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CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL OF
PUBLIC WORKS • TENDERS • ADVANCE INFORMATION • AND MUNICIPAL PROGRESS

EVERY THURSDAY

This paper reaches every week the Town and City Clerks, Town and City Engineers, County Clerks and County Engineers, Purchasers of Municipal Debentures and leading Contractors in all lines throughout Canada.

Vol. 6.

AUGUST 1, 1895

No. 26.

THE CANADIAN CONTRACT RECORD,
PUBLISHED EVERY THURSDAY
As an Intermediate Edition of the "Canadian Architect and Builder."

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NOTICE TO CONTRACTORS

ALEXANDRIA, ONT., WATERWORKS

Sealed tenders will be received until one o'clock p. m. FRIDAY, AUGUST 2ND, 1895, addressed to D. A. McDonald, Reeve, for furnishing material and performing the labor necessary for the construction complete of a

SYSTEM OF WATERWORKS FOR THE VILLAGE OF ALEXANDRIA, ONT.

The work to be done includes the furnishing:

279 tons cast iron pipe 8 in. to 4 in. in diameter.
20 hydrants.

Steel stand pipe 100 x 14 feet.

500,000 gal. compound duplex engine.

60 horse power boiler. Pumping station and the laying of 3 miles of mains.

Bids will be received for the above in whole or in part. The lowest or any tender not necessarily accepted. A certified cheque for 5% of the amount to accompany each tender.

Plans and specifications can be seen and blank forms of tender secured at the village council chamber and at the office of the Engineers, 137 Broadway, New York.

D. A. McDONALD, Reeve.

ALEXANDER POTTER, Engineer

TENDERS WANTED FOR Drainage Work

Sealed tenders endorsed "Tender for Drainage" and addressed to James Burton, Osnabruk Centre, Ont., will be received up to the hour of 6 p. m. SATURDAY, 10TH AUGUST, 1895, for the deepening, widening, straightening, etc., of Hoople Creek and Tributary, in the 5th, 6th, 7th and 8th concessions of the Township of Osnabruk, Stormount County.

Estimated quantity earth excavation, 56,209 yards.

Estimated quantity rock excavation, 470 yards.

Plans and specifications to be seen and forms of tender to be had at the offices of Saunders & Wiggins, Engineers, Brockville, Ont., and at the office of James Burton, Clerk of Osnabruk, (near the site of proposed works) on and after 1st August, 1895.

The work is divided in 4 sections and tenders will be received for the whole or for one or more sections.

The lowest or any tender not necessarily accepted.
SAUNDERS & WIGGINS, A. W. AULT, Engineers. Reeve.

Osnabruk, 24th July, 1895.



Notice to Contractors

Tenders will be received by registered post, addressed to the City Engineer, Toronto, up to 11 o'clock a. m. on SATURDAY, AUGUST 3RD, 1895, for the following works:

CEDAR BLOCK PAVEMENT

On Argyle Street, from Dundas Street to Gladstone Avenue.

BRICK PAVEMENT

On Amelia Street, from Sumach Street to Parliament Street.

On Selby Street, from Sherbourne Street to Huntley Street.

ASPHALT PAVEMENT

On St. Patrick Street, from McCaul Street to Beverley Street.

On Victoria Street, from Adelaide Street to Queen Street.

CONCRETE SIDEWALK

On east side of St. George Street, from Hoskin Avenue to Bloor Street.

Specifications may be seen and forms of tender obtained on and after Monday, July 27th, 1895, at the office of the City Engineer, Toronto.

A deposit in the form of a marked cheque, payable to the order of the City Treasurer, for the sum of 5 per cent. on the value of the work tendered for up to \$1,000 and 2½ per cent. for the value of the work tendered for over that amount, must accompany each and every tender, otherwise it will not be entertained.

The tenders must bear the bona fide signatures of the contractor and his sureties or they will be ruled out as informal.

The committee do not bind themselves to accept the lowest or any tender.

DANIEL LAMB,
Chairman Committee on Works.

Committee Room, Toronto, July 23, 1895.

TO CONTRACTORS

Tenders will be received by the undersigned, up to 4 p. m. on MONDAY, AUGUST 12TH for the Mason, Bricklaying, Cut Stone, Structural Iron and Steel, and Rough Carpenter work required in the erection and completion of a large

OFFICE BUILDING

to be known as the "Foresters Temple," at the north west corner of Bay and Richmond streets, Toronto, for the Independent Order of Foresters.

Plans and specifications may be seen on or after Tuesday, July 30th, and all information obtained at the offices of the architect. The lowest or any tender not necessarily accepted.

GEO. W. GOUINLOCK, Architect,
53 King Street East.

BRIDGE TESTING IN HOLLAND.

