

CANADIAN CONTRACT RECORD

*A Weekly Journal of Engineering, Public Works,
Tenders, Advance Information and Municipal Progress*

This Paper Reaches Every Week the Town and City Clerks, Town and City Engineers, County Clerks and County Engineers, Leading Civil Engineers and Contractors throughout Canada, and Purchasers of Municipal Debentures.

VOL. 18.

TORONTO, MONTREAL — MARCH 27, 1907 — WINNIPEG, VANCOUVER

No. 4

THE CANADIAN CONTRACT RECORD PUBLISHED EVERY WEDNESDAY

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CONFEDERATION LIFE BUILDING, TORONTO
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Room B34, Board of Trade Building, Montreal,
Telephone Main 2209.

790-791 Union Bank Building, Winnipeg.
Telephone 1274

Davis Chambers, 615 Hastings St., Vancouver,
B. C. Telephone 2248

PUBLISHERS' ANNOUNCEMENT.

To ensure publication of the CONTRACT RECORD on time, advertisers are requested to strictly observe the following regulations:

Copy and cuts for change of advertisements must reach the publication office in Toronto not later than Saturday preceding the date of publication. The copy should show the size of the cuts, if any, as sometimes there is delay in transmitting the later through the mails.

Transient advertisements for Tenders must reach the publication office by TEN O'CLOCK A. M. ON TUESDAY, but our patrons will confer a favor by forwarding advertisements earlier whenever possible.

TENDERS

will be received up to MONDAY, APRIL 1ST, for all the trades required in the erection of a Bank Building for the Canadian Bank of Commerce on King Street East, Toronto. Plans and specifications will be seen at the office of the undersigned. The lowest or any tender not necessarily accepted.

DARLING & PEARSON,

a Leader Lane, Toronto, Ont.

CITY OF REGINA

GRANOLITHIC SIDEWALKS AND CURBS.

The City Clerk will receive sealed tenders, marked "Tenders for Granolithic Sidewalks", on behalf of the Corporation of the City of Regina, up to and inclusive of TUESDAY, 25th APRIL, 1907, until 5 o'clock p.m., for the construction of about 185,000 square feet of Granolithic Sidewalks to be laid down in the City of Regina.

He will also receive sealed tenders, marked "Tenders for Curb and Gutter", on behalf of the said Corporation, on the same date and at the same time, for the construction of about 8,000 lineal feet of straight curb and 22,000 lineal feet of combined curb and gutter to be laid down in the City of Regina.

Each tender must be accompanied by a certified cheque, payable to the order of the City of Regina, for five per cent. of the amount tendered for.

The lowest or any tender not necessarily accepted.

ANGUS SMITH, J. KELSO HUNTER,
City Engineer, City Clerk.
Regina, Sask., 14th March, 1907.

TENDERS WANTED

Tenders will be received by the undersigned for the erection of a Y.M.C.A. building at Regina, Sask. Full particulars may be obtained at the office of STOREY & VAN EGMOND, Architects, Hamilton street, Regina, Sask.

The lowest or any tender not necessarily accepted.

Tenders Wanted

Sealed Tenders, addressed to the undersigned and endorsed "Tender for Pump," will be received up until twelve o'clock, noon, on TUESDAY, THE NINTH DAY OF APRIL, 1907, for furnishing, erecting and connecting complete, including foundations and all other work and materials necessary to the installation in running order, of a new pump in the Amherstburg Waterworks, capable of raising water from a depth of 15 feet in the well, and delivering 800 Imperial gallons per minute into a 10 inch main, against a hydraulic pressure of 120 pounds, with a steam boiler pressure not exceeding 80 psi per square inch, the said pump to be of the latest pattern of its type, and to have all the modern improvements and attachments; said tenders to also include the remaining and placing in perfect working order of the compound, direct acting, duplex pumping engine of the above capacity now in use in the said waterworks.

The said new pump may be either, and alternative propositions will be received for:—

First—A compound, direct acting, duplex pump.

Second—A fly-wheel pump.

Third—A turbine pump.

No tenders necessarily accepted.

For further particulars apply to

J. H. C. LEGGATT, Town Clerk,
Amherstburg, Ontario.

TOWN OF BATTLEFORD SASKATCHEWAN

Waterworks, Sewerage and Electric Lighting

Sealed tenders will be received by the Secretary-Treasurer of the Town of Battleford until 5 p. m. APRIL 15TH, 1907, for the following works:

Contract "A"—All labor and materials necessary for constructing the Water Works Force Main, Distribution System and Intake.

Contract "B"—All labor and materials necessary for constructing a Sewer System.

Contract "C"—The supply and erection of a sixty thousand gallon Elevated Tank.

Contract "D"—The supply and erection of a Water Works Pump.

Contract "E"—The supply and erection of one Return Tubular Boiler.

Contract "F"—The supply and installation of an Electric Lighting System.

Contract "G"—The supplying at Battleford of Cast Iron work for Manholes and Catch-basins.

Plans and specifications may be seen and forms of tender obtained at the office of the Secretary-Treasurer, Battleford, or at the offices of Galt & Smith, Chief Engineers, Toronto.

The town reserves the right to reject any or all tenders.

R. C. LAURIE, Esq.,
Secretary-Treasurer,
Battleford, Sask.

GALT & SMITH,
Consulting Engineers,
23 Jordan St., Toronto.

Engineer is open for an appointment, practical experience and good testimonials. Box 544, London, Ont.

WANTED

An experienced draughtsman. Apply, stating experience and salary expected, to STOREY & VAN EGMOND, Architects, Regina, Sask.

TENDERS

will be received by the undersigned until APRIL 15TH next for the lighting of the Village of Millbrook by electricity.

Further information on application. The village reserves the right to reject any or all tenders.

WALTER W. GILLOTT, Clerk.

Contractors' Notice

If you are tendering on any work in
NORTHERN ONTARIO

we are prepared to give right figures on heating and plumbing work.

CAVEN & MONCEON
Sturgeon Falls, Ont.

TENDERS

Sealed tenders, addressed to the undersigned, will be received up to noon, SATURDAY, 20TH APRIL 1907, for Trenching and Laying Water Pipes, Placing Hydrants, etc., and other works connected with the proposed new Water Works System in the Town of Richmond, Que., according to plans and specifications prepared by B. D. McConnell, C.E., and deposited in my office in the Town of Richmond, where parties desiring to tender may take cognizance thereof. No tender necessarily accepted.

E. F. CLEVELAND,
Secretary-Treasurer.

Town of Maple Creek, Sask.

TENDERS FOR

WATER WORKS

Contract "A"—All labor and materials for constructing the Supply Main, Intake Chamber and Collecting Pipes.

Contract "B"—All labor and materials for constructing and Distribution System.

Contract "C"—All labor and materials for constructing a Reinforced Storage and Compensating Reservoir.

Sealed Tenders will be received by the Town Clerk until 5 p. m. on SATURDAY, APRIL 20TH, 1907.

Tenders will be received for any of the above mentioned contracts for labor alone, or materials alone, for the total labor and material covering the three contracts.

Plans and specifications may be seen and forms of tender obtained at the office of the Town Clerk or at the head office of the Chief Engineers.

The town reserves the right to reject any or all tenders.

ARTHUR BURNETT, Esq.,
Town Clerk.

W. R. ABBOTT, Esq.,
Mayor.

GALT & SMITH, Chief Engineers,
23 Jordan Street, Toronto.

[FOR ADDITIONAL ADVERTISEMENTS FOR TENDERS SEE NEXT PAGE]

TOWN OF SIMCOE
PROVINCE OF ONTARIO
WATER WORKS

Sealed tenders will be received by the Town Clerk of Simcoe, until 8 p. m. on

FRIDAY, APRIL 19TH, 1907,

for the following works:—

- (a) Contract "C" Steel Water Tower.
- " " " " D " Cast Iron Pipes and Specials about 500 tons.
- " " " " E " Fire Hydrants, Gate Valves, etc.
- " " " " G " Two Power Pumps.
- " " " " H " Two Gas Engines, each 50 h. p.

Tenders will shortly be called for pipe-laying, power-house, etc.

Plans, specifications, etc., may be seen at the office of the Chief Engineer, 103 Bay Street, Toronto, Ont., or at the office of the Town Clerk, Simcoe, on and after March 27th, 1907.

No tender necessarily accepted.

H. A. CARTER, Esq., Mayor, Simcoe, Ont.
W. C. McCALL, Esq., Town Clerk, Simcoe, Ont.
WILLIS CHIPMAN, C. E., Chief Engineer, 103 Bay Street, Toronto.

TOWN OF BRAMPTON
PROVINCE OF ONTARIO
SEWERAGE WORKS

Sealed tenders will be received by the Chairman of the Sewerage Committee until 8 p. m. on

TUESDAY, APRIL 30TH, 1907,

for the furnishing of all materials and labor for a system of sewers for the Town of Brampton.

Plans, specifications, etc., may be seen at the office of the Chief Engineer, 103 Bay Street, Toronto, Ont., or at the Town Hall, Brampton, on and after March 30th, 1907.

No tender necessarily accepted.

W. E. MILNER, Esq., Mayor of Brampton.
T. J. BLAIN, Esq., Town Clerk, Brampton.
R. F. JUSTIN, Esq., Chairman Sewerage Committee, Brampton.
WILLIS CHIPMAN, Chief Engineer, 103 Bay Street, Toronto, Ont.

CALGARY, ALBERTA
Architectural Competition for City Hall and Police Headquarters

Competitive plans and specifications are invited for City Hall and Police Headquarters to be erected for the City of Calgary.

The author of the accepted design will be awarded a premium of \$750.00 and the second \$500.00.

Drawings and plans will be received not later than 12 o'clock noon on the 1ST DAY OF MAY NEXT, and are to be addressed to S. J. Clerks, Esq., Chairman of Public Works Committee, and endorsed "Plans for City Hall."

This competition is open to Canadian architects only.

Conditions of competition stating requirements of building, and plan showing site, etc., may be had on application at the City Engineer's office, Calgary, Alberta.

