

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 — APRIL 3, 1907 — WINNIPEG, VANCOUVER

No. 5

THE CANADIAN CONTRACT RECORD

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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 latter 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.

To Contractors

For Sale—Twenty Slush Scrapers, Ten Wheel Scrapers, and Three Rooter Ploughs, nearly new Apply

R. A. ROGERS & CO.,
49 Yonge Street Arcade, Toronto.

TENDERS FOR THE CONSTRUCTION OF STORM SEWERS

Sealed tenders, addressed to John Morrison, City Clerk, Woodstock, Ontario, will be received up to four o'clock of WEDNESDAY, THE 17TH DAY OF APRIL NEXT, for the construction of Storm Sewers as follows:

"A" SOUTH SYSTEM containing about 3,300 lineal feet of pipe, ranging in size from 12" up to 24".
"B" NORTH SYSTEM containing about 7,300 lineal feet of pipe, ranging in size from 8" up to 22".
"C" The supplying of the necessary pipe being part Vitrified Sewer Pipe and part Concrete Pipe.
Plans and specifications may be seen and forms of tender obtained at the office of the undersigned.
No tender necessarily accepted.

R. G. SAWTELL, F. J. URE,
Chairman Board of Works. City Engineer.

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 30th, 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.

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.,
GALT & SMITH, Secretary-Treasurer,
Consulting Engineers, Battleford, Sask.
23 Jordan St., Toronto.

Engineer is open for an appointment, practical experience and good testimonials. Box 524, London, Ont.

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.

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 2 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.,
W. R. ABBOTT, Esq.,
Mayor, Town Clerk.

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

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 1 1/2" 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.

[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.
 B. 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 15TH 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.

TOWN OF MAPLE CREEK
 Province of Saskatchewan

DEBENTURES FOR SALE

Sealed tenders will be received up to 8 p. m. of SATURDAY, THE 20TH APRIL, 1907, for the purchase of the following debentures of the Town of Maple Creek, amounting in all to the sum of Sixty Thousand (\$60,000.00) Dollars, spread over a period of thirty years, dated from the time of issue, bearing interest at 5 per cent., each debenture bond being for the sum of Two Thousand (\$2,000.00) Dollars, and one being redeemable annually with interest, said debentures being issued for the installation of a Water Works System for said Town under By-Law No. 23 of said Town and being secured, in addition to the liability of the Municipality of Maple Creek, thereunder by the system of waterworks to be installed.

For further details apply to the undersigned.

The highest or any tender not necessarily accepted.

I. C. DIXON,
 Chairman Finance Committee Town of Maple Creek.

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.
 \$15,000 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 it 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 BRIDGE

Sealed tenders, addressed to the Clerk, County of Grey, Owen Sound, will be received up to 6 p. m. FRIDAY, APRIL 20TH, 1907, for following options for a bridge over Potawatomi River.

1. Steel bridge, 18 feet roadway, 2 sidewalks 5 feet in width, 28 feet span.
 - (a) With steel joists and cob floor.
 - (b) With steel joists ready for reinforced concrete floor.
 - (c) Abutments some 254 cubic yards.
 - (d) Reinforced concrete floor.
2. Steel bridge, 24 feet roadway, 2 sidewalks 6 feet in width, 30 feet span.
 - (a) With steel joists ready for reinforced concrete floor.
 - (b) Abutments some 292 cubic yards.
 - (c) Reinforced concrete floor.
3. Reinforced concrete arch, 24 feet roadway, 2 sidewalks 6 feet in width, 45 feet span, 4 feet 6 inches rise.

A marked bank cheque payable to County Treasurer to the amount of five per cent. must accompany each tender, the same to be forfeited if the successful tenderer declines or fails in the performance thereof and will be returned in case of non-acceptance.

The lowest or any tender not necessarily accepted. Plans and specifications may be seen at the County Clerk's or Engineer's offices.

JOHN RUTHERFORD, ESQ.,
 R. McDOWALL, C. E.,
 County Clerk

WANTED—To rent or buy a SECOND-HAND CONCRETE MIXER. Address Box 105, CONTRACT RECORD, Toronto, Ont.

TO CONTRACTORS

Eighteen miles of first-class station work, Muskeg, and number of sub-contracts from five to ten miles each, for which we will pay the highest prices. The above are on the Teniskaming & Northern Ontario Railway, between MacDougall Chutes (via Englehart) and the junction of the Grand Trunk Pacific Railway, (McRae, Chantner & McNeil, MacDougall Chutes, via Englehart, Ont.

TO CONTRACTORS

Tenders will be received by the undersigned up to 12 o'clock noon, MONDAY, APRIL THE 8TH, for all trades required in the erection of a Permanent Exhibit Building for the Canadian Railways, at the Exhibition Grounds, Toronto. Plans and specifications may be seen at the offices of the Architect.

The lowest or any tender not necessarily accepted.
 GEO. W. GOUNLOCK, Architect,
 1108 Temple Building, Toronto.

To Contractors

Tenders will be received by the undersigned up to 12 o'clock noon, MONDAY, APRIL THE 8TH, for all trades required in the erection of a Brick and Cut Stone Bank and Office Building for the Sovereign Bank, at the North West corner of King & George Streets, Toronto. Plans and specifications may be seen at the offices of the Architect.

The lowest or any tender not necessarily accepted.
 GEO. W. GOUNLOCK, Architect,
 1108 Temple Building, Toronto.

Tenders Wanted

Tenders addressed to the undersigned will be received up to SATURDAY, APRIL 20TH, for the different trades required in the erection of a four storey Bank and Office Building to be built in the town of Fort William for J. Y. & F. M. Griffin.

Plans and specifications can be seen at office of N. R. Darrach, Architect, St. Thomas, Ont., also at the office of J. C. Stinson, Architect, Fort William, Ont.

The lowest or any tender not necessarily accepted.
 N. R. DARRACH, Architect,
 St. Thomas, Ont.

TENDERS
To Contractors

Tenders will be received up to WEDNESDAY, APRIL 10TH, for the Excavating and Brickwork, Carpenter Work, and Structural Steel required in the rebuilding of

THE HOTEL QUINTE
BELLEVILLE, ONT.

Plans can be seen at the offices of the Architect, F. H. Herbert, 9 Toronto Street, Toronto, or F. B. Gillen, Assistant Supervising Architect, Belleville.

CONTRACTS OPEN.

TILLBURY, ONT.—H. Callwood will erect a residence here.

NORTH BAY, ONT.—G. W. Lee intends erecting a residence.

SYDNEY, C. B.—The Waterworks system is to be extended at a cost of \$5,000.

PETERBORO, ONT.—T. W. Oke, of Cobourg, will erect a factory on Hunter street.

INGERSOLL, ONT.—The Board of Education will have plans prepared for a new school.

MINIOTA, MAN.—The Town Council have decided to establish a municipal telephone system.

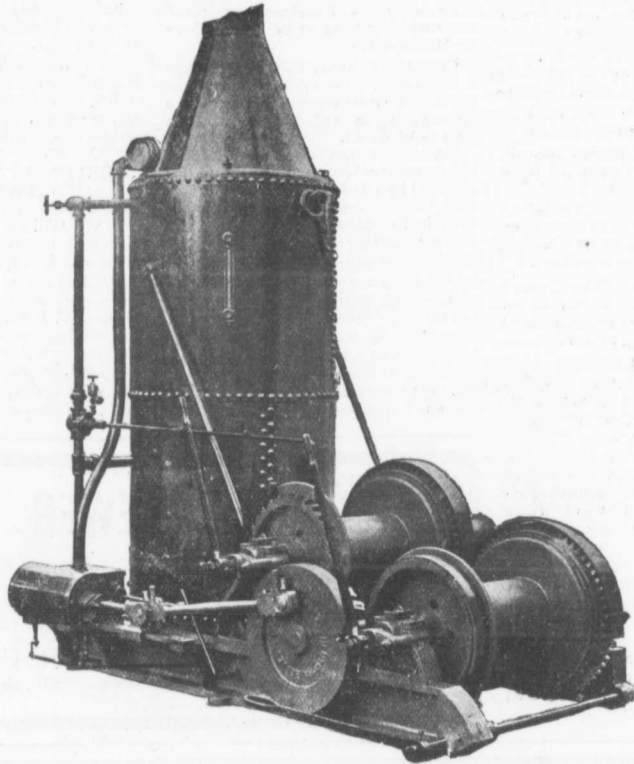
LONDON, ONT.—It is reported that the Grand Trunk Railway Company's shops will be enlarged.