According to the agreement between the Dutch government and the railway companies in the Netherlands, all the bridges of large spans must be periodically tested under government supervision. The tests are made by a large staff of trained assistants provided with 93 instruments to measure the elongation or compression of members under strain. These instruments consist essentially of two metal plates, fixed rigidly some distance apart, usually 1 meter, on the member to be observed. For investigating elongations the two plates are joined by means of a steel tape; for compression by a steel rod, by means of which an indicator is moved, recording the transformation on the member between the clamp plates. The results obtained indicate a factor of safety very much less than 5 (upon which calculations are based) in large structures.

BUSINESS NOTES.

McGregor & Jeeves, contractors, Victoria, B. C., have dissolved.

Gagnon & Charette will do business as contractors in St. Henri, Que.

Adolphe Paquette, builder, Montreal, is reported insolvent, owing \$22,765.

Bouyrassa & Nantel, of Montreal, have registered a partnership as contractors.

A. Ferris & Co., builders, Sudbury, Ont., are reported to have placed their estate in the hands of F. Cochrane.

Mr. William Elliott, senior member of the firm of Elliott & Son, interior decorators, Bay street, Toronto, died on the 18th inst.

The Don Valley Pressed Brick Works of Toronto, have just burned their first kiln of paving bricks, which are said to be of excellent quality.

W. A. Currie, painter, Ottawa, Ont., is reported to have assigned to W. A. Cole.

CONTRACTS OPEN.

MEAFORD, ONT.—A \$1,200 addition will be built to the public school.

HULL, QUE.—The E. B. Eddy Co. propose erecting another pulp mill.

WELLINGTON, B. C.—The Methodist congregation are preparing to erect a new church.

LEVIS, QUE.—The construction of a system of waterworks for the town is agitated.

MAISONNEUVE, QUE.—The town has decided to borrow \$225,000 for general improvements.

VICTORIA, B. C.—The Council have decided to expend the sum of \$25,000 in sewerage extension by day labor.

WOODSTOCK, ONT.—Anderson & Co. are about to build two three storey brick additions to their furniture factory.

PARRY SOUND, ONT.—The Town Council have decided to grant a franchise to a company for electric street lighting.

GRISWOLD, MAN.—It is proposed to build a bridge across the Assiniboine river about two and one half miles from this place.

WILKESPORT, ONT.—Orra Bishop, Clerk of Sombra, will receive tenders until the 10th inst. for the construction of the Conlon drain.

ARNPRIOR, ONT.—The Government has purchased property at the corner of Madawaska and John streets as a site for the new post-office.

PEMBROKE, ONT.—A. J. Fortier, Sec.-Treasurer, is asking for tenders for the erection of a two storey brick addition to the separate school.

ST. JOHN, N. B.—The Board of School Trustees have decided to issue \$12,000 debentures for the Erin street school, also to heat the building with hot water.

BROOKE, ONT.—Tenders for the construction of the Black Creek drain outlet are invited until the 5th inst., by A. McIntyre, Reeve, or D. Sutherland, Deputy Reeve.

ST. HYACINTHE, QUE.—The Eastern Townships bank directors have bought a piece of ground on Girouard streets, 55 x 60 feet, and will erect a brick block thereon this season.

NAPIER, ONT.—Tenders are invited by Archibald McIntyre, reeve of Brooke, for the construction of a drain estimated to cost over \$12,000. Plans may be seen at the residence of D. Sutherland, Inwood.

LONDON, ONT.—Geo. Craddock, architect, is receiving tenders for additions and alterations to St. John's Sunday school.—R. North will build a brick cottage, corner Louisa and George streets, at a cost of \$1,200.

GRANBY, QUE.—J. A. Tomkins, Secretary-Treasurer, will receive tenders until Monday, the 5th inst., for the construction of buildings for the Empire Tobacco Works. Plans may be seen at the Secretary-Treasurer's office.

CARLTON PLACE, ONT.—The tenders received for the erection of a fire station and town hall have been found to be in excess of the appropriation, and the rate-payers will be asked to sanction a further grant of \$5,000. It is probable that the work will be laid over until next year.

CORNWALL, ONT.—Mr. McCallum, C. E., of the Public Works Department of Ontario, last week inspected the location of the proposed River Aux Raisin drainage scheme, in order to make a report to the Department, after which the question of making a grant for the work will be considered.

QUEBEC, QUE.—Tenders are invited by F. X. Drouin, 61 Peter street, until the 6th of August for the construction of about 295 feet of wharfage and six sluices, to dam the narrow entrance of Barachois, of

Carlton County. Plans of the work may be seen at the office of D. Ouellet, architect.—Mr. Polley is preparing to erect a shoe factory at the corner of St. Valier and Voltigeurs street.

