 round iron bolts. The hull was built by the Collingwood Dry Dock and Wrecking Company. The superintendent and designer was S. D. Andrews. The *Majestic* has steam capstans, one forward and one amidship; steam steering gear and steam windlass for anchors on main deck. She has also two square fire-box boilers, with steam dome 10 feet by 13x9, with 124 tubes, 3 1-3 ins. by 11 feet in all, steam pressure 136 pounds to square inch; 1 fore and aft compound marine engine of latest design, cylinder 28 and 34, with 36 in. stroke; shaft in three pieces, thrust, tunnel and propeller; shaft made of mild forged ingot steel 11 1/2 ins. in diameter; 6 thrust rings of horse-shoe type, with four feed and air pumps connected, also pumps for fire; propeller of steel and iron and steel rudder, estimated horse-power 1200. Water-pressure on all time for fire service. The electric-light plant, consists of 1 30 horse-power engine, and 1 Edison compound-wound 12 K. W. dynamo of latest design, carrying 275 16 candle-power lamps; lights on main deck, in every staterooms, in cabin and on promenade deck, etc. The cabins were built by Wilson Bros., of Collingwood, of latest design, finished in white gloss satin, comprising 120 staterooms and officers' quarters, etc., with capacity for 200 passengers, promenade deck 200 feet long, 19 feet wide.

GET = YOUR ROLLS

GROUND AND CORRUGATED by the Stratford Mill Building Co. Ltd.

We guarantee our prices as low as any. We have one of the most complete plants of the kind in the province, and are able to do our work expeditiously and well.

SEND YOUR ORDERS FOR

BOLTING - CLOTH

to the same place. We handle nothing but the best, and sell the best as cheap as you can buy cheaper brands. Write us for prices.

Watch the next issue for a description of our NEW DUST COLLECTOR.

THE STRATFORD MILL BUILDING CO.

(LIMITED)

STRATFORD, = - ONTARIO.

Messrs. R. Lang & Son, Berlin, Ont., will increase the capacity of their tannery by the addition of a new boiler.

The Nanaimo Electric Light, Power & Heating Co., of Nanaimo, B.C., are applying for incorporation with a capital stock of \$100,000 to construct electric works, powerhouses, generating plant, etc.

John Campbell, St. Thomas, Ont., has closed down his mill for the purpose of completely remodelling it. He is taking out all his roll frames and putting in a 20 Double Allis Roller mill, 36 new flour bolts, and a large line of other machinery, all manufactured by The Stratford Mill Building Co., Stratford, Ont. Mr. Campbell is determined to have his mill right up-to-date, and is sparing no pains or expense to have it so.

The Packard Electric Co., Montreal, have issued the following "removal" notice which explains itself: Montreal, April 25th, 1895. A steadily growing demand for a high grade lamp has made it necessary for us to seek larger quarters where our out-put, which is to-day the largest in Canada, can be considerably increased, and in consequence our removal to St. Catharines, Ontario, will take place on or about the 25th of this month. As the new factory is now being equipped there will be but a short period when we shall not manufacture, during which time we can fill all orders promptly from stock. Address all correspondence to St. Catharines, Ont., after April 25th, 1895.

Mr. Connolly, Montreal, has ordered, through W. H. Nolan, manager Canada Machinery Agency, a 30 h. p., Robb-Armstrong engine for his steamer Admiral.

The Canada Machinery Agency, Montreal, of which W. H. Nolan is manager, have removed into larger and more commodious premises at 321 St. James St., with an entrance on Craig St. The new premises have 10,000 square feet of floor space. The rear part of the building is devoted to second hand, and the front part to the new machinery.

A New York electrical contemporary, that sometimes publishes Canadian Notes regarding electrical events, informs its readers that "The Poselean and Carleon Company, of Ottawa, capital \$100,000, have started the construction of their new works in that city. The factory will be 135 by 150 feet. It is our impression that no company with that name exists in Canada. The item probably has reference to a concern which was mentioned in these pages in our April 5th issue as follows: -The Ottawa Porcelain and Carbon Co., Ottawa, recently incorporated, have contracted for the erection of the new buildings for their works, it being expected that the works will be in operation by the first of July. Their premises are 200 feet square, upon which are to be erected three two-story and eight one-story buildings, also a large warehouse. When completed the capacity of these works will be to produce 1,500,000 carbon points per month.

