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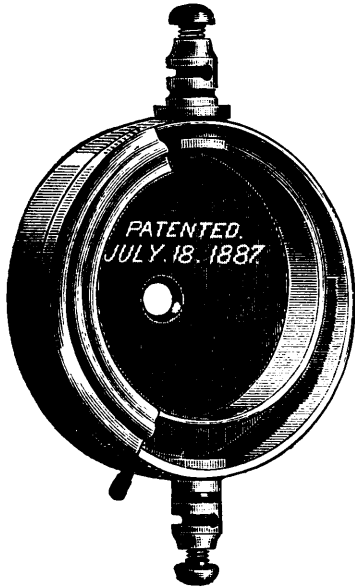
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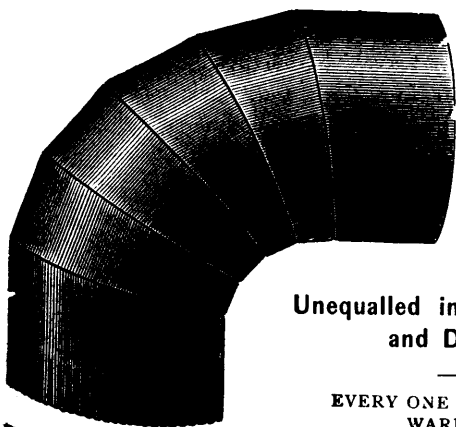
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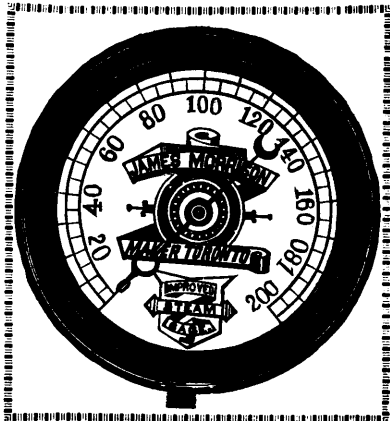
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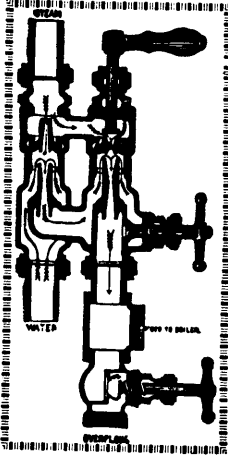


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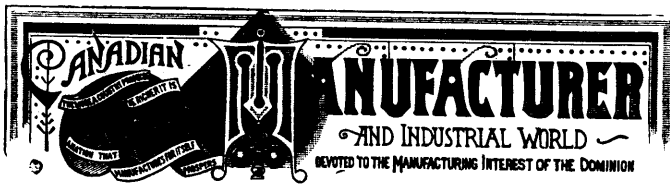
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Captains of Canadian Industry.

"THE nation that manufactures for itself, prospers." In the CANADIAN MANUFACTURER of June 1 we began the publication of a series of illustrated biographical sketches of "Captains of Canadian Industry." It was an entirely new departure in journalism, either in this or in any other country; and the very excellent artotype portraits of leading Canadian manufacturers which have been displayed in each successive issue of this journal have made it valuable as a pictorial album which must of necessity become a part of the history of the Dominion. The publication of these portraits and the biographical sketches of their originals will be continued indefinitely; the object being that when the publication in this journal is finally discontinued, to assemble and reproduce them in book form, which arrangement will be all the more valuable in that the matter which is now being extended through many months in the CANADIAN MANUFACTURER will all be brought into the compass of one attractive and convenient volume. To assist our readers in keeping in mind the names of the "captains" of this grand army whose portraits have already been published, we reproduce them here. They are as follows:—

PLATE I.—June 1.

W. H. Storey, Acton, Ont. Bennett Rosamond, Almonte, Ont.
Samuel May, Toronto. George Booth, Toronto.

PLATE II.—June 15.

Thomas Cowan, Galt, Ont. James Watson, Hamilton, Ont.
R. W. Elliot, Toronto. John F. Ellis, Toronto.

PLATE III.—July 6.

William Bell, Guelph, Ont. John R. Barber, Georgetown, Ont.
John Bertram, Dundas, Ont. Wm. Chaplin, St. Catharines, Ont.

PLATE IV.—July 20.

William Doherty, Clinton, Ont. Alex. Gartshore, Hamilton, Ont.
John Fensom, Toronto. Charles Raymond, Guelph, Ont.

PLATE V.—August 3.

William Christie, Toronto. Henry Bickford, Dundas, Ont.
Robert Mitchell, Montreal. James Hendrey, Peterboro, Ont.

PLATE VI.—August 17.

John Abell, Toronto. George W. Sadler, Montreal.
H. A. Massey, Toronto. John Taylor, Toronto.

H. A. MASSEY.

HART A. MASSEY, President of the Massey Manufacturing Company, Toronto, was born in a log cabin on his father's farm in Northumberland County, Ont., about seven miles from the town of Cobourg, April 29, 1823, and was one of ten children. When but six years of age he went regularly to a country school three miles distant, and when about eleven years old was sent to school at Watertown, New York, where his father had been educated, and where the subject of this sketch received his common school education. While at Watertown he worked during his school vacations on neighboring farms at fifty cents a day. When seventeen years old he went to work in the lumbering districts of Ontario, his father supplying him with a team for the purpose, and where for two winters he earned one dollar and twenty five cents a day for his services. At nineteen young Massey began a course at Victoria College, Cobourg, and during the first year he paid his expenses by cutting fire wood for the Cobourg Tannery. During the vacations he was entrusted with the management of the hands on the farm of his father, Daniel Massey, and being possessed of considerable mechanical genius, he kept the numerous agricultural implements and machines used on the farm in repair. In 1844 Mr. Massey left college and assumed the entire charge of his father's farm, which became known as probably the best cultivated in that part of the country. In 1846 while on a visit to Gloversville, New York, he became acquainted with Miss Eliza A. Phelps, a young lady who became his wife in June 1847. The means of travel in those days were not such as they are now, and on one occasion Mr. Massey travelled from his home in Ontario to that of his fiancée in New York, a distance of over three hundred miles, in a cutter over the snow and ice.

About the time of the marriage of Mr. H. A. Massey, his father, Mr. Daniel Massey, abandoned the management of the farm to his son, and removed to Newcastle, Ont., where he went into the manufacture of agricultural implements. As a farmer, Mr. Massey was very successful, for his early training and varied experience fitted him admirably for that business; but his ambition and tastes led him more in the direction of manufacturing, and in 1851 he removed to Newcastle and was appointed superintendent of his father's works. In 1852 Mr. Massey acquired a partnership in the business, and was made general manager of the concern, which then became known under the firm name of H. A. Massey & Co. In that same year the firm made extensive preparations for the manufacture of harvesting machinery, and the Ketchum mower—the first mowing machine ever made in Canada, and one which possessed considerable merit and which had a large

PLATE VI.



1888



—ε Captains * of * Canadian * Industry. ε—

(SUPPLEMENT TO THE "CANADIAN MANUFACTURER.")

sale for those days—and the Burrell reaper, probably the first Canadian built reaping machine, were turned out at these works. This Burrell reaper was a crude affair, and was one of the earliest inventions in reaping machinery. It was so constructed as to be drawn behind the disconnected fore-wheels of a wagon. It was, however, sufficiently practical to warrant its manufacture, and quite a large number of them were built and sold.

In 1855 Mr. H. A. Massey became the sole proprietor of the business by the retirement of Mr. Daniel Massey, who died the following year. Just previous to the death of this gentleman he received an invitation to ride in the first train of cars despatched over the Grand Trunk Railway from Toronto to Montreal. This great Canadian commercial artery was just then finished, and the opening of it to business marked an era in the prosperity of the company, and gave an impetus to farming interests which showed marked and happy effect upon the special industry in which Mr. Massey was then engaged.

To attempt to even mention the different lines and styles of agricultural implements, and the advances and improvements that have been made in their construction by the concern with which Mr. Massey has been connected for so long a time, would be to give a history of the business in Canada from its inception until the present time. But some of the earlier machines were the Massey combined reaper and mower—a manual delivery machine which was introduced in 1857; the Wood mower, in 1861, and the Wood self-rake reaper in 1863. These last two machines were selected by the Canadian Government for exhibition at the Paris Exposition in 1867, where they received the highest gold medal award.

In 1870 the firm of H. A. Massey & Co. was merged into the Massey Manufacturing Company, with Mr. H. A. Massey, as president, and his eldest son, Mr. Charles A. Massey, (who died in February 1884) as vice-president and manager, the capital stock of the company being \$100,000. Under the new management the business increased very rapidly. In 1874 the company began the manufacture of the Sharp horse rake, which was awarded the highest honor at the Centennial Exhibition in Philadelphia in 1876. For the sake of a more central location and better facilities for receiving supplies and shipping goods, the company removed from Newcastle to Toronto in 1879, and in 1881 the Toronto Reaper and Mower Company, who were then doing quite a large business in Toronto, and whose works were quite near to where the new Massey works were located, were absorbed into the Massey Company. This necessitated a large increase in the number of hands employed. In 1883 the business done by the Massey Manufacturing Company aggregated a million dollars—an increase of over ten fold over the amount done during the year the company was incorporated. Some idea of the magnitude of this business may be obtained from the fact that the sales of some of the specialties manufactured by this company have reached high up into the thousands, to wit:—the Sharp horse rake, 32,859; the Massey harvester, 11,976; the Massey mower, 5,855; Toronto mower, 20,342; Toronto light binder, 11,596.

In business Mr. Massey is a great favorite, and in private and social life he has many warm and attached friends. He

has always taken great interest in all important public questions both municipal and general, and has always taken a lively interest in the affairs of the Methodist Church of which he is a member. Dating from 1850 he was for twenty years a Justice of the Peace for the counties of Northumberland and Durham, and for several years was councillor for the town of Newcastle. He has now been the active manager of the business of the Massey Manufacturing Company for twenty-three years, and though sixty-five years of age puts as much energy in his work as he did twenty-five years ago.

GEORGE W. SADLER.

GEORGE W. SADLER, of the leather belting manufacturing firm of Robin & Sadler, Montreal, was born in that city in 1852, and educated at the model school there. While yet a child his father died, and at an early age the subject of this sketch was forced to work for his living. At first he served as an office boy, but when fourteen years of age he obtained employment with the late Mr. J. C. McLaren, who was at that time the leading harness maker in Montreal. It was about this time that Mr. McLaren began the manufacture of leather belting, and in this branch of his business young Sadler was employed. This was then an almost untried industry in Canada, about all the leather belting in use being imported from England or the United States. Young Sadler took a strong liking to the business, and determined to master it in all its parts, and he worked steadily at this trade with Mr. McLaren for about four years. In 1869, when seventeen years of age, he went to Boston, Mass., where he obtained a situation with Messrs. King & Adams, one of the largest leather belting manufacturing concerns in that country. Mr. Thomas B. Adams, the practical partner of the firm, became strongly interested in this young Canadian, who was not long in making his services appreciated in the factory, and where he learned all the details of the trade; and when young Sadler left that situation in 1874 he was foreman of the works.

His object in leaving Boston was to accept the management of the leather belting manufacturing business of Messrs. L. J. Campbell & Co., at Montreal; and two years later—in 1876—Mr. Sadler and Mr. Thomas Robin, his late partner, became connected in business with Messrs. Barry, Smith & Co., who were the successors to the business of Messrs. L. J. Campbell & Co. The firm of Barry, Smith & Co. was short-lived, having been in existence only about one year, but the business was conducted by Mr. Robin and Mr. Sadler until 1880, when the firm of Robin & Sadler was formed. Mr. Robin died in 1884, since which time Mr. Sadler has continued the business solely on his own account, but under the old name of Robin & Sadler.

When Mr. Sadler embarked in the manufacture of belting in Montreal, it was at a time when the demand for the article in Canada was small compared with what it now is, and, when the supply was drawn almost entirely from abroad. Foreign-made belting had the preference, and there were reasons for it; but the change in the tariff affording protection to the industry; the development of it under liberal and intelligent management; the phenomenal growth of the wheat grinding and lumber cutting interests of the country; and the establishment of other industries, created a large and steadily increasing

demand for belting; and the business that but a few years ago required hard struggling to keep up, is now one of the largest importance.