TORONTO JUNCTION, ONT.—The new addition to be erected by H. A. Lazier & Co. will be a two story brick building, 100 x 70 feet.—The Canada Permanent Loan Company will rebuild immediately the fertilizer works burned last week.—The authorities here are said to be in communication with representatives of an American firm who are considering the erection of a factory here.

OSNABRUCK CENTRE, ONT.—James Burton, Clerk of Osnabruck, will receive tenders until Saturday, the 10th inst., for the deepening, widening, straightening, etc., of Hoople Creek and tributary, in the township of Osnabruck. The work will include 56,209 yards of earth excavation and 470 yards of rock excavation and plans may be seen at the office of Saunders & Wiggins, Civil Engineers, Brockville, and at the Clerk's office.

EDMONTON, N. W. T.—Dr. Wilson, mayor, and Father Lacomb have gone to Ottawa to interview the government on the question of assistance for the new bridge to be built across the Saskatchewan river, estimated to cost \$60,000.—The plans show an iron truss bridge, 703 feet in length, with three spans of 234 feet each, supported by two piers in the river and an abutment in each bank. The piers are to be of cut stone set in cement.

HAMILTON, ONT.—Petitions have been presented for the construction of a sewer on Hunter street, from Locke to Pearl street, and from Pearl to Ray street.—Building permits have been granted as follows: E. Robertson, brick dwelling on Queen street south, cost \$1,000; F. W. Fearman, brick addition to factory on Rebecca street, cost \$3,000.—The County Council have accepted the city's offer to purchase the jail at the price of \$35,000, consequently the new jail building will not be proceeded with by the city.—Favorable reports have been presented to the Waterworks Committee regarding the introduction of down draught furnaces at the pumping station, and the work is likely to be carried out.

MONTREAL, QUE.—The municipal council of St. Henri have given permission to Messrs Walter Cottingham & Son to start a new manufactory of white lead, window glass and bronze powders on the old Moseby tannery site.—The municipality of St. Louis du Mile End have effected a loan of \$37,800 for school improvements.—A. Goyette, solicitor, of this city, gives notice that application will be made to Parliament to incorporate a company to construct a railway from some point on the north-eastern limit of the County of Vercheres, through the county of Chambly with branch lines to St. Longueuil and St. Lambert, and crossing the St. Lawrence river by a railway and general traffic bridge at Montreal; also with power to develop and utilize the water powers in the Chambly river, and to generate electricity for commercial purposes.

OTTAWA, ONT.—Dr. W. C. Cousens and James Davidson have taken out a permit for the erection of a four storey brick block of stores at the corner of Bank and Albert streets, to cost about \$85,000.—It is understood that the swing bridge over the canal is likely to be replaced by a high level bridge, the Dominion Government having the matter under consideration.—It is rumored that the Ottawa Railway Accident Insurance Co. will erect a new building.—Building permits have been granted as follows: Robt. Cotton, frame dwelling, Florence st.; N. Cotter, frame dwelling, King st., H. N. Bote, two brick veneered houses, Rideau st., R. J. Mackey, wooden building, Jane

st.; F. X. Robert, wooden building, Cumberland street; F. Deverennes, stone dwelling, Nelson st.; A. Tracey, dwelling, Cooper st.; Jas. J. Neville, two wooden buildings, Robert street.

TORONTO, ONT.—The Committee appointed to select a site for the proposed Consumptive hospital is reported to have decided to build in Muskoka.—The Property Committee of the City Council have inserted a clause in the Cobban Mfg. Co.'s lease of a site on the Esplanade requiring the company to commence the erection of a factory on Lake street, costing at least \$50,000, within three months from the date of the signing of the lease.—The Council of the Board of Trade have adopted a report strongly endorsing the necessity of prompt action being taken to construct the proposed tunnel across the bay and to otherwise improve the water supply.—The Manufacturers Committee of the City Council have been requested to grant exemption to the Dominion Cold Storage Company, who propose establishing a cold storage warehouse in this city.—Mr. E. J. Lennox, architect, is preparing plans for the Cobban Mfg. Co.'s new building, to cost \$50,000.—Mr. Geo. W. Gouinlock, architect, is asking for tenders until the 12th inst. for the several trades required in the erection of the new building at the corner of Bay and Richmond streets for the Independent Order of Foresters. Plans may be seen at Mr. Gouinlock's office, King street east.—Building permits have been granted as follows: Globe Printing Co., 3 storey bk. office building, s. e. cor. Jordan and Melinda sts., cost \$11,000; Alex. Millard, 3 storey bk. store and dwelling, and warehouse, rear 359 Yonge st., cost \$8,000.

FIRES.

