

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 — JUNE 5, 1907 — WINNIPEG, VANCOUVER

No. 14

THE CANADIAN CONTRACT RECORD

PUBLISHED EVERY WEDNESDAY

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THE C. H. MORTIMER PUBLISHING COMPANY
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Telephone 1274

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

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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 them 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.

FOR SALE

The Board of Water, Light & Telephone Commissioners of Fort William have the following machinery for sale, owing to the purchasing of Electric Power from the Water Power Company:

3 Boilers, 72" in diameter by 16 feet long, 100 pound steam.

1 Dean Condenser, vertical, 1,000 H. P. capacity.

1 Tandem Compound Engine with cylinders, 21x46 40x46, ran 2 years.

1 Engine 20x46, ran 7 years, together with counter shafting, pulleys and belting complete.

1 Westinghouse revolving field 600 k.w., 2 phase, 60 cycle, 2,400 volt generator, with exciter, switchboard and appliances complete.

1 Royal electric 180 k.w., 133 cycle, 2,400 volt generator, with exciter, switchboard and appliances complete.

The above machinery is now in the City Power House and in first-class condition. Will sell in bulk or in part.

Apply to
BOARD OF WATER, LIGHT & TELEPHONE COMMISSIONERS,
or to

JOHN M'RAE.

General Superintendent,
Fort William, Ont.

CONTRACTORS' PLANT FOR SALE

4 Steam Shovels, extra heavy, heavy and medium; 10 Locomotives, 2 ft. gauge; 150 Dump Cars, a number of each 3 and 4 yd. cars; Construction Rails, about 400 tons of 40, 45 and 50 lb.; 6 Hoisting Engines; 4 Portable Boilers and Engines; 6 Centrifugal and Duplex Pumps; 6 Concrete Mixers; several miles Water Pipe, 3/4" to 2"; Water Tanks; Camp Outfits; Wagons; Harness; Buggies, etc. M. A. PIGOTT & CO., Goderich, Ont.

CITY OF WOODSTOCK

Preliminary competitive plans for a new City Hall for the City of Woodstock are invited, cost of building \$50,000.

For information apply to

JOHN MORRISON, City Clerk,
Woodstock, Ont.

Tenders for Cement Work

Tenders will be received by the undersigned till 12 o'clock noon of TUESDAY, THE 11TH DAY OF JUNE, 1907, for the erection of a Cement Abutment for the Glenmorris Bridge in the County of Brant. Plans and specifications may be seen at the County Clerk's office.

A. E. WATTS,
County Clerk.

Dated at Brantford, 27th May, 1907.



Temiskaming and Northern Ontario Railway Commission.

TENDERS FOR Blacksmith Shop

Sealed tenders, addressed to the undersigned and endorsed, "Tender for Blacksmith Shop" will be received up to 5 p. m. on the 26TH DAY OF JUNE, 1907, for the erection of a Blacksmith shop at North Bay, Ontario.

Plans and specifications may be seen at the office of the Commission, 25 Toronto Street, Toronto, and at the office of the Chief Engineer, North Bay.

A certified cheque for \$500.00 must accompany each tender.

The successful tenderer must enter promptly into a contract and furnish security for the amount of \$1,500.00 for the due completion of same.

Cheques of unsuccessful tenderers will be returned to them.

The lowest or any tender not necessarily accepted.

A. J. MCGEE,

Secretary-Treasurer.

Toronto, May 23rd, 1907.

Papers inserting this advertisement without authority will not be paid for same.

English Clerk of Works for building operations seeks engagement. JOHN HOLDEN, 177 Seaton Street, Toronto, Ont.

TENDERS

will be received by the undersigned up to the 15TH DAY OF JUNE, for the construction of certain Cement Concrete Walks in the Village of Markdale, approximating 22,000 square feet. Specifications and other information furnished.

No tenders necessarily accepted.

J. G. MATTHEWS,
Secretary of Committee.

CITY OF REGINA

NEW CITY HALL FURNITURE AND FITTINGS

The undersigned will receive tenders up till 5 o'clock p.m. on TUESDAY, JUNE 11, 1907, for: (1) Furniture and Fittings for Council Chamber, Police Court and Public Offices; (2) Steel Fittings for Vaults, all for the new City Hall, Regina, according to plans and specifications to be supplied by the City Clerk on application. Tenderers must submit cuts of furniture and fittings along with their tenders and refer to them by number. The lowest or any tender not necessarily accepted.

J. KELSO HUNTER,
City Clerk.

Regina, Sask., May 8, 1907.



Department of Railways
and Canals

RIDEAU CANAL

Notice to Dealers in Cement

Sealed tenders, addressed to A. T. Phillips, Superintendent Engineer, Rideau Canal, Ottawa, and endorsed "Tender for Cement" will be received until 10 o'clock on FRIDAY, THE 21ST JUNE, 1907, for the supply of 1,600 barrels of Portland Cement, to be delivered in bags into the Ottawa Forwarding Company's sheds, in the Canal Basin, in the City of Ottawa, by the 31st July, 1907.

Specifications can be procured at the office of the Superintendent Engineer of the Rideau Canal, Canadian Building, Ottawa, on and after this date.

The Department does not bind itself to accept the lowest or any tender.

By order,

L. K. JONES,

Secretary.

Department of Railways and Canals,
Ottawa, 25th May, 1907.

Newspapers inserting this advertisement without authority from the Department will not be paid for it.

[FOR ADDITIONAL ADVERTISEMENTS FOR TENDERS SEE NEXT PAGE]

FOR SALE

2" plank, dry cull Maple 30,000 feet.
4 x 6 to 10 x 10 timber, cull Cedar 30,000 feet.
2" plank, dry cull Elm 30,000 feet.

M. CRAWFORD,
Campbellville, Ont.

TENDERS FOR Town Hall and Public Library Building

FOR THE
Town of Hanover, Ont.

Sealed tenders addressed to the undersigned, and endorsed "Tenders for Town Hall and Public Library" will be received up to 4 o'clock P.M., JUNE 14TH INST. from all trades for the erection of the new Town Hall and Public Library Building at Hanover, Ontario.

Each tender to be accompanied by a marked cheque for five per cent. of the tender, payable to W. A. Mearns, which will be forfeited if the successful tenderer neglects or refuses to sign his contract when notified of the acceptance of his tender.

Cheques of unsuccessful tenderers will be returned. The lowest or any tender not necessarily accepted. Plans and specifications may be seen at the Mayor's Office, Hanover, and also at the office of the architects, Messrs. G. M. Miller & Co., 59 Yonge Street, Toronto.

DR. W. A. MEARNS, Mayor,
Hanover, Ont.
June 3rd, 1907.

DALHOUSIE, N. B.**Notice to Contractors**

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

Wednesday, June 19th, 1907,

for the following works:

- Contract "G"—Pumping Engine.
- Contract "H"—Two Boilers.
- Contract "I"—Dam and G. te House.
- Contract "J"—Electric Light Engine.
- Contract "K"—Electric Lighting System.

Plans and specifications may be seen on and after May 14th at the office of the Chief Engineer, 103 Bay Street, Toronto, or at Dalhousie, N. B. No tender necessarily accepted.

W. S. MONTGOMERY, Esq., Mayor,
Dalhousie, N. B.
ALEX. J. LE BLANC, Esq., Town Clerk,
Dalhousie, N. B.
WILLIS CHIPMAN, C. E., Chief Engineer,
103 Bay Street, Toronto, Ont.

CITY OF BRANTFORD Sewer Extension

Sealed tenders, addressed to Samuel Suddaby, Esq., Chairman of the Board of Works, in care of the City Clerk, Brantford, Ont., will be received till 12 o'clock noon on THURSDAY, JUNE 20TH, 1907, for the construction of a

PUMPING STATION

and the following sewers:

- About 7,800 feet of extra strength 15 inch sewer pipe.
- About 7,200 feet of extra strength 12 inch sewer pipe.
- About 1,800 feet of 12 inch cast-iron pipe.

Plans and specifications may be seen, and instructions to bidders and forms of tender obtained, at the City Engineer's office on and after the 1st June.

Each tender must be accompanied by a marked cheque for 5 per cent. of the amount of the tender.

The lowest or any tender not necessarily accepted.
T. HARRY JONES,
City Engineer's Office, Brantford, Ont., May 20th, 1907.

For Sale

14,500 ft. of First Class White Pine, \$25 per 1,000 ft. at McQuillan & Co.'s yard, 1457 Queen street west, Toronto. The following are the lengths:
20 pieces 12" x 12" x 20 ft.
13 " 12" x 12" x 18 ft.
11 " 12" x 12" x 17 ft.
22 " 12" x 12" x 15 ft.

Apply to McQUILLAN & CO., 1457 Queen Street West, Toronto.

CONTRACTS OPEN.

PORT ARTHUR, ONT.—It is understood that the C.P.R. intend erecting a large freight shed.

QUEBEC, QUE.—C. A. Paquette & Co. have applied to the City Council for a site for a factory building.

INNISFAIL, ALTA.—G. T. Lundy has had plans prepared for a three-storey addition to the Hotel Alberta.

