

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. 17.

TORONTO, MONTREAL — JANUARY 23, 1907 — WINNIPEG, VANCOUVER

No. 47

THE CANADIAN CONTRACT RECORD PUBLISHED EVERY WEDNESDAY

As an intermediate Edition of the Canadian Architect and Builder.

THE C. H. MORTIMER PUBLISHING COMPANY
of Toronto, Limited,

Subscription Price, \$5 per annum, payable in advance.

CONFEDERATION LIFE BUILDING, TORONTO
Telephone Main 2365.

Branch Offices:
Room B34, Board of Trade Building, Montreal,
Telephone Main 2999.

750-751 Union Bank Building, Winnipeg,
Telephone 1274

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

Subscribers who may change their address should give prompt notice of same. In doing so give both old and new address. Notify the publishers of any irregularity in delivery of papers.



TEMISKAMING AND NORTH- ERN ONTARIO RAILWAY COMMISSION

TENDERS FOR OFFICE BUILDING

Sealed tenders addressed to the undersigned and endorsed "Tender for Office Building" will be received up to 5 p. m. on the 12TH DAY OF FEBRUARY, 1907, for the erection of a General Office Building at North Bay, Ont.

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

A certified cheque for \$2,500 must accompany each tender.

The successful tenderer must enter promptly into a contract and furnish security for the amount of \$10,000.00 for due completion of same.

Cheques of unsuccessful tenderers will be returned to them.

The lowest of any tender not necessarily accepted.

H. W. PEARSON,
Secretary-Treasurer.

Toronto, Dec., 21st, 1906.

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

For Sale

Two Canadian patents, covering Labor-Saving Device. Information given on application.

Box 512, St. Catharines, Ont.



TEMISKAMING AND NORTH- ERN ONTARIO RAILWAY COMMISSION

Sealed tenders addressed to the undersigned at 25 Toronto street, Toronto, and endorsed "Tender for Grading, Ballasting, etc.," will be received up to five o'clock p. m. on

WEDNESDAY, THE THIRTEENTH
DAY OF FEBRUARY, 1907,

for the construction of an extension of the Temiskaming and Northern Ontario Railway, including clearing of right-of-way, bridging, grading, ballasting, and track-laying complete and ready for operation, in accordance with plans and specifications prepared by the Chief Engineer of the Commission, such extension being from a point on the T. & N. O. Railway, 100 miles north of New Liskeard, northerly or north-westerly direction to a point forming a junction with the Grand Trunk Pacific (Transcontinental) Railway, a distance of forty (40) miles, more or less.

Plans and specifications of the work may be seen at the office of the Chief Engineer of the Commission at North Bay.

The rails, fastenings and ties will be delivered to the contractor at the southerly end of the work (say 100 miles north of New Liskeard).

Tenders will not be considered unless made on the form supplied by the Commission and signed with the actual signatures of the parties tendering. An accepted cheque on a chartered bank, for \$10,000 payable to the order of the Chairman and Secretary-Treasurer of the Commission must accompany each tender.

The cheque of the party whose tender is accepted will be forfeited if such party fails or declines to enter into a contract in form satisfactory to the Commission, or fails or declines to furnish security to the satisfaction of the Commission for the due completion of the work at the rates, and on the terms stated in the offer submitted.

The cheques of parties whose tenders are not accepted will be returned to them on the contract being awarded.

The Commission is not bound to accept the lowest or any tender.

Dated at Toronto this seventh day of January, 1907.

H. W. PEARSON,
Secretary-Treasurer.

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

TO EXCAVATORS

Tenders will be received until the 25TH INST. for the work of RAZING THE OLD BUILDINGS, that are now upon the premises and REMOVING ALL DEBRIS at Nos. 7 and 9 Richmond street east, extending west in rear of No. 151 Yonge street, and doing all the necessary EXCAVATION WORK required at a price per cubic yard in connection with the erection of a NEW WAREHOUSE. Contractor to state in his tender what he will allow for old material.

Plans can be seen and all other information obtained at the office of the architect.

E. J. LUNNOX,
Architect, Toronto.

GOVERNMENT OF THE PROVINCE OF SASKATCHEWAN

Public Works Department

Tender for Land Titles Offices.

Sealed tenders will be received up to 4.30 p. m. of

MONDAY, FEBRUARY 4TH, 1907,

for the erection of a Land Titles Office Building at Regina, Saskatchewan.

The building will be about 80 ft. x 80 ft. reinforced concrete fireproof construction, cut stone facing and two storeys in height and other details to match this style of work.

The plumbing, heating and ventilating and electric light wiring will not be included in this contract.

Each tender must be accompanied by an accepted cheque for other satisfactory deposit for the amount of \$5,000.00.

This deposit will be forfeited if the tenderer fails to execute the contract and bond when requested, and will be returned when the contract and bond is signed and the work is commenced.

The deposit of unsuccessful tenderers will be returned when the contract is signed.

The right to reject any or all tenders and to waive any defects or irregularities therein is to be at the discretion of the Commissioner of Public Works.

Plans, specifications, form of tender and all information may be obtained on application to the undersigned.

The unauthorized insertion of this advertisement will not be paid for.

F. J. ROBINSON,
Deputy Commissioner
of Public Works.

Department of Public Works,
Regina, Dec. 31st, 1906.

[FOR ADDITIONAL ADVERTISEMENTS FOR TENDERS SEE NEXT PAGE]

FOR SALE.

All the equipment for carrying on Concrete, Bridge, Wall and Sidewalk work; also Hercules Face-down Block and London Cement Brick Machines. Price low for immediate sale, leaving here in three weeks. Write now. BRANTFORD, BUILDING & PAVING CO., BRANTFORD, ONT.

TENDERS

will be received until SATURDAY, FEBRUARY 2ND, for alterations and additions to a house on Robert street.

GORDON & HELLIWELL,
Architects,
Confederation Life Bldg.

TENDERS FOR SUPPLY OF 30 MILES OF WATER PIPE

Sealed tenders addressed to the Chairman of the Fire, Water and Light Committee for the supply of thirty miles of assorted water pipe and quantity of specials for the City Water Works, will be received at the office of the undersigned up to a 30 p.m. on

FRIDAY, MARCH 1, 1907.

Specifications and forms of tender may be obtained at the office of H. N. Rutnan, City Engineer, Winnipeg, Man.

Each tender must be accompanied by an accepted cheque or draft payable to the order of the City Treasurer, or cash deposit for the sum called for in the form of tender supplied, which will be subject to forfeiture in case of failure on the part of the contractor to enter into a written contract with approved sureties if called upon to do so.

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

C. J. BROWN,
City Clerk.

City Clerk's Office, Winnipeg, December 8, 1906.

PUBLISHERS' ANNOUNCEMENT.

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

Copy and cuts for changes 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 advertisement for Tenders, &c., 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.

CONTRACTS OPEN.

NEW TORONTO, ONT.—A. Munro will erect a residence on Pearson avenue to cost \$3,100.

SYDNEY, C. B.—The municipality have decided to erect a new jail at a cost of \$15,000.

VERNON, B. C.—I. O. O. F. have purchased property on which they will erect a new hall.

STRATHCONA, ALTA.—A new High school is to be erected here at a cost of \$50,000.

WAPPELLA, SASK.—The by-law to complete the hall, at a cost of \$4,000, has been carried.

SUMMERSIDE, N. B.—Architects are preparing plans for the rebuilding of St. Mary's church.

WEYBURN, SASK.—The town council are considering the purchase of a drilling machine.

COULEE, B.C.—The Diamond Vale

Coal Company will erect several buildings immediately.

WINDSOR MILLS, QUE.—The Canadian Pacific Railway Company will enlarge their station here.

OKOTOKS, ALTA.—The Imeham Lumber Company are about to erect a two-storey brick veneer saw mill here.

WALLACEBURG, ONT.—The Fraser Canning Company are considering the location of their factory in this town.

ST. ANDREWS, N. B.—It is probable that the Canadian Pacific Railway will make additions to the Algonquin Hotel.

MONTMORENCY FALLS, QUE.—The proprietors of the Kent House have decided to add a new wing to their building.

LINDSAY, ONT.—J. D. Mention, of Springfield, Ohio, is considering the establishment of a match-making machinery factory in this town.

TORONTO JUNCTION, ONT.—The town council will seek legislation to issue debentures for \$8,000, estimated cost of paving Dundas street.

ESTEVAN, SASK.—Work will shortly be commenced on the erection of a warehouse here, for the Calgary Brewing Company, Calgary, Alta.

VANCOUVER, B. C.—A. Williams will erect a residence on Burnaby street, cost \$8,500.—A new wing is to be added to the Hotel Vancouver at a cost of \$200,000.

ST. THOMAS, ONT.—The St. Thomas Packing Company have applied for a charter on receipt of which they will commence the erection of necessary buildings.

CARTIERVILLE, QUE.—Tenders will be received up to February 1st, by C. Brandeis, C.E., Guardian Building, Montreal, for construction of waterworks system here.

SEAFORTH, ONT.—The Fire, Water and Light Committee are preparing a report on the best method, cost, etc., of making the proposed extensions to the water works system.