The general store of Mr. McKenzie, at Russell Man., was burned on the 24th of July, partially insured.—Jenkins livery stable at Belleville, Ont., was destroyed by fire last week. Building insured.—A building at Dresden, Ont., owned by A. Cuthbert, has been burned. Loss \$1,000. Insured.—L. V. Ludwig's vinegar works at London West, Ont., were consumed by fire on Monday last. Loss, \$9,000; insurance, \$3,000.—Piggott & Son's planing mill at Windsor, Ont., together with valuable machinery, was completely destroyed by fire on the 30th of July.—The loss will amount to \$20,000.—The residence of Jacob Erb, at Waterloo, Ont., was burned on Tuesday last. Loss, \$1,500; insurance, \$1,200.

CONTRACTS AWARDED.

NANAIMO, B. C.—Mr. Frost, of this place, has been awarded the contract for the Prevost island lighthouse.

PETERBORO', ONT.—The contract for the erection of an addition to Park Street Baptist church has been let to T. D. M. Croly.

WINDSOR, ONT.—Walter Malone has let the contract for a four storey grain elevator to be erected at the foot of McDougall street.

GANANOQUE, ONT.—The contract for the new High School building has been awarded to Mitchell & Wilson, of this place. Power & Son, architects.

LONGUEUIL, QUE.—The Town Council have awarded contracts to Chagnon & Co., and W. McNally & Co., of Montreal, for the supply of earthenware pipes for a drainage system.

TORONTO JUNCTION, ONT.—The Canadian General Electric Co., contractors for the extension of the electric railway to Weston, have sub-let the contract for grading to J. Hartnell.

MONTREAL, QUE.—Messrs. Bastien & Valiquette have been awarded the contract for laying all the water mains,

hydrants, and service connections for the supply of water in St. Louis du Mile End.

SARNIA, ONT.—The tender of Pollard, Goff & Co., of Illinois, for the repair and enlargement of the Perche and Pulse drains has been accepted by the Council. The price is \$5.50 per lineal rod, and the work will cost upwards of \$20,000.

WINNIPEG, MAN.—The Building Committee of the School Board have recommended the acceptance of the tender of John Shaw & Co., for the erection of the Argyle school, at the price of \$21,285. The Smead-Dowd system of heating is recommended for the above school, at \$2,420, the Fuller & Warren system of hot air for the Dufferin school, at \$2,784.

WOODSTOCK, ONT.—The Building Committee of the Town Council have recommended the acceptance of the following tenders for the new market buildings: James Blackstone, excavating and stone and brick work, \$3,200; J. D. Tindall, carpenter work, \$3,360; James Findlay, slating and galvanized iron, \$1,395; R. W. Moote, painting, \$300; James Patterson, plastering, \$265; E. S. Coppins, plumbing and gas pipe, \$81.18; Nobbs & Sons, cut stone, \$325.

OTTAWA, ONT.—The contract for the Peterboro' and Lakefield division of the Trent Valley canal, has been finally let to Messrs. Brown, Love & Aymer, of Toronto. It is understood the contract price is about \$300,000, the total length of the section being six and one-half miles.—Holbrook & Sutherland have been awarded the contract for the masonry and brickwork of H. Cluff's new hotel on Bank street, at the sum of \$12,000.—The Minister of Marine and Fisheries has awarded to Carrier, Lane & Co., of Quebec, a contract for six tubular boilers and six fog-horn machines, with necessary boilers required for lighthouses in the Maritime provinces.

ST. JOHN, N. B.—The Exhibition Association received tenders as follows for the erection of an exhibition building: W. L. Prince, \$5,761; J. Ferguson, \$4,567; A. Harrison, \$4,540; Adams T. Belyea, \$4,425; D. W. Clark & Son, \$4,385; J. Duffy, \$3,795; J. Drury & Son, \$3,500; Powan & Lelacheur, \$3,457.

(Continued on page 4.)