R. E. SPEAKMAN, City Engineer.
City Engineer's Office, Calgary, March 18th, 1907.

WANTED
to purchase a good Second-Hand Stone Crusher, capacity 30 to 40 tons per day. Address "Enquirer" care CANADIAN CONTRACT RECORD, Toronto.

TO CONTRACTORS
Sealed separate tenders addressed to the Architect will be received up to noon of TUESDAY, APRIL 2ND, for the erection of a (Residence in Eglington). Bulk tenders exclusive of Plumbing, Heating and Electric wiring will also be considered.
F. S. BAKER, Architect,
Traders Bank Building,
Toronto.

SEALED TENDERS
to be received by the undersigned up to 7 P.M., WEDNESDAY, 10TH APRIL, NEXT, for building a Concrete Culvert 54 feet in length and 6 feet span.
Also for building a Steel Rivetted Warren Low Trussed Bridge, 60 feet span, 14 feet clear roadway, and to carry a ten ton Traction Engine. For superstructure only Tenders to be for Steel Joist and 4 inch Hemlock Plank Roadway. Also a tender for a Concrete Flooring.
No tender necessarily accepted.
For further information apply to the undersigned.
P. S. GIBSON & SONS,
Engineers, Township York,
Willowdale, Ont., 11th March 1907.

TOWN OF THOROLD
PROVINCE OF ONTARIO
WATER WORKS

Sealed tenders will be received by the Town Clerk of Thorold until 8 p. m. on

TUESDAY, APRIL 23, 1907

for the furnishing of all materials for, and constructing a System of Water Works for the Town of Thorold, comprising pipe-laying, water pipes, hydraulic pumping machinery, powerhouse, water tower, sedimentation basin, etc.

Plans, specifications, etc., may be seen at the office of the Chief Engineer, 103 Bay Street, Toronto, Ont., or at the office of the Town Clerk, Thorold, on and after March 27th, 1907.

No tender necessarily accepted.

D. E. MILLAR, Esq., Mayor, Thorold, Ont.
D. J. C. MUNRO, Esq., Town Clerk, Thorold, Ont.
WILLIS CHIPMAN, C. E., Chief Engineer, 103 Bay Street, Toronto, Ont.

SEWER TENDERS

Tenders for the following glazed tile sewers, will be received up to 4 o'clock on THURSDAY, APRIL 11TH, 1907, viz:—

Bruce street	3350 feet 15" inch tile sewer
South street	3738 " 18" " " "
Wellington St. North	400 " 10" " " "
Fullarton street	336 " 10" " " "
Glebe street	375 " 10" " " "
Wortley Road	974 " 10" " " "
St. George St.	280 " 8" " " "

Also for the Construction of THREE (3) SEPTIC TANKS (Concrete)

Plans and specifications can be seen at this office, also forms of tender obtained.

Ald. R. F. MATTHEWS, A. O. GRAYDON,
Ch. No. 2, Committee, City Engineer,
London, Ont.

City of Moose Jaw, Saskatchewan
Engineer's Assistant

Competent Assistant required in the City Engineer's Department. Applicant must be good instrument man and draftsman and able to take outside supervision if required. Address with full particulars and references and specimens of drafting, age, married or single, salary, etc., to City Engineer, Moose Jaw, Sask.

TENDERS

will be received by the undersigned until noon on APRIL 12TH next for

- 1. Steel Water Tower,
- 2. Hydrants, Valves, Etc.
- 3. Trenching and Pipelaying.

for the Elmira Water Works. For specifications apply to
HERBERT J. ROWMAN,
Civil Engineer,
Berlin, Ont.

TOWN OF OWEN SOUND
DEBENTURES

Sealed Tenders, addressed to the undersigned, will be received up to 3 o'clock p. m. on WEDNESDAY, APRIL 10TH, 1907, for the following debentures:

- \$45,000 4 per cent. twenty years for Gas Plant.
- \$45,000 4 per cent. twenty years for Electric Light Plant.
- \$12,500 4 per cent. twenty years for construction of bridge.
- \$10,000 4 per cent. ten years for Collegiate Institute building.

Tenders required for each separate parcel. No tender necessarily accepted.

A. J. SPENCER,
Town Treasurer,
Owen Sound, March 22nd, 1907.

TENDERS
FOR THE CONSTRUCTION OF A SEWER SYSTEM

Sealed tenders will be received by the undersigned up to 4 p.m. on APRIL 30TH, 1907, for the construction of a Sewer System in the City of Fernie, according to plans and specifications on file in the office of the City Clerk, Fernie, B.C. Tenders to be accompanied by a marked cheque or draft payable to the order of the City Treasurer, or a cash deposit for 5 per cent. of the amount of the tender, which will be subject to forfeiture in case of failure on the part of the contractor to enter into a written contract with approved sureties if called upon to do so. The deposit of unsuccessful tenderers will be returned when the contract is signed.

The City reserves the right to reject any or all tenders or to accept any bid which appears advantageous to the City of Fernie.

J. W. NUNN,
City Clerk,
Fernie, B.C., March 15th, 1907.

TENDERS FOR DEBENTURES

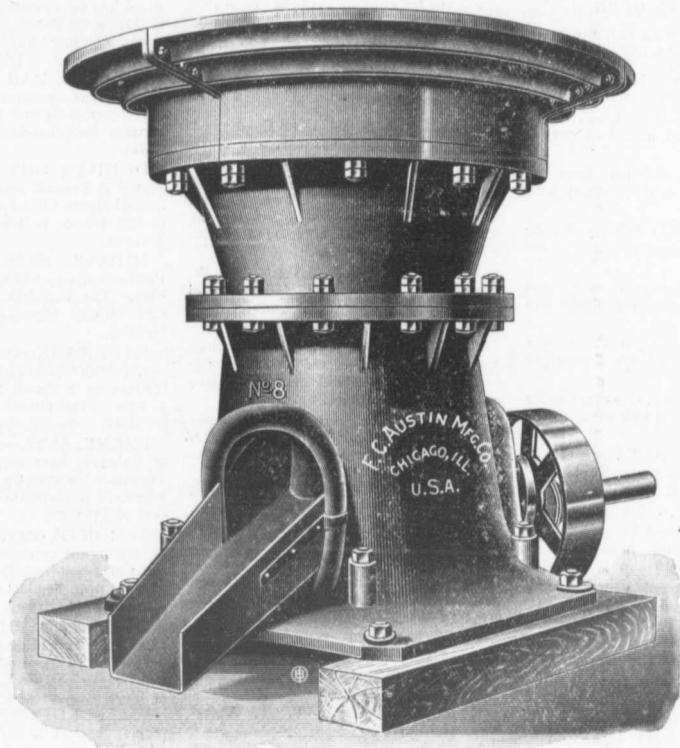
School District of Winnipeg—\$200,000

Sealed tenders addressed to the Secretary-Treasurer of the Winnipeg Public School Board, and marked "Tender for Debentures," will be received up to 12 O'CLOCK NOON, ON MONDAY, APRIL 1, 1907, for the purchase of \$200,000 of Debentures of the School District of Winnipeg, payable at the expiration of 35 years from August 1, 1906, with interest from February 1, 1907, at the rate of four per centum per annum, payable half yearly.

Principal and interest payable at the office of the Winnipeg Public School Board, or at any chartered bank in Winnipeg. Delivery to be made and money to be paid at Winnipeg. Payment to be made in gold or its equivalent.

The highest or any tender not necessarily accepted. Any information desired may be obtained by addressing the undersigned.

STEWART MULVEY,
Secretary-Treasurer Winnipeg Public School Board.



Complete Rock Crushing Plants

Stationary or Portable — Including

CRUSHERS (Jaw or Gyratory)
ELEVATORS
SCREENS
CONVEYORS

Specifications and Estimates on Application

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CONTRACTS OPEN.

BALCARRES, SASK.—J. Brown intends erecting a hotel building here.

ONBOW, SASK.—J. S. Stephens will erect a 60,000 bushel elevator here.

WETASKIWIN, ALTA.—A court house is to be erected here at a cost of \$20,000.

TABER, ALTA.—Piper Bros., of Stettler, will erect a three-storey hotel building.

YOUNG'S POINT, ONT.—W. E. Brooks will erect a large addition to his hotel here.

MATSQUI, B.C.—Local men have decided to erect a two-storey public hall 30 x 66 feet.

FORT WILLIAM, ONT.—The Imperial Steel & Wire Co. will establish a large mill here.

STRATFORD, ONT.—Plans are being prepared for erection of new wing to the General Hospital.

LETHBRIDGE, ALTA.—F. B. Rolison, architect, has prepared plans for a residence for Rev. C. McKillop.

OMEMEE, ONT.—The citizens are petitioning the Dominion Government to reopen the Pigeon creek channel.

WASHBURN, ONT.—A large brick making plant is to be established here by Chisholm & Birkett, of Kingston.

LISTOWEL, ONT.—It is understood that the Canadian Pacific Railway Company will erect a new station here.

MACLEOD, ALTA.—Canadian Bank of Commerce and the Northern Bank both intend to erect new buildings.

GLENMORRIS, ONT.—The County Council are considering the construction of a new steel bridge in this village.

BLNHEIM, ONT.—J. W. Bates, of St. Thomas, is considering the establishment of a canning factory in this town.

ST. CATHARINES, ONT.—A. E. Nicholson, architect, wants tenders up to March 30th for erection of frame residence.

DRESDEN, ONT.—The ratepayers have carried a by-law providing for erection of a new school building to cost \$27,000.

ST. CATHARINES, ONT.—Two new school buildings are to be erected in the township of Grantham at a cost of \$6,000.

KENORA, ONT.—Hon. Robert Rogers, of Winnipeg, and G. F. Harris will erect large summer residences near this town.

HASTINGS, ONT.—The congregation of St. George's church have purchased a site on which to erect a new building.

YORKTON, SASK.—The Town Council have instructed an engineer to report on the establishment of a water-works system.

RESTON, MAN.—Township Councillor Brady will receive tenders up to

April 5th for grading roads in Township of Pipestone.

ROXTON POND, QUE.—J. Marcoux will receive tenders up to April 15th for erection of new building in village of St. Pudentielle.