ARNPRIOR, ONT.—The Evangelical Association intend erecting a new church to cost \$3,000.

EAST TORONTO, ONT.—Plans have been prepared for a store for Pateron Bros., to cost \$9,000.

CENTREVILLE, N. S.—The Fowler

CONTRACTORS' HOISTS



We supply Hoisting Machinery to meet all
Requirements of Contractors, Mines,
Quarries, Coal Companies, Etc.

If Interested, write for Catalogue

MUSSENS LIMITED

Railway, Mining, Municipal and Contractors' Supplies.

Head Office: MONTREAL

Company of Hamilton, Ont., are interested in the erection of a cold storage warehouse here.

OWEN SOUND, ONT.—Plans have been prepared for a local citizen who intends erecting an opera house 84 x 104 feet.

KINISTINO, SASK.—The Board of Trade are considering the formation of a company to erect a flour mill at a cost of \$30,000.

ST. LOUIS, QUE.—The Town Council are about to consider the borrowing of \$375,000 to pay off the floating debt of the town.

NIAGARA FALLS, ONT.—The Dominion Suspender Co. are having plans prepared for the erection of a new factory building.

DESERONTO, ONT.—The ratepayers have carried the by-law providing for the expenditure of \$50,000 in purchasing water and gas plants.

STRATHCLAIR, MAN.—Barton & Holman, architects, Winnipeg, are calling for tenders for erection of brick veneer hotel here.

KINGSTON, ONT.—The Grand Trunk Railway Company are negotiating for the purchase of property on which to build additions to their freight sheds.

NELSON, B. C.—The Town Council have granted the Public School Board \$1,500 with which to have plans prepared for a new school building, to cost \$50,000.

STONEWALL, MAN.—On April 15th the ratepayers will vote on the question of issuing debentures for \$15,000 for the purpose of erecting a new school house.

ST. BONIFACE, MAN.—J. D. Cote, Town Secretary-Treasurer, will receive tenders up to April 8th for asphalt paving. Particulars at office of Town Engineer.

WATERLOO, ONT.—F. S. Kumpf will receive tenders up to April 5th for laying of sewer connections in this town. Particulars may be had from the Town Engineer.

WELLAND, ONT.—Work on the erection of a one-storey brick factory 150 x 60 feet for the Robertson Machinery Company will commence the latter part of the month.

FRANKLIN, MAN.—E. H. Sharpe will receive tenders up to April 30th for purchase of \$4,500 5 per cent. ten year Franklin Union School District debentures.

INNISFAIL, SASK.—E. Fream, Secretary Innisfail School District, will receive tenders up to April 8th for erection of an eight-roomed brick and stone school building.

HESPELER, ONT.—M. F. Cray has decided on the erection of a new block.—Additions will be made to the R. Forbes Company's mill and A. B. Jardine & Company's foundry.

CHATHAM, ONT.—J. L. Wilson & Son, architects, are preparing plans for a three-storey and basement brick and stone hotel building to be erected here for Hogan & Hoy.

FREDERICTON, N. B.—McKenzie & Mann have made a proposition to the Provincial Government to construct a railway along the valley of the St. John river to Westfield.

NAPANEE, ONT.—The Town Clerk will receive tenders up to April 13th for supply of Portland cement, vitrified brick, sand, stone, sewer pipes and other municipal supplies.

WETASKIWIN, SASK.—The Town Council have engaged Thorold & Paradis, civil engineers, Calgary, to superintend the construction of the waterworks and sewerage systems.

DAUPHIN, MAN.—J. W. Johnston, Town Secretary-Treasurer, will receive tenders up to April 15th for purchase of \$15,000 5 per cent. twenty year local improvement debentures and \$1,200 5 per

cent. six year local improvement debentures.

CALGARY, ALTA.—The City Council have voted \$250,000 for the establishment of a street railway system.—The Dominion Produce Co. will erect a three-storey brick cold storage warehouse.

LEAMINGTON, ONT.—The Windsor, Essex & Lake Shore Electric Railway have purchased a private right of way to this town, and it is expected that they will shortly commence the extension of their line.

ELORA, ONT.—A by-law will be submitted to the ratepayers on April 15th which will provide for exemption from taxes of property owned by the Brown Company, Limited, who purpose erecting new buildings.

SHERBROOKE, QUE.—G. M. Howard is interested in the erection of a curling rink to cost \$10,000.—C. J. Gibson, architect, Toronto, is preparing plans for a new Y. M. C. A. building to cost \$30,000.

BERLIN, ONT.—H. Wytter, of Dalhousie, N.B., has had plans prepared for a three-storey block to be erected here.—E. W. Willson wants tenders up to April 20th for erection of school house. Plans with I. Wey, this town.

AYLESFORD, N.S.—A large summer residence is under construction here for Mrs. W. J. Kelley, of Brooklyn, N.Y. The building which is estimated will cost \$30,000 is being erected under the supervision of L. R. Fairn, architect.

EDMONTON, ALTA.—The Durham Cream Separator Co. are consider-

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 PORTLAND CEMENT CO., LIMITED

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MONTREAL

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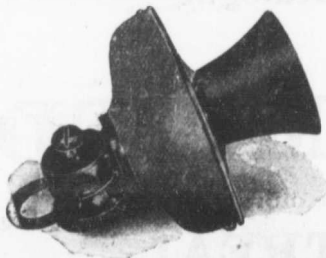
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The Northern Electric and Manufacturing
Co., Limited

WINNIPEG

MONTREAL



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Iron Pipe 1-8 in. to 12 in. carried in stock
 Malleable Fittings Cast Iron Fittings
 Lead Traps and Bends
 Valves Tools Lead Pipe Pig Lead
 PROMPT SHIPMENT

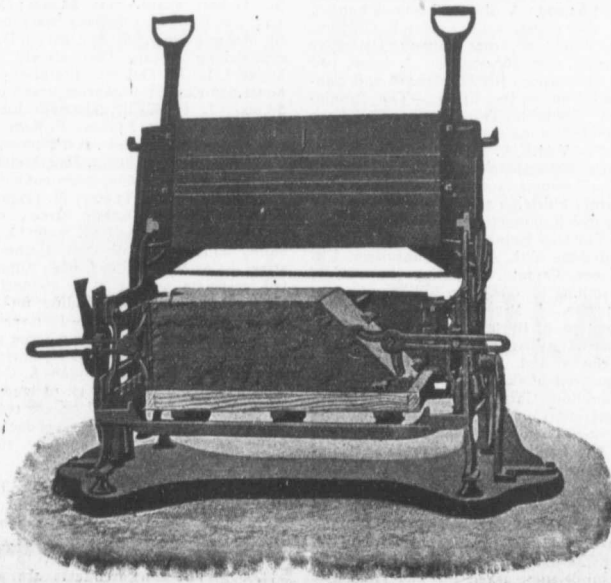
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TORONTO 59 Richmond St. East

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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, . Can.

ing the erection of a branch factory here.—The Public School Board will shortly call for tenders for heating and plumbing for the Alexander Taylor school building.

BELLEVILLE, ONT.—The City Council will issue debentures for \$3,000 with which to erect an addition to the Grier street school building.—The management of Albert College intend erecting a large residence.

STRATFORD, ONT.—The ratepayers have carried a by-law to guarantee bonds of the Cline Furniture Company, who intend erecting an addition to their factory.—The City Council will shortly call for tenders for laying five miles of concrete sidewalks.

MOOSE JAW, SASK.—The Canadian Pacific Railway are reported to have purchased about 30 acres of land which will be laid out for new yards.—The Canadian Pacific Railway have completed arrangements for erection of a large hotel here to cost \$175,000.