SARNIA, ONT.—C. McPhee will erect a rink building, 200 x 100 feet.—The congregation of St. Johns church will erect a new building with a seating capacity of 500 persons.

SOURIS, MAN.—A deputation from this town have interviewed the Provincial Government in reference to the construction of a bridge over the Souris River, to cost \$12,000.

HAMILTON, ONT.—The Hamilton Street Railway will erect large car barns corner of Wilson street and Sanford avenue.—Additions are to be made shortly to the Royal and Waldorf Hotels.

FORT WILLIAM, ONT.—The Water and Light Commissioners have rejected all tenders received for construction of Loch Lomond water tunnel, and will carry the work out by day labor.

PORTAGE LA PRAIRIE, MAN.—J. F. Walker has purchased a large site on which to erect an office building.—The Manitoba Government have included in their estimates \$50,000 for erection of buildings in connection with the reformatory here.

KINGSTON, ONT.—H. P. Smith, architect, this city, is preparing plans for a new stone church to be erected at Toledo, Ont., for the Roman Catholics, also for a group of gasolene yacht houses for the Kingston Yacht Club, this city.

WINDSOR, ONT.—Plans have been completed for the erection of a branch factory here for the International Gun

Co.—It is reported that promoters from Harvey, Ill., are negotiating with J. Curry for purchase 12,000 acres of land with a view to establishing a large steel plant here.

SACKVILLE, N. B.—D. Pottinger, General Manager, Intercolonial Railway, Moncton, N. B., will receive tenders up to February 4th, for erection of a station building here in this town. Plans with station master and chief engineer, Intercolonial Railway, Moncton, N. B.

MONTREAL, QUE.—Mr. C. Brandeis, C.E., this city, is taking tenders up to February 1st, for construction of waterworks system at Cartierville, Que.

STREETSVILLE, ONT.—The electric light by-law, recently voted on, was carried by a large majority, and J. S. Fielding, C.E., Toronto, has been instructed by the Town Council to prepare plans and take tenders for the construction of a concrete dam, erection of a power house, and supply and installation of the necessary equipment.

HALIFAX, N. S.—D. Pottinger, General Manager Intercolonial Railway, Moncton, N.B., will receive tenders up to January 31st, for erection of a freight car repair shop and planing mill in this city. Plans with Chief Engineer, Moncton, N. B., Terminal Agent, this city, and Secretary, Department of Railways and Canals, Ottawa, Ont.

CORNWALL, ONT.—Tenders will be received up to February 11th, by H. E. Hodgins, Clerk, Township of Osnabrock, Osnabrock Centre, Ont., for construction of reinforced concrete piers, doing necessary grading, etc., for bridges to be built in Township of Osnabrock. Plans at above address and office of Magwood & Walker, Civil Engineers, this town.

WINNIPEG, MAN.—T. Eaton Co. will shortly begin the erection of a six-storey building 160 x 108 ft.—Tenders will be received up to January 31st, by Chairman, Board of Control, for supply of 655 Enamel Street Name Plates. Specifications at City Engineer's office.—The Dominion Express Company will shortly commence the erection of a two-storey building on Main street.

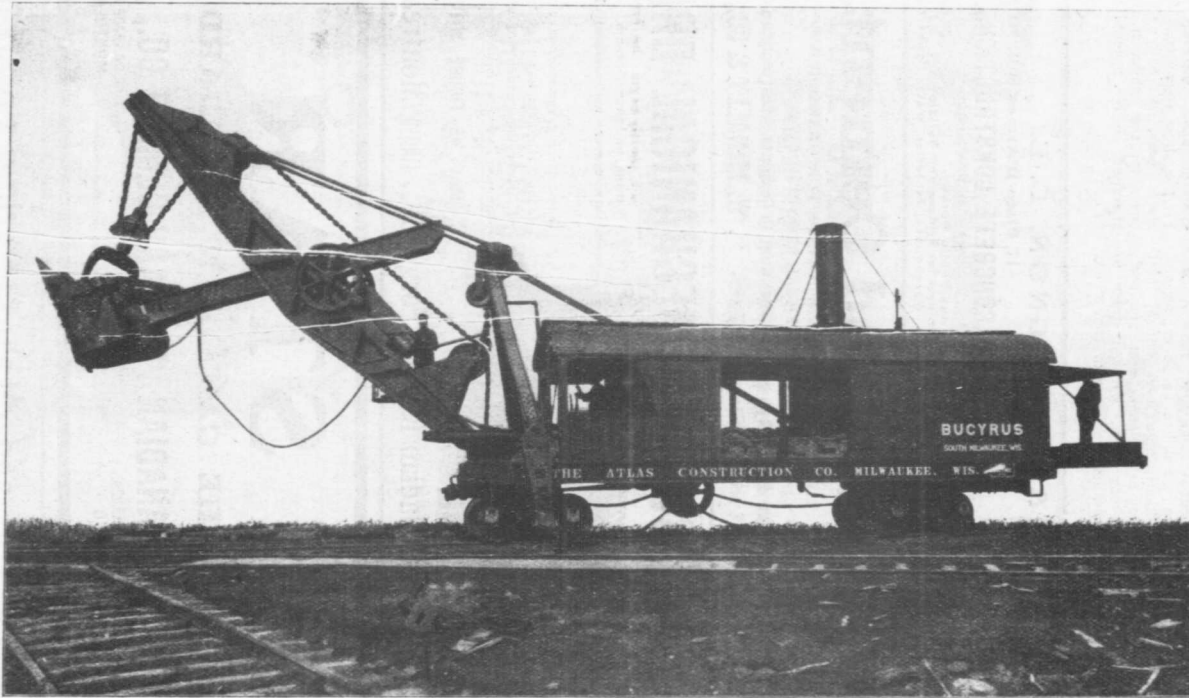
MONCTON, N. B.—Tenders will be received by D. Pottinger, General Manager, Intercolonial Railway, as follows: Up to January 31st, for construction of freight car repair shop and planing mill at Halifax, N.S. Plans with Terminal Agent, Halifax, Secretary Department of Railways and Canals, Ottawa, Ont., and Chief Engineer, this city; Up to February 4th, for construction of station building at Sackville, N. B. Plans with Station Master, Sackville, and Chief Engineer, this city.

PETERBORO, ONT.—J. J. Turner & Sons have purchased the Grand Opera House, and intend to make a number of interior improvements thereto.—Tenders will be received up to February 1st, by G. B. Watts, Assistant General Manager, Canadian General Electric Company, Toronto, and J. E. Blather, C. E., architect, this city, for erection of an addition to Canadian General Electric Company's works here. Plans at offices of the above named persons.

BRANDON, MAN.—The City Council will seek legislation to issue the following debentures: \$35,000 for steel bridge; \$45,000 for fire hall and appliances; \$15,000 for cemetery; \$45,000 for waterworks system. The International Gas Heating & Lighting Co. are endeavoring to secure a franchise to operate a gas plant in this city.—J. D. Coulton, of Winnipeg, has leased the Caledonian rink. He proposes to put in a hardwood floor on a foundation of cement. Estimated cost of improvements, \$12,000.

JANUARY 23, 1907
ADELPHI DEPT
BUCKYRUS STEEL & AM SHOWERS

BUCYRUS STEAM SHOVELS ARE THE BEST



RAILROAD PILE DRIVERS, RAILROAD CRANES, LIGHT LOCOMOTIVES, DUMP CARS, HAND CARS, TRACK TOOLS, ROCK CRUSHERS, CONCRETE MIXERS, HOISTING ENGINES, WIRE ROPE AND FITTINGS.

WRITE FOR CATALOGUES.

MUSSENS LIMITED

Formerly W. H. C. Mussen & Co.

Head Office: MONTREAL

January 23, 1907

CANADIAN CONTRACT RECORD

3

QUEBEC, QUE.—C. Brandeis, C.E., Montreal, will report on the best method of electric light for prisons throughout the province of Quebec.—Tenders will be received up to January 30th, by F. Gelin, Secretary, Department of Public Works, Ottawa, Ont., for erection of a store building at Dominion Arsenal, here. Plans at above address and office of P. B. Beland, Clerk of Works, Post Office, this city.

OTTAWA, ONT.—A deputation from the town of Goderich recently waited on the Minister of Public Works in reference to proposed improvements to breakwater at Goderich.—The congregation of the First Baptist Church is considering plans for additions to their Sunday school building to cost from \$12,000 to \$25,000.—Plans for erection of a store building at the Dominion Arsenal, Quebec, Que., may be seen at office of F. Gelin, Secretary, Department of Public Works, who is receiving tenders up to January 30th, for the carrying out of the work. Plans may also be seen at P. B. Beland's office, Post Office, Quebec.