WYCHWOOD P.O., ONT.—Ellis & Connery, architects, Toronto, will shortly call for tenders for erection of school building to cost \$14,000.

KINGSTON, ONT.—Power & Son, architects, have prepared plans for the remodeling of an old hotel building into a factory for Kent Bros.

WETASKIWIN, ALTA.—J. W. Hey, Town Secretary-Treasurer, will receive tenders up to April 2nd for drilling of one or more wells.

STRATFORD, ONT.—The Canadian Bank of Commerce have purchased the Gibson block and will make extensive alterations to that building.

ST. THOMAS, ONT.—Molsons Bank have purchased building corner of John and Talbot streets to which extensive alterations will be made.

PRINCE ALBERT, SASK.—It is reported that Gordon, Ironsides & Fares, of Winnipeg, are negotiating for a site on which to erect an abattoir.

ST. BONIFACE, MAN.—Canadian Distilleries, Limited have purchased property and will shortly commence the erection of several buildings.

BERLIN, ONT.—J. Zuber has decided to demolish the market hotel and erect on the site a four-storey brick hotel building at a cost of \$80,000.

KAMLOOPS, B. C.—W. T. White-way, architect, is preparing plans for a three-storey building to be erected here at a cost of \$30,000 for R. Dowsdell.

RANKIN, ONT.—Rev. M. Hamm will receive tenders up to April 15th for erection of church building. Plans with architect B. G. Michael, Pembroke.

SARNIA, ONT.—Rev. E. T. Evans will receive tenders up to April 6th for erection of church building for St. John's congregation. Plans with J. W. Smith.

PARRY SOUND, ONT.—On April 15th the ratepayers will vote on the question of issuing debentures for \$100,000 for the promotion of a smelting works.

MISSION JUNCTION, B. C.—E.

Bond has purchased property on which to erect a residence.—Canadian Bank of Commerce intend erecting a new building.

MORDEN, MAN.—The Town Council will issue debentures for \$20,000 to cover cost of electric lighting plant and \$10,000 for construction of cement sidewalks.

DUNDAS, ONT.—Plans were presented at a recent meeting of the Public School Board for a four-roomed addition to the school building, estimated cost \$16,000.

MIDALE, SASK.—The Canadian Pacific Railway will erect a new station here.—The Swedish Baptist congregation intend erecting a new church building.

HYDE PARK, ONT.—W. G. Murray, architect, London, will receive tenders up to March 30th for erection of a new Presbyterian Sunday School building.

FRANK, ALTA.—Alexander & Budd, of Calgary, have organized the Rocky Mountain Cement Co., who will establish a cement manufacturing plant here at a cost of \$350,000.

ALMONTE, ONT.—The Town Council are again considering the establishment of a waterworks system according to plans prepared last year by McDougall & McRae, of Ottawa.

WATERLOO, ONT.—L. Graybill, Chairman Fire Committee, will receive tenders up to April 1st for erection of an addition to the fire hall. Plans at office of Town Engineer.

WATFORD, ONT.—J. A. Hare will receive tenders up to April 13th for erection of brick school house. Plans at Secretary's office and office of the Guide-Advocate, this village.

FORT ERIE, ONT.—B. F. Matthews, Village Clerk, will receive tenders up to April 5th for installation of an electric lighting system in this village. Plans at Village Clerk's office.

ALLISTON, ONT.—The by-law to grant a bonus of \$5,000 to the Merner Manufacturing Company, of Waterloo, to establish works in this town, has been carried by the ratepayers.

INDIAN HEAD, SASK.—The water-works system is to be extended, and it is

GET GOOD SEWER PIPE

Those requiring sewer pipe should see that they get the best. It is the cheapest in the end.

We manufacture the best and cheapest. It is steam pressed, salt glazed, vitrified, absolutely non absorbant and once laid will last forever.

THE CANADIAN SEWER PIPE CO.

HAMILTON, ONT. TORONTO, ONT. ST. JOHNS, QUE.



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THE CANADIAN STANDARD

THE CANADIAN PORTLAND CEMENT CO., LIMITED

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TORONTO

BOARD OF TRADE BUILDING
MONTREAL

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Iron Pipe 1-8 in. to 12 in. carried in stock
 Malleable Fittings Cast Iron Fittings
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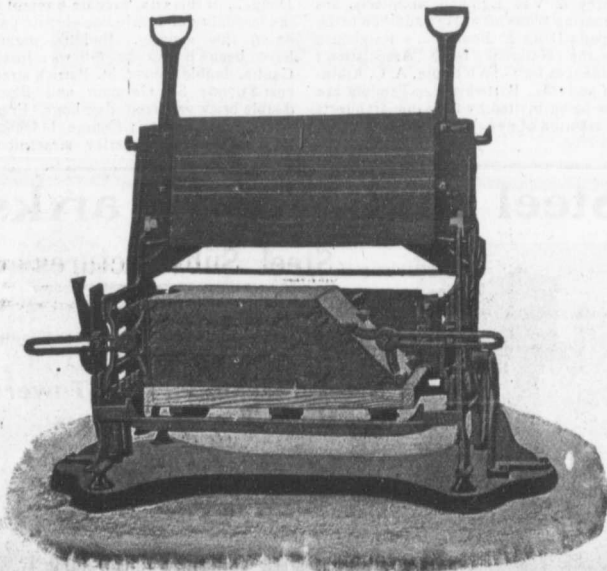
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THE MILES CONCRETE BUILDING BLOCK MACHINE

Makes 40 Different Sizes of Stone in Any Design, as well as the Specials, viz.:

Water Table, Gable, Circle, Angle, Chimney, Cornice, Pier Blocks, etc.

Catalogues and Information Cheerfully Furnished.



This Machine makes all blocks face down—"the only practical way"—allowing of a richer and finer facing, producing blocks that are perfect in appearance and impervious to moisture.

Let us tell you how the "Miles" will pay for itself over any other machine in three months' operation.

Manufactured and Sold by

**VINING BROS.
M'fg. Co.**

Niagara Falls, - Car

probable a new fire hall will be erected.—The Presbyterian congregation will erect a \$22,000 church here.

PALMERSTON, ONT.—Galt & Smith, consulting engineers, Toronto, have prepared plans for a waterworks system here to be undertaken as soon as the debentures can be disposed of.

ARCOLA, SASK.—By-laws providing for establishment of a waterworks system at a cost of \$60,000, also for completing the town hall at a cost of \$8,000 will be voted on by the ratepayers on April 8th.

WELLAND, ONT.—The Welland County Council, are asking for an appropriation for \$9,000 from the Dominion Government towards the cost of constructing a draw bridge over Welland river.

MOOSE CREEK, ONT.—Rev. C. D. McRae will receive tenders up to April 3rd for erection of stone church in this village. Plans at Presbyterian church and office G. B. Tanguay, Quebec.

MELFORT, SASK.—W. W. LaChance, architect, Saskatoon and Prince Albert, is preparing plans for a general store for Clift Bros.; store and office building for Dr. Shadd, and residence for H. Humphries.

MAPLE CREEK, SASK.—The Corporation is about to construct a waterworks system, from plans by Galt & Smith, consulting engineers, Toronto. Tenders for the work will be received up to April 20th.

STONEYWOOD P.O., ONT.—Rev. W. Duncan, Clerk Township of West Luther, will receive tenders up to April 17th for construction of a drain and branches in this township. Plans at Clerk's office.

DAWN MILLS, ONT.—M. S. Blackburn, Clerk, Township of Camden, Dresden, will receive tenders up to March 30th for erection of town-hall in this village. Plans with R. E. Huston, Dresden.

SHELBURNE, ONT.—On April 5th the ratepayers will vote on the question of issuing debentures for \$50,000 with which to develop a water power on Pine river and cover cost of installing an electric power plant.

FREDERICTON, N.B.—The Department of Public Works will receive tenders up to April 8th for construction of superstructure span of 78 feet over Cushings canal at Lancaster, N. B. Plans at offices of above named department.

MOOSE JAW, SASK.—Plans prepared by W. A. Elliot, architect, Brandon, for a new fire hall to cost \$20,000 have been accepted by the City Council.—The Moose Jaw Lumber & Supply Co. will shortly commence the erection of a large building.

EDMONTON, ALTA.—The Provincial Government have appropriated \$200,000 for the construction of telephone systems; \$15,000 for purchase of site for proposed Provincial University; and a large sum for the construction of nine steel bridges.

THESSALON, ONT.—The ratepayers have carried a by-law authorizing the granting of a bonus of \$10,500 to the Saginaw Lumber & Salt Co., who will establish a large saw mill here. Debentures for this amount will be issued by the Town Council.

GRAND FALLS, N. B.—W. F. Kertson, Town Clerk, will receive tenders up to April 5th for supply of cast iron pipe and specials. Specifications at Clerk's Office.—The Committee on Water Supply will receive tenders up to April 3rd for purchase of \$35,000, 4 per cent. 30 year debentures.

BRANTFORD, ONT.—The Slingsby Manufacturing Company will erect a four-storey brick structure 60 x 60 feet at a cost of \$10,000.—The Mitchell Reversible Window Co., of Freemont, Ohio, are considering the establishment of a branch factory in this city.

LONDESBORO, ONT.—J. Campbell, Clerk Township of Hullett, will receive tenders up to March 30th for erection of concrete abutments for two steel bridges, and up to same date for construction of steel superstructure for two bridges. Specifications at Clerk's office.

CHARLOTTETOWN, P. E. I.—D. Pottinger, General Manager of Government Railways, Moncton, N. B., will receive tenders up till April 11th for construction of an extension to the Railway wharf here. Plans with Chief Engineer Department of Railways and Canals, Ottawa; Chief Engineer, Moncton; and Resident Engineer, this city.

STRATHCONA, ALTA.—R. A. Hulbert, Secretary of the Strathcona Hospital Committee, invites competitive designs from architects practising in Manitoba, Saskatchewan, Alberta and British Columbia for hospital building. Premiums of \$200, \$150 and \$100 are offered for the three best designs submitted.