As a captain of this industry, Mr. Sadler's connection with it has always been noticeable. Thoroughly understanding his business, his determination from the first was to produce nothing but a first-class article; but one of the great difficulties he encountered in doing this was in obtaining the right sort of leather made from the right sort of hides. Being a self-reliant Canadian; having every confidence in the productive capacity of the country; and that the materials and facilities for making the best quality of belting—to wit: hides, bark and skilled workmen—were at hand, he established a large tannery at Stanbridge East, Que., and now this tannery, said to be the largest in the Dominion making a specialty of manufacturing belting leather; and his leather belting factory in Montreal, which is one of the largest in the country; afford him all the facilities necessary to place him in the highest position in the trade.

The demand for belting manufactured by Robin & Sadler, increased very rapidly and came from all directions; and the trade in Ontario became so large that in 1885 a branch house was established in Toronto, to enable the better filling of Western orders; and these goods are also well known in the Maritime Provinces, Manitoba and British Columbia.

Mr. Sadler believes in the potency of printers' ink, being a liberal and judicious advertiser, and has always availed himself of the fairs and exhibitions in all the larger cities to make attractive displays of his products. These displays are not only to show goods, but to assist in bringing Canadian manufactures prominently to the attention of Canadian users. At all these exhibitions these exhibits have been awarded high honors, among which are the Dominion gold medal, and quite a number of silver and bronze medals, and diplomas.

Canada is proud in producing such men as George W. Sadler.

JOHN TAYLOR.

JOHN TAYLOR, president of the Dominion Dyewood and Chemical Company, and proprietor of the Morse Soap Works, both of Toronto, whose portrait is shown in plate VI. of our series of "Captains of Canadian Industry," was born forty-seven years ago in the quiet silk manufacturing town of Leek, Staffordshire, England; and his schooling was at the National school in that place. Coming to Canada in 1855, he attended a common school for a few months in the township of Pickering, Ontario County, Ont., which closed his scholastic career. Being of a studious disposition, the subject of this sketch improved every opportunity to acquire, by self-directed efforts, what he lacked in not having had a collegiate course; and his favorite motto on this self-help question was: "Schools merely teach children how to learn."

In 1859, young Taylor was given a situation with the old and well-established firm of Messrs. John Taylor & Brothers, of Toronto, paper manufacturers, and proprietors of the Toronto and Don paper mills, with whom he was distantly related; and here it was from his respected principals that young Taylor doubtless acquired those habits of thrift and economy that

have in a large measure ensured the success of his commercial life.

In 1865 Mr. Taylor entered into co-partnership with Mr. J. L. Morrison (now president of the *Grip* Publishing Company, of Toronto), under the firm name of Morrison, Taylor & Co., who for many years conducted a large local and export provision trade in this city.

In 1872 the Morse Soap Company was formed by the then firm of Morrison, Taylor & Co. becoming interested with the late Geo. D. Morse. A large soap factory was erected near the Don Station of the Grand Trunk Railway in the eastern part of Toronto, the pork-packing works of Morrison, Taylor & Co. being absorbed in the new establishment. About eleven years ago Mr. Morse retired from the firm, and in 1885 Mr. Taylor acquired the sole control of the business by purchasing the interest of Mr. Morrison.

Mr. Taylor always took great interest in the success of his soap business, and would never allow any but the very best goods to be made. The vicissitudes of this business twice witnessed the destruction of his works by fire, but with his characteristic push and energy, they were on each occasion speedily rebuilt, and from the comparatively small concern of 1872, have grown up to what is now probably the largest and most important factory of the sort in the Dominion.

Mr. Taylor is best known throughout Canada, from ocean to ocean, as the proprietor of the Morse Soap Works, whose laundry specialty, "Morse's Mottled," has found its way into every hamlet in the land. He has also met a universal demand for the higher grades of toilet soaps. These are manufactured by the French process, and his list embraces nearly two hundred varieties, all of which are of the highest excellence.

Mr. Taylor owns a controlling interest in the Dominion Dyewood and Chemical Company, of Toronto, with whom almost every woolen and cotton manufacturer in Canada has dealings, and who purchase from his Company, anilines, dyewoods, extracts, fulling and scouring soaps, etc.

Although his time is very fully occupied with the details of extensive diversified and growing business ventures, Mr. Taylor finds pleasure in performing his share of the public duties that devolve upon good citizens. For many years he represented his ward on the Public School Board, and he was an alderman of the city for four years; and it was in this latter capacity he became one of the most active and useful promoters of the movement that gave Toronto its valuable and valued free public library. If no other laurel crowned his brow, the honor of having been instrumental in assisting to give this boon to the public, is one that Mr. Taylor prizes most highly. Prior to the establishment of this library (and he was for a term chairman of its Board), Mr. Taylor filled various positions upon the Board of the old Toronto Mechanics' Institute, during a membership of twenty-two years.

While a professed Reformer in politics, Mr. Taylor has always given hearty and generous support to Canada's National Policy, for he believes that under existing relations as between Canada and the United States, there could be no existence for such manufacturing industries as now make the Dominion so prosperous under any adverse policy. He is an active member of the Canadian Manufacturers' Association, and one of its executive committee.

JOHN ABELL.

(The sketch having reference to the life of Mr. John Abell, whose portrait appears among our "Captains" is unavoidably omitted from this issue, but will appear in our next.)

"IN GOOD STANDING."

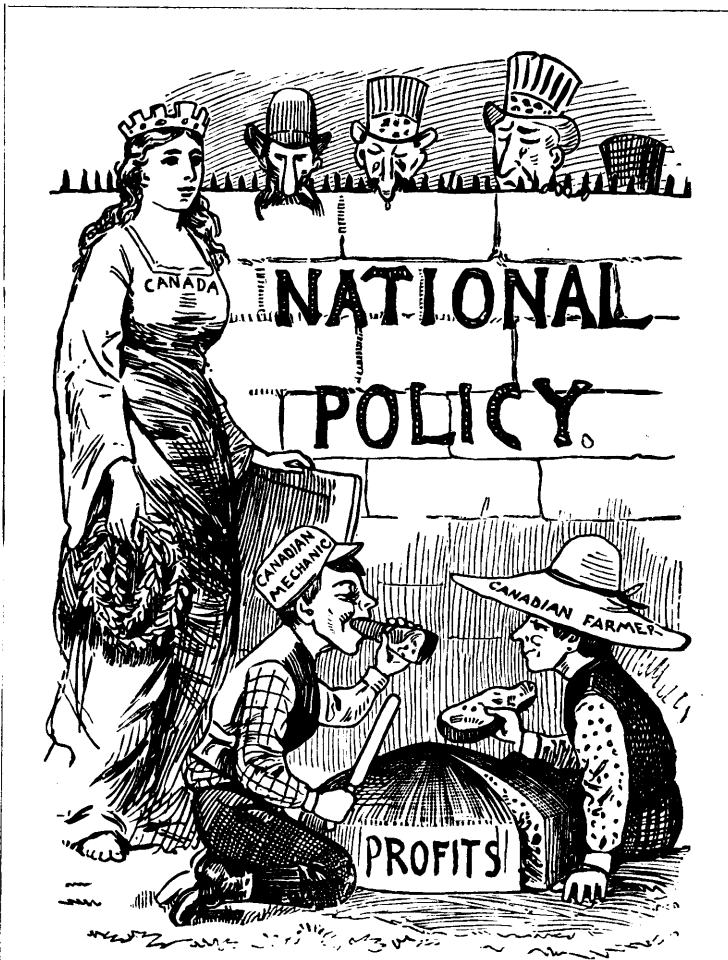
A FEW months ago allusion was made in these pages to the forlorn condition of a poor woman in Hamilton named Mrs. Farr. On the strength of reports in the Hamilton papers we stated that the husband of this woman had been prevented from working because he was a non-union man. Perceiving no good reason why Mrs. Farr, with a broken arm and a family of small children around her, should be allowed to starve because of the non-unionism of her husband, we ventured to direct the attention of Mrs. L. M. Barry, Organizer of Women's Work in the Knights of Labor, who was then in Toronto on a lecturing tour, to Mrs. Farr's pitiable condition. The lady announced that she would personally investigate the matter, but if she has ever done so we are not aware of it, and we don't think she has, because she said that when the investigation was made this journal would hear from her; and this journal has not yet heard.

Just at that time some of the worthy members of the Hamilton Bricklayers' Union rushed themselves into print with the declaration that Mr. Farr was a member in good standing of the aforesaid Hamilton Bricklayers' Union, and had been for years. Of course we accepted the statement, and are perfectly willing that Mr. Farr should enjoy all the honors and emoluments appertaining to his union, though the fact that he was a member in good standing in it does not explain why, when work was plentiful and good bricklayers in request, Mr. Farr should be out of a job and his wife compelled to support the family by scrubbing offices; nor why the family should have been in such sore distress when the poor

woman had the misfortune to break her arm by falling on a slippery sidewalk. The conclusion forces itself that Mr. Farr placed himself *hors du combat* by his own voluntary action; and that there was no one but himself to blame for his being out of work and requiring his old wife to support him in idleness and to also provide food, raiment, and fuel for the hungry and shivering little ones. It does not appear that the union of which Mr. Farr was an honored and honorable member ever contributed as much as a farthing to the necessities of this wretched family.

Some of Mrs. Barry's foolish friends professed to think that that good lady had been insulted when we requested her to visit Hamilton and investigate the case of Mrs. Farr, our offence seeming to rest in the fact that Mrs. Barry was a representative of the Knights of Labor, while Mr. Farr, as subsequent developments showed, was a trades-unionist. One might naturally enquire whether the "ethics" of organized labor, say of such trades' unions as exist in Hamilton, allow of enquiry into the moral character of their members. Our desire in the first place was to discover if these ethics countenanced the enforced starvation of a woman and her children merely because her husband was a non-union man who could not obtain work on that account; but the question seemed to be exhausted on that side when the answer was made that the man was a member of the union, and in good standing, too, although he was allowing his wife and children to suffer while he made no efforts for their relief. We are not surprised that Mrs. Barry never made her promised investigation in Hamilton; it should have been made.

Another matter recently occurring in Hamilton which tends strongly to remove us from the region of astonishment, is that wherein Michael Dwyer, a member "in good standing" of the Hamilton Iron Moulders Union, collected money from Mrs. Elleber, a poor widow, whose husband had been a member of that union—fraudulently it was claimed by the woman when she caused the arrest of Dwyer. It does not signify that only



HOW THE N. P. CAKE IS DIVIDED.

Information from different sections of Canada is to the effect that unusually heavy crops are being harvested; and that the manufacturers of harvesting machinery have had their stocks of implements completely exhausted, for which this year they have been paid largely in cash, instead of all credit as in former years.

after several months was this member of the union forced to return the money to the poor woman to avoid a criminal prosecution. The chief sufferers in both the cases here alluded to were poor women; and the men who brought this suffering upon them were members "in good standing" of labor unions. This may be in accord with the "ethics" of these unions; but again, we say, we are not surprised that the promised investigation in Hamilton was never made.

SPECIAL ADVERTISEMENTS.

TO BE SOLD.—The complete plant of a small woolen mill, including Knowles' broad and narrow looms. Apply to Montreal Cotton Company, Valleyfield, P. Q.

TISDALE'S BRANTFORD IRON STABLE FITTINGS.—We lose no job we can figure upon. Catalogue sent free. The B. G. Tisdale Co., Brantford, Canada.

KNITTING **CREELMAN BROS.,** **MACHINES.**
Georgetown, Ont.

EDITORIAL NOTES.

RECENTLY, in Montreal, Judge Gill granted a judgment of \$150 damages in favor of Mr. J. M. Fortier, cigar manufacturer of that city, against the *Canadian Workman*, for advising its readers not to buy or use cigars made by Mr. Fortier.

At the recent meeting of the Iron Moulders' National Convention at St. Louis, the fact came out that the strike of stove moulders, inaugurated in the foundry of Bridge & Beach Manufacturing Company, St. Louis, in March, 1887, cost Union No. 10 alone the sum of \$23,348.40. The Stove Founders' National Defence Association inaugurated a policy which made the failure of the moulders in that fight inevitable.—*American Artisan*.