TORONTO, ONT.—Debentures will be issued by the Council township of York for \$25,500 for enlarging school buildings.—The Metallic Roofing Co have leased property adjoining their present premises and will erect buildings thereon.—The following local improvements will shortly be carried out: Asphalt pavements, Dearborn avenue, Broadview avenue to Bowden street, cost \$7,224; Lennox street, Bathurst to Borden streets, cost \$3,559; Delaware avenue, Shanley to Hallam streets, cost \$7,094; Mutual street, Gerrard to Carlton streets, cost \$3,701; Clinton street, Bloor street to Barton avenue, cost \$5,437; brick pavement, Foster place, Elizabeth street to east end, cost \$1,151; Macadam roadway, Queen's Park Crescent (east branch), College to Bloor streets, cost \$5,993; Cement concrete sidewalks, Bathurst street, Arthur to College streets, cost \$2,144; Dearborn avenue, Broadview to Bowden avenues, cost \$1,254; Yarmouth road, Christie to Shaw streets, cost \$1,208.—The Board of Police Commissioners have recommended the erection of a new station on the Island, cost \$2,500; a stable at Agnes street station, cost \$10,000, and

new patrol signal service, cost \$25,000.—A macadam roadway is to be laid on Winchester street.—A public bath house is to be erected on Stephanie Place by the city, to cost \$40,000 and debentures for this amount will be issued.—The E. W. Gillette Company intend making additions to their premises.—The following items are included in the City Engineer's recommendations for this year: New bridge, Riverdale, cost \$1,800; new public conveniences, cost \$15,000; new city yard at foot of Princess street, cost \$23,800; improvement to sidewalks and pavement at King street subway, cost \$16,200; six million gallon engine and connections, high level station, cost \$60,000; new meters, cost \$100,000; twenty-inch main, Bathurst street to Roncesvalles avenue, with connections

via Shaw, Arthur, Argyle, Gladstone, Dufferin, Brock, and Queen, cost \$87,180.—The Board of Education are considering the following proposals: Erection of school buildings on Manning avenue, neighborhood of Agnes and Teraulay streets and additions to Howard school.—E. J. Lennox, architect, will receive tenders up to 25th January for raising old buildings at 7 and 9 Richmond street east and doing excavating necessary for erection of warehouse.—The Fire, Water and Light committee has recommended the purchase of the following plant: 900 feet hose, cost \$11,500; hose wagon, cost \$650; 6 fire alarm boxes, cost \$750; six fire alarm boxes for the exhibition, cost \$100; alterations in No. 2 aerial truck, cost \$2,000.

A. & E. LOIGNON, C. E.

17 Place D'Armes Hill, MONTREAL

REINFORCED CONCRETE CONSTRUCTIONS

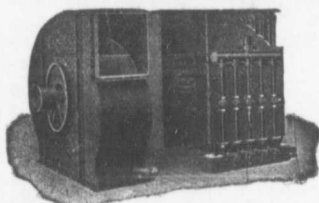
FOR
Fireproof Buildings, Hydraulic and Public Works
Steel Structures for Bridges and Buildings
Warehouses, Factories, Water Power Development

Portland Cement...

HIGH GRADE GERMAN BRANDS FOR GRANOLITHIC AND ARTIFICIAL STONE SIDEWALKS.

**Sewer Pipes, Best English Cements, Best Belgian Cements
Culvert Pipes, &c. W. McNALLY & CO., Montreal**

BUFFALO MECHANICAL DRAFT



Guarantees more Steam and Boiler Horse-power with less fuel and less smoke.

Meets quickly, sudden, heavy demands for steam. High stacks and chimneys avoided. Acts independent of weather conditions. Reduces coal bill 33 1/3 %.

MAY WE FIGURE WITH YOU ?

Canadian Buffalo Forge Co., LIMITED, Montreal, Que.



STAR

THE CANADIAN STANDARD

THE CANADIAN PORTLAND CEMENT CO., LIMITED

502 TEMPLE BUILDING,
TORONTO

BOARD OF TRADE BUILDING,
MONTREAL

The Northern Electric and Manufacturing Co., Limited
MONTREAL AND WINNIPEG

TELEPHONES, SWITCHBOARDS,
FIRE ALARMS, LINE MATERIAL
AND SUPPLIES

GENERAL OFFICE AND FACTORY

Corner Notre Dame and Guy Street, MONTREAL

CONTRACTS AWARDED.

NORTH BAY, ONT.—Erection of Normal School Building: Fred Whitham, Brantford, contractor. Tender \$54,200.

VANCOUVER, B. C.—Supply of valves for the city of Vancouver: Robertson-Godson & Co., successful tenderers.

STRATFORD, ONT.—Erection of Normal School Building: Fred Whitham, Brantford, contractor. Tender \$52,050.

HAMILTON, ONT.—Erection of Normal School Building: Fred Whitham, Brantford, contractor. Tender \$52,050.

PETERBORO, ONT.—Erection of Normal School Building: Fred Whitham, Brantford, contractor. Tender \$53,000.

TRURO, N. S.—Improvements to

post-office building: Spencer Bros. & Turner, this town, successful tenderers, at \$2,000.

EDMONTON, ALTA.—Supply of sewer pipe for city of Edmonton: McCombe Sewer Pipe Co., McCombe, Ill., successful tenderers at \$72,299.

MONT CARMEL, QUE.—Contract for interior finishing in plaster in Roman Catholic Church, awarded to Jos. Gosse- lin, Levis, Que. Plans by Ouellet & Levesque, architects, Quebec, Que.

FIRES.

Warehouse of the Canada Machine Co., Point Edward, Ont., totally destroyed.—Chisholm block, Edmonton, Alta., loss \$25,000.—Sawmill of Cummings & Sons, Coaticook, Que., totally

destroyed.—R. J. Hurt's elevator, Boisse- vain, Man., totally destroyed.—Factory of Cudahy Co., Toronto, totally destroyed.—C. E. Butler's furniture store, Qu' Appelle, Sask., totally destroyed.—Crump & Porrier's premises and adjoining buildings, Halifax, N.S., loss \$10,000.—Bank of Montreal Building, Mon- ton, N.B., considerably damaged.

CORRUGATED
 WRITE FOR PRICES
METALLIC ROOFING CO.
 LIMITED
 TORONTO, CANADA.
IRON



“BULL DOG” SHOVELS

forged from one piece of High Carbon Bar Steel without weld or rivet, solid neck and blade, tempered in oil, straight chucked handle can be replaced when broken.

CANADIAN SHOVEL & TOOL CO.
 WRITE FOR CATALOGUE LIMITED HAMILTON, CANADA



Note
 Solid Shank

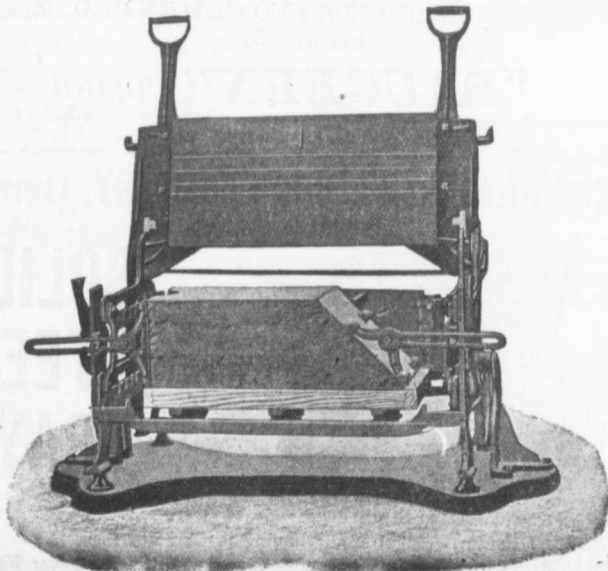
... Speaks For Itself ...

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.

MR. C. B. SMITH, C.E.

In this issue we publish a portrait of Mr. C. B. Smith, C.E., who was recently elected President of the Engineers' Club of Toronto.

That Mr. Smith ranks among the foremost of Canadian civil engineers is proven by the many important and responsible positions which he holds. Graduating from McGill University in 1884, he devoted some years to railroad engineering with various companies, and later became Assistant-Professor of Civil Engineering in the University where he had received his training. He was for some years resident engineer for the Canadian-Niagara Power Company in connection with the building of their extensive power development works at Niagara Falls, and consulting engineer to the International Railway Company, which positions he resigned in 1904 to engage in a consulting practise. He was then appointed Chairman of the Temiskaming and Northern



MR. C. B. SMITH,
President of the Engineers' Club of Toronto.

Ontario Railway Commission, which position he recently resigned, and later on in the same year accepted a position on the Hydro-Electric Commission as Chief Engineer. The City of Winnipeg then engaged him as Chief Engineer of the Power Department of that city, and just recently he was retained by the City of Toronto to report on the eastern entrances of the different railways to the city.

THE USE OF SMALL PUMPING PLANTS IN CONNECTION WITH SEWERAGE SYSTEMS.

A number of brief papers and addresses on the use of small pumping plants in connection with sewerage systems were presented at the meeting of the Sanitary Section of the Boston Society of Civil Engineers on the evening of January 9. Mr. I. F. Farnham described a small sewerage plant at Newton Upper Falls. The plant is a temporary one, designed for use pending

the construction of a gravity outfall sewer. The plant was put in operation in 1903 and serves 30 houses with a population of about 160, and a machine shop with a population of some 600. There are two 3½-in. submerged centrifugal pumps driven by two 6-H.P. gasolene engines. Either engine can operate either or both pumps, and both engines can, if desired, be connected to one pump. The maximum lift is 30.7 ft. The contract capacity was 150 gals. per min. and the test capacity was 210 gals. The plant is located near the water-works pumping station and is attended by a fireman in the latter. An indicator in the water-works pumping station shows when the small reservoir connected with the sewage station has filled. When the indicator works, the fireman goes to the sewage station and starts the pumps, which shut down automatically. The cost of this plant, including the pumping station, force main, etc., was \$6,700, and the yearly cost of operation has averaged between \$400 and \$500. On the whole, the plant is very satisfactory. The most serious trouble has been due to human rather than mechanical defects. No emergency overflow is possible, and once or twice the pumping station has been flooded. No screens were provided when the pumps were started, but trouble with clogging by cotton-waste led to the installation of basket screens.