PORTAGE LA PRAIRIE, MAN.—Nelson & Tyson have purchased property on which to erect a sash and door factory.

DELHI, ONT.—Frankland & Ball, Toronto, are negotiating with the Town Council in reference to the establishment of a factory.

ARCOLA, SASK.—Building operations will commence immediately on the mill to be erected by the Plum Coulee Milling Co.

GUELPH, ONT.—The congregation of Paisley street Methodist church have decided to erect a new church building on Alice street.

LONDON, ONT.—A. O. Graydon, City Engineer, wants tenders up to June 7th for construction of asphalt pavements on Clarence street.

HAMILTON, ONT.—The local Masons have under consideration the erection of a club house and also enlargement of the Masonic Temple.

NEW GLASGOW, N.S.—The Town Clerk and Treasurer wants tenders up to June 25th for purchase of \$11,000 30 year 4½ per cent. town debentures.

FORT WILLIAM, ONT.—The J. I. Case Mfg. Co., of Racine, Wis., have acquired property in this city on which to erect a large branch factory.

WOLSELEY, SASK.—The by law to loan \$20,000 to Joseph Cawthrop & Son for erection of a large flour mill here has been carried by the ratepayers.

REGINA, SASK.—Storey & Van Egmond, architects, are now calling for tenders for erection of business block for J. W. Smith, to cost about \$40,000.

STOUVILLE, ONT.—E. R. Babbington, architect, Toronto, is preparing plans for a rink building for the Stouville Skating & Curling Club to cost \$6,500.

ST. THOMAS, ONT.—Plans have been completed for the enlargement of the Pere Marquette railway shops which include the erection of a new round-house.

RICHMOND, QUE.—E. F. Cleveland, Town Secretary-Treasurer, wants tenders up to June 15th for purchase of \$25,000 4½ per cent. 40 year waterworks debentures.

STRATHCONA, ALTA.—The Strathcona Radial Tramway Company have applied to the City Council for a 30 year franchise to operate an electric street railway.

SAULT STE. MARIE, ONT.—The Algoma Steel Company will shortly begin erection of a million dollar blast furnace, which will be followed by erection of a large new plant.

ROSTHERN, SASK.—G. Braden, Town Secretary-Treasurer, will receive bids up to July 1st for purchase of \$18,000 20 year 5 per cent. town debentures.—Chenev & Clain will shortly commence the erection of a flour mill.

FENELON FALLS, ONT.—A. Rutherford, Secretary Union School Section No. 3, wants tenders up to June 10th for erection of school house. Plans with J. L. Arnold, this village.

BRANTFORD, ONT.—A. E. Watts, Brant County Clerk, wants bids up to June 11th for construction of concrete abutments for the Glen Morris bridge. Plans at County Clerk's office.

SASKATOON, SASK.—It is understood that the Massey-Harris Company will call for tenders this week for erection of their warehouse and office building to be erected at an estimated cost of \$25,000.

SARNIA, ONT.—The Town Council have passed a by-law to advance \$10,000 and a free site to the Standard Chain Works, of Pittsburg, if that company establish their Canadian branch in this town.

TREHERNE, MAN.—W. J. Scott wants tenders up to June 8th for erection of brick veneered church building for the Presbyterian congregation. Plans with Mr. Scott and at office of the architect, J. H. G. Russell, Winnipeg.

ST. JOHNS, QUE.—F. Gelinax, Secretary Department of Public Works, Ottawa, wants tenders up to June 8th for construction of cavalry stables in this town. Plans at St. Johns Barracks, and with above named department.

NEW WESTMINSTER, B. C.—The Westminster Trust & Safe Deposit Company, acting for a number of local business men, have purchased the water-works system. It is understood that the new owners will make extensive additions to the plant.

KINGSTON, ONT.—The ratepayers have ratified by-laws granting tax exemption to Stanley Smelting Works and Grey & Hedley who now operate a zinc smelter at Guelph. Buildings which are estimated to cost \$50,000 will be erected by the two concerns.

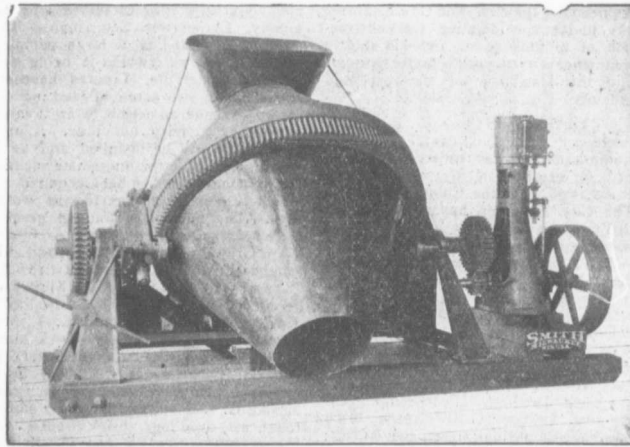
ST. HENRI DE MASCOCHE, QUE.—J. A. Charette wants tenders up to June 10th for construction of an iron bridge and two stone abutments for same over the St. Jean Baptiste river at this point. Information can be obtained from the above named gentleman.

BRIDGEBURG, ONT.—The Provincial Board of Health have approved of plans prepared by G. Ross, C. E., of Welland, for a sewerage system for this village. The estimated cost of the work including septic tank, pipe, manholes, etc., is \$125,000.

WARDSVILLE, ONT.—The Hydro-Electric Power Commission of Ontario have made an investigation of the water power at the Big Bend. The engineer who made the examination believes that from 500 to 800 horse power can be developed at a very reasonable cost. It is rumored that American capitalists are interested in the matter.

REVELSTOKE, B.C.—The City Council have decided to construct a sewerage system to the plans of Col. T. H. Tracy, of Vancouver, at an estimated cost of \$100,000.—A by-law has already been passed by the City Council for purchase of a 150 k.w. dynamo in addition to the equipment at present installed at the power house, also a \$30,000 auxiliary gas producer plant. Mr. C. Goddard, of Winnipeg, is consulting engineer for this power plant. At the time of writing no purchase had been made.

PETERBORO, ONT.—The City Engineer has been instructed by the City Council to obtain information regarding the installation of an incinerator.—R. Dobie and J. L. Hopwood have decided to erect new residences and Senator Geo. A. Cox will erect three dwellings.—W. H. Baker, has taken out a building permit for three buildings to cost \$5,100.



No. 5 Smith Mixer on Skids with Vertical Engine.

SMITH CONCRETE MIXERS



MIX THOROUGHLY



MIX RAPIDLY AND DUMP
IN AN INSTANT



ARE SCIENTIFICALLY DE-
SIGNED AND STRONGLY BUILT



OUTLAST SEVERAL MIXERS
OF OTHER MAKES



ARE BEING USED BY MORE
THAN 2500 SATISFIED USERS



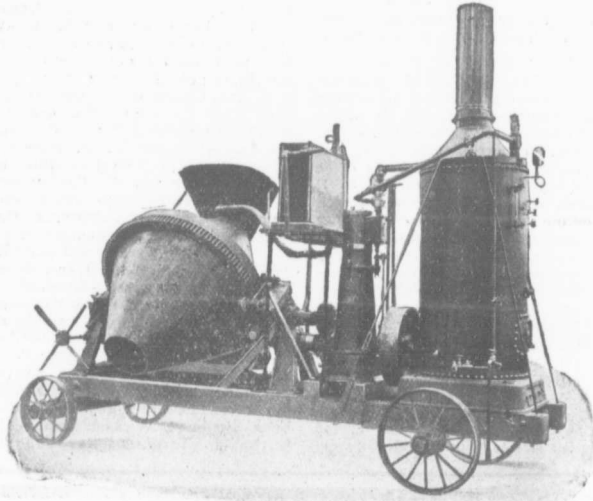
AND HAVE NEVER BEEN
KNOWN TO FAIL



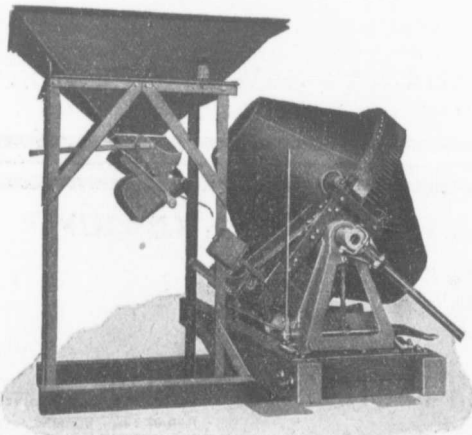
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ALL STYLES OF MOUNTING



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Smith Mixer on Truck with Engine, Boiler and Automatic Water Tank and Pump.



Smith Mixer with Charging Hopper.

Mussens Limited

Head Office: MONTREAL

BRANCHES: QUEBEC, TORONTO, WINNIPEG, VANCOUVER

—Plans have been completed for a business block to be erected on Simcoe street by the Toronto Savings & Loan Company.

BRANDON, MAN.—O. L. Harwood wants tenders up to June 7th for erection of two-storey cement and frame pavillion for the Brandon Winter Fair & Live Stock Association. Plans at the office of the architect, W. A. Elliott.—The Board of Directors of the Brandon General Hospital are endeavoring to raise \$5,000 with which to erect an addition to their building.