WILLIS CHIPMAN, B. A. Sc.,

M. Can. Soc. C. E.; M. Am. Soc. C. E.;
M. Am. W. W. Ass'n.

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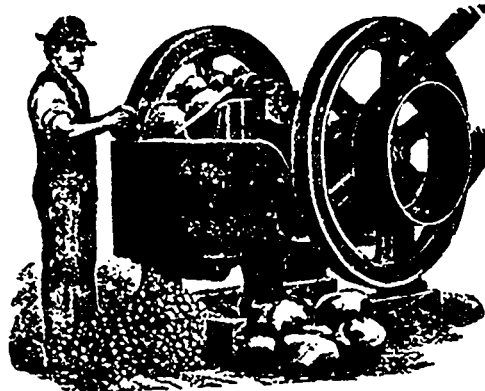
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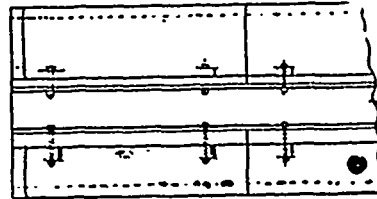
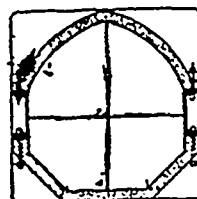
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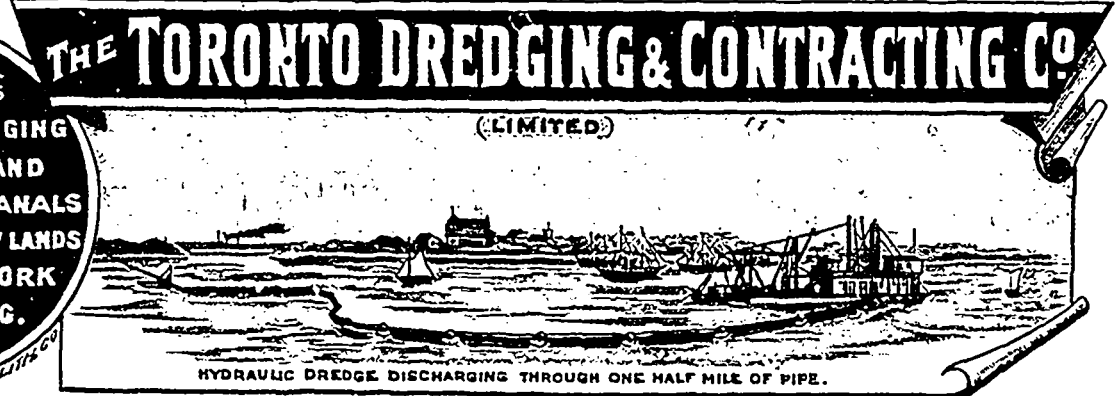
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MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

The latter tender was accepted. For building cattle sheds the tender of Adams & Belyea, at \$1,350, has been accepted.—James Pender & Co. have awarded a contract to Edward Bates to build a large warehouse at Lower Cove, to cost about \$4,000.—W. H. Thorne & Co. have received the contract of supplying the pipe for the waterworks at Hartland.

NEW COMPANIES.

VICTORIA, B. C.—Idaho Gold Mining & Smelting Co., of Butte, registered to transact business here. Capital, \$500,000. Its chief operations will be in Tail Creek district, West Kootenay.

VANCOUVER, B. C.—Alexander Mining & Dredging Co., incorporated; capital stock, \$3,000,000.—Cinnabar Mining Co., incorporated; capital \$100,000; incorporators, R. G. Tallow, A. G. Ferguson, and C. O. Wickenden.

MONTREAL, QUE.—James Shearer Co., seeking incorporation; capital \$200,000; to manufacture sashes, doors, blinds, and every description of woodwork, applicants, James Shearer, of Westmount, J. T. Shearer, of Montreal, J. Brown, of Westmount and others.

WEIGHT PER SQUARE FOOT OF SHEET METAL.

It will be interesting to those who have anything to do with sheet iron, boiler plate, or similar material to have an easily-remembered rule for finding the weight per square foot of material they are working with. It has been found by experience that a square foot of iron plate $\frac{1}{8}$ in. thick weighed almost exactly 5lb., and this forms a basis for a very simple and easy rule. As a square foot of iron $\frac{1}{8}$ in. thick weighs 5lb., a square foot of $\frac{1}{4}$ in. iron will weigh 10lb., and we can say that the area of any sheet iron (or plate iron) in square feet multiplied by the thickness in one-eighths and multiplied by five will give the weight of the piece. There is a piece of tank iron 5-16 in. thick, 3ft. wide, and 5ft. long, how much does it weigh? The area will be 3ft. by 5ft., or fifteen square feet. Now, how many eights is 5-16 in.? Since $\frac{1}{8}$ in. equals 2-16 in., and two is contained in five two and a half times, we say 5-16 in. equals two and a half eights, or two and a half times 5lb. equals 12 $\frac{1}{2}$ lb. per square foot, and as there are fifteen square feet we have 15ft. by 12 $\frac{1}{2}$ ft. equals 187.5ft. Where the thickness is even eights of in., it is much simpler; but even this is not a hard thing to do as shown. If it is desired to use this rule for other than iron, we simply find the difference between the weights of the two metals per cubic inch and find what a square foot $\frac{1}{8}$ in. thick will weigh, then work as shown above.—*Ironmonger.*

The British Columbia Iron Works, of Vancouver, propose establishing a branch foundry and machine shop at Nelson, B. C.