FORT WILLIAM, ONT.—M. B. Aylsworth, architect, Port Arthur, is receiving tenders for erection of a three-storey brick and cut-stone building for Masonic Hall purposes, here. The same architect is superintending work of making additions to residence of J. Gowanlock, near West Fort William.—Ellis & Conner, architects, Toronto, are associated with J. C. Stinson, architect, in the erection of the hospital buildings, which are to cost \$40,000.

TORONTO JUNCTION, ONT.—The Provincial Government have authorized the Town Council to borrow \$100,000 with which to construct a permanent pavement on Dundas street.—Ellis & Conner, architects, Toronto, are preparing plans for the following buildings: Fire hall for municipality, to cost \$7,000; residence for Dr. Hopkins, to cost \$5,000; residence for E. Walden, to cost \$3,000; warehouse for Campbell Milling Company, to cost \$12,000.

REGINA, SASK.—A five-storey stone and brick block will be erected here for F. N. Drake at a cost of \$100,000.—Storey & Van Egmond, architects, are preparing plans for a large addition to the Canada Drug & Book Co.'s warehouse for the National Drug Association; residences for G. Whitmore, A. C. Atkinson and Mr. Birtwhistle.—Tenders are now being invited by the same architects for erection of new Y.M.C.A. building in this city.

SASKATOON, SASK.—Dr. Croll has purchased a lot on which to erect a large residence.—The Saskatoon Milling & Elevator Co. are considering the erection of a brick and stone mill to cost \$75,000.—R. A. Rogers & Co., of Winnipeg, have purchased property on which to erect a warehouse.—The Public School Board are endeavoring to procure a site for a High school building.—J. Flanagan and R. Wilson have purchased property on which, it is understood, a modern hotel will be erected.

LONDON, ONT.—The First Methodist Church congregation have purchased property on which a new manse will be erected at a cost of \$10,000.—The congregation of the Hamilton Road Methodist church are considering the erection of a new edifice.—D. H. Maury, consulting engineer, has presented his report on the city's water supply to the City Council. He recommends establishment of a spring and river filtration system at a cost of \$420,000.

PORT ARTHUR, ONT.—The Meisel Manufacturing Co. have decided to erect their buildings by day labor. The buildings will be five in number, brick and cement, one storey high, and the estimated cost is \$50,000.—M. B. Aylsworth, architect, is receiving tenders for completion of St. Ansgarius Church. The same architect is about to proceed with improvements to Algoma and Mariaggi Hotels, and the Port Arthur Club building.

TRURO, N. S.—The ratepayers have recently defeated the following by-laws: Purchase of roadmaking machinery, laying of 4,000 feet wooden stave pipe and granting of bonus to Dominion Carriage Co., while the following by-laws were carried: straightening and laying of new water mains at a cost of \$9,500; erection of addition to waterworks station and installation of a 150 h.p. boiler to cost \$6,900, improvements to fire alarm signal service to cost \$3,000 and extension of sewerage system to cost \$3,500.

OTTAWA, ONT.—The Ottawa Electric Railway Co. have been ordered by the Railway Commission to widen the Somerset street bridge. Estimated cost of work \$12,000.—R. & L. Blackburn have purchased property on Sparks and Metcalfe streets at a cost of \$125,000 on which it is expected large buildings will be erected.—The Civic Electrical Committee have recommended that W. Kennedy, of Montreal, and A. McDougall, of this city, prepare a report on the feasibility of developing electric power in this vicinity.—Building permits have been issued as follows: Joseph Gaulin, double house, St. Patrick street, cost \$3,700; St. Germain and Black, double brick veneered dwellings, Frank street, cost \$5,000; George I Dewar, brick residence, Waverley street, cost

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\$10,000; A. A. avenue, \$2,700 veneered dwellings \$4,000.

VANCOUVER architects, have promised to erect a road at the foot of the City Council to construct a road dam at Seymour the work will be miles long c point over w constructed, shortly call six-storey reinforced concrete frontage on cost \$225,000 m:tee have r of five autom \$20,000.

HAMILTON son has purchased property on which to erect a street on which —A. & W. Jacques Ste who are co of a large b rent interview asking which they i —Building i follows: E King street, two brick \$3,600; F. dwelling, co avenue, co brick cotta

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Tel.

\$10,000; A. Ardley, dwelling, Second avenue, \$2,700; I. Cowie, double brick veneered dwelling, First avenue, cost \$4,000.

VANCOUVER, B.C.—Parr & Fee, architects, have completed plans for a promenade pier 600 feet long to be built at the foot of Gilford Street. A pavilion is to be erected on the pier 64x46 feet.—The City Council have decided to construct a road from the city to the new dam at Seymour creek, and tenders for the work will be called for shortly. The road is to be 100 feet wide and seven miles long crossing the stream at one point over which a truss bridge will be constructed.—T. Hooper, architect, will shortly call for tenders for erection of six-storey reinforced concrete block for R. D. Winch. The building will have a frontage on Hastings street, and will cost \$225,000.—The Fire & Police Committee have recommended the purchase of five automobile fire trucks at a cost of \$20,000.

HAMILTON, ONT.—W. J. Thomson has purchased a lot on Turner avenue on which to erect a large residence.—T. Allen has acquired property on Colborne street on which to erect several dwellings.—A. & W. Jacques, representing the Jacques Steel Works, of Paris, France, who are considering the establishment of a large branch in this city, are at present interviewing the Dominion Government asking that the duty on machinery which they intend to import be remitted.—Building permits have been issued as follows: E. Mills, two brick houses, King street, cost \$6,000; J. McNaugh, two brick houses, Arthur street, cost \$3,600; F. J. Mebley, brick store and dwelling, corner Barton street and Milton avenue, cost \$3,500; E. Kinrade, three brick cottages, Chesnut avenue, cost

\$3,300; Taylor & Mulvaney, warehouse building; J. A. Anstey, three frame houses, Princess street, cost \$3,000.—The provincial Government have authorized the City Council to issue debentures for \$135,000 to cover over-drafts for past two years.—H. Morley will erect two dwellings on East Main street.—E. Fearman intends erecting two dwellings on South Sanford avenue.—The City Parks Board have asked local architects to prepare competitive plans for a pavilion to be erected in Dundurn Park at a cost of \$5,000.—The City Engineer will ask the City Council to issue debentures for \$62,000 to cover the following expenditures: Waterworks mains \$28,000; services \$16,000; meters \$5,000; valves \$1,000; sand-sucker \$12,000.

MONTREAL, QUE.—The Water Committee have recommended to the City Council that J. Kennedy and E. Marceau be appointed consulting engineers to examine and report on improvements to the water system recently recommended by Superintendent Janin.—The Canadian Fire Engine Co. are negotiating for a large site at Mile End where they propose to establish large works.—The Dominion Government have decided to construct a new wharf at St. Helen's Island at a cost of \$50,000.—The Lakefield Portland Cement Co., of Lakefield, Ont., have completed arrangements for erection of branch factory in this city.—The Engineer's Club of Montreal have

purchased property on Beaver Hall square with the intention of erecting a building thereon.—A. E. Alamice has taken a building permit for erection of two-storey tenement house to cost \$6,500.—J. Alexander Co. have secured a site on which they will erect a reinforced concrete cold storage building at a cost of \$400,000.—Finlay & Spence, architects, have prepared plans for the new theatre to be erected on St. Catherine street at a cost of \$250,000.—W. McLea Walbank and some officials of the Canadian Electrical Trades Exhibition are interested in erection of a large amphitheatre. The proposed building to be fire proof and built in three separate compartments which may be thrown into one large auditorium.—It is reported that

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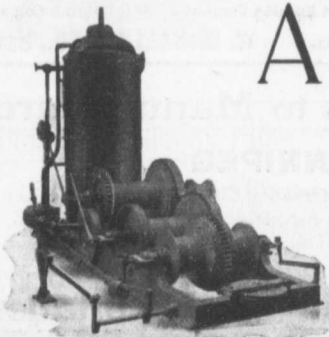
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the W. Strachan Co. will sell out and that the new company will make large extensions to the premises.—A new wing is to be added to the Montreal General Hospital.

WINNIPEG, MAN.—It is reported that plans are being prepared for an extension of the Northern Pacific Railway Company's line from this city to Dawson City by way of Prince Albert and Fort Nelson.—A. G. Lungier, a cloth manufacturer, of Selkirk, Scotland, has purchased property on Princess street, having a frontage of 137 feet, at a cost of \$82,800.—J. H. G. Russell, architect, has completed plans for the reconstruction of Bright & Johnston's premises, which were recently destroyed by fire.—T. D. Atchison, architect, is preparing plans and will invite tenders shortly for erection of a 3-storey brick and stone office building to be erected on Fort street for W. Gordon.—P. M. Clemens, architect, is calling for tenders for erection of a 3 storey brick residence for H. Pulford. Hot water heating and interior hardwood fittings.—H. New, architect, Winnipeg, is preparing plans and will shortly invite tenders for erection of a new building for Edmonton Steam Laundry Company. The same architect has completed plans for a 2-storey residence for E. S. Shields to be built at Crescent Wood at a cost of \$5,000.—E. M. Councill has purchased a large property on Main street for a client who intends erecting an office building at a cost of \$250,000.—S. Mulvey, Secretary-Treasurer Winnipeg Public School Board, will receive tenders up to April 1st for purchase of \$200,000 35 year 4 per cent. debentures.—The Canadian Pacific Railway have taken out a building permit for erection of large train sheds to cost \$105,000.—F. Gelinus, Secretary Department of Public Works, Ottawa, will receive tenders up to April 4th for construction of a post office building in this city. Plans with J. Greenfield, resident architect, this city, and offices of the above named department.—A building permit has been granted the T. Eaton Company for erection of a large addition to their premises to cost \$170,000.—The old firehall, corner Higgins avenue and Maple street, has been sold by the Business Agency. The purchaser intends to remodel the building and fit it up as an hotel.