Mr. F. A. Barbour, M. Am. Soc. C.E., of Boston, read a paper in which he described a number of sewage pumping plants which he had designed. He stated by way of preface that labor was the chief problem in connection with these pumps. In order to minimize the attendance on the pumps, automatic features are introduced where

feasible, for which and other reasons the pumps are frequently divided into small units. After describing the Saratoga installation, Mr. Barbour took up in succession the plants at Hudson, Mass., Fredericton, N.B., Atlantic City, N.J., and elsewhere. Two small, electrically-driven centrifugal pumps at Hudson, with a normal combined capacity of 500 gals. per min. against 35 ft. head, were installed at a cost of \$3,600 for pumps, motors, and piping. At Fredericton a plant of the same capacity, but operating under a lower head, is being put in, to pump the sewage when the river rises above the outfall. The cost of this plant will be about \$3,000, including a considerable percentage of import duty. At Atlantic City a number of electrically-driven pumps will be located beneath the sidewalk, with no structures above the surface.—Engineering News.

Mr. W. F. Fye, C. E., of Montreal, Que., has left for Mexico to take charge of the engineering work for the Canada Electric Syndicate, Limited.

Snow cleaning in Ottawa, Can., which was formerly carried on as a local improvement is now charged to the general expense fund. The snow is plowed from the walks with two-horse wooden snow plows, is thrown further into the roadway with "walkaway" plows, and finally is compacted with heavy wooden rollers. In the spring of 1905, according to the report of City Engineer N. J. Ker, on some roadways there was an accumulation of snow and ice 4 feet. thick, while the sidewalks were comparatively clean.

The **HANOVER PORTLAND CEMENT CO., Limited**

Manufacturers of

"SAUGEEN" BRAND

Prompt Shipments.

Write for Prices.

OFFICE AND WORKS: HANOVER, ONTARIO.

THE WILKINSON PLOUGH COMPANY, LIMITED
TORONTO, CANADA



**SOLID
STEEL
TRAY**

TRAY: Solid Pressed Steel, Edges Turned Over.

WHEEL: Heavy Wrought Iron, running in Cast Bearings.

FRAME: Selected Hardwood, Handles Capped and Projecting over Wheel

OF PARTICULAR INTEREST TO MUNICIPALITIES

Jan
JO
W
15 T
COI
o. w.
23 J
E
Grant
to at
1
Qu
JOS
Th
Best
WHY
W
T
bi
st
SES
McI
Phone
4855
Men
notice
Spec
400
400
L. I

JOHN S. FIELDING
CONSULTING ENGINEER
WATER POWER **DAMS, etc.**
15 TORONTO ST. — TORONTO

JOHN GALT
C. E. and M. E.
CONSULTING ENGINEER
and EXPERT

SPECIALTIES:
**WATERWORKS, SEWERAGE
AND ELECTRIC LIGHT**

Chief Assistant Engineers:
O. W. SMITH, C. E. W. J. BOWERS, C. E.
25 Jordan Street **TORONTO**

Paving Granite

Granite Sets for Street Paving — CURBING cut to any shape ordered. — Fine Rich Colors for Building and Monumental Purposes. Quarries, St. Philippe d'Argenteuil, P.Q.

Address all communications to

JOS. BRUNET - COTE DES NEIGES, MONTREAL

The Electric Blue Print Co.
40 Hospital Street, MONTREAL

**BLUE PRINTS
POSITIVE BLUE PRINTS
BLACK PRINTS
MULTI-COLOR PRINTS**

Best Finished Work on the Market at the Lowest Prices.

WHY PURCHASE STRUCTURAL STEEL

We offer 300 tons second hand **TEE AND GIRDER RAILS**, for bridges, &c., cut in lengths to suit purchasers.

SESSENWEIN BROS., MONTREAL

Men for Contractors

EMPLOYMENT OFFICE
Phone **WINNIPEG, MAN.** 568
4855 Main St.

Men of all descriptions furnished on short notice for railroad and building contracts.
Special Attention Given to Furnishing Gangs.

E. E. BRYANS & CO.

McGREGOR & McINTYRE, LIMITED

67 to 91 Pearl Street, Toronto, Ont.

STRUCTURAL IRON WORKS

*Beams, Channels, Tees, Angles, Chequered Plates, etc., in stock
Fire Escapes, Sidewalk Doors, Iron Stairs, etc., etc.*

Sole Agents for Duplex Hangers and Goetz Post Caps, Wall Boxes, etc.

PHONES: 7248
7249

ESTIMATES FURNISHED

JOSSON CEMENT

Is the Highest Grade Artificial Portland Cement and the Best for High Class Work. Has been used largely for Government and Municipal Works.

TO BE HAD FROM ALL CANADIAN DEALERS OR FROM

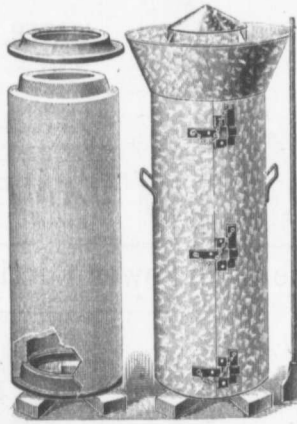
C. I. DE SOLA, 180 St. James Street, MONTREAL

AMBURSEN DAMS

OF REINFORCED CONCRETE

Write us at once for information.

Ambursen Hydraulic Construction Co., of Canada, Limited
Coristine Building, MONTREAL



**ROBINSON'S
CONCRETE MOULDS**

For Cement Culvert Pipe

are patented in Canada and the States. Made right with right prices. Be sure you get the best and then go ahead. Send for 1907 Booklet.

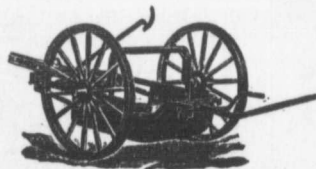
GLIMAX ROAD MACHINE CO.
HAMILTON, ONT.

The Toronto Pressed Steel Co., Limited
Toronto and Winnipeg

Manufacturers

- Drag Scrapers (Solid pressed bowl)
- Wheel Scrapers (pressed or square bowls)
- Dump Cars, from 1 to 3 yards
- Wheelbarrows, Wood or Steel Trays
- Waggons, Carts, Cement Mixers, Etc.

Prompt delivery from stock at Toronto and Winnipeg.
Send for complete catalogue. Write nearest office.



FOR SALE

We Offer Subject to Prior Sale for Immediate Shipment

4000 ft. **S. & F. CAST IRON PIPE** 8 in. x 45 lbs. x 12 ft. (Proved 300 pounds
4000 ft. " " " " 10 in. x 65 lbs. x 12 ft. (and Coated.)

Also a Large Assortment of Cast Iron Specials 2" to 10".

Our Season Being Over We are Prepared to Sell at Old Prices to Reduce Stock.

L. H. GAUDRY & CO., Importers, **QUEBEC** and **MONTREAL**
76 ST. PETER STREET 307 CORISTINE BUILDING

NOTES.

Concrete box sewers are being used quite extensively in Philadelphia where old sewers have to be replaced by others of larger capacity on substantially the same grades and lines. The walls are vertical, the bottom is trenched on the inside and paved with vitrified brick, and the top is a slab of concrete reinforced near its lower surface.

Electric drainage pumps are used in the vicinity of Altona, Holland, for keeping down the water in about 11,400 acres of marsh. The central station has a rated capacity of 260 kw., furnished by two units arrang-

ed for parallel operation. Each unit has a horizontal tandem-compound engine and a three-phase generator furnishing current at 3,000 volts. There are four Lancashire boilers, one as a reserve, which furnish steam at 150 pounds. From the station current is delivered to 21 motor-driven pumps, located at the most advantageous drainage points in the marsh. The drainage areas served vary from 25 to 4,200 acres and the lifts from 4.3 to 6.6 feet, thus requiring power in widely varying amounts. It would

have been too costly to proportion each pumping equipment to the work actually to be performed, and accordingly six standard sizes of motors of 2, 5, 11, 23, 46 and 100 h. p., respectively, were employed.

A. LEOFRED

(Graduate of McGill).

Consulting Engineer**WATERWORKS** A SPECIALTY.30 St. John Street
Metropolitan Ins. Bldg. **QUEBEC**
Phone 545.

Phone No.: PARKDALE 1809. Post Office and Telegraph Address: SWANS

THE DOMINION SEWER PIPE CO., LIMITED
SWANSEA, TORONTO, ONT.