ACCORDING to the knights of the needle at Windsor, Ont. working women have no "rights" which trades unions are bound to respect. Recently they exacted terms from the employing tailors which virtually prevented sewing women from doing tailoring work at their homes. These women work at the trade to earn money to enable them to live. Many of them having small children to care for could not possibly work in shops. The men work in the shops, however, and for fear the women might work overtime they were willing to see them starve. This is what these "Knights" call "dignity of labor."

At the recent meeting of the Iron Moulders Union of North America, held in St. Louis, a resolution was adopted to the effect that on and after April 1, 1889, nine hours shall constitute a day's work; and that if employers resist strikes will be ordered, which will be sustained by all the unions throughout the country. Mr. Fitzpatrick was re-elected president of the union. If we remember correctly this same labor organization locked horns last year with the Stove Manufacturers' Defence Association, and had to crawl from underneath after a lively scrimmage. The trouble arose in a

strike on the part of the moulders in the foundry of the Bridge & Beach Manufacturing Company, St. Louis; Mr. Fitzpatrick calling on all moulders' unions throughout the country to sustain the strike. The Bridge & Beach Company were backed up by the Defence Association, the result being that the manufacturers continued to boss their own business.

A FEW days ago a brute named Whiting was punished in Central Prison, Toronto, by the infliction of twenty-five lashes laid on his bare back. His offence was assaulting his niece, a child but eleven years old. The event drew a number of the reporters of the daily papers to witness it, and after it had been performed Warden Massie assembled the young men in his office and lectured them upon the bad effects sensational accounts of such affairs have upon the administrators of justice in country towns. He said very correctly that flogging is the only punishment men guilty of such crimes are really afraid of. In view of the warden's lecture the *Globe's* account says:—"So far as Whiting's punishment was concerned there was nothing cruel about it. He was lashed to the triangle in a humane and gentle manner. He was taken down with similar kindness, and the flogging might have been far more severe than it was. That the wretch howled as he did only showed his coward heart." "Humane and gentle manner" is refreshing. The punishment was well merited, the offense being an outrage that can never be repaired.

THE illustration which appears in another page, "How the N.P. Cake is Divided," is faithful to the existing situation in Canada. From all parts of the country the information is heralded that most bounteous crops are being harvested; that the barns and granaries are overflowing, and that the farmers are in better financial condition than ever before. On the other hand, the manufacturers of agricultural and farming implements report that although they had largely increased their output over last year, in anticipation of a largely increased acreage and larger crops, the demand for harvesting machinery has been such this year as to completely exhaust their stocks; a most agreeable feature of the situation being that whereas heretofore these implements were sold to the farmers generally on long time, with very little spot cash, this season but short credits if any are asked, most of the sales being c.o.d. Most of our readers will recognize the picture in which Canada, standing behind the protecting wall of our National Policy, looks with pleasure and gratification on her farmer and mechanic boys enjoying their Protection cake. We are always glad of an opportunity to give this beautiful picture an airing in our pages.

WE have to announce the death of Mr. Theo. H. Eaton, senior member of the firm of Theo. H. Eaton & Son, of Detroit, Mich., which occurred in that city July 31. Mr. Eaton was long known to the readers of this journal, for his business card has appeared in it ever since it was first established; and he was always one of its warmest friends. The *Detroit Free Press*, alluding to the event, has the following to say regarding this good man:—

In business matters Mr. Eaton was an extraordinary man. He had a horror of debt, and, though he would extend any

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STAR-RIVET

LEATHER



BELTING

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RUBBER AND COTTON BELTING.

LACE LEATHER.

PHENIX BELT OIL, ETC., ETC.

70 KING STREET EAST,

TORONTO.

HOYT'S PURE AMERICAN OAK-TANNED.

**Known the world over to be superior to any
other Leather Belting made.**

**GEO. F. HAWORTH & CO.
11 JORDAN STREET,
TORONTO.**

reasonable business accommodation to others, he would never ask anything for himself. He never gave a note, never gave a mortgage, and never accepted a draft. His rule was to pay cash for what he wanted or to go without it. Though in the course of his life he held many mortgages, he never foreclosed one, making it a rule to compromise with the debtor and to allow him in the settlement the sum it would have cost him to have enforced his rights by law. Mr. Eaton was a most retiring and unobtrusive man, and his finer qualities were known only to his family and intimate friends. He was kind-hearted, sympathetic and loving, and his charities were so unostentatious that even the recipients of his bounty were often unaware of the source of their relief.

THE successful strike of the Windsor tailors obtained from the bosses an agreement to pay the bill of wages in all cases, and to have no work made up outside the shops. The intent of these clauses appears to have been to prevent women from doing tailoring work at their homes. As the reason these women worked at the trade was their need of wages with which to purchase the necessaries of life, loss of tailor work meant to them deprivation of their means of living. They made known their case to influential citizens, who advised them to start in business on their own account, promising them whatever assistance they could render. Accordingly, one young woman has rented a store, hired a first-class male cutter, and expects to be able to give employment to a number of Windsor tailoresses. The proprietors of the two most prominent dry goods stores in town have promised countenance and assistance to the courageous and industrious women. The tailors are reported to have threatened to prevent the tailoresses from doing any business, though in what manner the threat is to be accomplished does not appear.—*Chatham, Ont., Planet.*

THE strike of the union plumbers of Toronto is developing some interesting facts. They struck because they could not come to a mutual understanding with the bosses. This they had undoubted right to do. The bosses, unable to obtain sufficient workmen in Toronto, sent abroad for them, and brought quite a number of them to this city. This they had undoubted right to do. These imported workmen were willing to accept the terms of the bosses, and desired to go to work. This they had undoubted right to do; and in this respect they occupied similar ground with the strikers. The one didn't want to work, and quit work; the other wanted to work—but here the similarity ends—they were prevented from work by the strikers. This the strikers had no right to do, for they denied to free men the very right they were themselves enjoying. This was tyranny pure and simple. Some of the strikers have been bound over to court charged with assaulting and intimidating the non-union men, and if the charges are substantiated on the trial they should be sent down to the care of Warden Massie, at Central Prison. Intimidation is an offence against the law, and it is high time such violations of the law were punished. The penitentiary, however, yearns more for the jawsmiths and instigators of the trouble than for the dupes.

AT the recent annual meeting of the Ottawa Valley Press Association, held at Smith's Falls, Ont., at a banquet tendered the newspaper men, Mr. F. T. Frost, responding to the toast,

"The Manufacturing Industries," came out unequivocally in advocacy of the National Policy, asserting that the present prosperous state of the Dominion was due to the protection afforded the manufacturing interests. He said he was not discussing a political question, but was speaking of the matter as it presented itself to him as a manufacturer. Smith's Falls owed its present prosperity largely to the manufactures of the place, and the interests of the manufacturers should be advocated by the press of Canada. It will be remembered that this gentleman, who is a member of the firm of Frost & Wood, manufacturers of agricultural implements at Smith's Falls, was the Grit candidate for that riding for the Provincial House at the last election. Mr. William H. Frost, proprietor of the Smith's Falls Malleable Iron Works, also made a speech, in which he said that although always a Reformer, he was a thorough believer in Protection. In fact we were not protected enough. Give the industries a chance and soon they would be able to compete with foreign manufacturers. Reduce the present tariff even one-half and the manufacturing interests of the Dominion would soon be killed off. These statements from these gentlemen are all the more interesting as up to this event it has been claimed by some that they were in favor of Commercial Union as against the N.P.

SEVERAL weeks ago in Hamilton, Ont., a moulder named Michael Dwyer was charged by Mrs. Elleber with defrauding her of \$6. Mrs. Elleber's husband, lately deceased, was a moulder, and after his death Dwyer told his widow that her late husband was \$6 in arrears to the Moulders' Union, of which they were both members, but that if she gave him the amount he would have the matter squared up, so that she could obtain the \$150 death benefit from the union. Mrs. Elleber handed over the required sum, but never received the benefit money. Dwyer spent the money, and although four months have since elapsed he has made no attempt to repay it. What makes the offence all the more contemptible is that Mrs. Elleber was in straitened circumstances at the time. The magistrate allowed the case to stand for a few days, as doubt existed whether the charge would come under the head of false pretences, Dwyer stating that he offered the money to an officer of the union, who refused it. On the publication of these facts one Fred Walter published a card, under instruction from the Iron Moulders' Union, in which he stated that Dwyer had visited him after the death of Elleber, saying he had six dollars with which to pay Elleber's dues to the union; but that he, Walter, had told Dwyer to return the money to the widow, who was in hard circumstances. Mr. Walter closes his card by saying that Dwyer had no excuse for appropriating the widow's money. The case seems to have been dropped out of the courts, probably because of Dwyer having returned the money to Mrs. Elleber; but we have failed to learn that the Iron Moulders' Union of Hamilton had expelled their fellow-member, Dwyer, for the transaction. Perhaps the "ethics" of the union does not discountenance such things.

THE NEW SAFETY WATER-TUBE BOILERS.

To the editor of THE CANADIAN MANUFACTURER :

DEAR SIR,—We request space in your columns to contradict the assertions of some of our envious neighbors that the reason why

Messrs A. W. Morris & Bro. (the J. A. Converse Manufacturing Company), and Frank Redpath, of the Canada Sugar Refinery, speak so highly of the results that they are getting from our improved boilers is because they hold stock in this company. In one way we are sorry that the tale is false. If it were true that they were large shareholders their names on our books would be strong proof of the bright prospects of the owners of these patents. But the stock has never been offered to them and they have no pecuniary interest in this company. Their very gratifying statements are simply the unvarnished record of their actual daily experience with these boilers.

Yours truly,

DOMINION SAFETY BOILER CO.,

Per J. F. Torrance, Mngr.

Montreal, Aug. 14, 1888.

COMBUSTION OF FUEL.

(Written for the CANADIAN MANUFACTURER.)

Continued from our issue of July 20.

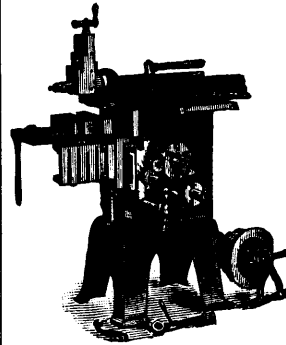
We have already seen that carbonic acid is formed by the union of one atom of carbon with two atoms of oxygen: their weight being as six to sixteen. Carbonic oxide, again, is composed of the same quantity of carbon, but one half the quantity of oxygen; their weights being as six to eight. Both gases are invisible; the former is incombustible, the latter combustible. Evidently then, if we pass off the carbon—either of the gas or the solid fuel—in union with oxygen, in any other proportion than that of carbonic acid, we cause a corresponding loss of heating effect. The oxide may be formed in two ways:—either by abstracting one portion of oxygen from carbonic acid, or by adding a second proportion of carbon to the same—in the one case, one volume of oxide is formed; in the other case, two volumes. In practice this oxide is most commonly formed thus:—the air, passing to the furnace from below, gives up its oxygen to the glowing carbon on the bars and generates heat in the formation of carbonic acid. This acid at a very high temperature passes up through the body of the incandescent solid fuel, takes up an additional portion of carbon, and is converted into oxide. Thus we have in place of one volume of acid, two volumes of oxide, and have actually absorbed heat in the conversion; and further, if the additional oxygen is not supplied to complete the saturating equivalents of these two volumes—that is to produce carbonic acid—they will pass away half consumed and a proportionate waste be the result. The correctness of this practice has been proved by recent experiments at the Montreal Water Works, conducted by the chief engineer, Mr. D. Kearney, there. About the beginning of the present year a smoke consumer and fuel economizer (Dobson & Brodie's) had been attached to three Lancashire boilers at the wheel-house, the principle of which device is to admit a certain regulated quantity of air into a chamber at rear of bridge, which, passing therefrom in finely divided streams, mingles with the gases there volatilized and igniting them. Results show a saving of about one ton of coal per day, on three twenty-six feet boilers; and the engineer's report to his committee states that never in the history of the water-works has the consumption of coal been so low as during the use of this apparatus. It may be stated that no boilers in Montreal are so hardly pressed and the furnaces more roughly treated as those of these works. The bad coal of the lower provinces having to be frequently turned over to effect ordinary combustion, and as a consequence much incandescent coal is thrust over the bridge, and a part of the consumer was found to be warped at the close of the battery's run. As the cost of the damage, however, is small, the patentees undertake to keep the apparatus in repair during the life of the boilers; even although such damage may be the result of careless firing. The prevention of smoke is by no means the least recommendation of this excellent appliance. The universal and ever deepening feeling against the pollution of the atmosphere with black smoke is one with which every right thinking mind must sympathize. Indeed it is difficult to see why any manufacturer should transgress in this matter when by adopting suitable appliances he may not only cease to annoy his neighbors but also greatly benefit himself; for as we have before said, any economy in fuel materially lessens the cost of production.