IBERVILLE, QUE.—The Central Pipe Foundry Co. have accepted a free site from the Town Council and building operations will commence shortly.—J. E. Benoit, architect, St. Johns', Que., is preparing plans for several stores to be erected here by S. Macdonald, also a three-storey office building for N. Lord.

ST. THOMAS, ONT.—E. W. Lohman, of Elkhart, Ind., is asking the City Council for certain concessions as he intends to establish a large factory here for the manufacture of go-carts.—The Board of Health have asked the City Council to submit a by-law to the ratepayers providing for erection of a two-storey Isolation hospital building, to cost \$15,000.

GODERICH, ONT.—F. Gelnas, Secretary Department of Public Works, Ottawa, will receive tenders up to April 12th for completion of breakwater in this town. Plans at offices of J. G. Sing, Toronto, H. J. Lambe, London, Postmaster, this town, and Department of Public Works, Ottawa.—Dwellings are to be erected here by D. F. Hamlink, Mrs. Edwards and J. G. Reinhart.—The Doty Engine Works will also erect a building.

BRANTFORD, ONT.—The Fire & Light Committee have recommended purchase of a hose wagon, ladder truck and 1,000 feet of hose.—The buildings which the Gould, Shapely & Muir Co. intend to erect are: a four-storey warehouse 464 x 64 feet, galvanizing building 100 x 54 feet, blacksmith shop 100 x 54 feet and an enlargement to the machine shop.

WOODSTOCK, ONT.—The Railway & Municipal Board have approved of the plans for the extension of the electric lighting system.—The City Council will issue debentures for \$7,000, cost of improvements made to electric light plant some time ago.—H. V. Knight, Secretary Public Library Board, will receive tenders for the erection of a library building. Plans at Secretary's office and office of architects, Chadwick & Becket, Toronto.

BRANDON, MAN.—On April 26th the ratepayers will vote on the question of issuing debentures for \$15,000 with which to purchase a cemetery site and \$50,000 for extensions to waterworks system.—The Secretary Militia Council, Ottawa, will receive tenders up to April 18th for construction of a rifle range in this city. Plans at offices of District Officer Commanding, Winnipeg, Director of Engineer Services, Ottawa, and Major J. W. Fleming, this city.

VANCOUVER, B. C.—The North Vancouver Ferry & Power Company

have received an offer for certain property which they own on which it is expected a large engineering works will be established.—The Provincial Government will spend \$70,000 in grading and improving Point Grey and the Shaughnessy Heights.—Parr & Fee, architects, will shortly take tenders for erection of two additional stories to Barr & Anderson's block on Hastings street.—W. H. Malkin & Co. are having plans prepared for a large warehouse to be erected on Water street.—J. Leckie & Co. will erect a six-storey fire proof warehouse on Cambie & Water streets.

NEW WESTMINSTER, B. C.—J. C. Bassett and C. A. Petrie are endeavoring to lease certain property on which to erect a factory building.—F. J. Hart, solicitor, is negotiating with the City Council for certain privileges for a client who intends erecting a two-storey building on Columbia street.—The Home Building Company is being organized with a capital of \$100,000 for the purpose of erecting dwelling houses.—J. N. Keney intends erecting a three-storey brick block on Columbia street.

OTTAWA, ONT.—The Commissioners of the Transcontinental Railway will receive tenders up to May 1st for construction of six steel bridges at the following points: Wabgon and Winnipeg Rivers; C.P.R. Crossing; Whitemouth River; and Brokenhead River (east and west branches). Plans at office of Chief Engineer, this city.—The Ottawa Electric Railway Company will erect a new pavilion in Rockcliffe park.—The Private Bills Committee of the Provincial Government have authorized the City Council to borrow \$16,000 for purchase of an asphalt plant, and \$100,000 with which to enlarge the city hall.—The following building permits have been issued: J. J. Codville, brick residence, Daly avenue, cost \$15,000; G. H. Clark, brick dwelling, Patterson avenue, cost \$4,500.—J. D. McLean, Secretary Department of Indian Affairs, will receive tenders up to April 10th for oil, gas and mining rights on the Shekuanadah Indian Reserve on Manitoulin Island consisting 5,106 acres. Full particulars on application to C. L. D. Sims, Local Indian Agent, Manitowaning, Ont.

HAMILTON, ONT.—The following building permits have been issued: W. A. Noble, three brick houses, corner Sandford and Poplar avenues, cost \$5,500; two brick houses, Main street, cost \$4,000; A. Moote, five brick houses, Tisdale street, cost \$12,000; E. C. Horn, brick theatre, corner Main and Catherine streets, cost \$60,000; F. J. Lyne, two brick houses, corner Delaware and Sandford avenues, cost \$4,000.—The Dominion Power & Transmission Co. have decided on the erection of new car shops.—The Y.M.C.A. authorities are considering the erection of a new building.—The Presbyterians have selected a site, corner Fairleigh avenue and Main street, on which to erect a new church building.

—The City Engineer has received a report from K. L. Aitken, Consulting Engineer, Toronto, estimating the cost of installing a 9,000,000 gal'on pump at \$30,000.—J. Bryers has decided on the erection of thirteen dwellings on King street at a cost of \$45,000.—The Ontario Railway and Municipal Board have approved of the plans for erection of the Hamilton Cataract, Power, Light & Traction Company's transmission line through Barton and Lancaster townships.—The Landed Banking & Loan Company will demolish the Wentworth Chambers and erect on the site a three-storey building.

VICTORIA, B.C.—The City Council have decided to expend only \$5,000 on the alterations to the City Hall. The appropriation asked for was \$18,000.—

The original plans for the new Court House have been changed to provide for the erection of a larger building at an increased cost of \$80,000.—The following by-laws will be submitted to the ratepayers on April 4th: Purchase of school sites and erection of buildings thereon at a cost of \$36,500; construction of surface drains at a cost of \$50,000; erection of building and purchase of incinerator plant at a cost of \$45,000.—W. W. Northcott, City Purchasing Agent, will receive tenders up to April 8th for supply and installation of pumping equipment. Specifications at office of Water Commissioner.—Plans have been prepared for the proposed Nurses' Home at the Provincial Royal Jubilee Hospital. The building will be of the most modern type and will cost \$8,000.—The Provincial Hospital for the Insane are asking the Government for an appropriation of \$10,000 with which to erect an additional storey on their building. They also ask for a grant of \$75,000 with which to commence the erection of the new hospital.—W. W. Northcott, City Purchasing Agent, will receive tenders up to April 8th for erection of an electric transmission line between this city and Beaver Lake. Specifications at office of Water Commissioner.

MONTREAL, QUE.—The Canadian Pacific Railway will undertake construction of 1492 miles of road as follows: Craighurst, Ont., to Sudbury, 173.8 miles; Milverton, Ont., to Goderich, 39 miles; Walkerton, to Proton, 37.5 miles; Listowell, to junction with Guelph & Goderich Railway at Linwood, 16.34 miles; from Teulon, Man., northward, 20 miles; extension of Pheasant Hills Branch to a junction with Wetaskiwin Branch, completing connection between the Calgary & Edmonton line at Wetaskiwin, Alta., and the main line at Kirkella, Man., 348 miles; Lauder, Man., westward, 29.40 miles; Wolseley, Sask., to Kaiser, 24.2 miles; Weyburn, Sask., to Stoughton, Sask., 37 miles; Moose-Jaw, northward, 50 miles; extension of Wetaskiwin Branch, eastward, 48.5 miles; Bredenbury, to Esterhazy, 20 miles; Sheho, Sask., northwest to a junction with Pheasant Hills Branch, 82.89 miles; Lethbridge to Macleod, change of line, 31.37 miles; Double Tracking: Winnipeg to Fort William, 426.7 miles; St. Anne's to Smith's Falls, 108 miles.—The following building permits have been issued: A. Rousseau, tenement house, St. Hubert street, cost \$5,000; McLaughlan Carriage Company, warehouse, St. Maurice street, cost \$11,000; J. Date, remodelling house, Peel street, cost \$6,000; L. E. Ouimet, alterations to house, 626 East St. Catherine street, cost \$8,000; J. H. Caille, tenement house, Alvin street, cost \$3,000; F. Rosconi, two houses, Wolfe street, cost \$6,000; E. Goudron, tenement house, Delisle street, cost \$5,000; F. Brochu, tenement house, Ontario street, cost \$3,000; N. Gagnon, tenement house, Ontario street, cost \$3,000.—M. Workman will erect a six storey building on West St. Catherine street.—Cox & Amos have been appointed associate architects in connection with erection of new building for the Union Brewery, Limited.—J. Eveleigh & Company have purchased a large site on Metcalf avenue on which to erect a factory building.—H. Morgan & Company have purchased a block of land on which a large factory will be erected.—The Catholic School Board have decided to spend \$20,000 in equipping their schools with fire-escapes.