MANUFACTURERS OF

**- VITRIFIED SALT GLAZED -
SEWER PIPES**

Price Lists and Discounts on Application

In Sizes from 4 inches to 24 inches

JNO. S. FIELDING

C. E.

CONSULTING ENGINEER

Concrete Dams**Power**

BRIDGES

MACHINERY

Plants**Hydraulics**

25 Years' Experience

5 TORONTO STREET - - TORONTO

**Matthews
Fire
Hydrant**

Is the recognized Standard Hydrant, and is the easiest Hydrant to keep in order.

Our Hydrants are thoroughly tested before shipment, and are of substantial proportions and weight.

Have your Engineer specify "The Matthews'" and get our tender.

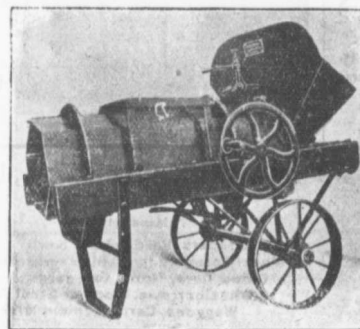
**THE KERR
ENGINE CO.,
LIMITED**
Walkerville - Ont.

**DRILLING CONTRACTORS****WATER, SALT, OIL AND GAS WELLS**

to any depth from 100 to 3000 feet. Contracts taken in any part of Canada. Excellent references. Estimates. Geological Reports. Expert Drillers and Complete Drilling Rigs Furnished.

JAMES PEAT & SONS

Established 1865. PETROLEA, ONT.

The Hand Power Continuous Concrete Mixer

FOR

Sidewalk and Street Work, and other classes of work where but small capacity is required.

Other Mixers, Hand, Steam, Electric, Gasoline and Gravity

E. F. DARTNELL
MONTREAL

Canadian White Company, Limited

SOVEREIGN BANK BUILDING, MONTREAL, CANADA

WINNIPEG OFFICE: BANK OF BRITISH NORTH AMERICA BUILDING

ENGINEERS AND CONTRACTORS

FOR

Steam and Electric Railroads: Electric Light and Power Plants: Building Construction: Water and Gas Works: Docks, Harbor Works, etc., etc.

J. G. WHITE & COMPANY, INC.,
New York City

CORRESPONDENTS
J. G. WHITE & COMPANY, LIMITED,
London, England

WARING-WHITE BUILDING CO.
London, England

GERMAN ALSEN, at higher prices than competitors has again this year been awarded the most important contracts of the World because practical tests by leading Engineers proved its merit and relative economy. Note the following:

	1905-1906	1905-1906
MEXICO CITY	120,000 bbls.	U.S. PHILIPPINE GOVMT. ORDER
NECAXA DAM (shipping instructions so far 60,000 bbls.) approximate amount	175,000 bbls.	GOVMT. OF SOUTH AMERICA
XOCHIMILCO WATER WKS., MEX. approximate	200,000 bbls.	RIO DE JANEIRO, SANTO, etc.
		Also enormous quantities for the PACIFIC COAST, AUSTRALIA, ENGLAND, SOUTH AFRICA, &c.

There is always a certain trade who will pay for the best. We also make American Alsen, the highest grade of domestic Portland cement.

CEMENT

45 BROADWAY, NEW YORK CITY

CEMENT

We protect our customers!

FIRE ESCAPES

Wire Screens for Road Making

Wrought Iron and Wire Guards and Enclosures for Jails, Asylums, Etc.

The Geo. B. Meadows, Toronto Wire, Iron & Brass Works Company
67 Wellington Place, TORONTO Limited



GALVANIZED WIRE WOUND WOODEN PIPE

No frost breaks, no corrosion. No electrolysis. It is easily and cheaply laid.
Its carrying capacity is never decreased by rust.

JAMES THOMSON, President. J. G. ALLAN, Vice-President. JAMES A. THOMSON, Secretary. ALEX. L. GARTSHORE, Treasurer.

THE GARTSHORE-THOMSON PIPE & FOUNDRY CO. LIMITED.

Manufacturers of



Flexible and Flange Pipe,
Special Castings and all kinds of
Waterworks Supplies.

3 inches to 60 inches diameter.

for Water, Gas, Culvert and Sewer

HAMILTON. ONT.

CANADIAN IRON AND FOUNDRY CO.

LIMITED

Special Castings
Flange Pipe
Branches
Hydrants
Valves



Valve Boxes
and
General
Water
Works
Supplies

SMALL DIAMETER WHEELS AND AXLES FOR CONTRACTORS.

CAR WHEELS. CASTINGS OF ALL KINDS.

Works at:

HAMILTON, ONT.
ST. THOMAS, ONT.
FORT WILLIAM, ONT.

MONTREAL, P. Q.
THREE RIVERS, P. Q.
LONDONDERRY, N. S.

HEAD OFFICE:

CANADA LIFE BUILDING, MONTREAL

HISTORY OF CONCRETE IN CANADA

BY JOHN S. FIELDING, C. E.

Concrete is coming to be recognized as a material possessing many of the qualities sought for by the hydraulic engineer, and conduits, dams, flumes, etc., that were at one time made of wood, are found to be strong and permanent, water-tight and weather-proof when properly constructed of concrete.

Mr. E. D. Tillson, the well known miller of Tillsonburg, Ont., was one of the first merchants in Western Ontario to recognize its advantages, and about the year 1892 built a crib dam filled with concrete, and about the same time the writer investigated its merits.

A good deal of literature on the subject was available at that time from European sources, but most of the work treated of had been done on public works on a large scale, and in climates essentially different from our Canadian climate.

The main question in doubt with European engineers was the effect of sea water on concrete, and for Canadians the great question was the effect of frost.

The Canada Atlantic was probably the first Canadian railroad to use concrete for bridge piers, and the late Mr. Thomas Munroe, C. E., Government Engineer on the Soulanges Canal, thought enough of it to use it for many hundreds of feet of heavy retaining walls in that work.

A trip made by the writer to Montreal and other cities disclosed the fact that some engineers were timid about using it for exposed work. They greatly feared the effect of expansion and contraction during setting or after completion, and hesitated on taking chances in the work being properly done. They preferred paying from \$10 to \$15 per cubic yard for stone work, rather than risk concrete work at \$5 to \$8. The writer thought what was good enough for retaining walls in the Soulanges Canal, for breakwater at Plymouth and Folkestone in England, in Cherbourg, Toulon, etc., in France, not to mention what has been done in Germany and the United States, was good enough for Canadians, and differed with those who said that when "one had solid stone masonry one knew what he had," believing that there were as many different grades of stone as there were of timber, and that some of them pitted, scaled, and decayed rapidly. The situation appeared to be, (1) That expensive masonry itself required some expense for repairs; (2) that concrete cost one-half of what first-class masonry could be done for, and no more than the cheapest grade of masonry would cost; (3) that tim-

ber was a constant source of expense for upkeep; (4) the chances of getting poor masonry or timber and of getting poor concrete were about even; (5) that good concrete once secured was superior to anything else.

No modern breakwater that the writer knew of had stood long without developing cracks and curves. Very many masonry walls showed similar defects, and surely a crack in a concrete wall would be no worse to put up with than in a stone wall.

Hard stone that would stand the weather was expensive to dress; stone easy to dress was often a weak stone. The localities having good building stone and those having gravel or trap rock suitable for concrete were as one to a thousand.

With these conclusions the writer felt justified in using concrete for many bridge piers, breakwaters, etc., for work in all parts of Western Ontario, and as a contracting engineer at that time put up bonds in some instances to guarantee the work for a term of years. He has yet to hear of any of the work entailing one dollar for repairs after completion.

Loss was incurred in some instances by contractors in being unable to secure good grades of European cement promptly, and being compelled to resort to an untried brand that happened to be in stock in Montreal, but now that the whole country is well supplied from home factories there is less liability to trouble from this source.

The investigations in France of Melan Emberger and Consideri brought in the use of reinforced concrete.

The efficacy of this system was found by actual trial, but one characteristic of steel and concrete, namely, their co-efficient of expansion from temperature changes, being so nearly uniform, .00000636 for steel, .00000795 for concrete for each degree Fahr. is one important point in favor of their use in combination.

The development of home manufacture has reduced the price of concrete in Ontario from \$2.40 to \$2.60 per barrel to \$1.50 to \$1.80.

The advance of concrete is along two lines, (1) replacing masonry, brick or timber for heavy masses, without any reliance upon metal reinforcement, and (2) replacing materials for comparatively light construction for which metal reinforcement is required.

Its use is sure to extend, and with good results upon the financial condition of the country, since such work should be permanent and the whole country is saved the enor-

mous expense of upkeep that was required when more perishable materials were used. In all cases of reinforced concrete, however, where loads are carried upon beams, slabs, columns, etc., the amount of metal required to secure a proper degree of strength is more than any novice would credit, and for the sake of the good name of reinforced concrete it is to be hoped that incompetents will keep their hands and minds of all such work.

There is one sad case of an Ontario farmer who had heard so much about concrete work that he decided to put in an approach to his barn consisting of a 14 ft. span, and whilst removing the false work the whole thing came down on him and crushed his life out. The unfortunate man had not put in sufficient reinforcement or had removed the false work before the concrete had dried out and hardened.