MONTREAL, QUE.—H. Kronenburg, is interested with others in a proposition to erect a Jewish Theatre in this city.—The Civic Finance Committee are considering an appropriation of \$17,000 for the construction of a water system in Rosemount.—The following building permits have been issued: J. Therrien, three houses, Gain street, cost \$12,000; A. Bleau, one house, Christophe Colombe street, cost \$5,000; E. Richard, one house, Mount Royal avenue, cost \$4,000; F. Lalancette, one house, Iberville street, cost \$3,000.

HALIFAX, N.S.—Willis Chipman, C.E., of Toronto, has presented to the City Council his report in regard to the city water supply. Among the recommendations made by Mr. Chipman are: The adoption of the meter system, replacing of smaller pipes now in use by large fire supply mains, installation of pumping machinery of large capacity for fire protection and erection of water tower. To bring an additional supply of water from Birch Cove Lakes would necessitate an expenditure of from \$250,000 to \$350,000 according to the report, and the cost of new power house is estimated at \$72,000.

WINNIPEG, MAN.—D. Laird, Indian Commissioner, this city, wants tenders up to June 19th for erection of farm house and stable at Valley River Indian Reserve. Plans at following post offices, Grandview, Gilbert Plains, Roblin and Kamsack and in the Dominion Lands Office, Dauphin.—J. H. G. Russell, architect, wants bids up to June 7th for erection of brick residence for G. Olafson.—A. M. Fraser has had plans completed for erection of 14 storey office building.—The proposed route of the Grand Trunk Pacific Railway from this city to Portage la Prairie has been approved of, and it is understood that tenders will now be called for grading and construction of the line.

VANCOUVER, B.C.—A deputation recently waited on the Richmond Council urging the reconstruction of the North Arm bridge.—It is understood that representatives from the municipal councils of Burnaby, South Vancouver and Richmond will meet shortly to discuss the establishment of a system of waterworks to serve the three municipalities.—Hood Bros. are having plans prepared for a new block of buildings to be erected on Howe street at a cost of \$35,000.—The City Council are at the present time con-

fronted with a serious question in regard to the sewage disposal, the present septic tank system having become too small for the needs of the city. The City Engineer has under consideration the construction of a trunk sewer and will shortly commence survey work in order to ascertain the feasibility of the proposed scheme.

OTTAWA, ONT.—P. E. Ryan, Secretary Transcontinental Railway Commission, invites tenders up to June 25th for erection of five steel bridges. Plans at office of the Chief Engineer.—The City Engineer has recommended that two new pumps be installed at the water works station at a cost of \$35,000.—A. T. Phillips, Superintending Engineer, Rideau Canal, this city, wants tenders up to June 21st for supply of 1,600 barrels of Portland cement to be delivered in this city. Specifications may be obtained from Superintending Engineer.—The following building permits have been issued: J. B. Duford, five brick dwellings, Marlborough avenue, cost \$15,000; G. B. Greene, brick dwelling, Cambridge street, cost \$4,500; G. Wilson, brick veneered dwelling, McLeod street, cost \$3,000; R. Sibbett, brick dwelling, McLeod street, cost \$9,000; J. McLaughlin, factory, Somerset street, cost \$6,000.—M. C. Edey, architect, is preparing plans for a two-storey club house to be erected at Riverside Park.

TORONTO, ONT.—E. R. Bibbington, architect, wants tenders up to June 5th for erection of residence on Markham street for H. G. Langley.—J. H. Galloway, architect, has completed plans for a pair of brick dwellings to be erected on Grafton avenue for B. J. Brandon, cost \$4,500, also for a residence for A. W. Switzer, cost \$3,000. The same architect is preparing plans for a residence to be erected on King street west for I. Lennox, cost \$4,500.—A. J. Rattray, architect, wants tenders up to June 11th for erection of an apartment house corner of Lowther avenue and Major street for W. B. Charlton.—J. Singer has purchased a lot 123 by 163 feet, corner Brunswick avenue and Wells street, on which to erect a number of houses.—C. A. McArthur is planning erection of an apartment house at 418 Wellesley street.—The Queen City Oil

Company intend erecting an addition to their warehouse on Princess street, to cost \$15,000—A factory building is to be erected at 493 King street west by the Gundy, Clapperton Company.—The question of installing a large pumping engine at the waterworks is being discussed.—Somerville, Limited have acquired about two acres of land on St. Helen's avenue on which to erect large two storey foundry buildings. A large power plant will be installed and additional property in the immediate vicinity of the foundry site has been acquired, on which to erect dwellings for the workmen.—The following building permits have been issued by the City Architect: C. A. Grant, 3 attached 2 storey and attic roughcast dwellings, brick fronts, 182-186 Pape avenue, cost \$5,800; McKinney & Johnston, pair 2½ storey brick dwellings, Havelock street, cost \$5,500; E. J. McCarthy, 3 attached 3 storey brick store and apartments, Queen street east, cost \$20,000; H. A. Cooper, 2½ storey brick dwelling, Roncesvalles avenue, cost \$4,500; G. L. Thompson, 2 pair 2 storey roughcast dwellings, brick fronts, St. Helen's avenue, cost \$6,000; S. Kelley, 2 storey and attic brick dwelling, Gladstone avenue, cost \$3,600; C. S. McArthur, pair semi-detached 2 storey brick dwellings, 412 Wellesley street, cost \$5,000; W. J. Byers, 2 storey brick dwelling, 8 Sinclair street, cost \$2,800; W. Downs, pair semi-detached 2 storey and attic brick dwellings, Crawford street, cost \$5,000; A. Butler, 2 storey brick roller rink, College street, cost \$10,000; Wm. Prest, pair semi-detached 2½ storey brick dwellings, 420 Greenwood avenue, cost \$5,000; J. A. Harvey, 2 storey and attic brick dwelling, Rusholme road, cost \$5,000; A. W. Bartlett, addition to store, 1243 1249 Queen street west, cost \$5,000; G. Beacroft, 2 storey brick dwelling, Fern avenue, cost \$6,000; C. W. Chadwick, 2 storey and attic brick dwelling, Parliament street, cost \$3,000; J. Alexander, pair semi-detached 2½ storey brick dwellings, corner Palmerston avenue and Ulster street, cost \$7,000; W. Simpson, 2-storey brick dwelling, Palmerston avenue, cost \$3,000; W. W. Tufts, 2-storey and attic brick dwelling, Humberstone avenue, cost \$3,000; Whitney & Saul, pair semi-detached 2-storey brick dwellings, Wickson avenue, cost \$4,500; F. Terry, 2-storey and attic

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.



THE CANADIAN STANDARD

STAR

THE CANADIAN PORTLAND CEMENT CO., LIMITED

502 TEMPLE BUILDING,
TORONTO

203 BOARD OF TRADE BUILDING
MONTREAL

PLUMBERS' AND STEAMFITTERS' SUPPLIES

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

Somerville Limited

TORONTO 59 Richmond St. East

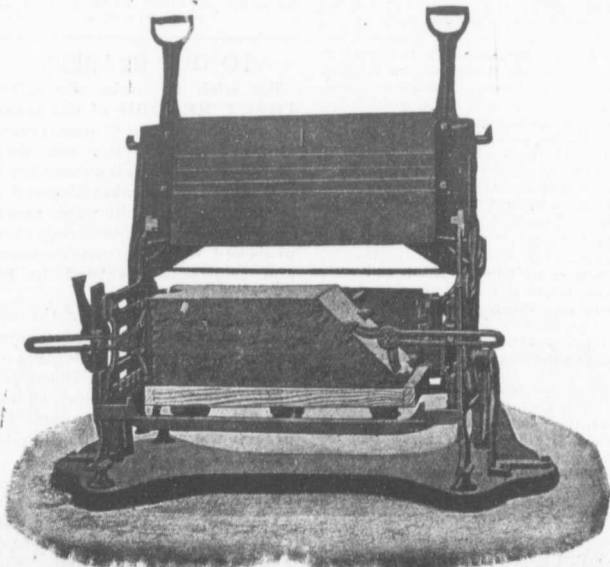
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THE MILES CONCRETE BUILDING BLOCK MACHINE

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'f'g. Co.**
Niagara Falls, - Can.