The city of Moncton, N. B., has purchased the works of the Moncton Gas Light and Water Company, at the amount, of the award, \$278,708, less the \$60,000 bonds.

Wm. Newman, A. M. Can. Soc. C. E., has been appointed City Engineer of Windsor, Ont.

DEBENTURES PURCHASED

Municipalities issuing debentures, no matter for what purpose, will find a ready purchaser by applying to

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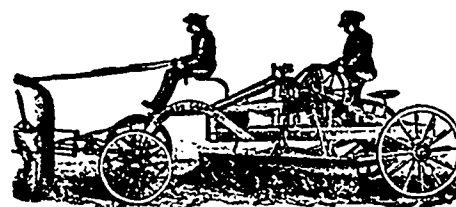
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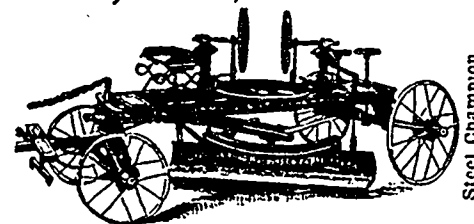
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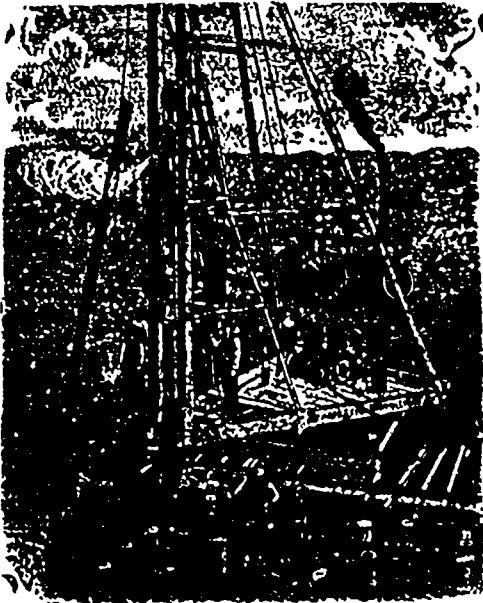
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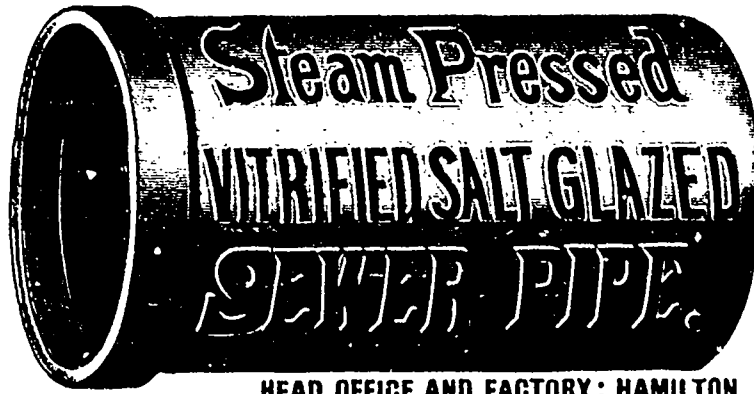
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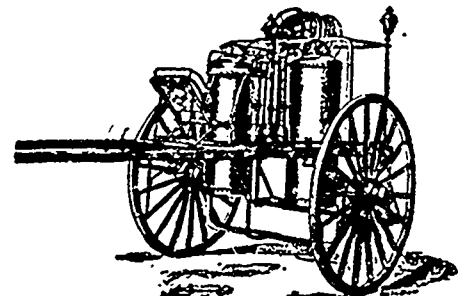
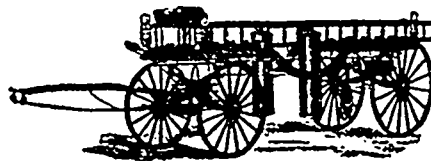
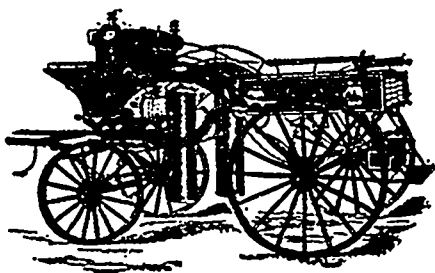
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MUNICIPAL DEPARTMENT

CAST IRON WATER PIPE.*

It is the purpose of the writer to describe the general features of pipe foundry plants, and the methods of tests and inspection which have been in vogue for years past to insure that great systems of mains may safely conduct water through the streets of the larger towns and cities. A pipe foundry does not realize economy of production through any novel methods of foundry practice. The economy results from the manufacture of a great many pieces which are essentially alike. The 12-foot laying length for cast-iron pipes has been adopted as the standard of all foundries, and practically all pipe mains have the bell and spigot joint, made tight by hemp packing and a lead ring. There is more or less difference in the practice of different engineers in the design of the sockets and bell ends of pipes, but as this affects comparatively a small part of the mould, provisions for variations of this kind are readily made. For each size of pipe, therefore, the flask, core barrel and the patterns can be made once for all in cast-iron, and used indefinitely. The base casting and the bell and socket moulds require occasional changes to provide for the difference in standards mentioned above, but these constitute the minor parts of the completed pipe mould.