Cases have occurred in the United States of failures of reinforced concrete construction and Canada will fare likewise unless care be taken that the essentials to success be maintained, and in this work, as in anything else, "eternal vigilance is the price of success." The writer, in all specifications for concrete work, uses a clause empowering the clerk of the works to secure the dismissal of any employee who shows an inclination to skip the work or vary from the rules and proportions called for.—Engineering Journal.

Heggie & Stewart, builders and contractors, Montreal, Que., have dissolved partnership.

J. St. Jaques, of St. Hermenegilda, Que., has been granted a Canadian patent on road grading and rolling implements.

Harbor improvements throughout the world have been investigated by Dr. E. L. Corthell, whose figures, obtained by correspondence with port authorities, show clearly that the steamships of the world are increasing in dimensions, particularly in draught, much more rapidly than the entrance channels to the ports are being deepened. At the time his data were obtained, 1904, there were 138 ports having a depth of less than 30 ft. at low water and 70 with 30 ft. or more. There were 95 ports having less than 30 ft. at high water and 113 having 30 ft. or more. When all channels are deepened as proposed, there will be 116 ports with less than 30 ft. at low water and 91 with 30 ft. or more; and there will be 71 with less than 30 ft. at high water and 136 with 30 ft. or more.

"INGERSOLL" ROCK DRILLS



Three out of the ten of our "Ingersoll" steam drills used by Messrs. Laurin and Leitch in excavating rock at St. Louis de Mile End, Quebec. These rock drills are fully described in catalogue No. 81.

CONTRACTORS' PLANT

"Ingersoll" Air Compressors and Rock Drills; "Lidgerwood" Hoisting Engines and Ballast Unloaders;
"Gates" Rock Breakers; Allis-Chalmers Steam Shovels; "Bullock" Electric Motors and Generators.

ALLIS-CHALMERS-BULLOCK LIMITED

Head Office and Works: MONTREAL

**District
Offices:**

{ MONTREAL: Sovereign Bank Bldg.
NEW GLASGOW N.S. Telephone Bldg.
WINNIPEG: 251 Notre Dame Ave.

TORONTO: Traders Bank Bldg.
NELSON: Josephine St.
VANCOUVER: 416 Seymour St.

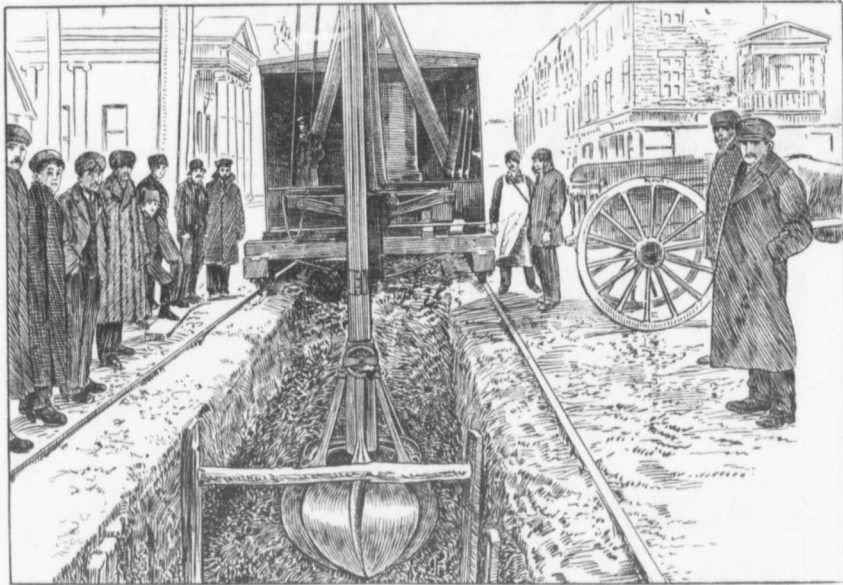
as
ble
es
er,
is,
of
er
ny
he
ed
at
ids

an
so
he
to
an,
ork
im
un-
uf-
ov-
on-
ed.
the
in-
nd
ess
to
his
nal
s."
for
m-
to
yee
mp
and
er-

and
ave

me-
d a
ing

gh-
gat-
iose
nce
arly
orld
tic-
pid-
the
the
004.
pht
and
ere
at
or
cep-
116
low
ore;
han
b 30



THE J. W. HARRIS EXCAVATOR

(Patented in all parts of the World)

This is one of the greatest inventions known for all kinds of excavating and trenching work.

Does the work of 50 to 100 men. Made in three sizes with half, three-quarter and one yard Orange Peel and Clam Shell Buckets.

Suitable for Railway Construction, Sewer and Waterworks, Crib Work, Irrigation Work, Coal and Ore Docks, Brick Yards and Cement Works, etc., etc.

For reference would refer you to Chief Engineer Canadian Pacific Railway, Corporation of the Town of Maisonneuve, (near Montreal,) and City Engineer, City of Montreal.

For further information and catalogue apply to

THE
J. W. HARRIS CO., Limited
Montreal - - - Canada

JOHN T. FARMER

**MECHANICAL and
HYDRAULIC ENGINEER**

418 Coristine Bldg. - MONTREAL

Please mention this paper when corresponding with advertisers.

SAMSON CEMENT

MANUFACTURED BY

THE OWEN SOUND PORTLAND CEMENT COMPANY, LIMITED
Owen Sound, Ont.

Works at SHALLOW LAKE, ONT.

Write us for prices.