Sales Agent for Quebec:
T. A. CHADBURN, 242 St. James Street,
MONTREAL.

brick store and dwelling, College street, cost \$4,000; J. J. Walsh, 3 detached 2½-storey brick dwellings, Maynard avenue, cost \$18,000; Love Bros., 8 pair semi-detached 2-storey brick dwellings, Dearbourne street, cost \$51,200; H. F. Sanders, 2-storey brick dwelling, Garden avenue, cost \$3,000; F. D. Brown, 2-storey and attic brick dwelling, 25 Roxborough street east, cost \$5,000; Deeth & Sons, 2 pair semi-detached 2-storey and attic brick dwellings, corner Dufferin and College streets, cost \$12,000; M. A. Hunter, pair semi-detached 2-storey brick veneer dwellings, Muir avenue, cost \$4,500; King Bros., 2-storey and attic brick dwelling, 206 Palmerston avenue, cost \$3,000; T. E. Essery, 2-storey brick factory, 101 Ontario street, cost \$5,000; H. Larkin, 3 attached 2-storey roughcast dwellings, brick fronts, Dovercourt road, cost \$4,500; G. L. Thompson, 2 pair 2-storey roughcast dwellings, brick fronts, Dufferin street, cost \$6,000; Mrs. H. Lee, 2-storey and attic brick dwelling, Dufferin street, cost \$3,600; J. Clark, 5-storey brick factory, 244 Farley avenue, cost \$10,000; C. B. Niles, 2½ storey brick dwelling, Roxborough street east, cost \$6,500; R. B. Fox, pair 2-storey roughcast dwellings, Pape avenue, cost \$4,000; J. W. Ellis, pair semi detached 2-storey brick dwellings, 256-258 Beatrice street, cost \$6,000; C. McRaken, 2-storey brick dwelling, Havelock street, cost \$3,600.—The date for the reception of tenders for the construction of steel railway bridges and hand railing for Lansdowne avenue subway for the city has been extended from June 18th to July 16th.

CONTRACTS AWARDED.

CAMPBELLTON, N. B.—Erection of new King Edward Hotel: Mann & Baxter, contractors.

PORT ARTHUR, ONT.—Erection of new school building: R. Hamer, this city, successful tenderer at \$30,200.

PETERBORO, ONT.—Erection of residence for Mrs. J. Haggert, to cost \$3,200; J. H. Haggert, contractor.

ST. JOHN, N.B.—Supply of granite blocks for the city: B. Mooney, successful tenderer at \$2.25 per square yard.

LEAMINGTON, ONT.—Erection of addition to Canadian Cannery, Limited, building: J. Davis, Aylmer, contractor.

MONTREAL, QUE.—Erection of theatre building for local syndicate: J. A. Major, contractor. T. Daoust, architect.

VICTORIA, B.C.—Erection of bank building for Merchants Bank: Wood & McVicars, this city, successful tenderers at \$42,850.

DELORAIN, MAN.—Erection of new building for Dominion Bank: Brandon Construction Co., Brandon, Man., contractors.

PORTAGE LA PRAIRIE, MAN.—\$16,000 20 year public school debentures: Wood, Gundy & Co., Toronto, successful tenderers at 96¼.

SINTALUTA, MAN.—Erection of four-roomed school building to cost \$10,000: Masonry, G. A. Glass; heating system, A. McKinney & Son.

SEAFORTH, ONT.—Construction of concrete sidewalks for the town: Edge & Guttridge successful tenderers at 10½ cents per square foot.

SYDNEY, C.B.—Erection of buildings, installation of machinery, etc., for the Sydney Rolling Mills: E. A. Wallberg, Moncton, N.B., contractor.

KENORA, ONT.—Erection of large hotel for C. F. Bunnell: Carter-Halls-Aldinger Company, Winnipeg, contractors. Estimated cost \$225,000.

NEW WESTMINSTER, B.C.—Erection of new wing to the Central school building: Marshall & Bowell, this city, successful tenderers at \$10,623.

HEWARD, SASK.—Storey & Van Egmond, architects, Regina, have awarded contract for erection of school building to C. J. Barrett, Weyburn, at \$10,750.

NORTH BATTLEFORD, SASK.—Erection of new school building: W. J. Broley, successful tenderer at \$32,200. Storey & Van Egmond, Regina, architects.

SOUTH QU'APPELLE, SASK.—Erection of Roman Catholic church: Wilson & Sprague, successful tenderers at \$8,698. Storey & Van Egmond, Regina, architects.

VANCOUVER, B. C.—It is understood that Macpherson & Sinclair will receive the contracts for erection of additions to four public school buildings. The cost of the work will be about \$100,000.

BUCKHORN, ONT.—It is understood that the contract for the new dam and bridge to be erected here by the Dominion Government has been awarded to D. Conroy of Peterboro, the figure being \$56,000.

MOOSE JAW, SASK.—Erection of fire hall for the city: A. Mather, successful tenderer at \$17,875.—Construction of granolithic sidewalks for the town: Parsons Construction Company, this town, successful tenderers.

TORONTO JUNCTION, ONT.—Construction of concrete sidewalks and asphalt block roadway for a distance of 4,714 feet on Dundas street for the town: C. W. Dill & Company, Toronto, successful tenderers at \$93,721. Other bidder, Toronto Construction Company, would construct concrete sidewalks and vitrified brick roadway for \$94,300.

REGINA, SASK.—Supply of 600 tons of cast iron pipe for the city: McFarlane, Strang & Co., Glasgow, Scotland, successful tenderers. R. A. Taunton, Winnipeg, is their Canadian agent.—The Public School Board have awarded \$9,000 4½ per cent. twenty year debentures to Wood, Gundy & Co., Toronto.—Erection of residence for T. S. McMoran: H. Black, successful tenderer at \$3,590. Storey & Van Egmond, this city, architects.

TORONTO, ONT.—The new Rose avenue fire hall building is to be erected by day labor under supervision of the City Architect. The lowest tender received for the work was \$3,675, while the City Architect estimates that the building can be erected for \$2,500.—E. R. Babbington, architect, has awarded contracts for erection of dairy building for R. W. Dockeray: Masonry, G. Fordyce; carpenter work, T. Adare; plastering, W. J. Haddock.

CALGARY, ALTA.—The City Council have recently awarded contracts as follows: Supply of cement, Gorman, Clancey & Grindley, successful tenderers at \$3.65 per barrel. Other bidders, Revillon Bros., \$3.75; Evans, Coleman & Evans, \$5.55. Construction of a wood block pavement on a cement foundation, Bitulithic Paving Company at \$16.50 per foot and W. H. Harvey & Company at \$16.27 per foot, successful tenderers. Erection of East End fire hall building, Pheasey & Batson, successful tenderers at \$12,712. Other bidder, L. B. Wood, \$12,835.

LONDON, ONT.—The City Council have awarded contracts for construction of sewers as follows: North end main sewer, Blight & Fielder, this city, successful tenderers at \$10,851 and 75 cents per foot for side drains. Other bidder, F. Harding, \$13,481 and 40 cents per foot for side drains.—F. Harding was awarded contracts for the following sewers: Mary street, \$757 and 40 cents a foot for side drains; Egerton street, \$588, and 40 cents a foot for side drains; Dufferin avenue, \$1,248, and 38 cents a foot for side drains.—Construction of bridge over Aux Sable river for Huron and Middlesex Counties: Ontario Bridge Co., successful tenderers at \$2,260. Other bidders, Hill & Co., \$2,365; Stratford Bridge Company, \$2,500; Petrolea Bridge Company, \$2,365; Jenks & Dresser Company, \$2,380. Concrete work, C. Ferguson, Melbourne,

successful tender at \$1,390. Other bidders: Dr. Witherspoon, \$1,590; L. Hardy, \$1,670.

WINNIPEG, MAN.—Additions to C.P.R. shops and car sheds: J. McDiarmid Construction Co., this city, contractors. Estimated cost of work \$125,000.—The City Council have awarded the following contracts: Supply of two boiler feed pumps for waterworks, Canadian Fairbanks Company, Montreal, successful tenderers at \$1,092; construction of sewer connections and plumbing work in a number of dwellings—sewer connections, C. Elsasses at \$708.80 and \$507; L. O. Bailey and T. H. Seddall at \$394.25; plumbing, Morton & Arnott at \$848.50, T. Ball & Son at \$660.—The Board of Control have recommended the City Council the following tenders accepted: Supply of waterworks specials, Northern Iron Works, this city, at \$60 per ton; supply of water pipe for the city, Evans, Coleman & Evans, Vancouver, at following prices: Four inch, 5,000 feet at \$44.65 per ton; six inch, 30,000 feet at \$41.39 per ton; eight inch, 5,000 feet at \$40.81 per ton; ten inch, 3,000 feet at \$40.81 per ton; twelve inch, 17,500 feet at \$40.18 per ton and 18 inch, 5,500 feet at \$39.74 per ton.—Erection of postal station for Dominion Government, J. McDiarmid Co., this city, contractors. Estimated cost, \$50,000.

BIDS.

VANCOUVER, B. C.—The following tenders have been received by the City Council for supply of four automobile fire wagons: Merryweather Auto Company, two chemical wagons, \$16,000; two hose wagons, \$14,600; American-La France Company, (not including duty), two chemical wagons, \$12,800; two hose wagons, \$10,980; Winnipeg Rubber Company, two chemical wagons, \$6,975; two hose wagons, \$4,950.

FIRES.

J. F. Cairns' warehouse, Saskatoon, Sask., totally destroyed.—Tierney Block, Annprior, Ont., considerably damaged.—F. C. Barrett's saw and grist mills, Adelaide, Ont.—Masonic Hall and adjoining buildings, Enderby, B.C., totally destroyed.