WINNIPEG, MAN.—Jewett & Tuttle, have completed plans for the erection of brick and stone edifice for Emanuel Baptist Congregation, corner Emily street and Bannantyne avenue, to cost \$35,000.—The same architects are pre-

paring plans for a two-storey brick and stone apartment block to be erected corner Toronto and Lavinia streets for C. Robb.—H. Rugb, architect, has completed plans for an apartment block to be erected on Ross street for the Fort Rouge Building Co., to cost \$40,000.—A building permit has been granted W. J. Bettington for erection of residence on Wellington crescent to cost \$25,000.—V. W. Horwood, architect, will receive tenders up to April 8th for erection of school building at Innisfail.—Oldfield, Kirby & Gardner, agents for owners, state that a twelve-storey fire-proof office building is to be erected on Main street, adjoining the Post Office.—The Public School Board have decided to equip the school building with fire-escapes.—J. Robinson & Company have been granted a building permit for erection of a two-storey brick stable, cost \$15,000.—J. D. Atchison, architect, is preparing plans for a twelve-storey fire-proof office building to be erected on Main street for A. M. Fraser at an estimated cost of \$175,000.—The Board of Control will shortly call for tenders for supply of ten miles of sewer pipe.—F. R. Evans, architect, is preparing plans for a brick and stone residence for D. McQuatt.—The same architect is preparing plans for a two-storey brick warehouse for D. Ackland & Sons.—J. H. G. Russell, architect, will receive tenders up to April 5th for rebuilding Bright & Johnson's warehouse and erecting an additional storey on the adjoining building.—J. Chisholm, architect, will receive tenders up to April 6th for erection of an addition to the Manitoba Cartage Co.'s stables.—Eade Bros., architects, are preparing plans for residence to be erected corner Jessie and Helen streets for R. O. Taylor.—The Board of Control will call for tenders for

power plant immediately.—It is reported that the Northern Bank will erect bank and apartment building, corner Portage avenue and Sherbrooke street. W. Blair, architect.—The Winnipeg Rowing Club are considering the erection of a new club house.—The Nassau street Baptist church congregation have instructed G. G. Teeter, architect, to prepare plans for brick and stone church to cost \$30,000.

TORONTO, ONT.—Plans have been prepared for erection of new greenhouses at Exhibition Park.—M. W. Glendon has purchased property on Yonge street, on which he will erect a new building.—The Board of Control have instructed the City Engineer to proceed at once with the construction of the Lansdowne avenue subway.—C. J. Gibson, architect is preparing plans for a new Y.M.C.A. building to be erected at Sherbrooke, Que., to cost \$30,000.—The Chairman Board of Control will receive tenders up to April 9th for purchase of electric lighting plant at Island Park. Full particulars on application to Commissioner of Parks.—Tenders wanted at Moyer's drug store, corner Bloor and Bathurst streets, for erection of brick stores.—Cowan & Co., architects, want tenders for alterations to building on Church street.—J. H. Galloway, architect, is preparing plans for three brick dwellings to be erected on Harvard avenue for P. Atkinson, to cost \$8,000, also for alterations to dwelling at

15 Gerrard street west for T. W. Czrczic. The same architect will receive tenders from April 8th to 18th for erection of following buildings: Residence, Avenue road, for T. W. Miller, cost \$6,000; residence, East Roxborough street, for A. D. Fisher, cost \$4,200; residence, Havelock street, for J. M. Prentiss, cost \$4,000.—L. Foulds, architect, is preparing plans for brick dwelling to be erected on Fermanah ave., to cost \$3,300.—The Board of Works have recommended the construction of a concrete wall at Ashbridge's Bay, cost \$64,000, also the laying of the following pavements: Asphalt—Gladstone avenue, Queen to Dundas streets, cost \$16,279; Barton avenue, Bathurst street to Albany avenue, cost \$1,604; Grace street, 1,404 feet north of College street to 250 feet further north, cost \$1,363; Franklin avenue, Ruskin avenue to north end, cost \$10,496; Barton avenue, Christie street to Manning avenue, cost \$4,149; Duchess street,

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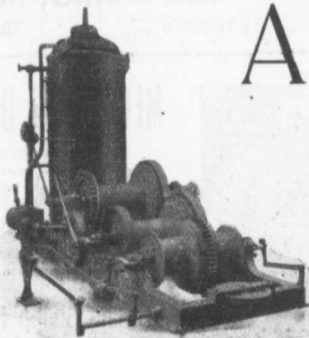
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Jarvis to Sherbourne streets, cost \$7,807; Vitriified block—Esplanade, on east side of Don River, from Queen street to 250 feet north of Matilda street, cost \$9,465.—The City Architect has issued the following building permits: Freyseng Cork Company, three-storey addition to factory, cost \$7,000; Hyslop Brothers, two-storey concrete garage, Shuter and Victoria streets, cost \$30,000; A. D. Adamson, brick house, corner Palmerston and Vermont avenues, cost \$4,500; Wright & Bartlette, pair houses, corner Dufferin street and Muir avenue, cost \$5,000; T. Eaton Company, six-storey brick store, corner Young and Albert streets, cost \$170,000; F. L. Belcroft, two pair houses, Ann street, cost \$9,000; W. Nash, six roughcast houses, 130-140 Bellwoods avenue, cost \$9,000; W. S. Walker, house, Palmerston Boulevard, cost \$5,000; T. Kelly, three pair roughcast houses, 39-49 Broadview avenue; T. Elliott, three houses, Markham, cost \$7,500; C. D. Ten Eyck, house, Lyndwood avenue, cost \$5,000; Alice Brown, house, Albany avenue, cost \$4,000; Hudson Brothers, two pair houses, St. Clarens avenue, cost \$9,000; C. E. Proctor, pair houses, Delaware avenue, cost \$7,000; C. W. Chadwick, two pair houses, corner Parliament and Wellesley street, cost \$5,000; Thomas McIlwaine, house, 143 Jamison avenue, cost \$5,500; Caleb Evans, house, 468 Palmerston boulevard, cost \$6,000; R. Donkin, two pair roughcast houses, 310-316 Pape avenue, \$6,400; J. J. Walsh, two pair houses, Dunn avenue, cost \$12,000; J. J. Walsh, two pair houses, 535-541 Huron street, cost \$15,000; J. J. Walsh, seven houses, 9-21 Wilson avenue, cost \$25,000; J. J. Walsh, three pair houses, 61-67 and 76-78 Wilson avenue, cost \$18,000; W. H. Marks, house, Emerson avenue, cost \$4,000; R. C. Vaughn, pair houses, St. George street, cost \$6,000; Ambrose Kent and J. W. Page, four pair roughcast houses, St. Clarens avenue, cost \$10,000.

FIRES.

Roman Catholic church, Marieville, Que., loss \$80,000.—Powell House, Commercial Hotel and C. & M. Mills' store, Iroquois, Ont., totally destroyed.—North Star Grain Exchange elevator, Abernethy, Sask., totally destroyed.—Victoria Hotel, Indian Head, Sask., loss \$150,000.

CONTRACTS AWARDED.

ST. THOMAS, ONT.—Remodelling of store for Molson's Bank: H. Lindop, this city, contractor.