CLASSIFIED INDEX OF ADVERTISERS

ACCIDENT INSURANCE Page	DRILLING CONTRACTORS Page	PIPE (CAST IRON) Page
Ontario Accident Insurance Co. 19	Harvey, J. 20	Canada Foundry Co. 23
BLUE PRINTS	Peat & Sons, James. 8	Gartshore-Thomson Pipe and Foundry Co. 9
Electric Blue Print Co. 7	DEBENTURES	Gaudry & Co., L. H. 7
BLOWERS	Nay, Anderson & Co. 22	Canadian Iron & Foundry Co. 9
Buffalo Forge Co. 4	Stimson & Co., G. A. 21	PIPE (WOODEN)
BRIDGES (CONCRETE)	ENGINEERS AND CONTRACTORS	Canadian Pipe Co. 9
Steel Concrete Co. 15	British Columbia General Contract Co. 23	Dominion Pipe Co. 14
BRIDGES (STEEL)	Canadian White Co. 8	Pacific Coast Pipe Co. 20
Canadian Bridge Co. 19	ENGINEERS (CIVIL)	PUMPS AND PUMPING MACHINERY
Canada Foundry Co. 23	Archibald, George H. 15	Allis-Chalmers-Bullock. 11
Dominion Bridge Co. 15	Chipman, Willis 18	Canadian Buffalo Forge Co. 4
Jenks & Dresser. 16	Connor, Clarke & Monds. 18	Canadian Fairbanks Co. 20
Phoenix Bridge and Iron Works. 15	Davidson, Shirley 21	Canada Foundry Co. 23
CEMENT	Davis, Johnston 15	Drummond, McCall & Co. 14
Alsen Portland Cement Co. 9	Fenson, C. J. 19	Mussens Limited. 3
Bremner, Alex. 15	Fielding, John S. 8, 7	McDougall Caledonian Iron Works Co., John 19
Canadian Portland Cement Co. 4	Galt, John. 7	ROAD MACHINERY
Currie & Co., W. & F. P. 20	Jackson, John H. 18	Cameron & Co., Hugh. 16
DeSola, C. I. 7	Lea & Coffin. 18	Climax Road Machine Co. 7
Gray & Bruce Portland Cement Co. 20	Leofred, A. 8	Heaman, George. 23
Hyde & Co., F. 22	McConnell, Brian D. 20	Morrison & Co., T. A. 13
Hanover Portland Cement Co. 6	McDougall & McRae. 7	Mussens Limited. 3
Lakefield Portland Cement Co. 14	Parke, Roderick J. 18	Sawyer & Massey Co. 16
McNally & Co., W. 4	Scott, Wm. Fry. 21	ROCK DRILLS
Morrison & Co., T. A. 16	Simpson, T. T. 21	Allis-Chalmers-Bullock 11
National Portland Cement Co. 17	ENGINEERS (MECHANICAL)	ROPE
Owen Sound Portland Cement Co. 13	Farmer, John T. 21	Allan, Whyte & Co. 21
Ontario Portland Cement Co. 16	Galt, John. 7	Dominion Wire Rope Co. 24
Raven Lake Portland Cement Co. 20	ENGINES	Greening Wire Co., B. 21
Stinson-Reeb Builders' Supply Co. 18	Allis-Chalmers-Bullock. 11	STEEL BARS (CORRUGATED)
Toronto Pottery Co. 22	Cameron & Co., Hugh 16	Corrugated Steel Bar Co. of Canada. 16
Thorn Cement Co. 14	Sawyer & Massey Co. 16	STRUCTURAL IRON AND STEEL
CONTRACTORS' SURETY BONDS	ELECTRICAL APPARATUS AND SUPPLIES	Canada Foundry Co. 23
United States Fidelity & Guaranty Co. 21	Allis-Chalmers-Bullock. 11	Dominion Bridge Co. 15
CONCRETE MIXERS AND MACHINERY	Canadian Gen. Elec. Co. 23	Jenks & Dresser. 16
Dartnell, E. F. 8	Drummond, McCall & Co. 4	Locomotive & Machine Co. 15
Hopkins & Co., F. H. 24	Northern Electric & Mfg. Co. 14	McGregor & McIntyre 16
Ideal Concrete Machinery Co. 17	FIRE APPARATUS	Phoenix Bridge & Iron Works. 15
Mussens Limited. 3	Cameron & Co., Hugh 16	STONE
Morrison & Co., T. A. 20	Meadows, George B., Toronto Wire, Iron & Brass Works Co. 9	Crushed Stone, Limited 16
Toronto Pressed Steel Co. 7	McGregor & McIntyre. 6	Doolittle & Wilcox. 21
Vining Bros. Mfg. Co. 5	Seagrave, W. E., Walkerville, Ont. 16	SHOVELS (STEAM)
CONTRACTORS' PLANT	HOISTING MACHINERY	Allis-Chalmers-Bullock. 11
Allis-Chalmers-Bullock. 11	Allis-Chalmers-Bullock 11	Beatty & Sons, M. 22
Beatty & Sons, M. 22	Beatty & Sons, M. 22	Canada Foundry Co. 23
Canada Foundry Co. 23	Canada Foundry Co. 23	Hopkins & Co., F. H. 24
Harris Co., J. W. 12	Canada Fairbanks Co. 20	Locomotive & Machine Co. 15
Hopkins & Co., F. H. 24	Canadian Iron & Foundry Co. 9	Mussens Limited. 3
Locomotive & Machine Co. 15	Gartshore-Thomson Pipe & Foundry Co. 9	SEWER PIPE
Mussens Limited. 3	Kerr Engine Co. 8	Bremner, Alex. 15
Peat & Sons, James. 8	McDougall Co., R. 21	Canadian Sewer Pipe Co. 18
Toronto Pressed Steel Co. 7	LOCOMOTIVES AND RAILS	Dominion Sewer Pipe Co. 8
CONCRETE CONSTRUCTION	Canada Foundry Co. 23	Toronto Pottery Co. 22
Ambursen Hydraulic Construction Co. 7	Gartshore, John J. 19	SHOVELS
Loignon, A. & E. 4	Hopkins & Co. 24	Canada Shovel & Tool Co. 5
Steel Concrete Co. 15	Locomotive & Machine Co. 15	Hopkins & Co., F. H. 24
CONTRACTORS' EMPLOYMENT BUREAUS	Mussen Limited. 3	Mussens Limited. 3
Bryans & Co., E. E. 7	Sessenwein Bros. 7	TANKS AND STAND PIPES
Zarossi, Banco. 15	PLASTER BOARDS	Canada Foundry Co. 23
CORRUGATED IRON	P. W. St. George. 20	Ontario Wind Engine & Pump Co. 18
Meta lic Roofing Co. 5	PILE DRIVING	VALVES
Pedlar People. 22	Hood & Sons, Wm. 19	Canada Foundry Co. 23
CRUSHERS (STONE AND ROCK)	Russell, John E. 19	Canadian Fairbanks Co. 20
Allis-Chalmers-Bullock. 11	PAVING AND PAVING MATERIALS	Canadian Iron & Foundry Co. 9
Beatty & Sons, M. 22	Brunet, Joseph. 7	Gartshore-Thomson Pipe & Foundry Co. 9
Canada Foundry Co. 23	Forest City Paving Co. 18	Kerr Engine Co. 8
Dartnell, E. F. 10	Ontario Asphalt Block Co. 18	McDougall Co., R. 21
Hopkins & Co., F. H. 24	Silica Barytic Stone Co. of Ontario. 15	
Mussens Limited. 3		
Morrison & Co. T. A. 20		
Sawyer & Massey Co. 16		

CEMENT SIDEWALKS.

Under ordinary conditions the wearing surface of a cement walk is composed of coarse grains of clean, sharp sand, largely made up of granite particles, cemented together by the finer particles of cement, enveloping the grains of sand and filling the voids. This forms, when properly proportioned and thoroughly mixed, a hard and uniform surface. After the thin film of cement has worn off the top, the face is practically granite, immune to the damage usually caused by shoe leather. The chief cause of a walk "scaling" is that this surface is over-troweled. When a trowel is drawn flat over the surface of fresh concrete a vacuum is formed that draws the finer particles of cement to the surface. If the process is too long continued a thin crust of neat cement forms on the top. This is strong against tensile strain, but will not resist abrasive wear. Consequently, this crust wears off under traffic and blows away. Underneath it is left a layer of sand from which all the cement has been drawn. This also rubs off readily, and a badly scaled walk is the result. If the walk is troweled in the fall the voids in the sand, robbed of their cement, fill with

**Portland Cement
Monarch Brand**



Highest quality—guaranteed to fulfill the requirements of specifications for Portland Cement approved of by the Canadian and American Societies of Civil Engineers.

Prompt shipments from mill or stock at Fort William and Port Arthur.

THE LAKEFIELD PORTLAND CEMENT CO., LIMITED
LAKEFIELD, ONT.

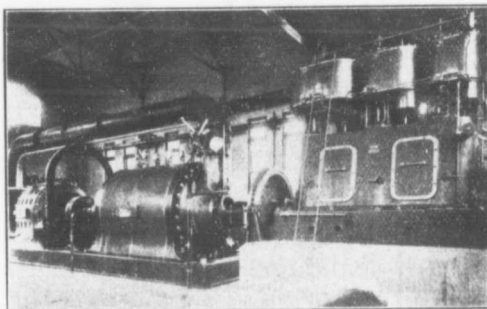


**"Lehigh"
Portland Cement**

Capacity 20 000 Barrels Per Day.

The "Lehigh Portland Cement Company, Limited," are also now building a plant at Belleville, O. L., of 750,000 barrels annual capacity. Until this plant is completed all orders can be shipped from the United States. For prices, etc., address—

THORN CEMENT CO. - Buffalo, N. Y.
SALES AGENTS FOR CANADA



Six Stage Turbine Pump, Electric Motor and High Speed Steam Engine. Built for the Montreal Water and Power Co., to do 4500 imperial gallons a minute against 300 feet head. Overall Eff. 70 per cent.

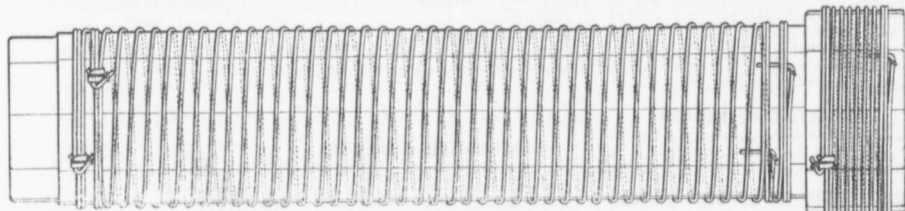
**PATENT
TURBINE PUMPS**

KITUNG TWO CYCLE S ENGINES,
GRAVITY AND PRESSURE FILTERS,
WATER SOFTENING PPARATUS,
ELECTRICAL MACHINES.

— BUILT BY —

MATHER & PLATT, LIMITED
MANCHESTER, ENG.

CANADIAN AGENTS: —
Drummond, McGill & Co., Montreal



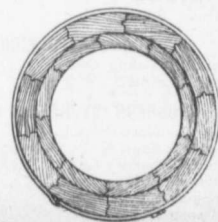
The Dominion Wire Wound Wood Water Pipe

Showing special method of winding with two independent parallel wires. The great advantage of this is, that in event of one wire becoming damaged the pipe still retains a factor of safety of 2.5.

Made only by
THE DOMINION WOOD PIPE CO., LIMITED
NEW WESTMINSTER, B. C.

Also Manufacturers of Continuous Stave Pipe for Irrigation and Power Purposes.

WRITE FOR CATALOGUE.



End view of Pipe and Coupling.

GEO. H. ARCHIBALD
CONSULTING CIVIL ENGINEER

820 Union Bank Bldg.
WINNIPEG, CAN.

Municipal Improvements.
Reinforced Concrete and Steel Construction

BANCO ZAROSI

Italian Licensed Labor Contractor
460 St. James St., MONTREAL

All kinds of Italian Laborers furnished
on short notice.

DAVIS & JOHNSTON

CIVIL ENGINEERS

**WATER WORKS, SEWERAGE
AND SEWAGE DISPOSAL**

Wm. Mahlon Davis, Herbert Johnson, C. E.
M. Can. Soc. C. E.
Offices: BERLIN and GALT

ARTIFICIAL STONE PAVEMENTS

SIDEWALKS A SPECIALTY

CORPORATIONS Will do well to consider our work
and prices before letting contract.

The Silica Barystic Stone Company
of Ontario, Limited.

WALTER MILLS Head Office:
General Manager WINDSOR, ONT.

THE PHOENIX BRIDGE & IRON WORKS, LIMITED
MONTREAL
GENERAL STEEL CONTRACTORS

Large Stock I BEAMS, CHANNELS, ANGLES, TEES, ZEES and
PLATES always on hand.