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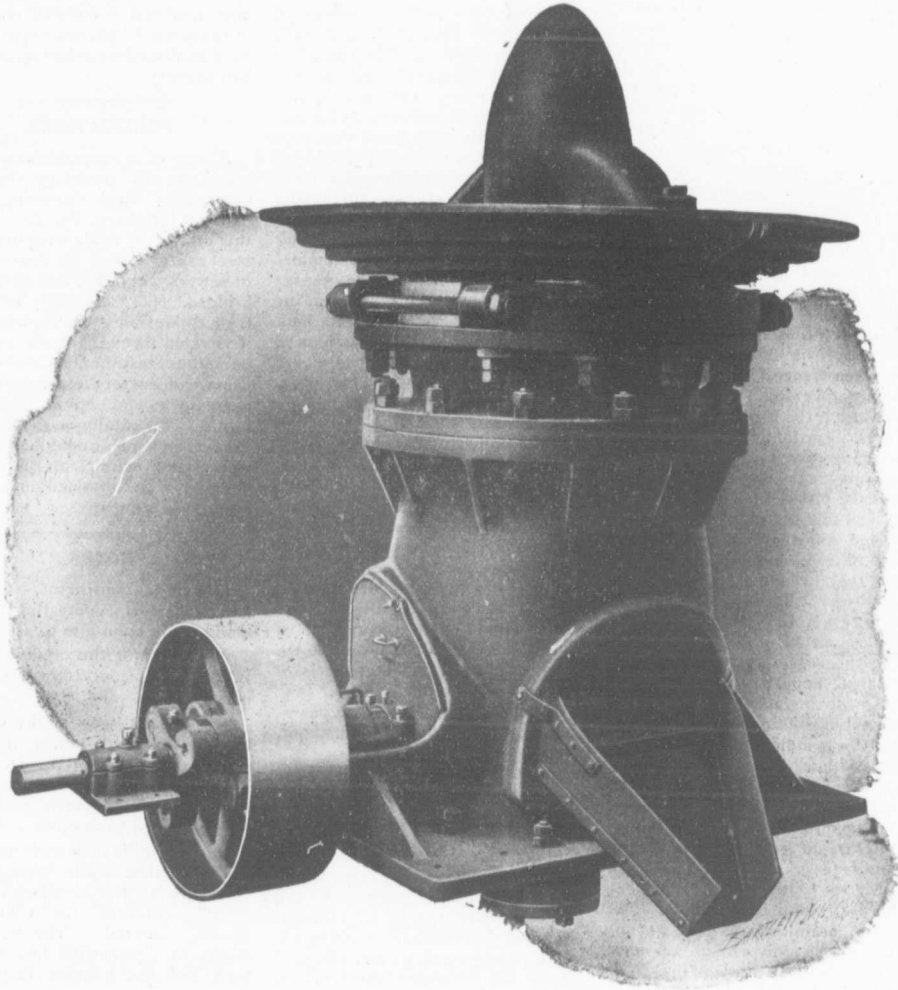
TO OUR READERS.

We wish to make the **CONTRACT RECORD** of the greatest possible value to subscribers, and to that end we ask their co-operation. Each subscriber is requested to consider himself a correspondent of the paper and to send us intelligence regarding proposed works of construction and contracts awarded in his vicinity.

We cannot hope to learn, through our regular channels of information, of all work contemplated throughout this vast Dominion, but by the co-operation of our readers we may more nearly approach the maximum efficiency in the service given.

Correspondence sent to our head office at Toronto or to our branches at Montreal, Winnipeg or Vancouver, will receive due attention and be much appreciated.

Rock Crushing Plants



The demand for crushed rock is increasing rapidly for railroad ballast, Portland cement, fluxing purposes in smelting plants, "Good Roads," etc. Bulletin 1411 describes the machinery and appliances, including the Gates "K" gyrotory breaker shown above, used in MODERN ROCK CRUSHING Plants. Included also are sectional plans of a large number of plants in active operation, from which intending purchasers may get valuable hints in preparing data for plans and specifications.

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HARDENING OF HYDRAULIC CEMENTS.

The reading of a paper on "The Hardening Process of Hydraulic Cements," by Dr. W. Michaelis, Sr., of Berlin, at the annual meeting of the Association of German Portland Cement Manufacturers during the last week of February was one of the most remarkable events in the history of the science of hydraulic cements, says our Chicago contemporary, the Cement and Engineering News. This paper revealed the last secrets of the hardening process of hydraulic mortars, and offered the most manifest proofs and demonstrations for the correctness of the theory that the hardening process of all hydraulic cements is mainly a process of formation of colloids and not a process of crystallization. Dr. Michaelis has stood almost isolated ever since he offered this theory about ten years ago. Most other investigators could not free themselves from the idea that a process of crystallization is the basis of the hardening process. But this isolation has been the same in every previous phase of Dr. Michaelis' classical research work. His theories and explanations have always been bitterly opposed at the time when they were made public, and many years have past in every single case until other investigators were convinced of the correctness of his theories and until the public at large adopted his teachings. Thus, for instance, he found the greatest opposition when he advocated fine grinding about forty years ago, and later, about twenty years ago, the Association of German Portland Cement Manufacturers as a body opposed his demand for an admixture of soluble silica in the form of trass, puzzuolana or slags in order to protect Portland cement from destruction in sea water. Today the usefulness of such an admixture is universally acknowledged. In every stage of his scientific life Michaelis has been a generation ahead of his contemporaries. Therefore it is no surprise to us to see him give the most lucid explanations of the apparently very complicated hardening process at a time when all other investigators are still busily engaged in a debate about the constitution of Portland cement clinker, a subject of secondary importance, at the best a scientific pastime, but no longer a study from which any advantages have to be expected, especially if the researches refer only to part of the elements in question, if the rest of them are omitted in the research work and if nevertheless conclusions are drawn from such investigations that are afterwards offered to be applied to any possible case of a composition of a clinker.

Through Michaelis' teachings we now know that the composition of the clinker is entirely immaterial to

a certain extent, that many different compounds may be contained in the clinker, that some of them are essential, while others may be present or absent, but that no matter what the composition may be within certain limits, the hardening process invariably proceeds the same way and is due to the formation of a gelatinous substance, a colloid, which becomes solid in time and which is composed of calcium hydro-silicates, calcium hydro-aluminates and calcium hydro-ferites. While this hardening process goes on it is accompanied by a process of crystallization of a small percentage of various compounds, which in the beginning contributes to the solidification of the hardening colloids, but which in time impairs the impermeability of the mortar and thus prepares the way for the ultimate deterioration of all hydraulic cements. The deductions to be drawn from this theory are proved by practical experience. Hydraulic cements being more reliable and more durable the more limited the process of crystallization during their hardening; this means that hydraulic cements low in alumina and calcium oxide are the most preferable, as the surplus of calcium oxide crystallizes in the mortar and becomes the cause of formation of crystals of gypsum and calcium-sulpho-aluminate in the presence of aluminates and sulphates, while the alumina forms unstable crystals of calcium aluminate and in the presence of solutions of sulphates the dreaded calcium sulpho-aluminates.

Iron-ore cement must be regarded as, and has proved to be, an ideal hydraulic cement, because it contains, instead of the aluminates of Portland cement, calcium ferites, which never crystallize. Moreover, iron-ore cement has the greatest resistance to all chemical reactions that come in question; it is the strongest of all cements and yields the densest mortars on account of its high specific gravity, which is between 3.3 and 3.4.

In the foregoing we have touched only the most salient points of Dr. Michaelis' paper which is before us, but will shortly bring in our columns a complete translation, so

that our readers may become familiar with the deductions that form the quintessence of a life study in cement chemistry of a man who took the lead in his science during the second half of the first century of scientific research of hydraulic cements, and who thus continued and completed the work of the great Vicat, who was at the head of the science during the first half century.

PUBLICATIONS.

A copy of a very attractive catalogue recently issued by the Blaw Collapsible Steel Centering Company, of Pittsburg, Pa., has reached this office. It deals with the use of steel center forms for construction of sewers, conduits, culverts, pipe, bridges, etc., and fully explains their collapsible steel center. It is illustrated throughout and contains numerous testimonials from engineers, contractors and construction companies who have used these forms. This catalogue should prove very interesting to engineers, contractors and municipal officers and a copy can be obtained on application to the company.

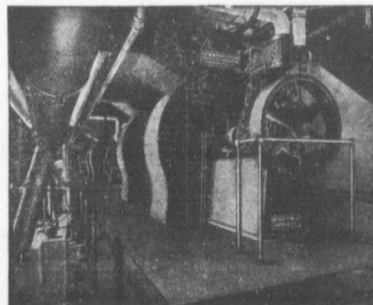
NOTES.

A. Reeves, contractor, Montreal, has filed papers contesting the demand made upon him to assign.

A meeting of the creditors of J. B. Gauthier, contractor, Montreal, is called for to-day.

The current issue of the Canada Gazette contains notice that the authorized capital of the Dominion Bridge Company, Limited, of Montreal, has been increased from \$1,000,000 to \$2,000,000.

Operations have been commenced in the erection of the large factory buildings at the head of Christie street, Toronto, for Clarke & Clarke, Limited. The buildings will be one, three and four storeys high and the ground floor plan approximately 175 x 230 feet. A power house will also be erected. These structures will be constructed of concrete, reinforced with the Niagara system, and were designed by Pitt & Robinson, engineers, Toronto and Niagara Falls, Ont.