TORONTO, ONT.—Canada Foundry want tenders up to March 28th for plumbing for machine shop. Plans at Works Office at Davenport Post Office.—H. Simpson, architect, 17 Toronto street, is preparing plans for a six-storey brick warehouse 54x89 feet to be erected corner Richmond and Duncan streets for the Mussen Book Company. The building will be of mill construction and will be equipped with a modern sprinkler system.—The same architect is preparing plans for residences as follows: S. Lorie, brick and stone, Schiller avenue, to cost \$13,000; Dr. Hawke, Wellesley street, to cost \$7,500; H. E. Bydwell, brick, 42 Bedford road, to cost \$8,000; J. D. Prentis, brick, 32 Admiral road, to cost \$7,000; A. E. Walton, brick, Broadview avenue, to cost \$7,000; J. Glanville, brick, 31 Isabella street, to cost \$6,500.—E. J. Lennox, architect, is preparing plans for an extension to be made to Victoria Hall to cost \$40,000.—The Chairman Board of Control will receive tenders up to April 2nd for supply of brass work for house services. Plans at City Engineer's office.—R. M. Rodden, architect, Montreal, will shortly call for tenders for erection of a large arena on Shuter street. The building will be 353 x 190 feet, and an artificial ice plant will be installed.—The Toronto & Suburban Electric Railway Company have decided to extend their line from

Lambton Mills to Brampton.—The Toronto Carpet Co. have purchased property corner of King and Dufferin streets on which to erect a large addition to their factory.—The Canadian Amalgamated Rubber Company will erect a warehouse on Adelaide street west.—Additional stories are to be added to the warehouse of W. R. Brock Company.—A company has secured property on Spadina avenue, just north of Queen street, on which they will erect a fire proof apartment house.—The Board of Education will shortly consider the engagement of an expert to report on the ventilating, lighting, heating and sanitary systems now in use in the public school buildings.—The Private Bills Committee of the Provincial Government have rejected the plans submitted by the City Council to extend Bloor street easterly and to construct a bridge over the extension.—The same committee has authorized the City Council to issue debentures for \$403,500 with which to rebuild the Exhibition buildings and erect other civic buildings.—J. H. Gilroy, architect, has prepared plans for a pair of brick front houses to be erected on Macdonnell avenue for H. Frith to cost \$4,000.—The same architect is preparing plans for following buildings: Residence, Empress Crescent, for C. W. Chadwick, cost \$3,500; residence for T. W. Miller on Avenue road, cost \$6,000; dwelling for D. H. Atkinson on Pearson avenue, cost \$2,500.

CONTRACTS AWARDED.

VANCOUVER, B. C.—J. S. Pearce, architect, has awarded contract for addi-

tions to the Strand Hotel to cost \$15,000 to Smith & Sherburne, this city.

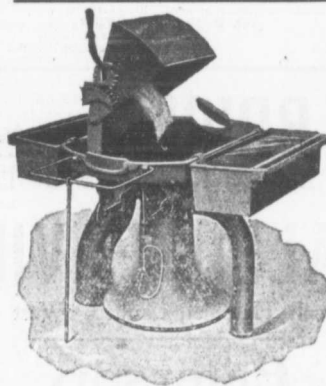
NORWAY, ONT.—Supply of brick for new school house: Newman & Chapmen, successful tenderers.

GULL LAKE, ALTA.—Erection of hotel building for Mr. Sharp: G. Thompson, Maple Creek, contractor.

MONTREAL, QUE.—Erection of ten-storey office building for Eastern Townships Bank, to cost \$350,000: Peter Lyall & Soas, this city, contractors.

WINNIPEG, MAN.—Eade Bros., architects, have awarded contract for erection of Synagogue for Shaary Shomayin Congregation on Dagmar street, to Cotterell & McElveny, this city.—The following contracts have been awarded by J. H. G. Russell, architect, for erection of office building for W. J. Hammond: mason work, Hindson & Davidson; plastering, Juck & Genery; carpentry, A. B. Anderson; heating and plumbing, John Plaxton & Co.; painting and glazing, J. A. Payne; galvanized iron, Douglas Bros.

TORONTO, ONT.—Erection of church corner of Simpson and Broadview avenues for St. John's Presbyterian congregation: Kay Bros., this city, contractors.—Supply of stone trimmings for Imperial Bank building, corner of Bloor street and Lansdowne avenue: Roman Stone Co., this city, successful tenderers, J. M. Lyle, architect.—Supply of cut and roman stone for warehouse for D. McCall Co.: Roman Stone Company, this city, successful tenderers, G. W. Gouinlock, architect.—Furnishing of new pumping engine for the city: John Inglis Co., this city, successful tenderers at \$3,505.



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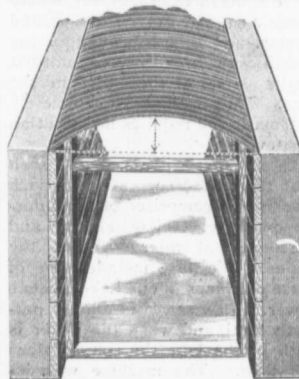
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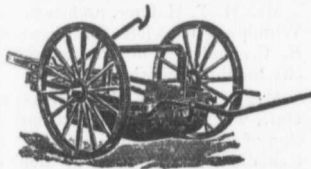
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QUEBEC AND MONTREAL

SEWAGE DISPOSAL IN FLAT DISTRICTS

By THOS F. MCGILVRAY, Mem. Am. Soc. C. E.

One of the most difficult problems with which the municipal engineer comes in contact is that of the disposal of sewage in level districts, where there is not sufficient fall for a gravity system of sewer pipes. This condition exists, to a greater or less extent, in some part in almost every city and town in the United States.

There have been heretofore two methods for the disposal of sewage in such districts, which have been generally used. They are, either pumping the sewage direct, or giving an impetus to its flow by means of compressed air. Where pumping is done, it is usual to conduct all of the sewage through various sized conduits, depending of course upon the tributary population, to a common sump or sewage well, by gravity, and from thence to pump it to an outlet. It is frequently necessary, if the area to be sewered is large, to have more than one of these sewage wells. In some cases, as, for instance, in New Orleans, there are many of them.

The method of disposal of sewage by compressed air entails the use of air pipes alongside the sewage pipes, from which air is passed by means of an engine and compressor. The sewage collects by gravity into steel tanks and the intermittent entrance of air into the said tanks discharges the sewage onto a higher plane, from whence it again runs by gravity to another tank, where the same operation is repeated, until finally the sewage is discharged into an outlet.

The principal objection to both methods outlined above is their expense. In the case of pumping, it is readily seen that the expense of engineers and firemen, fuel, etc., together with interest on the cost of the machinery, is quite large. This objection is sometimes partially overcome by the introduction of electric pumps, which can be operated from a central station, but the cost of electric current must also, in that case, be figured. In the case of a compressed air system, the expensive features are the same as those of the pumping system, plus interest on the cost of the air conductors and the increased cost of maintenance of such a system.

In our city we were confronted with conditions somewhat similar to those outlined in the first paragraph of this paper—that is to say, we have a large flat area on Minnesota Point, where the average elevation of the ground above Lake Superior is not more than six feet, and as this district has become densely populated during the last few years, on account of better connections being established between the city

proper and Minnesota Point, it was necessary to design some system which would provide adequate sewerage facilities for this district. As the water mains had just been laid throughout the streets and avenues on Minnesota Point, and as our water pressure in the mains is excellent, it occurred to me that some kind of water engine could be designed which would give an impetus to the flow in the sewers. My assistant, Mr. Axel Wilson, therefore went to work and designed a machine which may be called a hydraulic sewer ejector.

The machine consists of a receiver, into which the sewage flows by gravity. When the receiver is full, a ball float is raised by the sewage which automatically opens a valve from the water supply of the city into a water cylinder, the size of which is proportioned to the water pressure and capacity of the sewage receiver. The sewage is thus elevated some three or four feet, where it again runs by gravity to a second ejector, and so on throughout the length of the area sewered, until it finally arrives at the outlet in the lake. The machine is completely automatic and requires no attention whatever.

Of course it will be readily seen that the cost of operation of such machines is comprised of the interest on the cost of installation and the amount of water used from the mains. We have installed one of these machines in our Lake avenue sewer. This sewer is almost perfectly level, and when the water is high in the lake the sewage does not flow. The machine was installed to overcome this objection, and it has done so perfectly.

The proportions of the water cylinder to the sewage receiver are as 7.5 gallons to 240 gallons. In other words, we use about 3 per cent. of volume of water to that of sewage moved. We have, of course, a pressure of almost 100 pounds per square inch in the mains on Lake avenue, which accounts for the economy in the amount of water used. At our city rates, which are two cents per 100 feet, the sanitary discharge of said sewage, which sewers about 20 acres, costs, since the introduction of this machine, about 2½ cents per day for water.

It is to be presumed that some kind of water pressure is available wherever a sewer system is in operation. This water pressure may vary greatly in different cities, but it will generally be found that the best pressure in the system is obtainable in the low-lying districts where these machines ordinarily would be installed. I have therefore appended a table based on the

amount of sewage contributed by a population of 10,000 people at 60 gallons per capita per day, to be lifted four feet, the cost of operation being based on our own meter rates of two cents per hundred. The table allows for friction in the apparatus.

TABLE OF EFFICIENCY OF HYDRAULIC EJECTOR UNDER DIFFERENT WATER PRESSURES.

Water Press. per sq. in.	Per Cent. of Water Used	Volume in cu. ft. per Day	Cost per Day at 2c per 100	Cost per Capita per Annum
25 lbs.	12.12	9,696	\$1.94	\$0.07
30 lbs.	10.14	8,112	1.62	0.06
40 lbs.	7.58	6,064	1.22	0.05
50 lbs.	6.06	4,848	0.97	0.04
60 lbs.	5.07	4,056	0.81	0.03
70 lbs.	4.34	3,472	0.69	0.025
80 lbs.	3.79	3,032	0.61	0.023
90 lbs.	3.37	2,696	0.54	0.02
100 lbs.	3.04	2,432	0.49	0.018

I believe that machines of this design are applicable and will soon be in common use in all districts where other than gravity means of sewage ejection must be used. This machine is also applicable, as will be readily seen, to the drainage of cellars or basements which are below the sewer lines in the streets, and could also be used for the purpose of raising water, similarly to the use of a hydraulic ram.—Improvement Bulletin.