THE J. B. ARMSTRONG

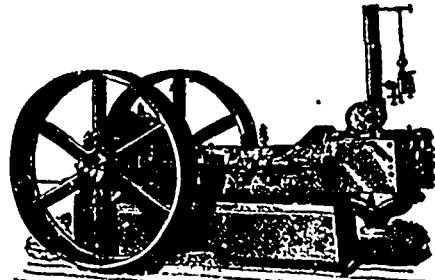
**Road Wagons, Buggies and
... Carriages ...**

Excel in combining light and stylish appearance with perfect riding qualities and durability. Ask for our Catalogue illustrating all our different styles

J. B. Armstrong Mfg. Co., Ltd.
GUELPH, CANADA.

Armington & Sims

AUTOMATIC HIGH SPEED ENGINES



-FOR-
ELECTRIC LIGHTING
-AND-
GENERAL FACTORY PURPOSES
Perfect Regulation and Highest Economy.
-AND-
Steam Pumps
SHAFTING, PULLEYS
-AND-
General Machinery

Nie & Whitfield - HAMILTON, ONT.

**A GOOD INVESTMENT
REQUIRING BUT LITTLE CAPITAL.**

The Inventor of a very ingenious and novel **HASP LOCK** offers the Canadian Patent for sale at a reasonable price.

It has proven itself to be a great seller in the United States.

Hardware dealers generally handle this lock and railway and car companies are adopting it.

The cost of machinery and tools to manufacture it is light while the profits are large.

Full information as to the machinery and tool furnished if desired.

The closest investigation as to its merits invited.

Address **Wm. E. Deibert, Shamokin,**
Pa., U. S. A.



THE STANDARD DRAIN PIPE CO., St. John's, P.Q.
Manufacturers of Sal Glazed Vitrified Sewer Pipes, Double Strength Railway Culvert Pipes, Inverts, Vents, and all kinds of Fire Clay Goods.
The Standard Drain Pipe Co., of St. John's, P.Q., (Ltd.) W. C. TROTTER, President

FRICION BOARD **FRICION BOARD** **FRICION BOARD**
Manufactured by **Dominion Leather Board Co.,**
MONTREAL.
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ROOFING, SHEATHING AND FLOORING FELTS.

FIRSTBROOK BROS.
Mnfrs of **Dovetail and Packing Boxes**
Top-Pins, Side Blocks and Cross Arms. Wood Printers, Etc.
CIGAR BOXES, SHIPPING CASES.
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Smith Wool Stock Co.
219 FRONT STREET EAST, - - - TORONTO
...MAKERS OF...
Wool Stock, Shoddies, Etc.
All Kinds of Graded Woollen Rags, Carbonizing and Neutralizing, Buyers of Wool Pickings, all kinds of Head and Soft Wastes.

The Toronto Paper Mfg. Co.
CORNWALL, ONT.
Manufacturers of . . .
ENGINE SIZED SUPERFINE PAPERS
WHITE AND TINTED BOOK PAPERS
Blue and Cream Tint and Wove Foolscap, Account Envelope and Lithographic Papers etc.

BROWN & CO.
MANUFACTURERS OF
Square and Hexagon HOTPRESSED NUTS
Paris, Ont.

The Stratford Woollen Mill, Stratford, Ont., are building a three story brick addition to their mill to be used as store rooms office and salerooms.

The Hamilton Storage Battery Co. has been incorporated with a capital stock of \$10,000 to manufacture electrical storage batteries, electrical apparatus, etc.

The Stratford Gas Company, Stratford, Ont., will shortly increase their boiler capacity; they now have 100 h.p. If they secure the contract for lighting the streets, which will be settled by the beginning of May, they will also put in another engine.

The North Shore Navigation Co.'s new steamer, City of Toronto, was launched at Owen Sound on April 20th. The vessel is 160 ft. long and 38 ft. wide over the guards. The machinery was supplied by Messrs. J. Inglis & Son, Toronto. She is a side-wheeler with iron feathering wheels and will have accommodation for more than 600 passengers. The vessel was designed and built by Capt. John Simpson, and this makes the 124th vessel that he has built.

The Dodge Wood Split Pulley Company, Toronto, have just completed the erection of another extensive rope drive at The Rathbun Company's Cement Mills at Napanee Mills, Ont. The transmission in this case is 150 h.p. from the main shaft in one mill, carried a distance of 361 feet to the main shaft in another mill, thus doing away with a steam engine, one pair of boilers, an engineer and a fire man, and the saving of fuel, and all the consequent expense attached thereto. Messrs. Rathbun acknowledge a saving of twenty-two dollars per day in the running of their grinding mills in this manner. The drive is composed of a system of iron-grooved Driving pulleys, compound winders, and Idler pulleys, and the Dodge patent double wind slack take-up device. The power at either end is under control by means of Dodge patent split clutches, and is equipped with the Dodge patent Electrical Tell Tale, which will promptly announce at the superintendent's office any defect in the rope, allowing him to stop the same by means of the cut off clutches placed there for that purpose. It may be also mentioned that the main power at the driving mill end of the system is transmitted from a 250 h.p. automatic engine to line shaft by the Dodge system of rope drive, which has always given the best satisfaction. The Rathbun Co., as well as many other of our largest Canadian mill people, are continuing to use the Dodge Co.'s system of transmission after satisfactory results and experiences already obtained. A saving, such as has been effected in the instance here recorded, made at such a comparatively small cost, is worthy of being taken advantage of by those who require to transmit power from one point to another.