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NEW COMPANIES.

Emberton Lumber Company, Limited, Megantic, Que., incorporated, capital \$20,000. Incorporators, J. E. Roberge, of Saint Vital de Lambton, Que., E. Huard, P. H. Renaud, Eugene Huard, all of Megantic, and others.

Newbury Canning & Preserving Company, Limited, Newbury, Ont., incorporated, capital \$30,000. Directors, J. L. Heatherington, P. B. Robertson, C. Rush, W. Bayne, and others.

Chesley Furniture Company, Limited, Chesley, Ont., incorporated, capital \$40,000. Directors, W. G. Durst, J. Hauser, W. Damm, J. M. Lillow and G. Durst.

Niagara Lumber Company, Limited, Niagara Falls, Ont., incorporated, capital \$40,000. Directors, F. W. Griffiths, W. H. McGuire and F. E. Franz.

Lake Superior Iron & Coal Company, Limited, Sault Ste. Marie, Ont., incorporated, capital \$1,000,000. Directors, C. W. Thompson, H. B. Johnson, E. W. Wright, T. Gibson, E. P. Seon, H. H. Hunter.

La Plaza Apartments, Limited, Toronto, incorporated to carry on business as a land and building company, capital \$100,000. Directors, E. R. Lynch, Alice Scott and Edith McLellan.

Sterling Gas Company, Limited, Port Colborne, Ont., incorporated, capital \$40,000. Directors, M. A. Reeb, C. E. Steele and Mary E. Reeb.

Wapskehedan Lumber Company, Limited, incorporated, capital \$24,000. Incorporators, D. F. Maxwell, A. E. Vessey, N. M. Mills, all of St. Stephen, N.B., and others.

J. E. Sauve, Limited, St. Louis, Que., incorporated to carry on a general lumber business, capital \$40,000. Incorporators, J. E. Sauve, G. Polquin, both of St. Louis, and F. Gaboury and A.

Bigras, both of Montreal, and others

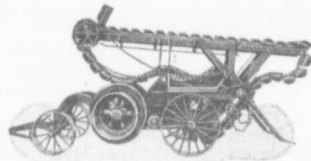
The Louison Lumber Company, Sayabec, Que., incorporated, capital \$200,000. Incorporators, A. C. Dutton, Springfield, Mass., J. W. Cooke, A. R. McMaster, H. H. Brodie, all of Montreal, and others.

Vulcan Portland Cement Company, Limited, Montreal, incorporated, capital \$2,500,000. Incorporators, G. W. Macdougall, L. Macfarlane, C. A. Pope, A. Swindlehurst, McG. Barclay, all of Montreal.

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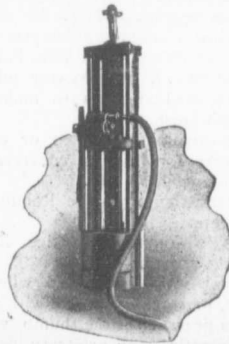
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Glossary of Terms used in Concrete Work

The Engineering World publishes a glossary which is of value to every worker in concrete. A standard nomenclature is desirable at the present time and the list which follows will be found to be of great service. It is compiled by E. Lee Heidenreich, M.W.S.E., M. Am. Inst. Min. Eng., M. Am. Soc. Test. Mat., and is as follows:

ACCELERATED TEST.—A test generally made to determine soundness of a cement, hastened by subjecting the test specimens to heat, sometimes dry heat, sometimes hot or boiling water. Such tests are determined by hours, while long time tests require days, months or even years.

AGGREGATE.—The sand and gravel or crushed stone combined with cement in the formation of concrete.

ARMORED CONCRETE.—See Reinforced Concrete.

BAG OF CEMENT.—Weighs 95 lbs. or is equivalent to one-fourth of a barrel.

BALL MILLS.—Circular drums used in cement manufacture, grinding clinkers or stone between circumference of the rotating drums and forged steel balls contained in same.

BARREL OF CEMENT.—Weighs 380 lbs. net, contains four bags of cement.

BATCH.—The definite quantity of concrete made at one mixing.

BETON.—The French term for concrete.

BETON ARME.—The French term for reinforced concrete.

BLOWING.—Overwet mixtures not properly stirred or tamped, show effect of air bubbles on finished surface.

BOND, MECHANICAL.—See Mechanical Bond.

BONDING.—The uniting of one layer or course of concrete with another.

BRIQUETTE.—A small brick of cement paste, mortar or concrete having a definite area at the smallest section and made for testing purposes.

BUSH-HAMMERED.—A method of dressing stone, applicable to concrete, produced by dressing with a hammer having large point-like teeth on the striking face.

CARRYING RODS.—Term used to designate those rods which carry or sustain the load; they extend lengthwise in the reinforced member.

CEMENT.—A preparation of calcined clay and limestone or their equivalents possessing the property of hardening into a solid mass when moistened with water.

CEMENT MORTAR.—Mortar composed of cement, sand and water.

CEMENT SAMPLER.—A small tool used to take a sample of cement from a barrel for testing purposes.

CENTERING.—A wooden form

giving shape to a concrete arch while setting.

CENTRES.—Same as centering.

CHECKS.—Same as hair cracks.

CINDER CONCRETE.—Concrete in which cinders are used as one of the aggregates.

CONCRETE.—A compact mass of broken stone, gravel or other suitable material assembled together with cement mortar and allowed to harden.

CONCRETE STEEL.—See Reinforced Concrete.

CONSTRUCTION JOINT.—The seam between two successive days' work in concrete laying.

CORRUGATED BAR.—A form of reinforcing steel, made by pressing the surface of a plain bar into a series of ridges or corrugations.

CRAZE.—Same as hair cracks—generally the result of too rich a mixture—occasionally a sign of unsound cement.

CRUSHER RUN.—Crushed stone taken directly from the crusher with none of the fine materials screened out.

DISTRIBUTING RODS.—Term used to designate those rods which distribute the load over the carrying rods; they extend crosswise in the reinforced member.

DRESSING.—The finish given to the surface of concrete.

DRY MIX OR DRY MIXTURE.—A concrete mixed with so little water that very hard ramming is required to flush the water to the surface.

EARLY STAGE.—The first part of the chemical process cement mortar undergoes after mixing, such as initial set and final set both of which precede hardening.

EFFLORESCENCE.—A white discoloration appearing on the surface of concrete, due to the leaching out of soluble salts.

EXPANDED METAL.—A form of reinforcing material, made by cutting sheet steel in a series of short parallel rows, and drawing the sheet to form diamond-shaped meshes.

EXPANSION CRACK.—Cracking in concrete work caused by expansion.

EXPANSION JOINT.—A vertical joint or opening to allow for variations due to changes of temperature.

FABRIC WIRE.—See Wire Fabric.

FACING.—A rich mortar placed on exposed surfaces to make a smooth finish.

FALSEWORK.—Wooden or other supports for holding concrete in position while setting.

FERRO-CEMENT.—See Reinforced Concrete.

FERRO-CONCRETE.—See Reinforced Concrete.

FINAL SET.—Is reached when a paste, mortar or concrete will support a pressure of the thumb without indenting—an arbitrary period of setting of concrete just preceding hardening.

FINENESS OF CEMENT.—Is the degree of pulverization, and for either cement or sand is measured in terms of the numbers of the two sieves between which it is held.

FINISHING.—Working the concrete or mortar surface with steel trowels or similar tools, as for instance by brush, called brush finish.

FIREPROOFING.—Protection of structural parts that are subject to damage by fire, by covering them with a material that will withstand much heat, for instance reinforced concrete.

FLOATING.—Preparing the roughly spread mortar for the steel trowel by the use of a wooden or cork float. If this floating is used for a finish, it is called float-finish.

FLUSH.—To bring water to the surface of concrete by compacting or ramming.

FORMS.—Wooden or other moulds to give concrete the desired shape until hardened.

GAUGING.—Determining the proportions of cement, sand, gravel or broken stone and water in concrete. Generally used in specifying the quantity of water that will produce a certain consistency.

GRANOLITHIC.—Concrete in which the stone aggregate is very fine; its most general use being as a top surface for concrete walks.

GRAPPIERS CEMENT.—A French cement made by grinding particles which have escaped disintegration in the manufacture of hydraulic limes.

GRAVEL.—Mixed rounded pebbles, used as one of the aggregates in concrete.

GROUT.—A thin mortar composed of sand, cement and water; either poured or applied with a brush.

HAIR CRACKS.—Fine hair-like cracks on the surface of a cement or concrete structure which has stood for some time.

HARDENING.—Commences after the final set of a cement, mortar or concrete and continues for a number of years.

HIGH CARBON STEEL.—A steel in which the elastic limit is not less than 52,500 lbs. per sq. inch.

HINGE JOINTS.—Joints which divide a structure into several sections, each one of which can expand independent of the others.

HOOPED CONCRETE.—Concrete columns reinforced with wires wound spirally.

HYDRATED LIME.—Made by mixing quicklime and water; the chemical formula is $\text{CaO} + \text{H}_2\text{O} = \text{CaO} \cdot \text{H}_2\text{O}$.

HYDRAULIC CEMENT.—Any cement which sets or hardens under water.