PFRSONAL.

Mr. Geo. McLean, who for the past ten years has been City Treasurer of Guelph, died on March 16th.

Mr. F. W. Flater, C.E., of Chatham, Ont., has been appointed engineer for the Township of Harwich.

Mr. J. M. Moore, superintendent of the waterworks department, London, Ont., has resigned that position.

Mr. H. T. Haffner, architect, of Winnipeg, has left for Victoria, B. C., and will not return to the city for three months.

Mr. J. Forrest, C.E., of Brussels, Ont., will superintend the construction of the Kemptville section of the Canadian Pacific Railway double track.

The Winnipeg Foundry Co., Winnipeg, a lately incorporated syndicate, have started business at corner of Flora avenue and Robinson street.

A new company of contractors has been established at Winnipeg under the name of Cotterell, McElveny & Company. Mr. E. H. Cotterell was formerly practicing as civil engineer in Winnipeg. The company who make a specialty of reinforced concrete constructions have their offices in McLean Block.

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BRIDGES (STEEL)		ENGINEERS (CIVIL)		Somerville Limited.	5
Canadian Bridge Co.	19	Chipman, Willis	23	PUMPS AND PUMPING MACHINERY	
Canada Foundry Co.	27	Connor, Clarke & Monds	23	Allis-Chalmers-Bullock	15
Dominion Bridge Co.	26	Davis, Johnston	26	Canadian Buffalo Forge Co.	4
Jenks & Dresser	13	Fenson, C. J.	19	Canadian Fairbanks Co.	24
Phoenix Bridge and Iron Works	26	Fielding, John S.	13	Canada Foundry Co.	27
		Galt, John	9	Drummond, McCall & Co.	18
CASTINGS (IRON)		Jackson, John H.	23	Mussens Limited	3
Laurie Engine & Machine Co.	1	Lea & Coffin	23	McDougall Caledonian Iron Works Co., John	19
Rogers Manufacturing Co.	4	Leofred, A.	13		
		Macallum, A. F.	21	ROAD MACHINERY	
CEMENT		McConnell, Brian D.	24	Cameron & Co., Hugh	20
Alpena Portland Cement Co.	24	McDougall & McRae	9	Climax Road Machine Co.	9
Alsen Portland Cement Co.	18	Parke, Roderick J.	23	Heaman, George	27
Baxter, Paterson & Co.	7	Scott, Wm. Fry	21	Morrison & Co., T. A.	20
Bremner, Alex.	26	Simpson, T. T.	21	Mussens Limited	3
Canadian Portland Cement Co.	4			Sawyer & Massey Co.	16
Currie & Co., W. & F. P.	4	ENGINEERS (MECHANICAL)			
DeSola, C. I.	9	Farmer, John T.	20	ROCK DRILLS	
Gray & Bruce Portland Cement Co.	24	Galt, John	9	Allis-Chalmers-Bullock	15
Hyde & Co., F.	22			ROPE	
Hanover Portland Cement Co.	14	ENGINES		Allan, Whyte & Co.	21
Lakefield Portland Cement Co.	14	Allis-Chalmers-Bullock	15	Dominion Wire Rope Co.	28
McNally & Co., W.	13	Cameron & Co., Hugh	20	Greening Wire Co., B.	21
Morrison & Co., T. A.	20	Rogers Manufacturing Co.	24		
National Portland Cement Co.	20	Sawyer & Massey Co.	16	STEEL BARS (CORRUGATED)	
Owen Sound Portland Cement Co.	23	ELECTRICAL APPARATUS AND SUPPLIES		Corrugated Steel Bar Co. of Canada	16
Ontario Portland Cement Co.	16	Allis-Chalmers-Bullock	15	STRUCTURAL IRON AND STEEL	
Raven Lake Portland Cement Co.	22	Canadian Gen. Elec. Co.	27	Baxter, Paterson & Co.	7
Stinson-Reeb Builders' Supply Co.	22	Drummond, McCall & Co.	18	Canada Foundry Co.	27
Thorn Cement Co.	14	Northern Electric & Mfg. Co.		Dominion Bridge Co.	26
				Jenks & Dresser	13
CONTRACTORS' SURETY BONDS		FIRE BRICKS		Locomotive & Machine Co.	26
United States Fidelity & Guaranty Co.	21	Baxter, Paterson & Co.	7	McGregor & McIntyre	9
		FIRE APPARATUS		Phoenix Bridge & Iron Works	26
CONCRETE MIXERS AND MACHINERY		Cameron & Co., Hugh	20	STONE	
Baxter, Paterson & Co.	7	Meadows, George B., Toronto Wire, Iron & Brass Works Co.	18	Crushed Stone, Limited	16
Dartnell, E. F.	13	McGregor & McIntyre	9	Doolittle & Wilcox	21
Hopkins & Co., F. H.	28	Seagrave, W. E., Walkerville, Ont.	16	Rogers Supply Co.	23
Ideal Concrete Machinery Co.	17	Morrison & Co., T. A.	20	Morrison & Co., T. A.	20
London Concrete Machinery Co.	14	HOISTING MACHINERY		SHOVELS (STEAM)	
Mussens Limited	3	Allis-Chalmers-Bullock	15	Allis-Chalmers-Bullock	15
Morrison & Co., T. A.	20	Beatty & Sons, M.	22	Beatty & Sons, M.	22
Toronto Pressed Steel Co.	9	Canada Foundry Co.	27	Canada Foundry Co.	27
Vining Bros. Mfg. Co.	5	Georgain Bay Engineering Works	7	Hopkins & Co., F. H.	28
		Hood & Sons, Wm.	10	Locomotive & Machine Co.	26
CONTRACTORS' PLANT		Hopkins & Co., F. H.	28	Mussens Limited	3
Allis-Chalmers-Bullock	15	Mussens Limited	3	Rogers Manufacturing Co.	24
Beatty & Sons, M.	22	Rogers Mfg. Co.	24		
Canada Foundry Co.	27	HYDRANTS		SEWER PIPE	
Hopkins & Co., F. H.	28	Canada Foundry Co.	22	Bremner, Alex.	26
Locomotive & Machine Co.	26	Canadian Fairbanks Co.	24	Canadian Sewer Pipe Co.	4
Mussens Limited	3	Canadian Iron & Foundry Co.	25	Dominion Sewer Pipe Co.	20
Peat & Sons, James	14	Gartshore-Thompson Pipe & Foundry Co.	18		
Rogers Manufacturing Co.	24	Kerr Engine Co.	13	SHOVELS	
Toronto Pressed Steel Co.	9	McDougall Co., R.	21	Hopkins & Co., F. H.	28
Wallington, G. P.	7			Mussens Limited	3
		LOCOMOTIVES AND RAILS		TELEPHONE SUPPLIES	
CONCRETE CONSTRUCTION		Canada Foundry Co.	27	Northern Electric & Mfg. Co.	
Ambursen Hydraulic Construction Co.	9	Gartshore, John J.	19	TANKS AND STAND PIPES	
Baxter, Paterson & Co.	7	Hopkins & Co.	28	Canada Foundry Co.	27
Concrete Engineering & Construction Co.	13	Locomotive & Machine Co.	26	Ontario Wind Engine & Pump Co.	23
Steel Concrete Co.	26	Mussen Limited	3		
		Sessenwein Bros.	9	VALVES	
CONTRACTORS' EMPLOYMENT BUREAUS		PLASTER BOARDS		Canada Foundry Co.	27
North Western Employment Agency	23	P. W. St. George	24	Canadian Fairbanks Co.	24
Reliance Labor Exchange	3	PILE DRIVING		Canadian Iron & Foundry Co.	25
Zarossi, Bance	26	Hood & Sons, Wm.	19	Gartshore-Thomson Pipe & Foundry Co.	18
		Russell, John E.	19	Kerr Engine Co.	13
CORRUGATED IRON		PAVING AND PAVING MATERIALS		McDougall Co., R.	21
Metallic Roofing Co.	7	Baxter, Paterson & Co.	7	WOOD FIBRE PLASTER	
		Brunet, Joseph	26	Imperial Plaster Co.	13
CRUSHERS (STONE AND ROCK)		Cadwell Silix Stone Co.	18		
Allis-Chalmers-Bullock	15	Forest City Paving Co.	13		
Beatty & Sons, M.	22	Ontario Asphalt Block Co.	23		
Canada Foundry Co.	27	Pettypiece Silix Stone Co.	23		
Dartnell, E. F.	13	Silica Barytic Stone Co. of Ontario	26		
Hopkins & Co., F. H.	28				
Mussens Limited	3				
Morrison & Co., T. A.	20				
Sawyer & Massey Co.	16				

SPECIFICATIONS FOR SIDEWALKS

By GEO. L. STANLEY.

FOUNDATIONS.

The ground base should be made as solid and permanent as possible. Where excavations or fills are made, all wood or other materials which will decompose should be removed and replaced with earth or other filling like the rest of the foundation.

Fills of clay or other material which will settle after heavy rains or deep freezing should be tamped solid in layers not more than 6 in. in thickness, so as to ensure a solid embankment which will remain firm after the walk is laid.

Embankments should not be less than 2½ ft. wider than the walk which is to be built. When porous material, such as coal ashes, granulated slag or gravel is used under drains, agricultural tile should be laid to the curb drains or gutters, so as to prevent water accumulating and freezing under the walk and breaking the blocks.

The position of shade trees should not be less than 4 ft. from the walk. Carolina poplar, elm or other shade trees whose roots run near the surface of the ground should not be less than 10 ft. from the walk.

Line and grades should be given by a civil engineer; the stakes to be not over 25 ft. apart and far enough from the walk line so that an inspector may see that the walk is laid to line and grade.

The mould strips should be firmly blocked under the ends and the centre of the strips and carefully straight-edged, care being taken that the strips are parallel with the engineer's line and the height of the grade stakes. The walks should be laid with a drop of ¼ of an inch to the foot towards the curb gutter.

SPECIFICATIONS FOR THICKNESS.