The Heeson Rocking Grate Bar Co., Toronto, Ont., are applying for incorporation with a capital stock of \$100,000 to manufacture rocking grate bars, etc.

The village of Sandridge, Ont., has obtained permission from the Ontario Legislature to give aid to a woollen mill, a tannery, and bobbin factory which it is proposed to establish there.

The Selkirk Roller Mill Co., Selkirk, Man., contemplate replacing the present engine with a much larger one, and also putting in some extra rollers and reels to increase the capacity of the mill to 75 barrels per day.

The Goderich Steam Boiler Works, of which A. S. Chrystal is proprietor, report business good. They have just completed and placed in position 45 feet of new steel water flume 24" and 36" dia., for Alex. Smith's oatmeal mills, at Kinloss, near Lucknow, Ont.; a new 25 h.p. steel boiler and outfit for O. S. Doan & Son's Tannery at Clinton, Ont., and a large steel smokestack 66 feet high for the Goderich Organ Co. They have under construction a 40 h.p. steel boiler, large water tank, etc., for the Huron County House of Refuge; a 16 h.p. boiler and outfit for the Holmesville, Ont., Butter and Cheese Mfg. Co., besides several other contracts.

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COPPER ⁶⁰¹⁹ BRASS

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Berlin, Germany.

METHYLENE BLUES, ERIKA, CONGO BROWNS, ETC.

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PHILADELPHIA, 122 and 124 Arch St.

A. W. LEITCH, 16 Hughson St. South, HAMILTON, ONT.

ECO MAGNETO

Watchman's Electric Clock

... WITHOUT BATTERIES ...

Write for Descriptive Circular to

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John Starr, Son & Co., Ltd. — Halifax, N.S.

Agents for the Maritime Provinces.

ESTABLISHED 20 YEARS

A. KLIPSTIEN & CO.

122 PEARL ST., NEW YORK

Anilines, Dyestuffs and Chemicals

of every variety, of the best quality and at the lowest prices. Delivery made at New York, Montreal or Hamilton.

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AGENTS

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WE MANUFACTURE

THE MOST PERFECT

...Watchman's Clock...

IN THE MARKET.

Send for full information and prices to

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New 10-Inch Standard Molder.

The accompanying illustration is of a new 10-inch molder manufactured by Messrs. Jackson, Cochrane & Co., Berlin, Ont.

The frame is very heavy and well braced, and is made extra long so that the belts have great pulling capacity, and every advantage and clearance for easy running.

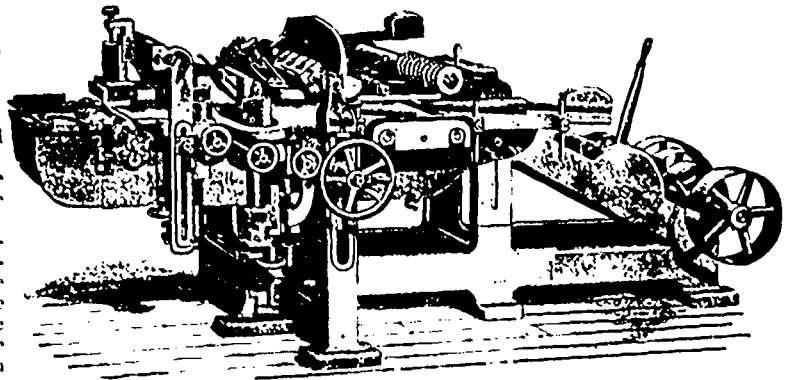
The main spindle is of the best cast steel, and has three very long bearings. The boxes are self-oiling, and are lined with genuine Babbitt metal.

The patent outside bearing is of the latest improved construction. It goes to the floor and is braced by a solid projection from the base of the frame. No bolts or outside boxes have to be taken off to raise and lower the bed. The side heads, with their spindles, raise and lower with the table, and both inside and outside spindles are adjustable while in operation, by hand wheels on the front side. Both side spindles can be run at an angle, and either side spindle can be raised and lowered independently of the other. The under head is also adjustable laterally. These are great improvements on molders which will be appreciated. There are chip breakers to each head, and in this there is a marked excellence, as there can be no tearing on any of the heads, the way these improvements are rigged.

The feed is extra powerful, consisting of two rolls above and two in the bed, all geared in a very superior manner. The expansion for driving the lower rolls is so perfect that the bed can be lowered 16 inches and the feed remain just as powerful. There are four feeds on the machine. The upper feed spindles are hung on links in such a manner that the feed rolls raise up parallel, giving the fluted roll a full bearing on the board, the entire width of the piece. By this system of weighting, the feed rolls can be instantly raised up, allowing the operator to slip the board back.