We recently stated that the D. Lothrop Company, Boston, publishers of *Wide Awake*, had set aside \$2,000 to be distributed as prizes—ninety-four in number—to be given to the ninety-four teachers and pupils in Canadian and American schools who send the most desirable stories, sketches, essays, poems, etc. These prizes are from \$5 to \$500; and the commissions must all be in before December 1. The object is two-fold—to stimulate improving people to

Leeds Foundry and Machine Works. E. E. ABBOTT,

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IRON PLANERS,
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BOLT CUTTERS
AND
SPECIAL TOOLS FOR WORKING
IRON AND WOOD.



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Horse, Factory, Machine Brushes, etc., etc.
Corn Brooms and Whisks.

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NEW BRUNSWICK FOUNDRY.

RAILWAY CAR WORKS,
PARADISE ROW.

PORTLAND ROLLING MILLS,
STRAIT SHORE.

PORTLAND, ST. JOHN, N.B.

Railway Cars of all descriptions. Chilled Car Wheels, "Washburn Peerless" Steel Car
Wheels. Car, Machine, Mill, Ship, and all kinds of Castings. Steam Engines,
Mill and other Machinery. Nail-Plate, Bar Iron, Street and Mine Rails,
Ships' Iron Knees, Hammered Car Axles, Shafting and Shapes.

find out what they are good for, and to advertise *Wide Awake*, which is one of the very best juvenile magazines published in the English language. The book itself tells all about the matter, and it can be had at any of the bookstores or from the publishers, the D. Lothrop Company, Boston, Mass., for \$2.40 a year.

"THE DOMINION ILLUSTRATED," the illustrated weekly paper of the Dominion *par excellence*, published by Messrs. G. E. Desbarats & Son, Montreal, is intended to illustrate the Dominion of Canada, its scenery, cities, industries, attractions, resources, public works and prominent men. In these directions the field is immense and the variety infinite. The pictures that are shown are mostly from photographs, and are of such character that Canadians may take pleasure in sending them abroad, and that all who are at all familiar with the subjects will quickly recognize them as truthful and correct. All the issues of this meritorious journal that have reached us testify to the faithfulness with which the publishers have kept their promise in this respect; and a happy effect of the existence of it is to make this Canada of ours not only better known to other nations, but also to spread a healthful and valuable knowledge of it among Canadians. All of the more pretentious of the pictures shown are of sufficient merit to entitle them to be framed as ornaments for the household—only because of their numerousness, they would soon be too great in number for such a purpose. Of course all who take the paper regularly should preserve the numbers and at stated intervals have them bound in good style. The book would make a beautiful library or centre table ornament.

Manufacturing.

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.

A NEW flouring mill will be erected at Tseherne, Man.

MR. ALEXANDER will erect a 32,000 bushel grain elevator at Deloraine, Man.

MR. F. WYLIE, late of Brantford, Ont., will establish a wincey and flannel mill in Galt, Ont.

THE lumber mill of Mr. A. E. Killam, near Moncton, N.B., was destroyed by fire July 30. Loss, about \$4,000.

THE large flouring mill of Messrs. Hutton & Carr, at Wingham, Ont., was destroyed by fire Aug. 8. Loss, about \$32,000.

THE Southern Alberta Milling Company, Macleod, Alberta, N.W.T., will be incorporated and build a first class flour mill.

MR. C. J. SMITH, proprietor of the flouring mill at Moosomin, Assa., will introduce a new steam engine and boiler, and put the mill in first class order.

THE carding mill of Mr. W. R. Bradley, Huntley, Ont., was destroyed by fire, July 6, loss about \$6,000. The fire was caused by sparks from the picker.

AT the recent annual meeting of the Windsor Cotton Company, Windsor, N.S., the reports showed a profit of \$12,000 on the business of the preceding year.

THE Penman Manufacturing Co., Paris, Ont., have just put in one of Messrs. R. W. King & Co.'s improved steam drying apparatus for drying knitted goods in the web.

THE Dominion Suspender Company, Niagara Falls, Ont., are erecting a factory for the purposes of their business, which is being built of brick. It will be 90x40 feet, two stories high.

THERE is every reason to believe that before many years New Glasgow will have grown up to Stellarton and down to Trenton, with a population of at least 10,000.—*New Glasgow, N.S., Chronicle.*

MESSRS. HEES, ANDERSON & Co., Toronto manufacturers of window shades, etc., have removed to their new premises No. 258 Davenport road. Their factory is of brick, 165x45 feet, three stories high.

MR. ANDREW LITTLE, Teeswater, Ont., will rebuild his flouring mill, destroyed by fire some three years ago. The frame of the mill is being erected, and the capacity will be about 75 barrels of flour per day.

MR. JAMES CROSSEN, Cobourg, Ont., proprietor of the Cobourg Car Works, has recently built and delivered a number of new first and second class passenger coaches and baggage cars for the Temiscouata Railway.

MR. BECKETT, of Hamilton, Ont., was recently in Belleville, Ont., with the object of establishing a file works there. He says that if he is sufficiently induced he will start a factory and give employment to about forty hands.

MESSRS. ROBIN & SADLER, manufacturers of leather belting, etc., Montreal and Toronto, have just executed another large order for leather belting for the Lake of the Woods Milling Company's immense new mill at Kewatin, Man.

MESSRS. TAYLOR, SCOTT & Co., Toronto, manufacturers of brooms, brushes, baskets, woodenware, etc., whose factory is on Nelson street, employ over twenty hands, their average output of brooms and whisks being about 600 dozen per week.

MR. F. WYLIE, of the Brantford, Ont., wincey mill, states it as his intention to immediately erect a mill at Paris, Ont., for the manufacture of winceys, union flannels, etc., at a cost of about \$60,000, if the authorities there vote him a bonus of \$5,000.

Central Canada Exhibition Association ANNUAL FAIR

Under the Distinguished Patronage of His Excellency
Lord Stanley of Preston

- - OTTAWA - -
September 24th to 29th, 1888

For Prize Lists and Posters address,

Chas. Magee,
President.

R. C. N. MacCuaig,
Secretary, Ottawa.

WESTERN FAIR

Industrial and Arts Exhibition,

LONDON, CANADA,

20th to 29th Sept., '88

NINE DAYS.

\$25,000 Appropriated for Prizes, Attractions, etc. \$132,000 Value of New Grounds and Buildings. \$200,000 Display of Agricultural and other Machinery. \$500,000 Live Stock Exhibit.

Grand International Bench Show of Dogs.

THE INDIAN TRIBES OF ONTARIO are preparing an immense exhibit of manufactured articles, agricultural productions and curiosities of the old hunting days. There will be LARGER PRIZES, GRANDER ATTRACTIONS, more to see and more to learn than at any previous Exhibitions.

Prize Lists and all other information may be had on application to the Secretary.

CAPT. A. W. PORTE,
President.

GEO. MCBROOM,
Secretary.

Engines and Boilers FOR SALE,

- 2 "Goldie" Engine, 12 by 22 Cylinder.
- 1 75-Horse Power Locomotive Steel Boiler.
- 1 75-Horse Power Babcock-Wilcox Boiler.
- 1 75-Horse Power Tubular Steel Boiler.

All in Perfect Condition. Good as New.

WM. JOHNSON & CO.

St. John St., Montreal.

To Manufacturers and Others

THE ONTARIO INDUSTRIAL LOAN
AND INVESTMENT CO.

Having now in course of erection a Large Building on the north side of Lombard Street, between Church and Victoria, are prepared to receive offers for the renting of the same, with or without steam power, in flats or portions to suit lessees.

The proximity of the location to the wholesale houses and all the railroads entering the city, makes it particularly suitable for light manufacturing purposes.

By applying at once alterations in the plans can be made to suit convenience of lessees.

For full particulars apply at office of the Company, 32 TORONTO ARCADE, TORONTO.

E. T. LIGHTBOURN,
Manager.

THE G. & J. Brown Manufacturing Company, Belleville, Ont., a few days ago delivered ten dump carts to the Canadian Pacific Railway Company for service at the Don river crossing, and two velocipede cars for the Intercolonial Railway at Metapedia, N.S.

CAPT. BOYD SMITH, of Kingston, Ont., has gone down 100 feet in his phosphate mine at Parham, the vein widening as he descends. About 100 tons of phosphate are mined and shipped daily, and the impression is that the district is richer than the Buckingham district.

THE G. & J. Brown Manufacturing Company, Belleville, Ont., shipped a large 3,600 pound friction wheel to Trenton last evening, for use in Gilmour's big mill. The company are also furnishing twenty-six dump cars for the Grand Trunk double track contractors. —*Belleville Intelligencer.*

AMONG other large contracts recently secured by the J. C. McLaren Belting Company, Montreal, is an order from the St. Lawrence Sugar Refinery Company for leather belting 36 inches, 30 inches and 24 inches wide respectively, and over 1,500 feet of 14 and 16 inch belting, all double thickness.

THE Smith Wheel Company, Batavia, N.Y., are negotiating for the abandoned steel works at Niagara, Ont. The Smith Company are the owners of the patents under which they are now working, and if they obtain the property alluded to they will establish another valuable Canadian manufacturing industry.

THE J. C. McLaren Belting Company, Montreal, have recently been adding considerable new machinery in the card clothing department of their works, one of the machines being particularly worthy of note. It is for the continuous grinding of filleting in either iron or steel, and the company are now offering to mills card clothing ready to start up as soon as put on the cards.

MESSRS. BARNES & Co., proprietors of the large box shoo factory near Ottawa are said to have received and rejected an offer from the city council of St. Albans, Vt., of a complete new factory, fully supplied with power, exemption from taxation, and in addition a bonus of \$10,000, if they would consent to remove their business to that point. The firm employ about 300 hands.

THE Whiton Manufacturing Company, Toronto, are introducing the Falcon fountain pen, with which an ordinary business letter may be written with one dipping into the ink. The manufacturers claim for it that it is superior to the stylographic pen, as it preserves the individuality of the writing. It is unsurpassed for business purposes, and it will fit any ordinary penholder.

MESSRS. COWAN & BRITTON, Gananoque, Ont., who are manufacturers of wrought iron butts and straps and T hinges, say that their facilities for manufacturing these goods are much more than equal to the consumption by the trade of the country, and therefore customers can rely upon getting their goods promptly. They make a specialty of manufacturing a first class cut steel nail.

THE Toronto Lithographing Company, Toronto, produced the beautifully designed and executed cover of the Toronto Board of Trade edition of the Toronto *Globe*. The paper also contains a number of views of different departments of the Lithographic Company's works, executed in their best style, which give a good idea of the way lithographing is done, and the extent of their business.

MESSRS. H. BROAD & SON, Port Colborne, Ont., manufacturers of edge tools, etc., have their new works in operation and are booking orders from wholesale houses in Ontario and Montreal. Their general lines include axes, hatchets, hammers, mauls, crowbars, chisels, etc. An impression prevails that Messrs. Broad & Son are located at Welland, Ont. This is incorrect, as they are at Port Colborne.

THE Prescott Emery Wheel Company, Prescott, Ont., are calling the attention of the trade to the general lines of grinding tools manufactured by them. In their card, which is to be seen in another column, they mention emery wheels, corundum wheels, suspension grinding and polishing machinery, water grinders for tools, twist-drill grinders, etc., also a large variety of polishing machinery.

THE Upper Canada Furniture Company, Bowmanville, Ont., are manufacturing the "Empire" nursery chair and park carriage, which, they inform us, is the most complete and useful carriage chair ever invented, an illustration of which appears elsewhere in this paper. This company have secured the exclusive right to manufacture and sell this chair in the Dominion, and are prepared to fill all orders.

C. & J. BROWN M'FG CO.

(LIMITED),

BELLEVILLE, ONT.

Engineers, Machinists, Boiler Makers,

Foundrymen and Bridge Builders.

RAILWAY and CONTRACTORS' SUPPLIES A SPECIALTY.