The thickness of the walk should be determined by the location, the amount of travel and danger of being broken by heavy bodies falling on it, or frost.

Business front walks should not be less than 4 in. thick, and may be 6 in. thick with profit. The top coat of business walks should not be less than 1¼ in. thick.

In residence districts the top coat should not be less than 1 in. wearing thickness, and the thickness for different widths of walks should be as follows:

6' wide, the minimum at the centers should be 4½ in. thick; at the edges, 4 in. thick.

5' wide, the minimum at the centers should be 4" thick; at the edges, 3½" thick.

4½' wide, the minimum at the centers should be 3¾" thick; at the edges, 3½" thick.

4' wide, the minimum at the

centers should be 3½" thick; at the edges, 3" thick.

All other widths less than the above, the minimum at the centers should be 3½" thick; at the edges, 3" thick.

Sizes of blocks may be determined by the width and thickness of the walk. Business front walks should contain not over:

12 sq. ft. when the walk is 4 in. thick.

16 sq. ft. when the walk is 5 in. thick.

20 sq. ft. when the walk is 5½ in. thick.

25 sq. ft. when the walk is 6 in. thick.

Residence districts where the walks are:

6 ft. wide, in thick at the centre, the blocks may be 6 ft. long.

6 ft. wide, 4½ in. thick at the centre, the blocks may be 5 ft. long.

5 ft. wide, 4½ in. thick at the center, the blocks may be 5 ft. long.

5 ft. wide, 4 in. thick at the center, the blocks may be 5 ft. long.

4½ ft. wide, 4 in. thick at the center, the blocks may be 4½ ft. long.

4 ft. wide, 4 in. thick at the center, the blocks may be 4 ft. long.

4 ft. wide 3½ in. thick at the center, the blocks may be 4 ft. long.

Other widths, less than the above, 4 in. thick at the center, the blocks may be 4 ft. long.

Other width, 3½ in. thick at the center, the blocks may be 3½ ft. long.

SPECIFICATIONS FOR CONCRETE.

Bottom coat gravel. The largest size to be not over 1 in. and all under ¾ in. to be considered sand. Proportions to be one part high grade Portland cement to four parts, clean, hard gravel and sand enough to fill the voids, which makes the proportions as most gravel will measure after being filled with sand, one part cement to five of the whole aggregate sand and gravel.

Bottom coat crushed stone. The size of broken stone should not be larger than ¾ in. and vary in size to ¼ in., and free from fine screenings and dust or soft stone. Proportions to be one part high grade Portland cement, two parts clean aed sharp sand and four parts broken stone, or what is termed by consulting engineers and concrete experts one part of cement to four of stone, and sand enough to fill the voids.

Mixing of both gravel and broken stone should be done by placing stone in the mixing box or on the platform first, then spread the sand evenly over the stone and in

like manner the cement over the sand. Then cut through from top to bottom in thin slices, which will insure an even mix. Then turn with hoe or shovel twice before adding water, which should be done with a sprinkler and hoed over as sprinkled. The batch should be turned at least once after the water is applied. The amount of water used in the bottom coat should be only enough to make it, when firmly tamped, solid and not "quaky."

Top Coat. Proportions, three parts high grade Portland cement and five parts clean, sharp sand mixed dry and screened through a No. 4 sieve. In the top coat the amount of water used should be just enough so that the surface of the walk can be tamped, struck off, floated and finished within 20 minutes after it is spread on the bottom coat and when finished it should be solid and not "quaky." An edger of not less than 1 in. radius should be used on the outer edges of the walk.

Separation of the blocks should be done with a spud not over 6 in. wide and ¼ in. thick and to insure complete separation the groove should be cut through into the ground base. Fill the groove with dry sand before the top coat is spread and the top coat should be cut through to the sand after floating and troweling and a jointer run in the groove; then again draw a trowel through the groove so as to insure a complete separation of the blocks.

The protection of newly finished walks from storms can be accomplished by covering with roofing paper or canvas. Canvas should never be laid on the walk, but stretched over on a slant so as to run the water off.

Grading after the walks are ready for use should be on the curb side of the walk 1½ in. lower than the walk and not less than ¼ in. to the foot fall towards the curb or gutters. On the property side of the walk the ground should be graded back at least 2 ft. and not lower than the walk, which will insure the frost throwing the walk alike on both sides.

Water rates to contractors at Winnipeg have been increased by 100 per cent.

Mr. J. J. Malaffy, Village Clerk of Streetsville, Ont., has resigned and is removing to Regina.

Mr. J. L. Thomas, C.E., of London, Ont., has been appointed engineer for the township of Tucker-smith.

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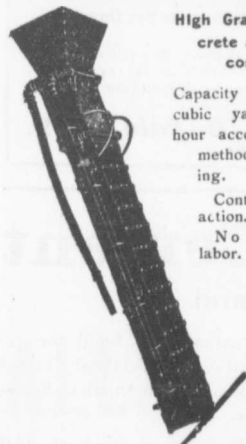
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NEW COMPANIES.

Strathcona Silver Mining Company of Cobalt, Limited, Toronto, Ont., incorporated, capital \$800,000. Directors, R. T. Mullin, J. P. Beaudoin, and others.

Tourist Hotel Company, Limited, Kenora, Ont., incorporated, capital \$150,000. Directors, J. Hose, C. C. Delbridge, A. Carmichael and other.

Elk Lake Cobalt Silver Mining Company, Limited, North Bay, Ont., incorporated, capital \$1,000,000. Directors, M. B. Strachan, H. D. Graham, and others.

J. Sale has been appointed attorney for the Campbell Oil Company who are incorporated under laws of the Territory of Arizona and who now have obtained a license to transact business in the Province of Ontario provided capital used does not exceed \$40,000.

Commercial Travellers Larder Lake Gold Mining Company, Limited, New Liskeard, Ont., incorporated, capital \$500,000. Directors, J. Matthews, M. W. Herron, and others.

Red Rose Mining Company, Limited, Toronto, Ont., incorporated, capital \$600,000. Directors, L. R. Berg, F. W. MacLean, and others.

Erie Portland Cement Company, Limited, Toronto, Ont., incorporated capital \$1,000,000. Directors, D. Forrester, R. D. Moorehead, and R. L. Johnson.

Bracebridge & Muskoka Lakes Telephone Company, Limited, Bracebridge, Ont., incorporated, capital \$10,000. Directors, P. A. Smith, P. Hutchison, and J. Thomson.

Vandorf Telephone Company, Limited, Vandorf, Ont., incorporated, capital \$10,000. Directors, G. J. Van Nostrand, G. H. Powell and J. A. M. Van Nostrand.

Dominion Warehousing Company, Limited, Ottawa, Ont., incorporated, capital \$150,000. Directors, H. H. Williams, J. G. Gibson, H. S. Harrison, and others.

Perfect Brick & Tile Company, Limited, Ottawa, Ont., incorporated, capital \$100,000. Directors, A. McK. Chisholm, J. H. Birkett, and R. F. Rowan.

Barton Netting Company, Limited, Windsor, Ont., incorporated to manufacture mantels, tiling, etc., capital \$40,000. Directors, C. J. Netting, C. C. McCloskey, and G. F. Trunk.

Confederation Mines, Limited, Hamilton, Ont., incorporated, capital \$250,000. Directors, W. Marshall, J. Thomson, and others.

Dominion Electric Manufacturing Company, Limited, Montreal, Que., incorporated, capital \$20,000. Incorporators, P. Lahee, A. Morin, A. R. Hall, all of Montreal, and others.

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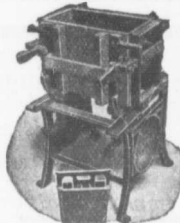
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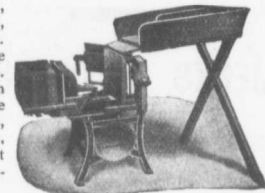
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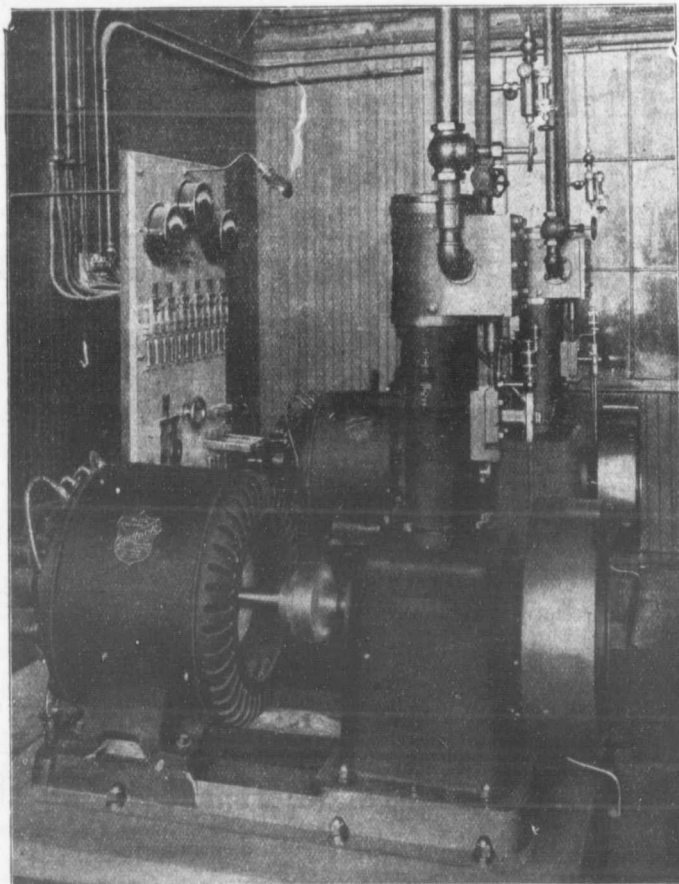


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International Steel Company of Canada, Limited, Montreal, Que., incorporated to carry on a general business as engineers, machinists, manufacturers of machinery, etc., capital \$500,000. Incorporators, A. R. Oughtred, R. W. Gibb, M. A. Phalen, E. G. Place and S. C. Marson, all of Montreal.