Every advantage has been taken of our long experience in building improved molders, and every improvement put on that practical experts could advise.

The operator can change the shape of the moulding on each side head without changing the thickness, and also change the thickness of moulding without changing the shape, all of which is accomplished without stopping the feed. These are advantages that should not



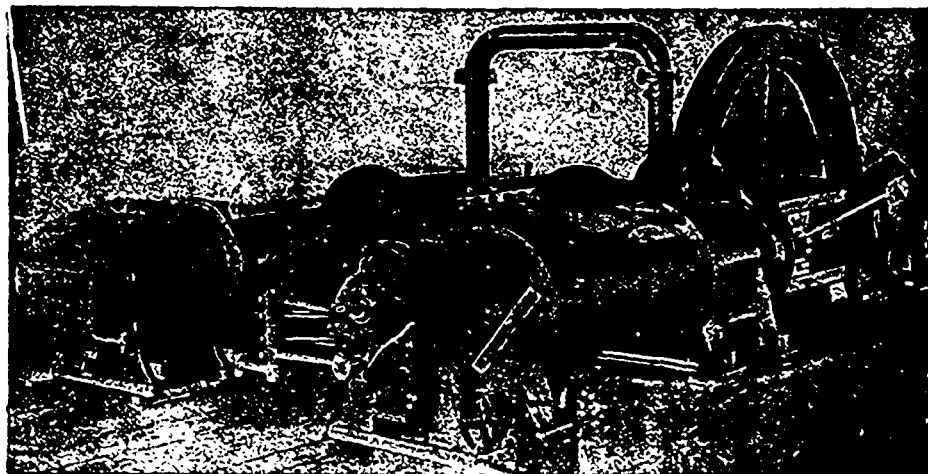
be lost sight of. These Standard Molders are made in sizes from 7 inches up to 12 inches. The tight and loose pulleys are 12" x 16 1/2" face, and should run 1,000 revolutions per minute.

For further information address the builders, Messrs. Jackson, Cochrane & Co., Berlin, Ont.

We are in receipt of a circular from the Hamilton Bridge Works, Hamilton, Ont., in which they announce that the Hamilton Bridge Co. has been reorganized and is now The Hamilton Bridge Works. Mr. J.W. Schaub, late of the Carnegie Steel Co., Pittsburg Pa., has been appointed chief engineer and manager. This concern is prepared to design and construct all kinds of railway, highway and other bridges of steel or iron, also viaducts, turntables, etc. They are in a position to quote very low prices to architects and others for girders, columns, steel and iron roofs and structural work. Their shipyard affords excellent facilities for building ships and barges either of steel or iron. Estimates and plans of all kinds of engineering work furnished on application. They specially call attention to the present low price of steel which enables them to build highway bridges at a price, which, considering their durability and strength gives them great advantage over wooden structures.

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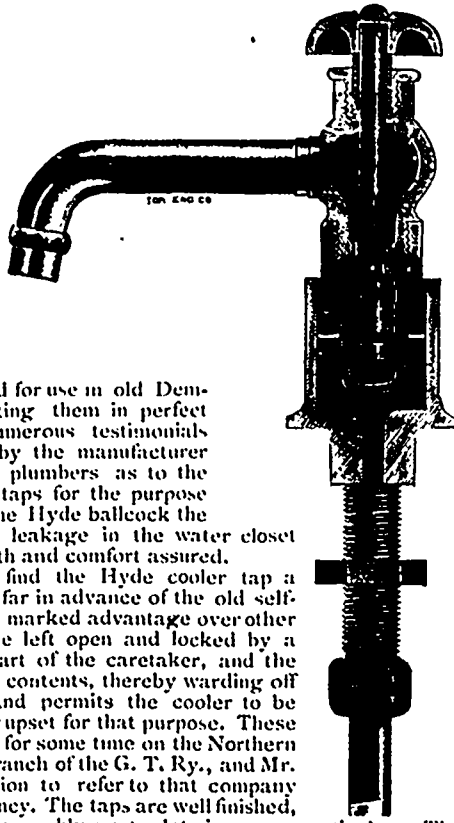
Toronto Office,
33 Melinda Street.

Hyde's Patent Self-Closing Water-Cooler Tap.

Mr. Daniel Johnson, 14 Markham St., Toronto, is the manufacturer of the Hyde patent taps and closet valves. These taps are extensively used in fine buildings requiring self-closing taps to prevent overflow from carelessly leaving taps running, and for horse-troughs, drinking fountains, etc.

The Hyde valve is particularly adapted for use in old Demorest closets in putting them in perfect working order. Numerous testimonials have been received by the manufacturer from architects and plumbers as to the adaptability of these taps for the purpose intended. By using the Hyde ballcock the noise caused by the leakage in the water closet tank is done away with and comfort assured.