ST. CATHARINES, ONT.—Erection of building for Sovereign Bank: Newman Bros., this city, contractors.

WELLAND, ONT.—Erection of two-storey brick building for J. S. O'Neal: M. Vanderburg, this town, contractor.

LUCKNOW, ONT.—Erection of Carnegie Hall and Library building: Bryan & Henderson, this town, contractors.

SOURIS, P. E. I.—Construction of large reinforced concrete railway wharf: E. A. Wallberg, Montreal, contractor.

VANCOUVER, B. C.—Erection of Bower Block on Granville street to cost \$40,000: Baynes & Horie, contractors.

HALIFAX, N.S.—Interior wood work fittings in Detention hospital: Spencer Bros. & Turner, Truro, N.S., contractors.

ST. GEORGE, N. B.—Erection of metal superstructure for St. George Lower Bridge: Dominion Bridge Co., Montreal, successful tenderers.

OTTAWA, ONT.—Furnishing of 1,000 feet Peerless brand fire hose: Gutta Percha & Rubber Manufacturing Co., Toronto, successful tenderers at 90 cents per foot.

VICTORIA, B. C.—D. H. Bale, contractor, has been awarded contracts for

erection of residences for E. Pfordner, Madame G. Fausch de Kerpezdion and Mrs. Blantly.

WINNIPEG, MAN.—The Vulcan Iron Works, this city, have the contract for cast iron columns for the T. Eaton Co.'s addition, also for iron work for Faichild Co.'s new premises.

NORTH BAY, ONT.—Erection of large office building for Temiskaming & Northern Ontario Railway Commission: O'Boyle Bros. Construction Co., Sault Ste. Marie, contractors.

GRANBY, QUE.—Erection of Anglican church, to cost \$30,000: Simoneau & Dion, Sherbrooke, contractors. Dominion Bridge Co., Montreal, contractors for steel work. Cox & Amos, Montreal, architects.

INGERSOLL, ONT.—Nagle & Mills, contractors, this town, have received a contract from the Dominion Government to build a Post Office at Owen Sound. The building will be of cut stone, and the contract price \$65,000.

ELMIRA, ONT.—H. J. Bowman, C.E., has awarded the contract for supply of water pipe to Gartshore-Thomson Pipe & Foundry Co., Montreal, at \$37.50 per ton; supply of special castings to the same firm at \$3.25 per hundred pounds.

NIAGARA FALLS, ONT.—Furnishing meters and regulators for city: Canadian General Electric Co., Toronto, successful tenderers at \$1,257.25.—The only other tender was that of the Canadian Westinghouse Co., which was \$1,393.70.

SUSSEX, N.B.—L. R. Fair, architect, Aylesford, N. S., has awarded contracts for erection of \$40,000 High school building as follows: Lutz & Cripps, this town, general contractors. J. E. Wilson, St. John, contractor for metal work.

OTTAWA, ONT.—Steel work in connection with erection of three public school buildings: Canadian Agency & Supply Company, successful tenderers, at \$4,643.99. Other bidders: W. F. Colston, \$5,475; Ottawa Fire-Proofing Company, \$5,540; and the General Supply Company, \$5,540.

MONTREAL, QUE.—Erection of power house at a cost of \$80,000 for Montreal General Hospital: C. E. Deakin, this city, contractor.—Erection of bank building for Canadian Bank of Commerce: Canadian White Co., this city, contractors. Darling & Pearson, Toronto, architects.

EDMONTON, ALTA.—Supply of Portland cement for this city: Gorman, Glancy & Grindley, successful tenderers, at \$3.40 per barrel f.o.b. Edmonton. Other bidders, W. H. Clarke & Co., \$3.90; Revillon Bros., \$3.65; Wm. Black, Winnipeg, \$3.65; Edmonton Fruit & Produce Co., \$5.60.

PRINCE ALBERT, SASK.—Supply and installation of engines for electric light plant: Goldie & McCulloch Co., Galt, Ont., successful tenderers, at \$14,520; dynamos, etc., Allis-Chalmers-Bullock, Montreal, at \$9,085; boilers, Canada Foundry Co., Toronto, at \$2,632.—Erection of departmental store building

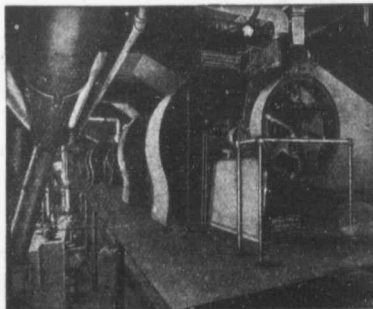
for Rev. Mr. Moore to cost \$40,000; W. J. Wright, this city, contractor.

SASKATOON, SASK.—Snyder Bros., Regina, have been awarded contract for the erection here of a new brewery to cost \$100,000.—The same firm have also obtained contract for erection of fine hall at Regina at cost of \$29,800. A. & W. Melville, architects, Winnipeg.—Laying of 27,000 feet sewer and water pipe for city: Saskatoon Construction & Engineering Co., this city, successful tenderers at \$68,777.—Construction of concrete foundation for water tower, the same firm at \$2,970.

GUELPH, ONT.—W. T. Tanner, architect, has awarded contracts for erection of brick residence for J. Monkhouse as follows: Stone and brick work, Johnston & Williams; carpenter work, J. Marshall; tinsmithing, W. Heather; plastering, J. J. Mahoney; painting, T. A. Cormie. Also for double house to be erected for H. Heather as follows: Stone and brick work, J. Oakes; carpenter work, J. Marshall; tinsmithing, W. Heather; plastering, J. J. Mahoney. — L. C. Wideman, architect, has awarded contracts for erection of dwelling on Grove street and residence on Arthur street to J. W. Fleming, this city.

TORONTO, ONT.—W. G. Burns, architect, has awarded contract for carpentry work in brick residence on St. Ann street for James Kerr to S. Frame. The same architect has awarded contract for carpentry work in three stores on Dundas street for A. Burns to W. Moss.—F. H. Herbert, architect, has awarded the following contracts: Erection of apartment-house corner Agnes and Elizabeth streets for H. Wineberg: Brick work, R. Chalkley & Son; carpenter work, F. Armstrong; painting, G. McComb; plastering, T. Blackburn; steel and iron, McGregor & McIntyre; roofing and iron, A. B. Ormsby, Limited. Erection of residence on St. George street for J. G. Carroll: Carpenter work, T. Westlake; painting, F. E. Phillips; plastering, Taylor & Nesbett; roofing and iron, Rennie & Son. Erection of residence on Maple avenue for J. Laishley: Brickwork, Moore & Stewart; carpenter work, Hanks & Son; plastering, Dancy Bros.; painting, Fletcher & Winn.—The Roman Stone Co. have been awarded contracts for supply of cut and roman stone for following buildings: Apartment house for Hart Estate, Montreal; bank building for Royal Bank, Montreal, and bank buildings for Standard Bank at Belleville and Cobourg.—J. H. Galloway, architect, has awarded contracts for erection of residence on Balmoral avenue for W. V. Ecclestone as follows: masonry, S. J. Coles; carpenter work, W. Heap; plumbing and heating, Bennett & Wright; plastering, T. Fitzgerald.