F. ogs, Diamond Crossings, Switches, Hand Cars, Lorries, Velocipede Cars, Jim Crows, Track Drills, Semaphores, Rail Cars, Double and Single Drum Hoists, etc., etc.

BINGHAM

& WEBBER



"Their Work Speaks Their Worth."

Their Telephone No. is 50

Their Office is in the Lakeside Court.

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PREMIER CATALOGUE PRINTERS

- OF CANADA -

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Remington Standard Typewriter

NOTE.—Our unqualified challenge for a test of all Writing Machines remains unaccepted.

SEND FOR COPY IF INTERESTED.

GEO. BENGOUGH,

General Agent,

36 KING ST. EAST,

TORONTO, ONT.

PATENT

ADDING MACHINE

A MATHEMATICAL MARVEL

Is not a toy but a practical article. Thousands in use. HUNDREDS OF TESTIMONIALS. By mail (charges prepaid) on receipt of price — ONE DOLLAR. Money returned if not satisfactory. Circular, testimonials, etc., for stamp. Agents wanted.

WHITON MAN'G CO., - TORONTO,

SOLE AGENTS FOR CANADA.

BRANCH OFFICE—BUFFALO, N.Y.

It was recently recorded in these pages that the foundry and machine shop of Mr. William Smith, Beaverton, Ont., had been destroyed by fire, and that it was likely the citizens and municipality of that town would lend material assistance to Mr. Smith in rebuilding. A public meeting was held in Beaverton last week at which it was determined to render that assistance, and the works will probably be rebuilt immediately.

MESSRS. CHAMBERS, TURNER & LAYTON, Truro, N.S., are manufacturing incandescent lights and apparatus for producing the same. The "incandescent" is a mild, bright light, and the "lamps" may be placed on a desk or table, and moved about at will without any danger in handling them "when the current is on." The Nova Scotia Sugar Refinery has fitted up its building and factory with 100 of these lights which give the fullest satisfaction.—*Halifax Critic.*

REGARDING the hot water heater manufactured by the E. & C. Gurney Company, Toronto. The Patterson Bros. & Company, Woodstock, Ont., manufacturers of agricultural implements, who placed one of these Gurney heaters in their office building, stated in a letter to Messrs. Gurney that the apparatus was doing splendidly. They say that during the intense cold of last winter their offices were really uncomfortably warm, and that, too, without any forcing of the fire.

MR. WM. CHAPLIN, of the Welland Vale Manufacturing Company, St. Catharines, Ont., has purchased the premises in that city now being occupied by the Woodburn Sarven Wheel Company. The property was owned by the Imperial Bank of Toronto, and the change of ownership does not affect the present lessees, who may continue their business there until their lease expires. We are informed by Mr. Chaplin that he will be making the Sarven wheel not later than 1st November next.

MESSRS. ROBERT MILL AND ALFRED DICKEY, representing the Kansas City Sewer Pipe Company, Kansas City, Mo., were in Toronto last week looking for a suitable site on which to establish a sewer pipe and fire brick factory. They will make a large exhibit of the goods manufactured by the firm they represent at the forthcoming Toronto Exhibition. Should they be successful in establishing a factory here, they will add another important industry to the large number already in existence.

SECRETARY WILLS of the Toronto Board of Trade thinks that Canadian builders and those interested in building materials are allowing a point to be scored against them. Every day the mails bring descriptive circulars of all sorts relative to one class of building material or another, and without exception these are from the United States. If Canadians who supply building materials wish to do any business in connection with the erection of the new Board of Trade building they should make proper representations to the Board of what they sell, before some other materials are chosen.

ABOUT two years since Messrs. Lee & Edgar, who had previously been connected for many years with Messrs. G. & J. Brown, of Belleville, bought out Mr. Brown's interest, and have since been carrying on the business under the style of the G. & J. Brown Manufacturing Company. Both of the partners in the present concern are practical men, and their energies are resulting in a very considerable development of the business, which is largely the manufacturing of railway and contractors plant and supplies. In order to obtain more room a large new building has been acquired for a boiler shop, and other improvements are contemplated.

THE Upper Canada Furniture Company, Bowmanville, Ont., are manufacturing the "Empire" nursery chair and park carriage, of which they are making a specialty. As will be seen in the illustration in their advertisement in another page, it is about the most complete and useful carriage chair ever invented, and is equally useful for indoor and outdoor service. The cut represents the chair in carriage position—by an ingenious and simple arrangement it can be instantly converted into a high chair. The company inform us that they have secured the exclusive right to manufacture and sell this chair in the Dominion and that they are prepared to fill all orders.

THE 2,000 horse power engine of the Warren Manufacturing Company, R.I., drives all the machinery of the works from a rope pulley 32 feet in diameter and 9 feet 3 inches face, carrying 43 ropes 1 1/4 inches diameter, instead of a belt. One advantage this system possesses over belts is that several shafts can be driven at different speeds from the same driving pulley, thus saving much counter-shafting.—*Scientific American.* The system alluded to is that of the Dodge wood split pulleys heretofore described in these pages, the manufacture of which in Canada is by the Dodge Wood Split Pulley Company, Toronto, under the management of Mr. Samuel May.

CANADA JUTE COMPANY, MONTREAL.

MANUFACTURERS OF

Cotton and Jute Bags

IN ALL SIZES AND QUALITIES.

STARK BROS., AGENTS,
TORONTO.

HENRY PORTER,

MANUFACTURER OF

LEATHER

BELTING

Visitation Street, Montreal, Que.

Mill Owners will do well to write for estimates before placing their orders.

MUNDERLOH & CO.

MONTREAL,

SOLE AGENTS FOR THE DOMINION

OF

Meyer's Watchman Control Clock.

REDUCED PREMIUMS ON FIRE INSURANCE
SECURED BY USING THIS CLOCK.

Description and particulars on application.

CANADA BANK NOTE CO. (Ltd.)

MONTREAL.

W. C. SMILLIE, Pres't. HERMANN DRECHSEL, Vice-Pres't.
EDW. B. PARKER, Sec'y-Treas.

BANK NOTE PRINTERS,

LITHOGRAPHERS,

ARTISTIC PRINTERS.

RAILWAY MAPS.

GLOSSED LABELS.

ARTOTYPE (PHOTO) PRINTING.

THE Whiton Manufacturing Company, Toronto, recently introduced "a new patent adding machine" for adding columns of figures, and offered in their advertisements to refund the money if purchasers were dissatisfied. They have sold thousands of these machines in the last few months and not one has been returned, which is pretty good evidence that the purchasers are satisfied. And we saw letters in the company's office the other day from some who bought one machine ordering others for friends, and speaking in the highest terms of their own. The supply is now equal to the demand, and all orders are filled same day as received.—*Toronto World.*

A CAREFULLY prepared estimate of the number of hands engaged in the lumber business in and near Ottawa shows that the six principal firms there employ during the summer about 5,620 men in their mills and about their yards, and in winter about 3,800 in their shanties and on their limits. The Upper Ottawa Improvement Co. employ during the summer months about 1,000 men. It is estimated that the total number of men employed in the limits on the Ottawa river is about 15,000. The lumbermen say that only about 25 per cent. of the employees in the mills during the summer go to the shanties in winter. The rest of their winter gangs are made up of outside men. Of the 3,800 men who work in the shanties during the winter, about 2,000 live in Hull and about 1,000 in Ottawa.

THE Dominion Safety Boiler Company, Montreal, of which Mr. J. F. Torrance, M.E., is manager, inform us that they have secured an order for one of their Field-Stirling boilers from the Acadia Coal Company, of New York, to supply steam to their collieries at Stellarton, N.S. The plans of this boiler were submitted to their consulting engineer in New York, Mr. Brotherhood, who reported that this is the well-known English "Field" boiler with many important improvements made by Mr. Stirling; and the use of the Canadian made boiler was strongly recommended. The company esteem this order all the more valuable because the Acadia Coal Company have heretofore used the Babcock-Wilcox boiler in their works.

THE manufacture of articles of different kinds from wood fibre is very largely increasing, and the branches of business this new industry will affect is constantly broadening. The success of the line of pails, basins, tubs and other household utensils sold as indurated fibre ware is assured. The newer lines lately developed are battery jars and cells and pipe. The battery jars are warranted to stand the action of battery solutions for the ordinary forms of batteries, and also the acids used in storage batteries. They have also many other points of merit which would be at once appreciated by an electrician. The pipe was originally intended and manufactured as a conduit for electric wires, but is reaching into many other fields, and will be of particular interest in warm climates where irrigation is necessary. It is light and therefore easily handled, is as cheap as iron pipe, cannot rust and is virtually imperishable, while its cost is below that of any equally durable material in the market.

MR. ROMAINE, of Ottawa, chief of the Dominion House of Commons stationery office, who left for the Old Country a few weeks ago, has deposited a model of his steam farmer in the Glasgow exhibition, and the implement seems to have evoked the most favorable comment from the Scotch agriculturists. It is designed to perform all the work at present done on the farm by horse-power, and further to substitute for the time honored custom of ploughing a system of cultivation which without inversion will thoroughly pulverize and aerate the soil, enabling the farmer to procure a seed bed superior to what can now be obtained by existing methods, and obviate in this and subsequent operations the serious drawbacks incident to the impaction of the soil produced by ploughing, and the continuous treading of horses over the cultivated land. Mr. Romaine is endeavoring to make arrangements for the purpose of having a machine built and tested on Scotch soil before winter sets in. There ought, however, to be sufficient enterprise among some of our Canadian manufacturers of agricultural implements to build one of these machines and test the value of this important Canadian invention.

MESSRS. WARDEN KING & SON, Montreal, are just issuing a brochure having reference to the Spence's patent hot water heaters manufactured by them. In the preface of the book they say that the present system of heating buildings by hot water circulation was introduced in Canada some twenty years ago by Messrs. Rogers & King, and that it has proved a great success. They also say that many of the largest public and private buildings in the Dominion, including civic buildings, churches, colleges, convents, asylums and schools, are now heated with the Spence hot water boilers. They are made in eight different sizes and of various kinds, and are suited in capa-

Fenwick & Sclater,

43 and 44 Foundling St., Montreal.

MANUFACTURERS OF

Cast Steel Files and Rasps, Anchor Brand.

Cotton Waste, white and colored.

Asbestos Cement for covering Steam Pipes and Boilers.

Asbestos Piston and Joint Packing. Asbestos and Rubber Piston and Joint Packing. Plumbago Packing.

HOSE—Rubber, Canvas and Linen.

HOSE—Cotton, Rubber-Lined for Fire Brigades.

SELLING AGENTS FOR

Asbestos Packing Co., Boston; Boston and Lockport Block Co., Boston; American Cotton Waste Co.; Montreal Tent and Awning Co.; "Household" Fire Extinguisher Co.

A. C. LESLIE & CO.

MONTREAL and TORONTO,

MANUFACTURERS' AGENTS FOR

Iron, Steel, Wire, Tin, Plate,
GALVANIZED IRON.

Special value in STEEL BARS, ANGLES,
SHEETS, PLATES.

BUYERS ARE INVITED TO OBTAIN PRICES.

"JESSOP'S" STANDARD TOOL STEEL IN STORE.

1835 - 1888

Phenix Foundry and Locomotive Works,

POND ST., ST. JOHN, N.B.

JAMES FLEMING

(Successor to GEO. FLEMING & SONS),

MANUFACTURER OF

LOCOMOTIVES, Marine and Stationary Steam Engines,
Steam Boilers, Ship Tanks, and

MACHINERY OF EVERY DESCRIPTION.

The Wm. Hamilton M'g Co.

PETERBOROUGH, ONT.

MANUFACTURERS OF THE MOST MODERN

SAW MILL MACHINERY

ALLINGTON'S PATENT DOUBLE COLUMN BAND MILL,
WITH ROLLER GUIDES.

SINGLE COLUMN BAND MILLS. WILKINS' PATENT COMPENSATING
BALANCE GANG, NO FOUNDATIONS REQUIRED.

Circular Saw Mill, and everything required in first-class
Saw Mills. Send for Circular.

city for the heating of the smallest cottages as well as for the largest seminaries; and the numerous testimonials received from architects, engineers, and those having them in use attest the satisfaction these heaters have given. The boiler represented in the pamphlet is the latest improvement, and combines cheapness in price, cleanliness, ease of management, and economy in fuel. All the details of the apparatus are illustrated and described, and dimensions of the different sizes and their capacity for heating are given, by which a correct idea of the affair is had.