Railway men will find the Hyde cooler tap a model of its kind and far in advance of the old self-closing tap. It has a marked advantage over other taps in that it can be left open and locked by a simple turn on the part of the caretaker, and the cooler emptied of its contents, thereby warding off danger from frost and permits the cooler to be emptied without being upset for that purpose. These taps have been in use for some time on the Northern and North Western branch of the G. T. Ry., and Mr. Johnson has permission to refer to that company regarding their efficiency. The taps are well finished, nickel plated and thoroughly up to date in every particular. The manufacturer will be glad to answer any enquiries or send circular and price list to any desiring the same.

**CANADIAN PATENTS.**

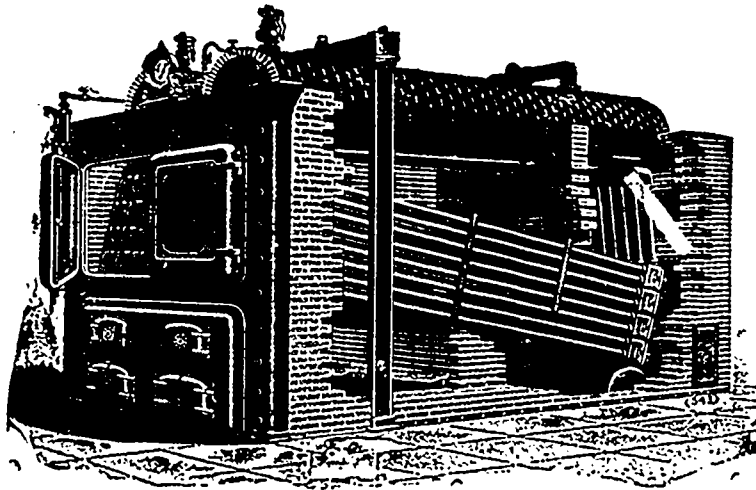
The following patents have been issued from the Canadian Patent Office, from February 11 to February 26, 1895, inclusive.

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

Fetherstonhaugh & Co.,	Bank of Commerce Building,	Toronto.
Ridout & Maybee,	103 Bay street,	Toronto.
A. Harvey,	Central Chambers,	Ottawa.
J. A. Grenier,	Imperial Building,	Montreal.

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

- 48,192 Method of and apparatus for producing illuminating gas, Wm. Young, Priorsford, Scotland.
- 48,193 Stone dressing machine, Nils Petter Ostberg, Lund, Sweden.
- 48,194 Multiple gear, Frederick C. Robinson, East Fremont, Mich.
- 48,195 Wire stretcher, Wm. H. Beal, Anson, Kansas.
- 48,196 Snow plow for railways, The Taunton Locomotive Mfg. Co., Taunton, Mass.
- 48,197 Piston valve, Saml. Otis Jones & Geo. H. Atwood, Stillwater, Minn.
- 48,198 Feed water regulator, Chas. A. Straub and Hy. F. Straub, Rouseville, Pa.
- 48,199 Flue cleaner, Chas. E. Davey & Edgar F. Reeve, Detroit Mich.
- 48,200 Tie and fastening for railway rails, Ellery Cowm Davis, Crookston, Minn., and Edmund Davis, Hyde Park, Mass.
- 48,201 Bicycle, The Wanderer Cycle Co., Toronto, Ont.
- 48,202 Grocer's cabinet, Jacob G. Schunn, La Porte, Ind.
- 48,203 Car attachment, Chas. K. Sherwood, Brooklyn, N. Y.
- 48,204 Railway car heater, Hy. R. Town, Stamford, Conn.
- 48,205 Lock, Ferdinand Cunrad, Detroit, Mich.
- 48,206 Creamery apparatus, Geo. T. McLaughlin, Boston, Mass.
- 48,207 Hand propelled vehicles, Louis A. Frigon, Montreal, Que.
- 48,208 Gas heater, Edward Gurney, Toronto, Ont.
- 48,209 Bed spring, La Fayette Wildermoth, Columbus, O.
- 48,210 Lobster can packer, Francis Gallant, Tignish, P. E. I.