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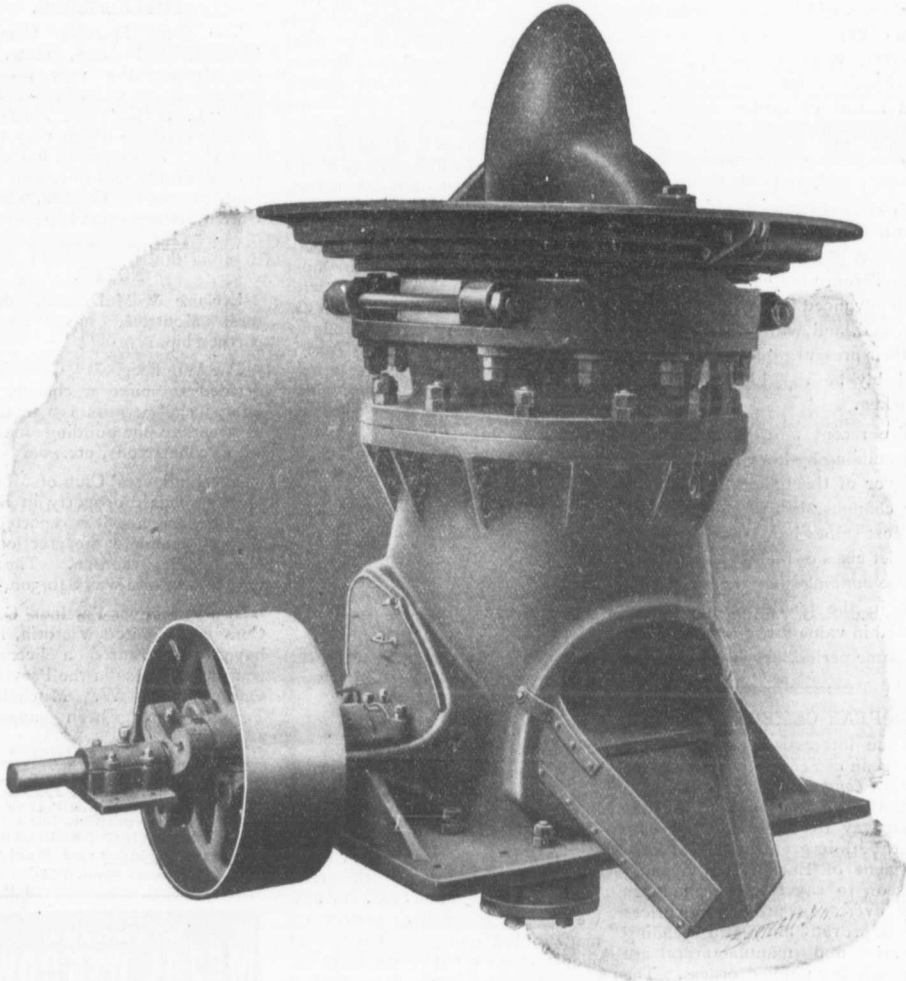


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THE OUTLOOK.

From present indications the building season which is just commencing will be one of the largest in the history of Canada. Simultaneous with the reports that millions of dollars will be spent in the erection of buildings in all parts of the country, come demands from the labor unions for increased wages, and notice of further increase in the price of building materials.

The price of lumber is high at present, and, notwithstanding this fact, a report comes from Vancouver that a further increase will shortly be made.

In Toronto the price of sand has been advanced from \$1.25 to \$2.00 per load, and with other materials at their present prices building will probably be 10% higher this year than last.

The recent amendments to the city building by-laws are, however, in favor of the builder. There are few changes, but they will lessen the cost somewhat, especially in the smaller class of buildings.

The building permits issued this year in the leading cities largely exceed in value those issued during the same period last year.

EUROPEAN CEMENT ACTIVITY.

Some interesting figures as to European cement activity are given in the *London Times*, which says that the stagnation in 1905 has given way to a decided improvement, both in great Britain and the continent of Europe. This paper goes on to say that "demand has fully overtaken production, prices are improved and still tending upwards and manufacturers are accumulating unfilled orders. The San Francisco rebuilding needs created an unusual demand for cement, but before that there were unmistakable signs of recovery."

During the year 1905 the total shipments from the United Kingdom to the United States amounted to 11,590 tons, and in 1904 to 5,073 tons, while for the seven months ended July 31, 1906, they had already reached the comparatively large total of 60,932 tons. The total British exports in 1905 amounted to 456,558 tons, while the exports for the first seven months of 1906 were 385,551 tons. The maximum annual production of Portland cement in Great Britain is estimated at about 3,000,000 tons.

Belgium exports annually considerable larger quantities of cement than Great Britain, the total for 1905 being 679,426, and for 1904 558,295 metric tons. For the first six months of 1906 the exports amounted to 380,556 tons. It is

claimed on behalf of the Belgian exporters that by prompt action after the earthquake at San Francisco they secured the lion's share of the newly created business with that city.

But the export figures for the six months to the end of June in 1906 show that the shipments from Belgium to America fell short of what was shipped from Great Britain, being 41,332 metric tons, against 49,540 long tons from Great Britain. A productive capacity of the thirteen syndicated mills in Belgium is about 700,000 tons per annum, and at the present time these mills are turning out a full production.

The German cement manufacturers have been the chief competitors with certain markets, the most pronounced success being with America. In 1902 the German exports to the United States amounted to 246,730 tons out of total American imports of 699,380 tons, largely met by local manufacture, which reduced the exports from Germany to 88,043 tons in 1905, out of a total import of 617,891 tons. The recovery in the German cement trade is as clearly marked as in England, being helped by the extraordinary activity in the German building trades. The works of the several syndicates are being pushed to the fullest extent. The German exports for the first half of 1906 amounted to 803,626 metric tons, of which 71,288 tons went to the United States, against 46,556 tons the first half of 1905.

SEWER PIPE OF REINFORCED CONCRETE.

In Germany and France and other countries of Europe sewer pipe of concrete has been in use for many years; however, lately the reinforced idea has taken hold, and now we find that many large sewers are made in that manner. The cement people claim many advantages for concrete sewer pipe, first, that it will hold water better than either clay sewer pipe or sewer constructed of brick; second, that they will stand more pressure than clay pipe. They are cheaper than clay sewer pipe, and are usually made right at the place of the sewer construction, which saves a large amount of freight and handling.

PERSONAL.

Mr. W. Muir Edwards, M.Sc., has recently been appointed assistant professor of civil engineering in McGill University. Mr. Edwards has for some years been a lecturer in both civil engineering and mathematics in McGill.

Mr. W. McNab, assistant chief engineer of the Grand Trunk Railway, was elected vice-president of the American Railway and Maintenance of Way Association at the recent convention held at Chicago.

Mr. J. H. Hamilton, C. E., having resigned his position as Town Engineer of Amherst, N. S., has accepted the management of the Maritime Gypsum Co., Amherst Point.

PUBLICATIONS.

The Scott Machine Company, Limited, of London, Ont., have recently issued a very attractive booklet, which describes very fully the "L. & K." test boring and drilling machine which they manufacture. This machine has several very desirable features, and is already patented in Canada, while the United States patent is pending.

NOTES.

Leclair & McDonald, contractors, Montreal, have dissolved partnership.

The Winnipeg City Council have decided to make a charge, hereafter, for all permits issued for use of streets to pile building material, sewer connections, etc., on.

The Engineers' Club of Montreal have purchased property in Beaver Hall Square, and it is reported that they contemplate the erection of a club building thereon. The price paid for the site was \$40,500.

The Vancouver Portland Cement Company, Limited, Victoria, B. C., have been granted a license to transact business in the Province of Ontario. J. W. Mitchell, of Toronto, has been appointed attorney.

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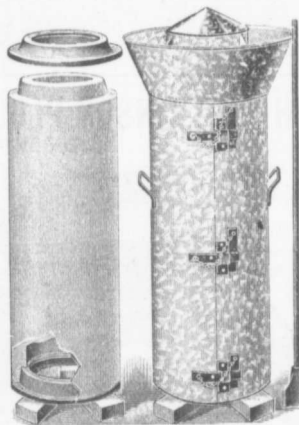
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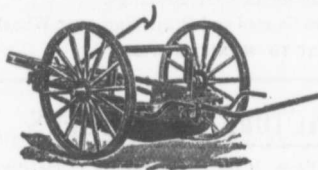


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METHODS OF HANDLING CONCRETE.

On heavy concrete work one of the most important items of cost is the conveying of the concrete to place from the mixer. In many instances three-quarters or more of the concrete is at a low level and the mixer and bins may be put high enough to avoid elevating a large per cent. of the material after mixing. This should be done if the dry materials can be, as is usually the case, delivered economically to the machine. Inclined chutes of smooth plank may then be used. Rich grout will flow on a slope of about 20 deg., while dry mixtures require 40 to 45 deg.