Consumers Co-operative Brewery Company, Limited, Montreal, Que., incorporated, capital \$1,000,000. Incorporators, W. Kearney, J. D. Gadbois, J. B. Peloquin, J. M. Campbell, all of Montreal, and others.

Phoenix Mines, Limited, Montreal, Que., incorporated, capital \$200,000. Incorporators, R. T. Henecker, A. H. Duff, J. A. Walker, all of Montreal, and others.

Campbell - MacLaurin Lumber Company, Limited, Montreal, Que., incorporated, capital \$100,000. Incorporators, A. H. Campbell, of New York, A. MacLaurin, of Montreal, C. J. R. Bethune, of Ottawa, and others.

Dominion Lumber Company, Limited, Webbwood, Ont., incorporated, capital \$350,000. Directors, E. B. Ryckman, C. S. MacInnes, C. C. Robinson, and others.

Cleopatra Mining Company, Limited, Ottawa, Ont., incorporated, capital \$2,000,000. Directors, L. B. Jennings, D. S. Sawyer and others.

Sudbury Brewing & Malting Company, Limited, Toronto, Ont., incorporated, capital \$70,000. Directors, P. McKay, A. R. Bickerstaff and W. H. Irving.

Manchester Cobalt Mines, Limited, Toronto, Ont., incorporated, capital \$450,000. Directors, F. B. Allan, A. Cohen and Florence E. Ellis.

Cobalt Blue Silver Mining Company, Limited, Toronto, Ont., incorporated, capital \$1,000,000. Directors, J. G. Shaw, J. Montgomery and W. R. Williams.

Shamrock Silver Company, Limited, Toronto, Ont., incorporated, capital \$1,000,000. Directors, J. G. Shaw, J. Montgomery and W. R. Williams.

Millburn Cobalt Silver Mines, Limited, Peterboro, Ont., incorporated, capital \$200,000. Directors, S. T. Medd, G. L. Hay and W. S. Davidson.

Flexume Sign Company, Limited, St. Catharines, Ont., incorporated to manufacture electrical illuminated signs and other electrical devices, capital \$40,000. Directors, R. R. Wiley, W. S. Hough, W. K. Wiley, E. C. Graves and A. W. Marquis.

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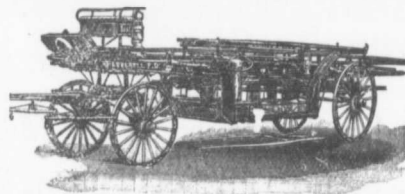
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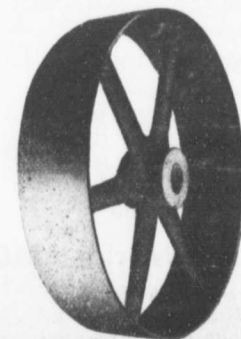


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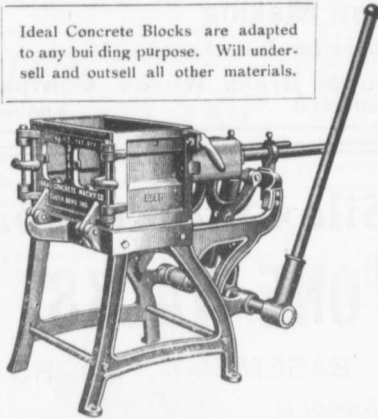
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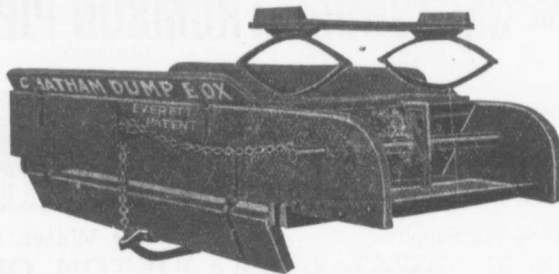
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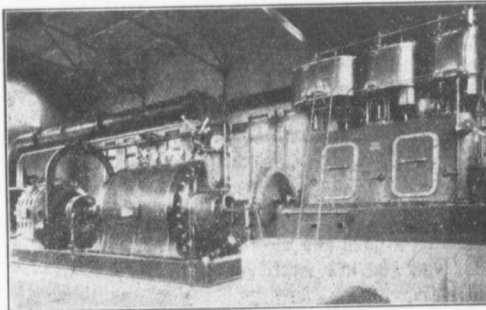
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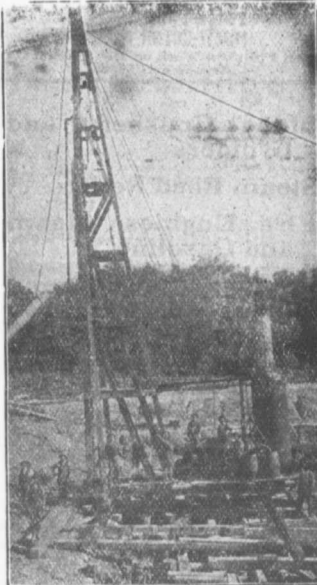
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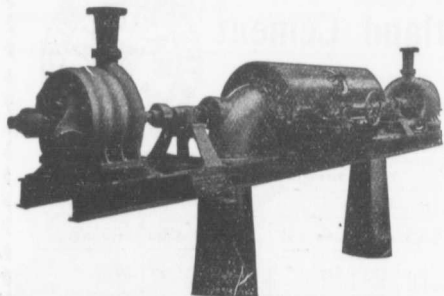
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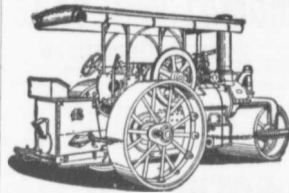
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							1 dy.	7 d.	28 d.	3 mos	1 yr	1 dy.	7 d.	28 d.	3 mos	1 yr.
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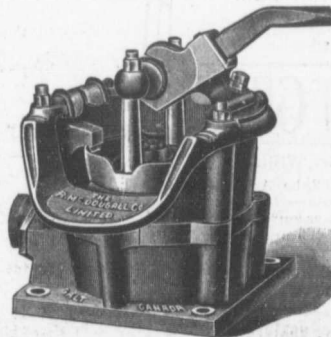
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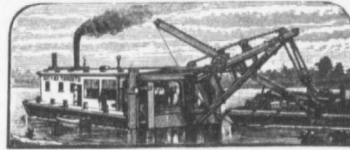
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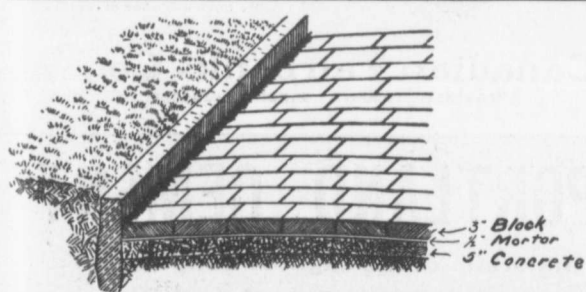
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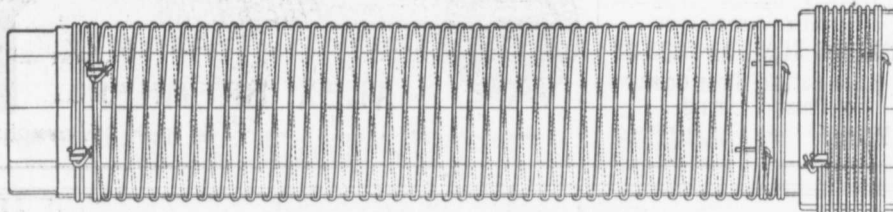
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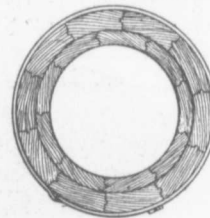
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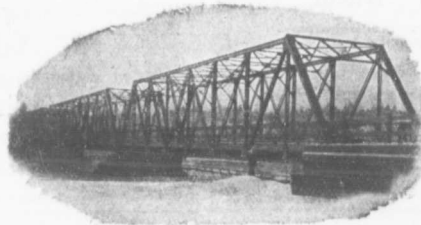
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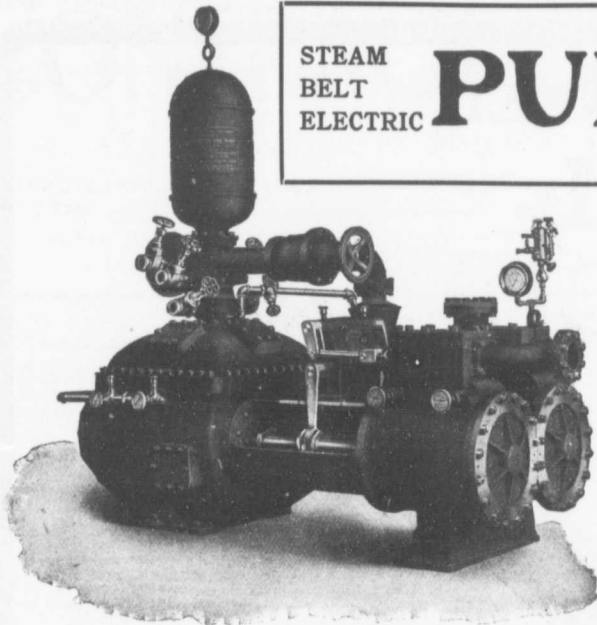
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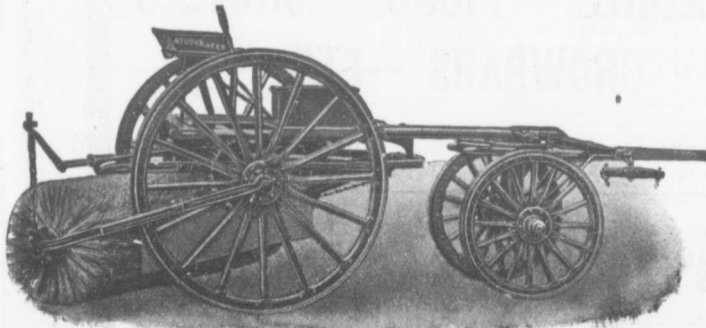
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