MESSRS. BINGHAM & WEBBER, Toronto, have submitted for our inspection quite a large number of specimens of fine printing work done by them, which indicates that they stand at the very top of their profession, and that no better work can be done anywhere else in this country. The specimens are of specimen books for the Toronto Lithographing Company and for Mr. J. L. Jones, wood engraver, Toronto, showing the various styles of work done by them in their respective lines; catalogues for the Toronto Silver Plate Company, showing the various styles of goods manufactured by them; for Messrs. W. & J. G. Greey, manufacturers of flour mill machinery, illustrating their specialties; for Messrs. Warden King & Son, Montreal, manufacturers of hot water heaters; for the Montreal Saw Works, Montreal, illustrating their products; for the James Smart Manufacturing Company, Brockville, Ont., illustrating the stoves, ranges, etc., made by them; a beautiful hanger in colors for the Gananoque Carriage Company, Gananoque, Ont.; school certificates, letter heads, business cards etc. These are all really works of art and show the high state of perfection in which this firm do printing work. We are informed that the plant and machinery owned by these enterprising young men cost \$20,000, and that they now have some \$8,000 worth of jobs in course of completion.

THE J. C. McLaren Belting Company, Montreal, are now manufacturing, under letters patent, an improved leather link belt for which they claim great excellence. It is composed of small pieces of thick, heavy leather cut concave and convex, which are appropriately bolted together and caught in the centre with a soft leather hinge which permits the belt to conform to the crown of the pulley, the peculiar shape of the pieces constituting the belt forming a complete knuckle joint, the contact with the pulley presenting a solid surface. The enterprise that characterizes this concern in introducing this new article is praiseworthy, and we are informed by the company that this link leather belt is already meeting with such favor that they are away behind in filling orders for it. Among the large number of establishments in which these belts are now in successful operation, the company mention the Royal Electric Light Company, Montreal; Montreal Harbor Commissioners' Station; Charlottetown Electric Light Company; Messrs. Prouty & Miller's saw mills, at Roxton Falls, Que., and Newport, Vt., and Henderson Lumber Company's mills, Montreal. They are now building an 18-inch belt of this character to be driven by a Brown automatic engine for the works of the St. Lawrence Sugar Refining Company, Montreal, which is intended to perform the work expected from a 24-inch double leather belt. This link belt is specially adapted for use in damp places, such as saw mills operated by water power, paper mills, pulp mills, etc.

THE James Smart Manufacturing Company, Brockville, Ont., are issuing to their friends their illustrated and descriptive catalogue and wholesale price list of stoves, ranges, hollow-ware, pumps, sinks, house furnishing hardware, tinsmiths' supplies, etc. The principal cook stoves and ranges alluded to are the "Perfection A," which are remarkably pleasing in appearance and are made in all the usual sizes and styles, including high and low closets, reservoir, high and low shelves, nickel and tile ornamentations, polished edges, etc. The "Perfection B" line of stoves and ranges are shown to be built with reference to all modern requirements and, although not quite so highly ornamented, are fully up to the standard as regards all that is to be desired. Other goods illustrated are Olive Branch, Saxon, and Saxon Boy, cooks, for coal or wood; Farmer's Cook, My Choice, Central, Dufferin, Favorite, Genesee, Smart's Cook and Treasure, for wood only; Paris and Superior ranges, for coal or wood; Alaska, Belle, Golden Star and Palace Aladdin, heating stoves for coal; Ruby, for wood, and Classic, for coal or wood. The other lines of goods alluded to are also fully illustrated and described. This catalogue is one of the finest and best that has come into this office, and is fully equal to any that is issued by any similar manufacturing concern in Canada or the United States. What is more—it is of a size—7½x4½ inches—that ensures its preservation. The front cover is beautifully embossed in gold and black, and the back shows the legend "Perfection Stoves and Ranges." Messrs. Bingham & Webber, the popular printers, Toronto, have their imprint in the book.

FOR
**Cylinder, Machinery
& Wool Oils**

WRITE TO

ROYAL OIL COMPANY,
1, 3 & 5 Sherbourne Street,
TORONTO.

OUR MOTTO: "High Class Oils at Low Prices."

McMillan, Kittredge & Co.



HEAD OFFICE:
Petrolea, - Ont.

BRANCH:
Stratford, Ont.

MANUFACTURERS
OF THE **OILS** HIGHEST QUALITY

FOR
CYLINDERS, ENGINES, SCREW CUTTING, ROLLS, WOOL,
HARNESSES, BELTS, SEWING MACHINES, ETC., ETC

Black Oil (Summer and Winter), Pure Surface Oil, Paraffine Oils,
Red Oil 22° and 25°, and Benzine 62° Gravity.

STOVE GASOLINE, 72° GRAVITY.

IF YOUR DEALER DOES NOT KEEP OUR BRANDS, ORDER DIRECT.

PRESCOTT EMERY WHEEL CO.

PRESCOTT, ONT.

MANUFACTURERS OF
Emery Wheels,
Corundum Wheels
AND ALL KINDS OF
EMERY GOODS.

— ALSO —
SUSPENSION
GRINDING AND
POLISHING
MACHINERY.



Water Grinders for Tools
Twist Drill Grinders.

ALSO A LARGE VARIETY
OF
GRINDING AND POLISHING
MACHINERY

Discounts and Price Lists on application.



SAULT Ste. MARIE CANAL.

Notice to Contractors.

SEALED TENDERS addressed to the undersigned and endorsed "Tenders for the Sault Ste. Marie Canal," will be received at this office until the arrival of the eastern and western mails on **TUESDAY**, the 23rd day of October, next, for the formation and construction of a Canal on the Canadian side of the river, through the island of St. Mary.

The works will be let in two sections, one of which will embrace the formation of the canal through the island; the construction of locks, etc. The other, the deepening and widening of the channel-way at both ends of the canal, construction of piers, etc.

A map of the locality, together with plans and specifications of the works, can be seen at this office on and after **TUESDAY**, the 9th day of October, next, where printed forms of tender can also be obtained. A like class of information, relative to the works, can be seen at the office of the Local Officer in the Town of Sault Ste. Marie, Ont.

Intending contractors are requested to bear in mind that tenders will not be considered unless made strictly in accordance with the printed forms and be accompanied by a letter stating that the person or persons tendering have carefully examined the locality and the nature of the material found in the trial pits.

In the case of firms, there must be attached the actual signatures of the full name, the nature of the occupation and residence of each member of the same; and further, a *bank deposit receipt* for the sum of \$20,000 must accompany the tender for the canal and locks; and a *bank deposit receipt* for the sum of \$7,500 must accompany the tender for the deepening and widening of the channel way at both ends, piers, etc.

The respective *deposit receipts*—cheques will not be accepted—must be endorsed over to the Minister of Railways and Canals, and will be forfeited if the party tendering declines entering into contract for the works, at the rates and on the terms stated in the offer submitted.

The deposit receipt thus sent in will be returned to the respective parties whose tenders are not accepted.

This Department does not, however, bind itself to accept the lowest or any tenders.

By order,

A. P. BRADLEY,

Secretary.

Department of Railways and Canals,
Ottawa, 8th August, 1888.



ST. LAWRENCE CANALS.

Notice to Contractors.

SEALED TENDERS, addressed to the undersigned and endorsed "Tender for the St. Lawrence Canals," will be received at this office until the arrival of the eastern and western mails on *Tuesday, the 25th day of September next*, for the construction of two locks and the deepening and enlargement of the upper entrance of the Galops Canal. And for the deepening and enlargement of the summit level of the Cornwall Canal. The construction of a new lock at each of the three interior lock stations on the Cornwall Canal between the Town of Cornwall and Maple Grove; the deepening and widening of the channel way of the canal; construction of bridges, etc.

A map of each of the localities, together with plans and specifications of the respective works, can be seen on and after *Tuesday, the 11th day of September next*, at this office, for all the works, and for the respective works at the following mentioned places:—

For the works at Galops, at the Lock-keeper's House, Galops. For deepening the summit level of the Cornwall Canal, at Dickenson's Landing; and for the new locks, etc., at lock-stations Nos. 18, 19 and 20, at the town of Cornwall. Printed forms of tender can be obtained for the respective works at the places mentioned.

In the case of firms there must be attached the actual signatures of the full name, the nature of the occupation and residence of each member of the same, and further, a *bank deposit receipt* for the sum of \$6,000 must accompany the tender for the Galops Canal Works, and a *bank deposit receipt* for the sum of \$2,000 for each section of the works on the summit level of the Cornwall Canal; and for each of the lock sections on the Cornwall Canal a *bank deposit receipt* for the sum of \$4,000.

The respective *deposit receipts*—cheques will not be accepted—must be endorsed over to the Minister of Railways and Canals, and will be forfeited if the party tendering declines entering into contract for the works at the rates and on the terms stated in the offer submitted. The deposit receipts thus sent in will be returned to the respective parties whose tenders are not accepted.

This Department does not, however, bind itself to accept the lowest or any tender.

By order,

A. P. BRADLEY,

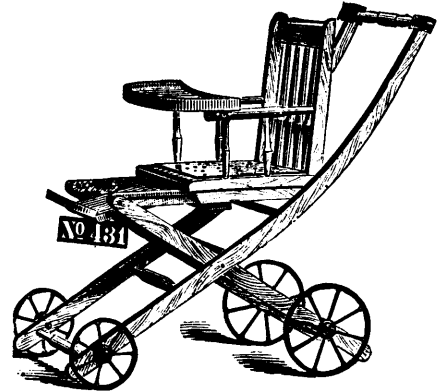
Secretary.

Department of Railways and Canals,
Ottawa, 8th August, 1888.

The "Empire" Nursery Chair AND PARK CARRIAGE

THE MOST COMPLETE AND USEFUL CARRIAGE
CHAIR EVER INVENTED.

Useful in Winter and Summer.



Every Baby Should Have One.

The "Empire" in Carriage position.

Patented in Canada June 20th, 1887.

We have secured **THE EXCLUSIVE RIGHT** to manufacture and sell this Chair in the Dominion of Canada, and we are now prepared to fill orders. We will be pleased to send a sample order. They can be shipped K.D. in pairs.

**UPPER CANADA FURNITURE CO'Y,
BOWMANVILLE ONT.**

THE

Dartmouth Ropework Co.

Halifax, Nova Scotia.

MANUFACTURERS OF

MANILLA, SISAL and

Tarred Russia Cordage,

MARLINE, HOUSELINE,

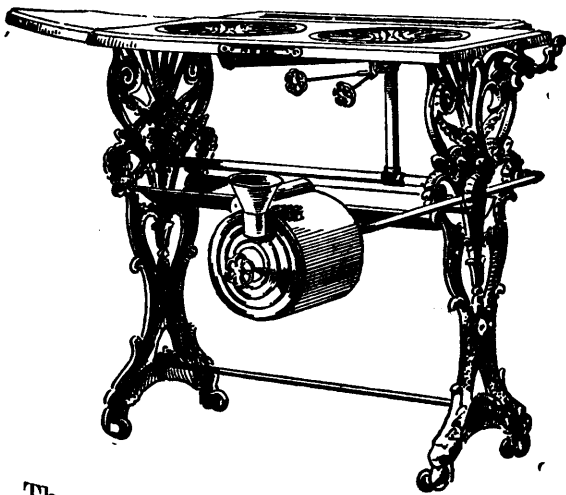
HAMBROLINE, SPUN YARN AND OAKUM.

SPECIAL ATTENTION GIVEN TO

BINDER TWINE.

Monarch Vapor Stoves.

(ALL SIZES.)