When the work is of some magnitude time and money will usually be saved by installing labor-saving machinery for handling the concrete. Cableways, derricks, railways and elevators are all adaptable to certain conditions. The cost of labor and the scarcity of good men ordinarily makes the wheelbarrow uneconomical. In delivering materials to the mixer wagons and cars, or when the grade is too steep for these, cableways are used. A heavy team can haul a five-yard dump car, with ordinary bearings, weighing when loaded about 12 tons, on grades up to 2 per cent. Locomotives operate on grades up to 4 or 5 per cent.

When the area of delivery is long and narrow a single cableway may be used. An outfit of 800-ft. span, capable of handling 1 cu. yd., costs, complete with boiler, hoist and stationery towers, about \$4,500 to \$5,000. Such an arrangement should handle an output of 200 cu. yd. per 10-hour day. When the area is too wide to be supplied from one cableway, derricks may be used to rehandle the material, or if the area is very wide several cableways may be necessary. Cables with movable towers are often found efficient. On long retaining walls or dams, conveying by cables is an especially economical method.

If the total width covered by the work is a large fraction of the length a trestle and car plant may be more flexible and cheaper than a cableway. This is especially likely if the distance from the mixer to the further boundary is less than 500 ft. Assume the structure to be 100 x 200 ft. in plan, with three-quarters of its bulk below the economical elevation of the mixer, and the mixer within 50 ft. of the near side of the work. If the concrete is less than 3,000 cu. yd. in bulk and the time is reasonable, one mixer of 200 cu. yd. per day capacity will be suitable. The cost of a car and trestle plant to fit the above conditions, consisting of three 3/4-yd. steel cars, two turntables, five split switches and 30-ft. trestle legs necessary for 150 lin. ft. of double track, is estimated at \$565 by Mr.

Wm. G. Fargo in an article published by the Michigan Engineering Society, from which these notes are taken. This outfit should last five seasons and the timber work for several jobs. The first cost, plus

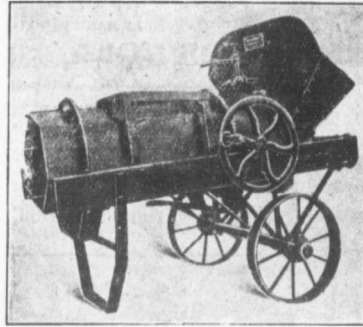
10 per cent. for repairs and renewals, divided by five gives \$124.30 as the yearly rental for the plant. This amounts to about \$1 per day for a season of five months. To operate the plant five men are

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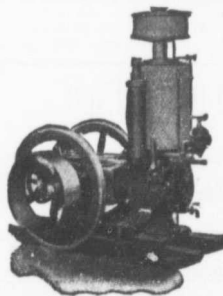
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needed, three car pushers, one man to help dump and one to operate the switches and turntables. Figuring labor at \$1.75 per day, the cost of handling 200 cu. yd. in a day is at the rate of 4 $\frac{3}{8}$ cents per yard. This means, according to Mr. Fargo, a saving of about 5 $\frac{3}{4}$ cents per yard as compared with the cost of delivering in wheelbarrows. By using two-wheel steel push carts, holding 4 or 5 cu. ft., as high as 100 cu. yd. per day can be handled without incurring the expense of cars, rails, switches, etc.

The Muskegon river dam, built under Mr. Fargo's supervision, contains 13,000 cu. yd. of concrete. There the mixer was placed on the ground at $\frac{2}{3}$ the height of the concrete work. The 1,500 cu. yd. above the car track was delivered with a cage hoist on which the small tip cars were elevated to the work. At the Ceresco, Mich., dam, with 25 ft. total height of concrete, the car track was within 8 ft. of the top of the work, and as the upper portions of the walls were thin reinforced concrete, it was economical to use wheelbarrows on steep inclines and also to shovel up to platforms. On this work the mixer and several pumps and a lighting plant in the camp were run with current secured from a nearby interurban line.

It is not practicable to handle wet concrete with belt or bucket conveyors, but the dry materials may be readily handled by such methods. Concrete cars should be of simple construction, easily cleaned, dumping at both sides or both ends as desired, and without moving parts, which will become clogged with concrete. The size of car or bucket to be used depends somewhat on the character of the work. For most building work or thin reinforced work a yard batch is rather large to dump into the forms handily, and a small batch is preferable. On massive dams or heavy foundations the yard or 1 $\frac{1}{2}$ -yard bucket is satisfactory.—Engineering Record.

CEMENT MANUFACTURE IN CANADA.

The total quantity of Portland cement manufactured in Canada in 1906 was 2,152,562 barrels, as compared 1,541,568 barrels in 1905, an increase of 610,994 barrels, or 39.6 per cent. The total sales of Portland cement were 2,119,764 barrels as compared with 1,346,543 barrels in 1905, an increase of 775,216 barrels, or 57.4 per cent.

Fifteen companies were operating plants during 1906, with a total daily capacity of about 10,500 barrels, namely: one in Nova Scotia; two in Quebec; eleven in Ontario; and one in British Columbia. At least four plants were under construction during the year, of which

8 TO 10

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the total initial daily capacity will be about 4,700 barrels.

Detailed statistics of production in 1905 and 1906 are as follows:—

	1905.	1906.
	Bbls.	Bbls.
Portland cement sold.....	1,346,548	2,119,764
Portland cement manufactured	1,541,568	2,152,562
Stock on hand 1st January...	111,446	269,558
Stock on hand 31st December	306,466	302,356

Value of cement sold..... \$1,913,740 \$3,164,807
Some companies do not take stock at the end of the calendar year, consequently their estimates of stock on hand do not always agree from year to year.

The average price per barrel at the works in 1906 was \$1.49 as compared with \$1.42 in 1905.

The imports of Portland cement into Canada in 1906 were:

	Quantity	Value
	Cwt.	
Six months ending June.....	945,187	\$319,021
Six months ending December	1,485,573	\$459,685

The year 1906 2,430,760 \$778,706
This is equivalent to 694,505 barrels of 350 pounds each at an average price per barrel of \$1.12. The duty is 12½c. per hundred pounds.

The imports in 1905 were equivalent to 917,558 barrels valued at \$1,138,548, or an average price per barrel of \$1.24.

There is very little cement exported from Canada. The consumption is therefore practically represented by the Canadian sales together with the imports.

The following is an estimate of the consumption of Portland cement in Canada for the past six years.

Year	Can'n Imported	Total
	Bbls.	Bbls.
1901.....	317,066	555,900
1902.....	594,594	544,954
1903.....	627,741	773,678
1904.....	910,358	784,630
1905.....	1,346,548	917,558
1906.....	2,119,764	694,503

NEW COMPANIES.

Federal Oil Company, Limited, Toronto, Ont., incorporated, capital \$200,000. Directors, T. H. Barton, F. D. Byers and O. F. Taylor.

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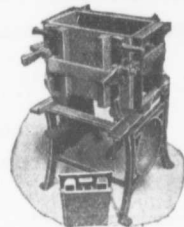
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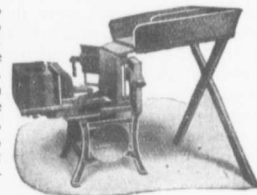
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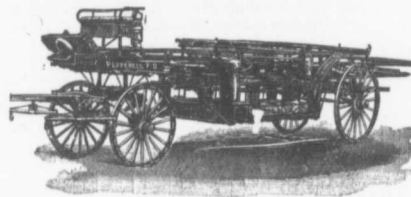
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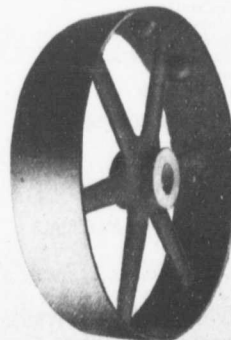