INITIAL SET.—A certain stage of solidification in cement defined by the length of time required; vary-

ing according to the kind of cement under test.

KAHN BAR.—A form of reinforcement named after the inventor consisting of a special rolled section of steel with diagonal members sheared directly from the sides of the bar and bent upward.

KILN.—A stationary or rotary furnace used in cement manufacture.

LAITANCE.—Pulpy, gelatinous fluid washed from cement that is deposited in water.

LEAN MIXTURE.—A concrete containing a relatively small proportion of cement.

LIMESTONE.—A raw product used in cement manufacture consisting largely of CaO, CO₂, and SiO₂.

LOAM.—Earth or vegetable mold

composed largely or entirely of organic matter.

MATRIX.—A term sometimes used for Mortar.

MECHANICAL BOND.—Increased adhesion due to deformations in reinforcing material.

MIX.—A shortened term for Mixture.

MIXER.—A machine for mechanically mixing concrete.

MIXTURE OR MIX.—Refers either to the proportions of materials composing concrete or to its consistency.

MONOLITHIC.—Built in one solid, continuous piece.

MORTAR, CEMENT.—A mixture of cement, sand and water. Very finely crushed stone may be used in place of the sand.

MOULDS.—Wooden or other forms used to hold concrete in the desired shape until hardened.

NATURAL CEMENT.—The finely pulverized product resulting from the calcination of an argillaceous limestone at a temperature only sufficient to drive off the carbonic acid gas.

NEAT CEMENT.—Or cement paste, is cement mixed with water without the addition of any aggregate.

PASTE, CEMENT.—A mixture of cement and water.

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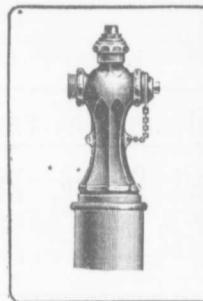
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PAT.—A small quantity of neat cement spread upon glass for testing purposes.

POINTING.—Filling in joints or depressions on the face of concrete.

PORTLAND CEMENT.—The finely pulverized product resulting from the calcination to incipient fusion of an intimate mixture of properly proportioned argillaceous and calcareous materials and to which no addition greater than 3 per cent. has been made subsequent to calcination.

PUDDLING.—Sometimes used to describe the mechanical or hand stirring of wet concrete in the mould when too wet to be tamped or rammed.

POZZOLAN.—Same as Pozzolan.

PUZZOLAN.—An intimate mixture made by grinding together granulated furnace slag and slaked lime without further calcination, possessing the hydraulic qualities of cement.

QUAKING CONCRETE.—Concrete mixed with that proportion of water which will cause it to quake like jelly when heavily tamped.

QUICK SETTING.—Term applied to cement which takes an initial set in a comparatively short time; is an arbitrary term.

RAMMING.—Heavy compacting of concrete with a suitable tool.

REGAUGING.—Adding water to mortar which has become stiff and working same until plastic.

REINFORCED CONCRETE.—Various known as armored concrete, steel concrete, concrete steel, etc., is concrete in which is embedded steel in such form as to take up the tension and assist in resisting shear.

REINFORCEMENT.—The iron or steel used in reinforced concrete.

REINFORCING.—Applying the reinforcement—also used in the same sense as reinforcement.

RICH MIXTURE.—A concrete containing relatively a large proportion of cement.

ROMAN CEMENT.—The English term for natural cement.

ROSENDALE CEMENT.—A natural cement from the Rosendale district in eastern New York.

ROTARY KILN OR ROTARY.—Used in cement manufacture—see Kiln.

RUBBLE CONCRETE.—Concrete in which rubble stone are imbedded.

SAMPLER.—See Cement Sampler.

SAND.—Aggregate of pebbles smaller than in gravel.

SAND CEMENT.—Same as Silica Cement.

SCALE.—To flake off in thin layers.

SCREENINGS.—A fine aggregate separated from crushed stone and used in the place of sand.

SET.—In cement begins when a Vicat needle 0.039 ins. in diameter weighing 10.58 oz. penetrates only .20 ins. into the mortar, and is complete when the needle will not penetrate at all. Approximately, when cement paste resists a light pressure of the finger nail.

SHRINKAGE CRACKS.—Due to con-

traction of concrete on account of temperature changes.

SILICA CEMENT.—Clean sand and Portland cement ground together.

SLAG CEMENT.—Another name for Pozzolan Cement.

SLOPPY CONCRETE.—Concrete mixed with that proportion of water which prevents it from being piled up in the barrow.

SLOW SETTING CEMENT.—That which requires two hours or longer in setting. The term is arbitrary.

SOUNDNESS.—Same as constancy of volumes, cement having passed the different stages of tests without showing any faults is called a sound cement.

STANDARD SAND.—Recommended by the American Society for Testing Materials is the natural sand from Ottawa, Illinois; screened to pass a sieve having 20 meshes per lineal inch and retained on a sieve having 30 meshes per lineal inch; the wires to have diameter of 0.0165 and 0.0112 ins., respectively, i. e., half the width of the opening in each case. Sand having passed the No. 20 sieve shall be considered standard when not more than 1 per cent. passes a No. 30 sieve after one minute continuous sifting of a 500 gram sample.

STEEL CONCRETE.—See Reinforced Concrete.

TAMP.—To firmly compact concrete with a suitable tool.

TEST.—An examination into the condition or quality of a cement, a concrete or its aggregates.

THACHER BAR.—A deformed bar used in reinforced concrete, named after its inventor.

TOP SURFACE.—The exposed horizontal surface of concrete or cement work; usually applied to the finishing coat of sidewalks.

TRAP ROCK.—A heavy rock which

when crushed forms an excellent aggregate for concrete.

TROWEL.—A steel tool used in finishing a cement or concrete surface; also the act of using said tool.

TUBE MILL.—A rotary mill or furnace used in the manufacture of cement in conjunction with ball mills.

TWISTED STEEL.—Reinforcing material made by twisting square steel bars.

UNDERBURNED CEMENT.—A cement burned at too low temperature; the clinker of such cement is lacking in density.

VASSY CEMENT.—The product obtained by heating limestone containing much clay at the lowest temperature that will decarbonate the lime; it sets very rapidly but hardens very slowly.

VICAT NEEDLE.—An apparatus containing a needle named after its inventor, used in testing cement pats.

VOIDS.—The spaces between the particles of sand, gravel, crushed stone or other aggregate.

WEARING SURFACE.—Finished surface exposed to wear.

WET MIX OR WET MIXTURE.—Concrete mixed with enough water so that little or no ramming is needed.

WIRE FABRIC.—A reinforcing material composed of wires crossing at right angles and secured at the intersections.

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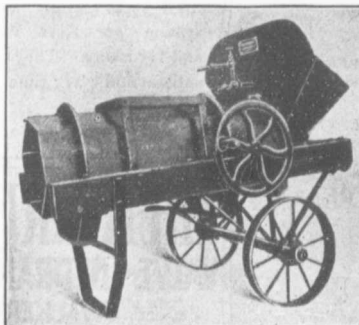
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PERSONAL.

Mr. Chas. Garden, C. E., of Woodstock, N. B., has recently been appointed civil engineer for the British Columbia Electric Company, Vancouver.

The death took place at Montreal on May 26th of Mr. Frank White, C. E. Deceased, who was a graduate of McGill University, practised his profession for some years in New York, returning to Montreal, however, about a year ago to represent a group of American engineering firms. He is survived by his widow and two children.

NOTES.

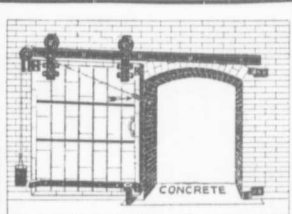
J. Gravel and H. Corbeil, contractors, Montreal, have registered as Gravel & Corbeil.

It is reported that J. B. Gauthier, contractor, Montreal, has filed his consent of assignment.

Scott & Legault, brick manufacturers, St. Jerome and St. Adele, Que., have dissolved partnership.

The Engineering Contracting Company, of Baltimore, Md., have been granted a license by the Ontario Government to carry on business in Province of Ontario with capital not to exceed \$30,000. A. W. Hunter, Toronto, has been appointed attorney for the company.

A recent issue of the Canada Gazette contains notice of the incorporation of the Provincial Construction Company, Limited, of Montreal, who are authorized to carry on business as general contractors. The incorporators are: J. B. Pauze, H. Beauregard, F. Trudeau, P. Trudeau and Z. Beauchamp, all of Montreal.

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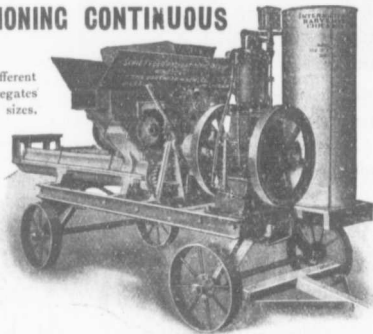
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A new engineering firm has been established at Hamilton under the name of Somerville & Van Every. This firm will carry on business as consulting and architectural engineers and as both the partners are men of varied experience their success seems already assured.