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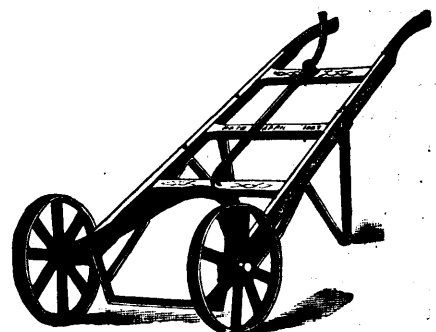
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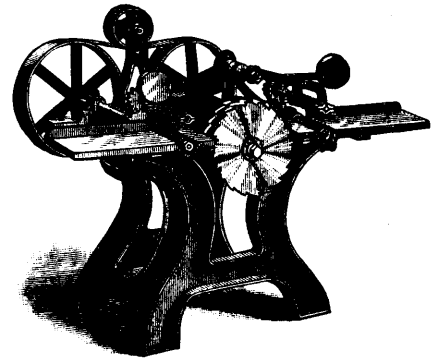
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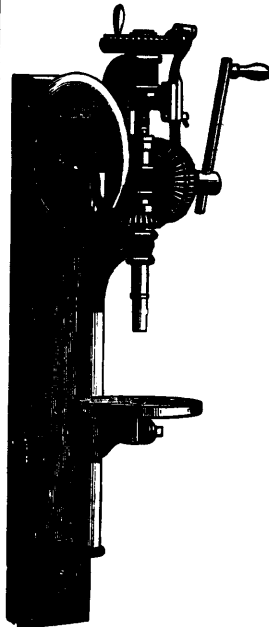
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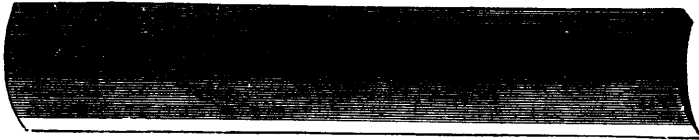
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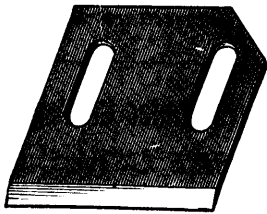
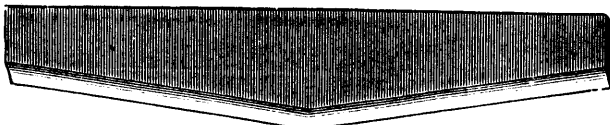
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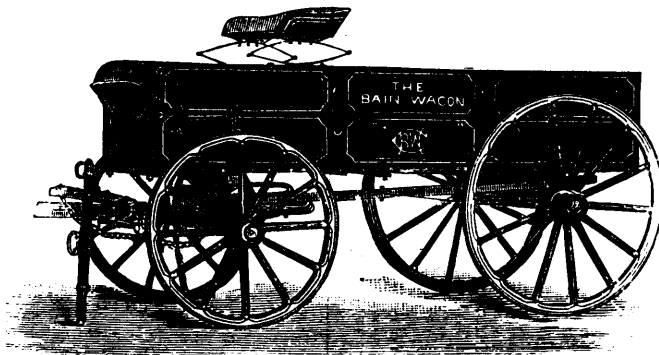
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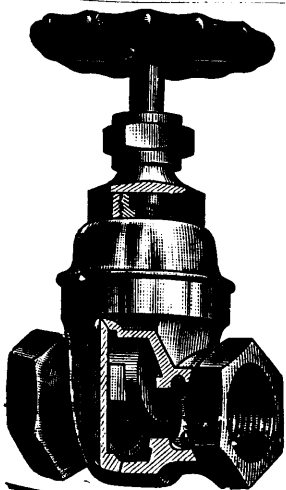
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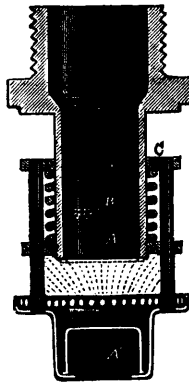
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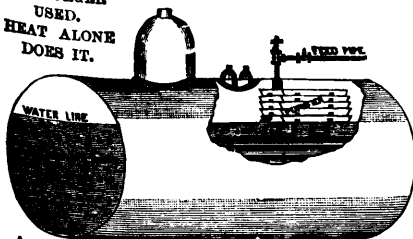
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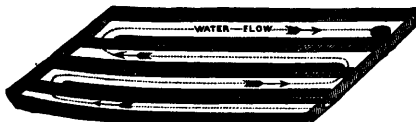
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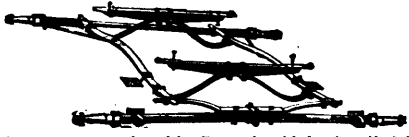
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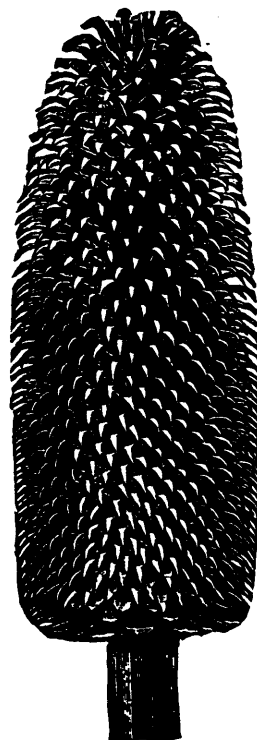
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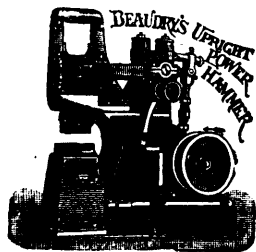
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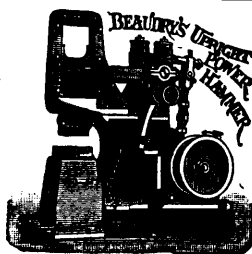
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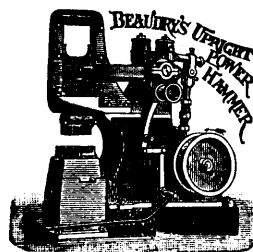
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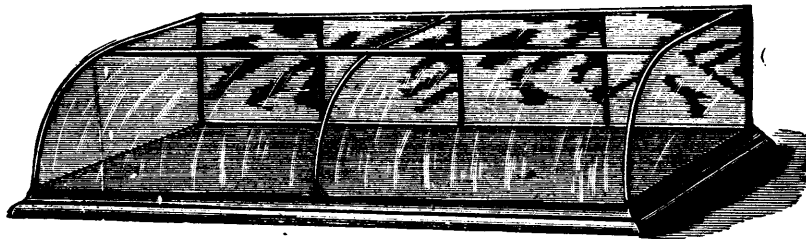
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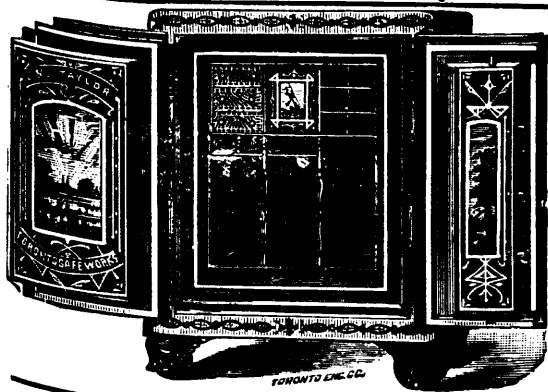
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SOME PERTINENT SUGGESTIONS.

FIRST { We tan our own Leather especially for Belting.
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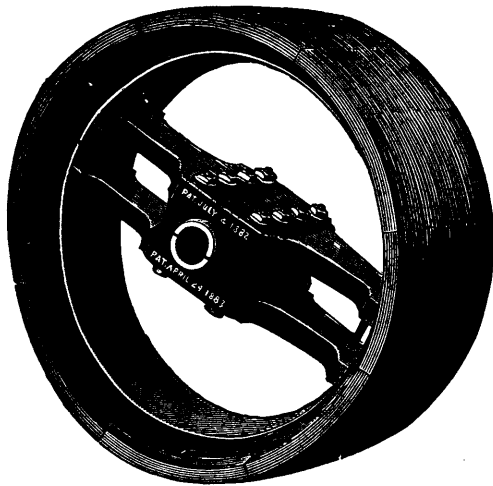
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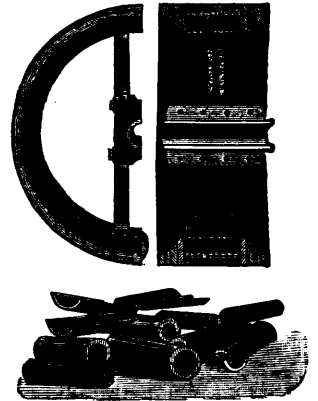
Dodge Patent Wood Separable or Split Pulleys.



Best Belt Surface, Lightest, Strongest, Best
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With our Patent Bushing System

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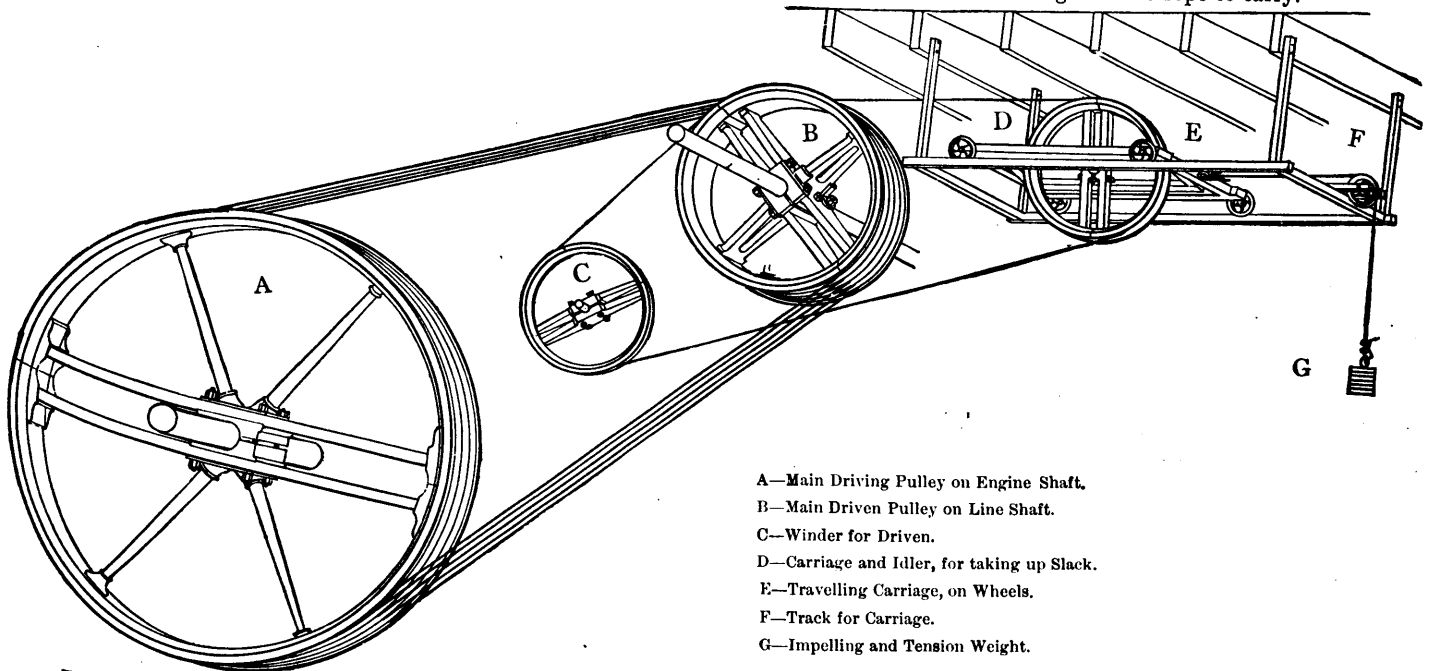
THE TRANSMISSION OF POWER BY ROPES AND THE DODGE PATENT WOOD PULLEYS.

The great advantage of Wood over Iron as a material for belt pulleys (or drums) to transmit power economically, has induced the DODGE WOOD SPLIT PULLEY CO., of Toronto, to introduce grooved hardwood pulleys for the special purpose of transmitting power by ropes (manilla tallow laid), and in this connection Mr. Dodge has taken out Canadian Letters Patent for a system of applying the ropes, adjusting the pulleys, and taking up slack, that is giving the most unqualified satisfaction.

This system of transmitting power by ropes is cheaper and superior to belts in many cases, such as where the driven shaft is at right angles with the driver, also where the drive is perpendicular, particularly when it is quarter twist and perpendicular; also where the driver and driven are

close together; also for long drives, such as across a street, or a stream, etc For transmitting power from an engine to the line shaft this system is unequalled; steady all the time, not like a heavy belt, which is always more or less flapping, jerking and stretching, then slipping and losing power. It is safe to say that an engine hitched up by the Dodge Rope System will do 25 per cent. more work on the same consumption of fuel than the same engine would do with a belt. We have put up a number of the Dodge Patent Rope transmissions during the past year, all of which are in most successful and satisfactory operation, as certified by the testimonials published in our catalogue of well-known manufacturers who have them in use.