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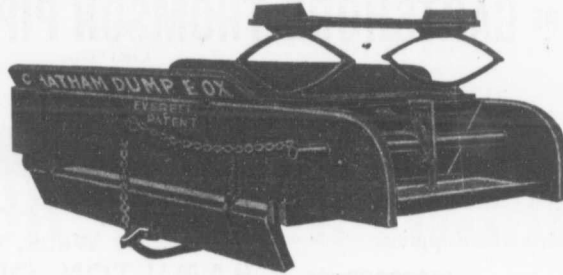
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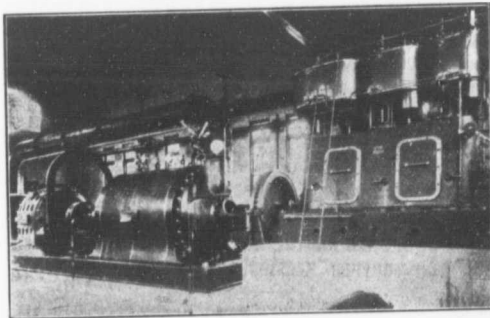
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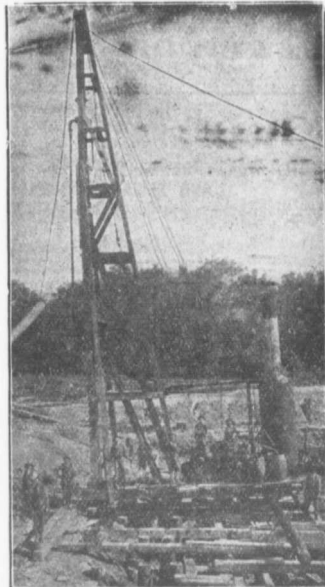
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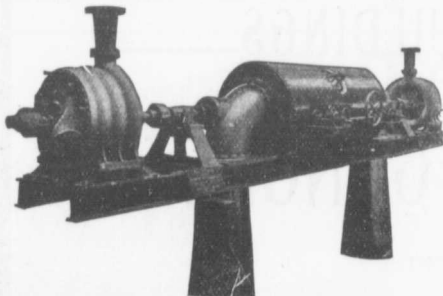
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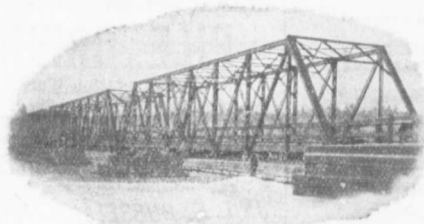
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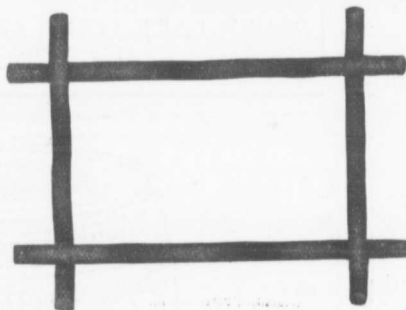
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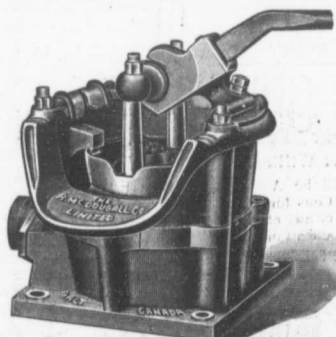


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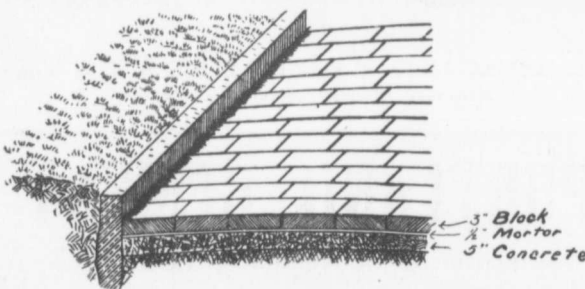
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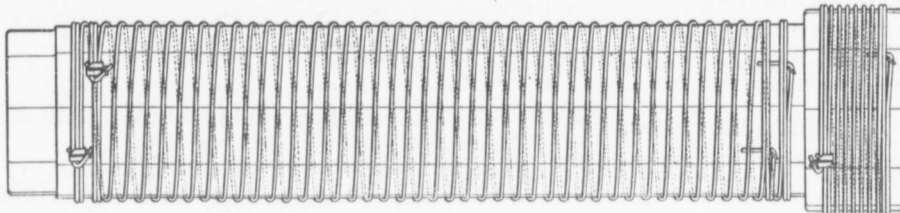
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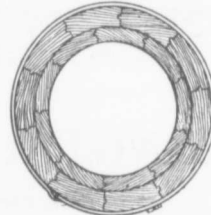
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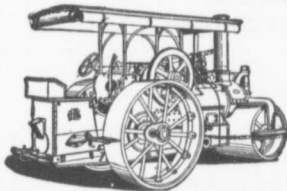
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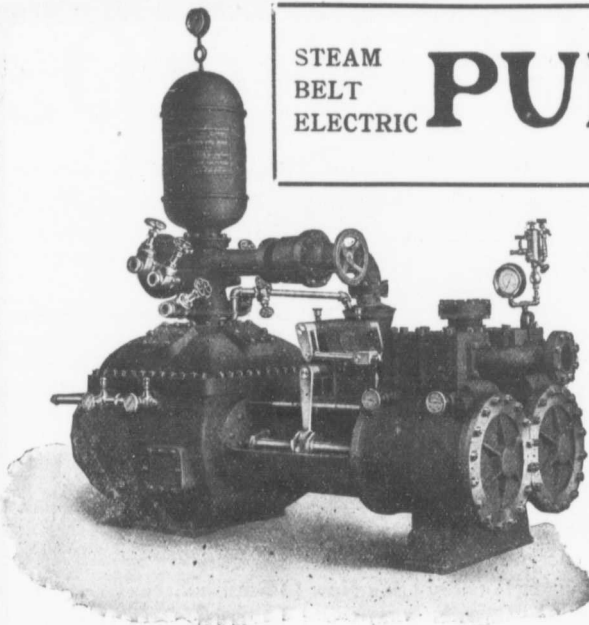
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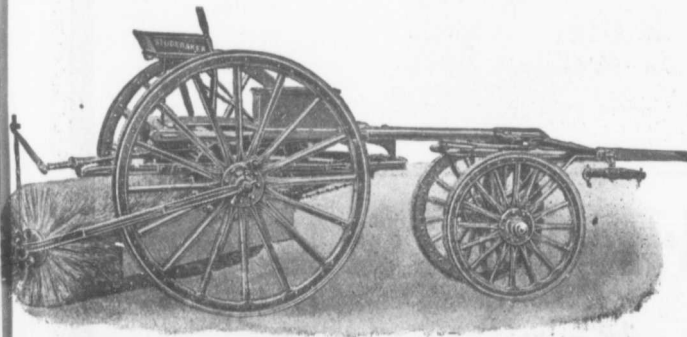
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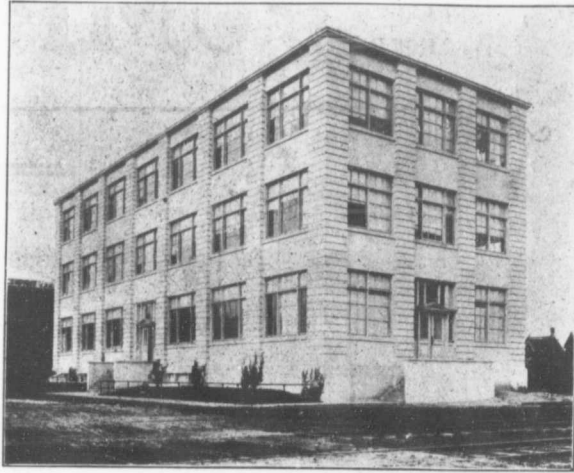
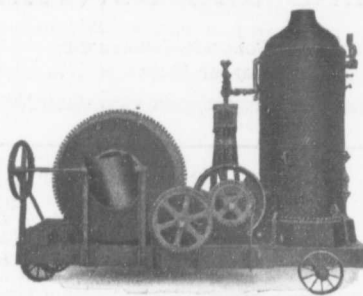


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