The most striking feature of a pipe foundry is the circular casting pit, dominated by its large radial crane. The pit around the crane is sunk about 13 or 14 feet below the floor, so that a completed flask for a 12-foot pipe will be about at the floor level, and the crane must be high enough to lift flask and pipe clear of everything, and swing it all around the pit. Around this pit all the work of the foundry proceeds, and the scene is one of great activity and continuous interest.

A completed pipe mould consists of four parts: 1st. The base casting, which carries also the socket ring (for pipes cast bell down); 2nd. The flask proper; 3rd. The core which fits into the socket ring below and is centred by wedges at the top of the flask; and 4th. The bead ring which fits snugly around the top of the core and forms the mould for the bead at the spigot-end of the finished pipe. The moulding of the sand to these different parts constitute as many different processes, the moulding around the flask alone being done in the pit. The process of moulding, then, is as follows: The cast-iron flask, which is in several parts, bolted together, is set up in the pit and secured on a base casting which constitutes the pattern for the outside of the bell of the pipe. A mandrel is then lowered into the flask, fitting into turned bearings in the

base, and at the top it is properly centred and wedged in place. The sand is then shoveled into the space between the mandrel and the flask, being thoroughly rammed as it is put in, thus making the mould for body of the pipe by the use of permanent patterns.

In the meantime a spindle, which constitutes the core barrel, has been set in lathe bearings at one side of the foundry, and covered first with a layer of hay rope and then coated with damp sand, which is trued to diameter and outline by a mould board. At still a third point of the foundry, the base and socket rings are being moulded with standard patterns; and at a fourth point the bead rings are made. All parts of the mould must then receive a facing of lamp black, and must be separately dried. A drying furnace is provided for each of the parts, and in well-regulated foundries the work on all four parts goes forward harmoniously, so that bases, cores and bead rings are all ready to go into place as soon as the flasks are dried and in condition for casting. It will be readily seen that a process which is thus essentially simple, and in which nearly all parts of the flasks and of the moulds can be used over and over again, will realize a great economy of production; and it is through a careful development of the economics of this process that cast-iron pipe can be sold with profit at a price of from $\frac{3}{4}$ cent to 1 cent a pound, while the ordinary run of castings may cost from 2 to 5 cents. The casting pit and foundry around it present an interesting scene when the work of the foundry is under full headway. In the pit, the moulding in the flasks, the baking, assembling of parts, casting of pipe, and withdrawal of cores, pipes and burned-out moulds proceed in regular order and in a continuous round. The number of casts varies according to the size of the pipes, the facilities of the foundry and the skill of the foreman.

(To be Continued.)

STREET SWEEPINGS AS FUEL FOR STEAM BOILERS.

From the report of the London County Council on dust destructors, the average from several districts gives 260 tons per annum for 1,000 of the population, although the actual quantities vary widely. Taking this into consideration, and the fact of the preponderant amount of combustible material which has been shown to be present in this refuse, it is apparent that it should be disposed of by fire, not merely with a view to its destruction for hygienic reasons, or yet to reduce its bulk—which is done by the destructors in present use, leaving only from 25 to 30 per cent of ashes and clinkers—but that the heat set free in the process of destruction should be utilized.

Prof. Forbes and others have estimated the value of ashbin refuse at a much higher figure than results from practice, the various estimates ranging from 3 to 5 pounds of water evaporated for one pound of refuse. Hitherto, in practice this result has not been obtained, and according to statistics collected by C. Jones from the

larger towns using destructors with steam generators by the waste heat, 6 horse power per cell burning from 6 to 8 tons every 24 hours seems to be the average result. This result, doubtless, can be increased by the use of forced draught, at the same time enabling the furnaces to do a far greater amount of work as destructors.

There is no doubt that the calorific value of the refuse is low, particularly when street sludge is used, and from results obtained by the author, only one pound of water evaporated per pound of unsifted refuse is actually obtained. With screened refuse, however—that is, with the paper and loose rubbish, commonly called breeze taken out—a fair average of $2\frac{1}{2}$ pounds of water evaporated per pound of breeze is the result. For some months past the author has been using this fuel in an ordinary double-flued Galloway boiler, 22 feet long, 7 feet diameter, with 22 cross tubes and steam jet forced draught, the boiler being used for boiling purposes. These results, however, could only be obtained by burning the breeze in direct contact with the boiler, and could not be obtained if used in a destructor and then passed through brick flues to the boiler.—T. W. Baker in Cassier's Magazine.