After hearing a representative from the city of London, and also from the Union of Municipalities, Mr. M. J. Butler, Deputy Minister of Railroads and Canals, has decided to defer the granting of permission to the Toronto & Niagara Power Company to build a transmission line from Brantford to London. The city of London objections are raised on the ground that they had not had sufficient time to investigate the extent of and manner in which their interests as a municipality would be affected.

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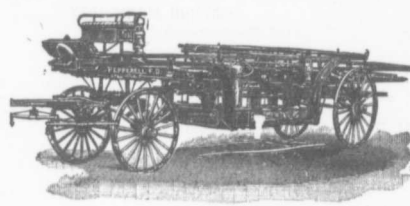
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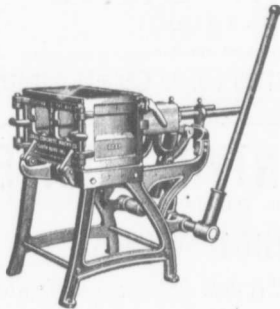
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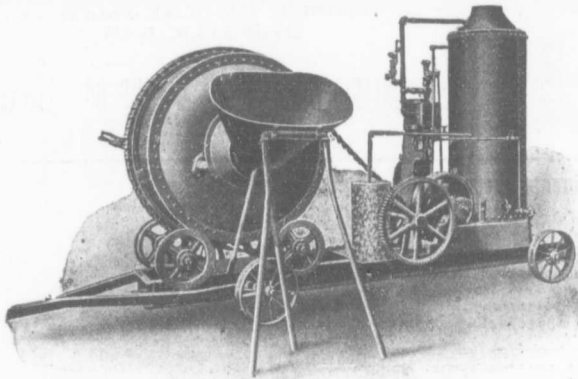
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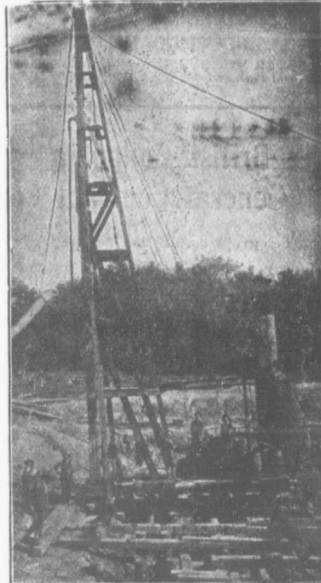
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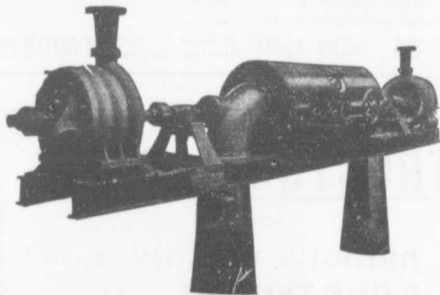
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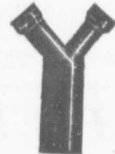
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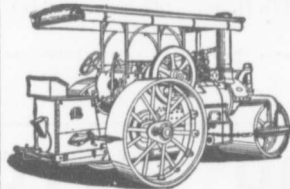
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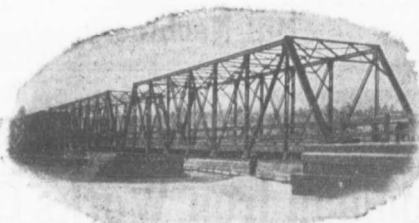
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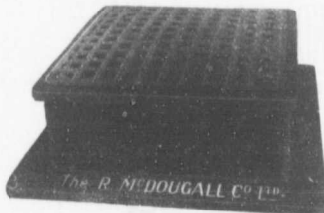
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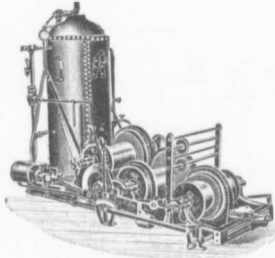
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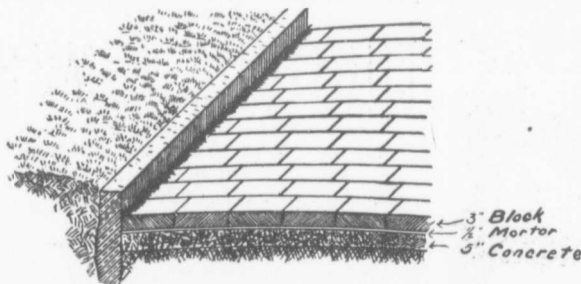
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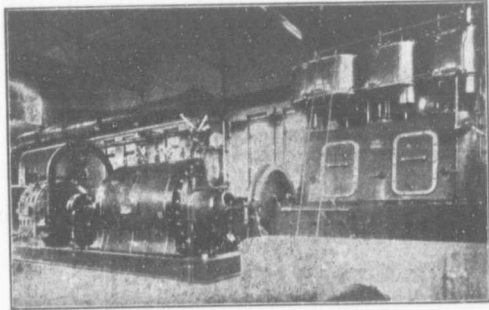
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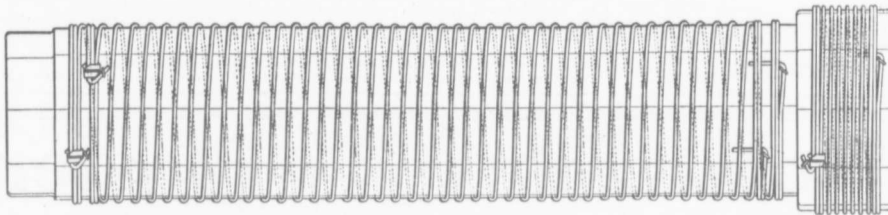
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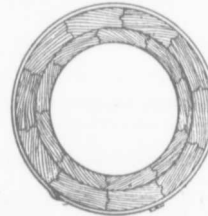
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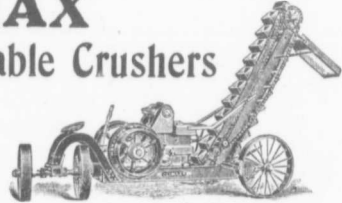
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TESTIMONIALS

St. George, Sept. 19th, 1906

TO WHOM IT MAY CONCERN.—This is to certify that the Stone Crusher, Size 8 x 15, purchased by the Municipality of South Dumfries from your Company has given entire satisfaction. Regarding capacity, we have easily put 10 cords of stone through it in a day, broken to the finest grade. The power to operate is small, have frequently run with 20 of steam pressure with an 18 horse-power engine. The wear of the Machine so far is not appreciable. It is easy to operate and convenient to move.

S. G. KITCHEN, Reeve of South Dumfries
H. S. MAUS, Com. for South Dumfries
R. G. LAWRASON, Com. for St. George.

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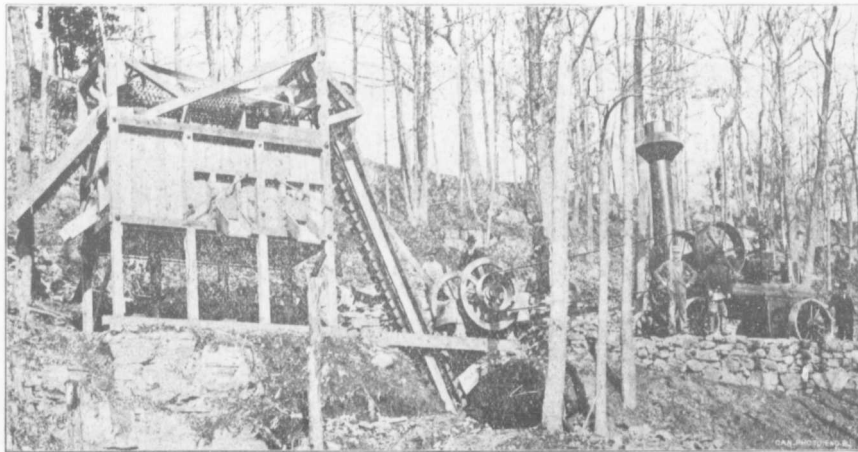
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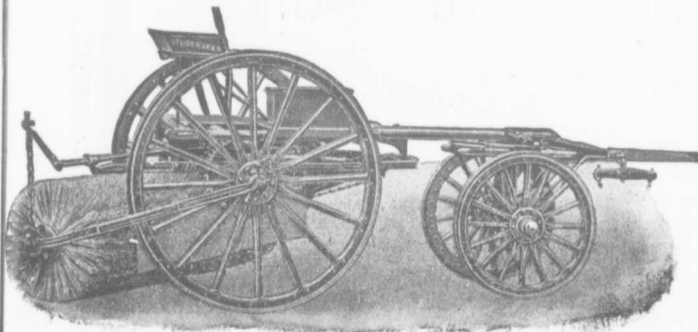
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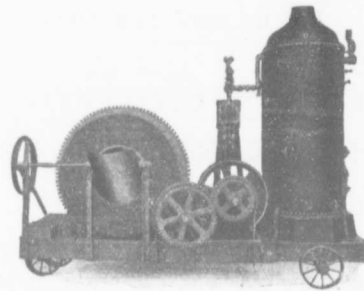
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