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| <p>48,211 Draft device for chimney stacks, The Taylor improved draught Co., Newark, N. J.</p> <p>48,212 Cloth sizing and drying machine, The Montreal Cotton Co., Valleyfield, Que.</p> <p>48,213 Carpet beater, Geo. G. Fernald, North East, Pa.</p> <p>48,214 Method and apparatus for manufacturing gas, Chas. D. Hank, Chicago, Ill.</p> <p>48,215 Boat, Hiram D. Layman, Little Rock, Arkansas.</p> <p>48,216 Gate, Moses E. Myers, Cambridge, Ind.</p> <p>48,217 Treatment of precious ores, Hy. Livingstone Sulman, London, Eng.</p> <p>48,218 Chimney and stove pipe, Alfred E. Gilpin, Halifax, N. S.</p> <p>48,219 Shelf support, Chas. B. Godfrey, Milford, Mass.</p> <p>48,220 Folding bedstead, Carl J. Pehrsson, Lundswall, Sweden.</p> <p>48,221 Apparatus for repairing asphalt pavements, Jas. R. Penberthy, Buffalo, N. Y.</p> <p>48,222 Method of producing caustic, etc., Thos. Drake, New Street, Huddersfield, Eng.</p> <p>48,223 Sewing machine, Harry Moore, Wellingborough, Eng.</p> <p>48,224 Manufacture of coopered vessels, Thos. K. Parrish, Richmond, Va.</p> <p>48,225 Mortise lock, Rich. Chappell, Moosomin, N. W. T.</p> <p>48,226 Weather strip, Wallace Simpson, Brighton, Ont.</p> <p>48,227 Wall tie, Hesse Prescott, Webster, Mass.</p> <p>48,228 Car coupler, Dennis Wholey, Lowell, Mass.</p> <p>48,229 Electrical display apparatus, Jos. K. Ketcher, New York, N. Y.</p> <p>48,230 Feed cutter, Wm. Stafford, A. Stafford and Wm. J. Stafford, Lancaster, Ont.</p> <p>48,231 Window and curtain fixture, Geo. A. Crisson, Tarrytown, N. Y.</p> <p>48,232 Hay loader and rake, Jno. Martin, Belview, Minn.</p> <p>48,233 Nut lock, Frank P. Johnson, Danville, Pa.</p> | <p>48,234 Lubricator, Jno. Medway, Cambridge, Mass.</p> <p>48,235 Gas burner, Jacob Haussler, Berlin, Germany.</p> <p>48,236 Device for preventing seasickness, Frederick W. Kimball, New York, N. Y.</p> <p>48,237 Ratchet drill, Napoleon Samson, Rivier-du-Loup, Que.</p> <p>48,238 Automatic exhaust nozzle, Jno. T. McLellan, Bozemon, Montana.</p> <p>48,239 Rubber-soled foot wear, Chas. Leander Higgins, Montreal</p> <p>48,240 Fire kindler, Fletcher R. Pearson, Vancouver, B. C.</p> <p>48,241 Device for fastening covering strips on boilers, Philip Carey, Cincinnati, O.</p> <p>48,242 Machine for filling bottles, etc., Wm. A. Bowie, Streathar, Hill, Surry, and Finest J. Dodd, New Barnet, Eng.</p> <p>48,243 Device for securing carriage curtains, Mortimer O. Turner, Marquette, Mich.</p> <p>48,244 Railway signal, Wm. H. Walsh, Albany, N. Y.</p> <p>48,245 Road cart, Aloysius Brohmam, Mildmay, Ont.</p> <p>48,246 Chemical fire engine, Daniel D. Wilson, Toronto, Ont.</p> <p>48,247 Device for disinfecting water closets, etc., Geo. R. Orton, Winnipeg, Man.</p> <p>48,248 Multiple cylinder steam engine, Hamilton J. Combes, New York, N. Y.</p> <p>48,249 Trousers, John E. Leavitt and Jas. L. Wosson, Boston, Mass.</p> <p>48,250 Brake shoe, Wm. D. Sargent, Chicago, Ill.</p> <p>48,251 Trolley pole, Alex. Stewart, McBeau, Montreal, Que.</p> <p>48,252 Process of refining petroleum, Geo. H. Moore, London, Ont.</p> <p>48,253 Car coupler, Wm. McNames, Scatterwood, S. D.</p> <p>48,254 Machine for operating the valve of feed spouts of conveyers of saw dust to furnaces, Thos. Manley, Prince Albert, N. W. T.</p> <p>48,255 Process of refining petroleum, Geo. H. Moore, London, Ont.</p> <p>48,256 Paper box, Wm. Stone, Toronto, Ont.</p> <p>48,257 Car coupler, Duncan J. Sinclair, Caledonia, N. Y.</p> |
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- 48,258 Brick and tile cutting machine, Jno. Thompson, Bucyrus, O.
 48,259 Process of preserving yeast, August Collette, Seclin, France.
 48,260 Middlings separator, Alfred R. Tattersall, London Eng.
 48,261 Step rest pedal for bicycles, Arthur Cox, Toronto, Ont.
 48,262 Soap hook for harness, Jos. W. Calef, North Easton, Mass.
 48,263 Ice scraper for trolley wires, The Homestead Mfg. Co., Homestead, Pa.
 48,264 Apparatus for malting grain, John W. Free, New York, N.Y.
 48,265 Portable burglar alarm, Lars G. Larson and Claus Lundquist, Moscow, Idaho.
 48,266 Bottle stopper, Frederick B. Thatcher, Providence, R. I.
 48,267 Exterior finish for frame structures, Theophile Gironard, St. Catharines, Ont.
 48,268 Grate, Geo. S. Watson, Toronto, Ont., and John Barclay Montreal, Que.
 48,269 Fuel saver, Wm. L. P. Lyons, Goshen, Ind.
 48,270 Method of manufacturing beer, Paul Kroffat and August Gruell, Chicago, Ill.
 48,271 Apparatus for lighting, heating and cooking, Jas. G. Pennycook, Toronto, Ont.
 48,272 Land Roller, David File, Cainsville, Ont.
 48,273 Waggon body, Chas. A. Erickson, Red Wing, Minn.
 48,274 Air brake coupler, Leonidas Sennett, Russell, Ky.
 48,275 Method of charging and combining liquids with carbonic acid gas, Edwin Adam, Philadelphia, Pa.
 48,276 Brake clutch, David L. Winters, Pueblo, Colorado.
 48,277 Stove drum, Christian A. Henrich, New Hamburg, Ont.
 48,278 Cattle car, Harry Livesey, London, Eng.
 48,279 Manufacture of white lead, etc., Rowland Matthews, Forest Hill, and Jas. Noad, East Ham, Eng.
 48,280 Tire, Edward E. Horton, Toronto, Ont.
 48,281 Method of electro plating metals, Ed. R. Johns, New York, N. Y.
 48,282 Process of refining nickel, etc., Chas. G. Richardson, Chas. Riordon, Toronto, Ont.
 48,283 Artificial stone, etc., Ludwig Grote, Landberg on Leeb, Germany.
 48,284 Slop basin, Frank Wm. Bentall, Essex, Eng.
 48,285 Device for stopping a leak in hose, Jas. B. Cooper, Minneapolis, Minn.
 48,286 Machine for inserting threads into woven fabrics, Edmund Morris, Michigan City, Ind.
 48,287 Poultry feeder, Jon. G. Whitten, Genoa, N. Y.
 48,288 Mould for glassware, Chas. E. Blue, Jr., Wheeling, W. V.
 48,289 Brick kiln, Wm. A. Eudaly, Cincinnati, O.
 48,290 Disinfecting apparatus, Geo. Philip Kato, Jr., Jersey City, N. J., and Ringgold W. Carman, Flushing, N. Y.
 48,291 Hay press, Jos. Charest, St. Remis, Que.
 48,292 Typewriter ribbon, Lebbens Harding Rogers, New York, N.Y.
 48,293 Wire, Jno. White, London, Ont.
 48,294 Process of manufacturing labels, Richard R. Lansing, Detroit, Mich.
 48,295 Water tap attachment, Alex. Schram, Toronto, Ont.
 48,296 Device for holding type for printing, Wm. B. Hamilton, Toronto, Ont.
 48,297 Fish spear, Josiah H. Gardner, Detroit, Mich.
 48,298 Machine for the manufacture of glass bottles, jars, etc., Chas. Emmet, Sheffield, Eng.
 48,299 Bottles, jars, and method of sealing the same, Chas. Emmet, Sheffield, Eng.
 48,300 Sewing machine, Jas. Newbigging, Ewan Morrison and Mrs. Sophia Hall, Victoria, B. C.