WITH OUR SYSTEM OF MANILLA ROPE TRANSMISSION is overcome the objection to Wire Rope (because of crystallizing) and gearing, (because of loss of friction) and shafting (because of the liability to get out of alignment, hence loss of power by friction), and a separate engine plant (because of its great expense); on the contrary, with the Manilla Rope System, under the Dodge patents, the power is transmitted with the same efficiency as though the shafts were close together, there being no loss of power by excessive tension, or bad alignment. but simply the friction of the journals to overcome at the carriers, which have a strain of weight of the rope to carry.



A—Main Driving Pulley on Engine Shaft.
B—Main Driven Pulley on Line Shaft.
C—Winder for Driven.
D—Carriage and Idler, for taking up Slack.
E—Travelling Carriage, on Wheels.
F—Track for Carriage.
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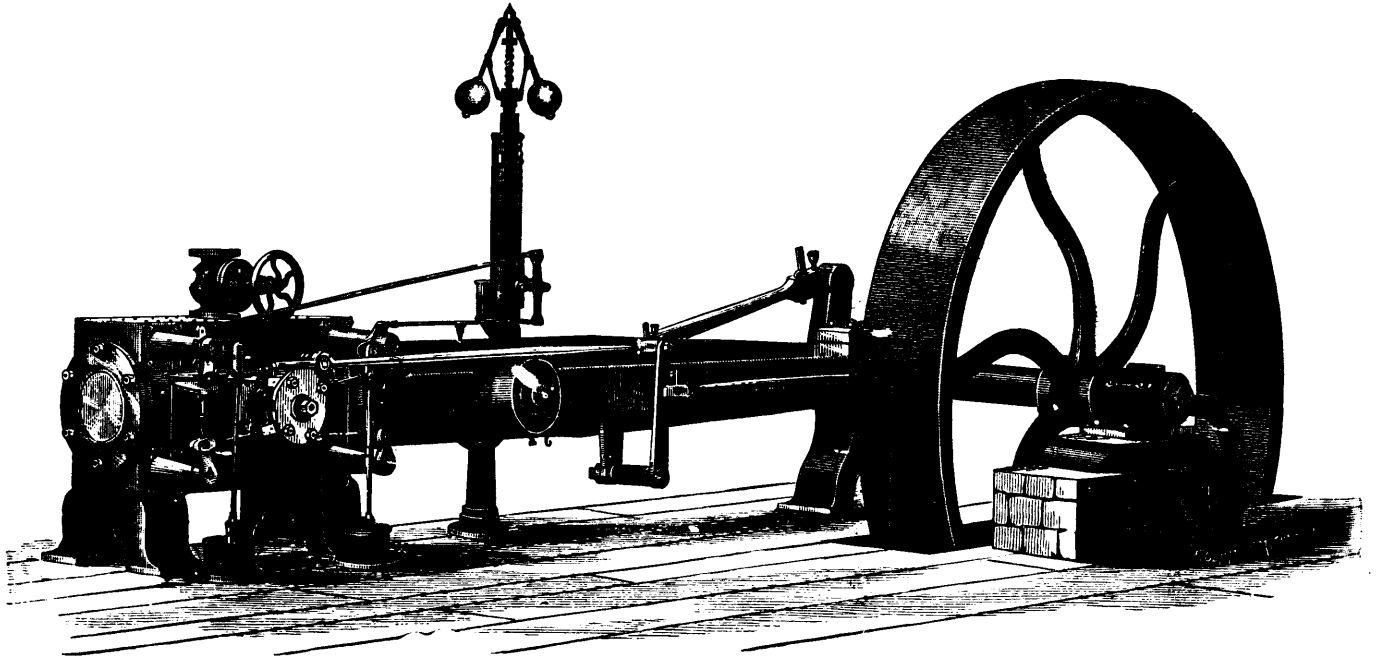
The illustration, as shown above, is one of peculiar construction, and represents an engine transmitting its power to the line shafting by the Dodge Patent System of manilla ropes and grooved hardwood pulleys. Transmissions similar to the above are now in use at the works of the following well-known manufacturers in Toronto:—

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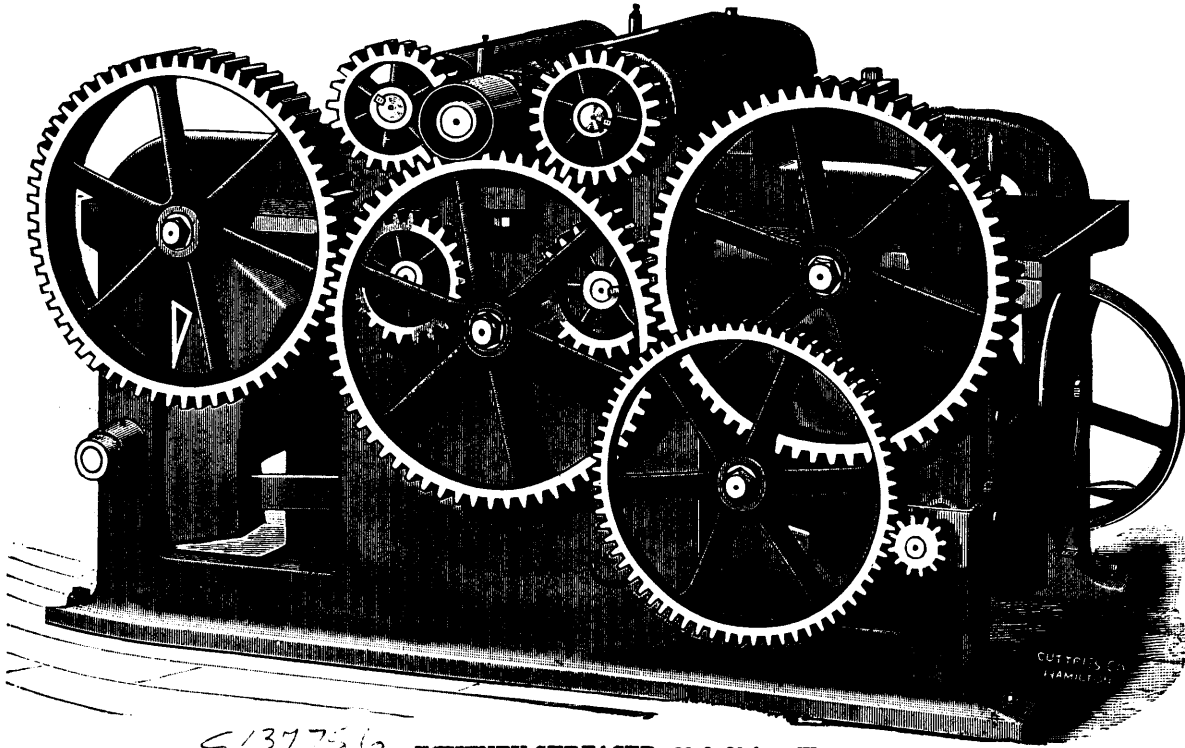
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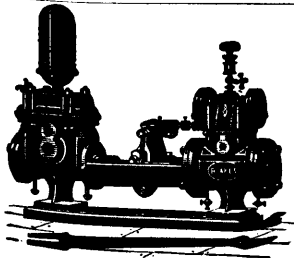
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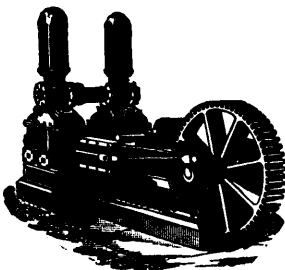
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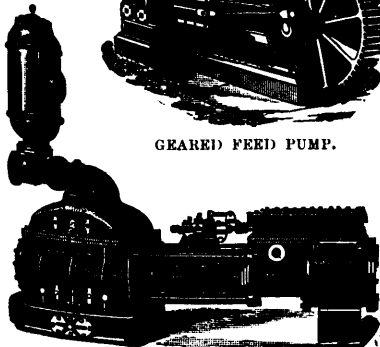
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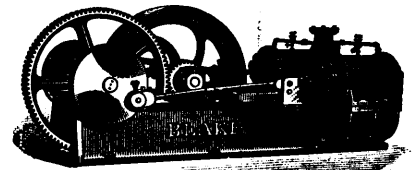


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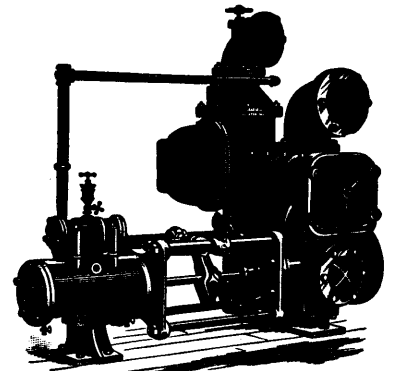
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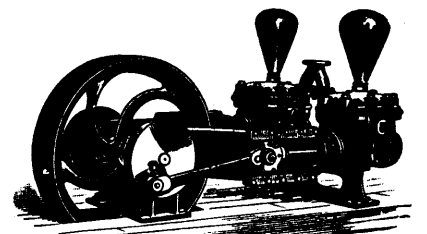
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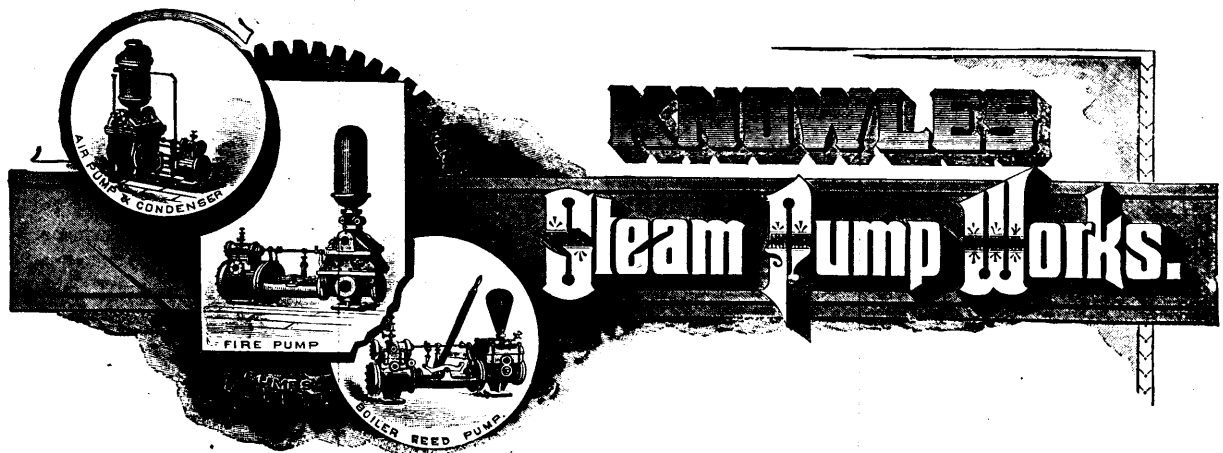
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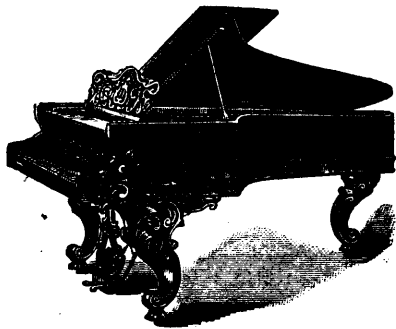
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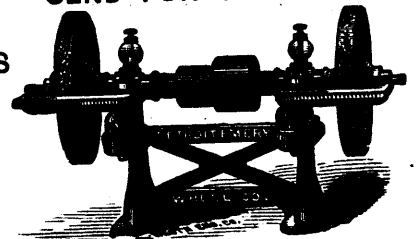
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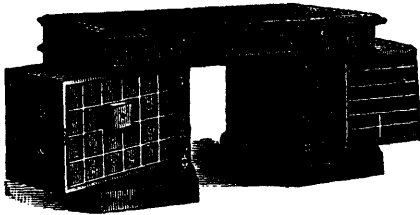
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