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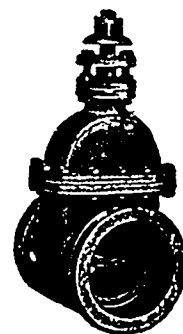
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*From an article by Frederick H. Lewis in Cassier's Magazine.

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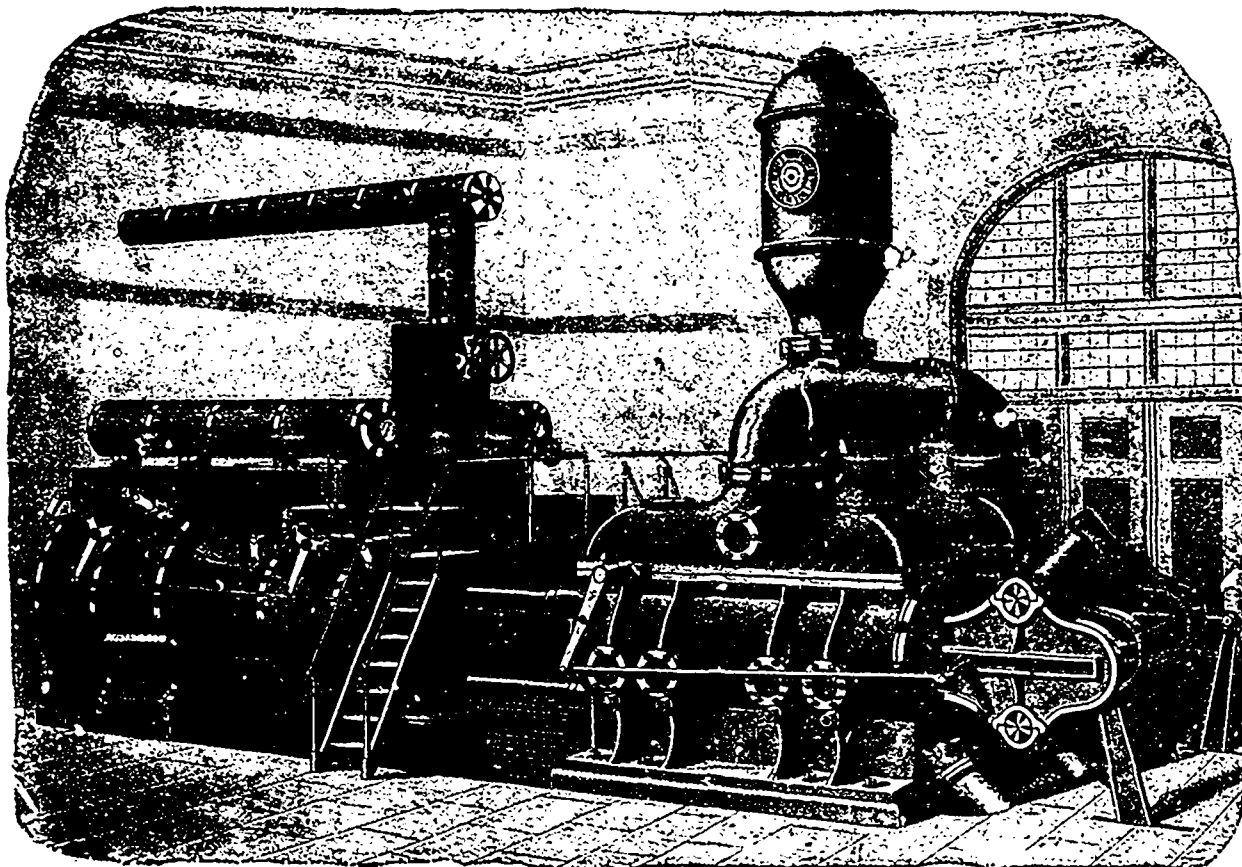
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CONDITION OF THE MARKET.

TORONTO: A satisfactory amount of business for the past week is reported. General hardware, cut nails and plumber's supplies show a slight improvement. Cement is steady at unchanged quotations. Much interest is centred in the iron pipe trade, and another advance is looked for at no distant date, stocks on hand being small.

MONTREAL: Trade in general is quiet, with no amount of activity in any particular line. The receipts of cement last week were 1,900 barrels English, and 1,250 Belgian. Prices are firm, but have not as yet advanced in sympathy with the recent rise in the English markets.

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COMMON BARREL NAILS.

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