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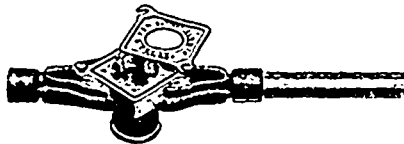
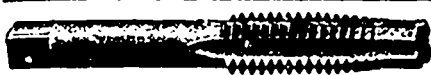


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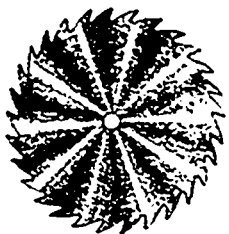
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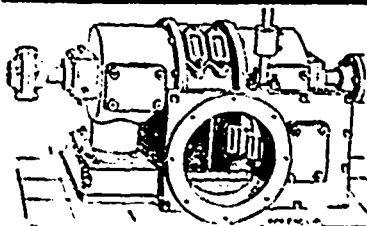
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1 3/8	1 3/8	5.01	"	3	2 7/8	22.59	"
1 1/2	1 1/2	5.94	"	3 1/4	3 1/8	26.60	"
1 3/4	1 3/4	7.46	"	3 1/2	3 1/4	30.94	"
2	1 7/8	9.03	4 cts.	4	4	42.33	5 cts.
2 1/4	2 1/8	12.53	"	4 1/2	4 1/2	53.57	"
2 1/2	2 3/8	15.55	"	5	5	66.13	"

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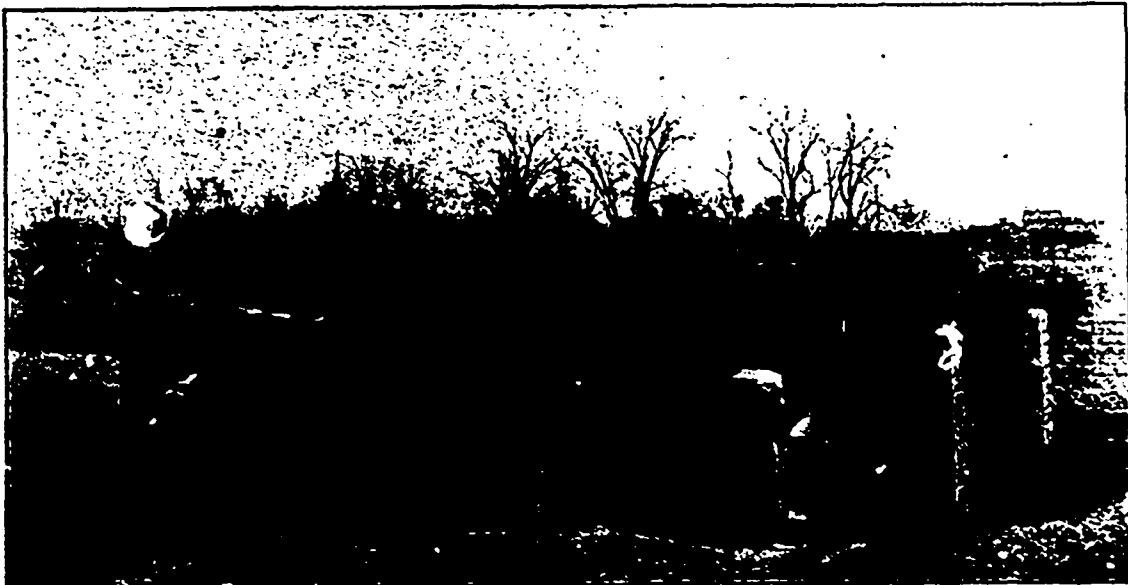
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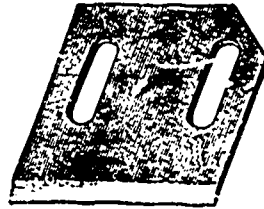
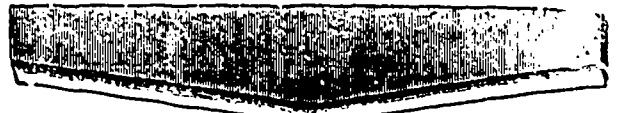
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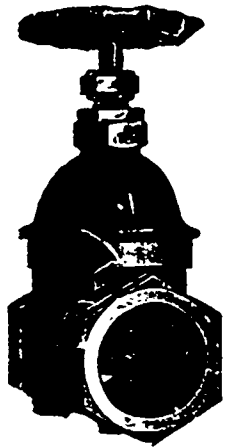
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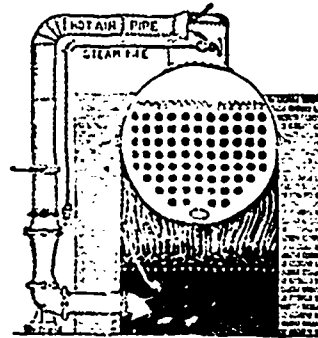
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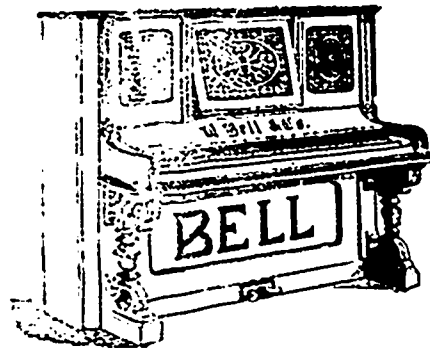
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Other Assets.....	\$ 8,699 93	80,259 40	
Total.....	\$ 293,352 57	\$ 812,220 88	
		Reserve and on acct. of Policyholders..	\$160,401 00
		Other Liabilities.....	5,881 76
		Net Surplus.....	NIL
		Income.....	157,351 97
		Expenditure, Total.....	147,158 37
		Insurance in force.....	6,110,160 60
			\$642,218 63
			1,281 48
			60,169 72
			308,713 63
			163,493 87
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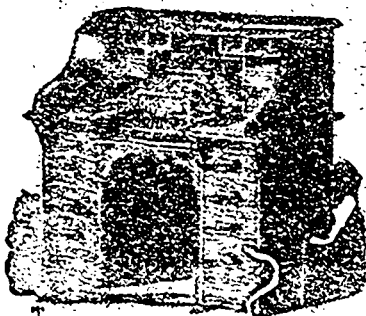
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