**Dominion
Bridge
Co., Ltd.**

P. O. Address, MONTREAL, P.Q.
Works at LACHINE LOCKS, P.Q.

STEEL BRIDGES

For Railways and Highways
Piers, Trestles, Water Towers,
Tanks, Buildings, Roofs, Girders,
Beams and Columns

Toronto Agent: GEO. E. EVANS,
38 Canada Life Bldg., TORONTO, ONT

PORTLAND CEMENT.



SEWER PIPES

FIRE BRICKS

FIRE CLAY

ALEX. BREMNER

50 Bleury Street, MONTREAL



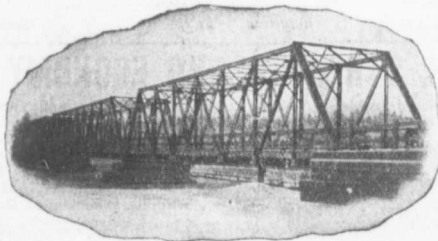
STRUCTURAL STEEL

FOR

BRIDGES, BUILDINGS,
ROOF-TRUSSES, ETC.

THE LOCOMOTIVE & MACHINE CO.
of Montreal, Limited

Imperial Bank Building - Montreal



FACTORY BUILDINGS

ENTIRELY IN

REINFORCED CONCRETE

STEEL CONCRETE COMPANY

E. A. WALLBERG, President

Merchants Bank Building

MONTREAL

water, freeze and thaw several times, and by expansion cause the surface to scale off. A scale never extends further down than the deepest point at which the surface has been disturbed by troweling.

There would be fewer broken walks if people would use a little good judgement and would give the concrete mixture time to crystallize properly. Properly crystallized cement forms a wonderfully rapid and permanent stone, when one thinks of it in comparison with the the work of Nature in forming natural rock. If defective cement causes the trouble the damage would not be confined to the top layer of the walk, but would extend all through the body mixture.

To use an Irishism, the safest way to trowel a walk is not to trowel it at all. After jointing it perfectly true, so that no water pockets are left, take a wooden plate and stipple it. This will prevent the top surface from becoming slippery in winter and will leave the

STEEL HIGHWAY BRIDGES

JENKS & DRESSER
SARNIA, ONT.

BUILDERS OF
STEEL HIGHWAY BRIDGES
STRUCTURAL STEEL WORK
CONCRETE ABUTMENTS

T. A. MORRISON & CO.
204 St. James Street
MONTREAL

Stone Crushers and Grinders
Steam Road Rollers
Fire Engines, Steam and Gasoline
Concrete and Macadam Stone

Crushed Stone, Limited

STONE

of any Size and in any Quantity on hand for
Sidewalks, Roadwork or Concrete Work

Works:
KIRKFIELD, ONT.

Head Office: 47 Yonge St. Arcade, TORONTO
Phone Main 4516
G. W. Essery, Manager.

Blue Lake Cement

MADE BY

THE ONTARIO PORTLAND CEMENT CO. LIMITED
HEAD OFFICE: BRANTFORD, ONT. LONG DISTANCE PHONE 194

THE JOHNSON CORRUGATED STEEL BAR

FOR

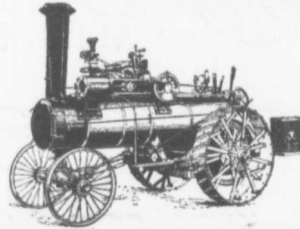
REINFORCED CONCRETE

Manufactured by

THE CORRUGATED STEEL BAR CO. OF CANADA, LIMITED

Operating under Johnson Patent No. 91630 and by license of Sir Wm. Mather.

Office: Coristine Building, MONTREAL



New, Re-built and Second-hand
TRACTION and PORTABLE ENGINES
(Simple and Compound)

For drawing and driving Rock Crushers,
Road Graders, Cement Mixers,
Grinders, Threshers, Plows, Saw
Mills and miscellaneous uses.

All Powers Quality the Best
Correspondence Solicited

Sawyer & Massey Co., Ltd.

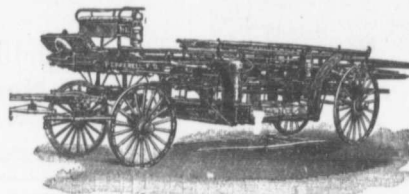
Road Machinery Department

Hamilton

Canada

LIGHTNESS, STRENGTH AND ECONOMY

Seagrave Patent Trussed Ladders, Trussed Aerial, City Service and Village
Hook and Ladder Trucks, Combination Hook and Ladder Trucks and Chemical



Engines, Trussed Trucks
and Hand Pumps, Com-
bination Hose Wagons and
Chemical Engines, Hose
Wagons, Combination Hook
and Ladder Trucks and
Hose Wagons, Chemical En-
gines, Fire Extinguishers,
Hose Reels, Patrol Wagons,
Ambulances, Specialty Wag-
ons, Patent Sleigh Runners,
and other Modern Fire Fight-
ing Tools.

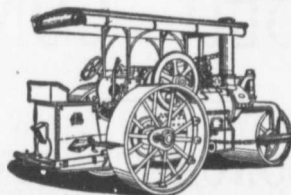
Prompt attention given all inquiries. All goods built to order.

Long Distance
Phones 686 and 684

W. E. SEAGRAVE, WALKERVILLE ONT.

"WATEROUS"

ROAD MACHINERY AND FIRE APPARATUS



FIRE ENGINES in five sizes,
with a full line of fire-
fighting goods

We Rebuild other makes of
Fire Engines with our
patent Boiler.

BRANTFORD PITTS DOUBLE ENGINE STEAM ROAD ROLLER

IN THREE SIZES—10, 12 and 16 ton.

CORRESPONDENCE SOLICITED.

HUGH CAMERON & CO., Selling Agents 72 Queen St. West,
Maunings Chambers, TORONTO

granite grain on top. If a smooth surface is essential, trowel it as little as you possibly can.

Mr. Chas. Brandeis, C. E., Montreal, Que., is leaving this

week for Havana, Cuba, on a business trip.

The building business of J. Stewart & Co., Westmount, Que., has been registered.

A well known contractor in the

person of Mr. Wm. McElva, Ottawa, Ont., died on January 15th. Deceased was for some time connected with Haycock & Company, and carried on an extensive building business.

Defy Competition

The Ideal Concrete Machine for the manufacture of Concrete Building Blocks makes it possible to profitably undersell all other building materials in all localities.

Ideal Blocks can be sold far below the cost of brick, lumber or natural stone. Excell them all in durability and fire and weather proof qualities. Adaptable to any possible architectural design.

IDEAL CONCRETE MACHINERY

Wonderfully simple in construction. No chains, springs or gears. Embody the only principle (face down) permitting the practical use of rich facing material with less expensive material in back of blocks. Adaptable to any size block within capacity.



The same machine makes blocks in countless ornamental designs and natural stone effects.

Write and learn how easily, rapidly and profitably **one man** can turn out Concrete Building Blocks with an Ideal Machine.

IDEAL CONCRETE MACHINERY CO.

.DEPT. A. Q.
LONDON — ONTARIO

MUSSENS LIMITED,
MONTREAL, CANADA

SOLE AGENTS FOR CANADA

One Grade

"The Cement of Quality"

The Highest

Tests of

NATIONAL Portland Cement

BY

The City Engineer of Toronto for 1903-4

Note the High Grade of National. Compare it with others.



Year.	No Samples Tested.	Soundness Fajji Test.	Specific Gravity	Residue in Test Sieve No. 100 Sieve	Setting Time in Minutes		Tensile Strength in pounds per square inch.									
					Initial	Final	Neat.					3 (Sand) to 1 (Cement)				
							1 dy.	7 ds.	28 ds.	3 mos.	1 yr.	1 dy.	7 ds.	28 ds.	3 mos.	1 yr.
1903	20	O.K.	3.135	2.1	162	345	307	701	783	827	*	74	214	299	367	*
1904	44	O.K.	3.150	2.0	132	342	300	744	848	914	938	86	262	354	401	427

* Tests for 1 year were not completed when records closed. 1905 report not yet issued.

THE BEST IS THE CHEAPEST

The National Portland Cement Company

Limited

Head Office and Mills: DURHAM, ONTARIO

MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

WILLIS CHIPMAN

Hon. Grad. McGill University.
M. Can. Soc. C.E. M. Am. Soc. C.E.
Mem. Am. W.W. Ass'n.
WATERWORKS, SEWERAGE WORKS, GAS
WORKS, ELECTRIC LIGHT AND
POWER PLANTS
Reports, Surveys, Construction, Valuations
103 BAY STREET - TORONTO

LEA & COFFIN
and H. S. FERGUSON
ENGINEERS

Waterworks, Sewerage, Water Powers
Pulp and Paper Mills
Reinforced Concrete Structures of Every
Description.
Cristine Building - MONTREAL

RODERICK J. PARKE

A.M. Can. Soc. C.E. A.M. Amer. Inst. E.E.
CONSULTING ELECTRICAL ENGINEER.
Electrical Light and Power.
Steam Plants, Gas Power Plants, Water
Power Plants.
Estimates, Tests, Reports, Valuations.

82-53 James Building - TORONTO, CAN.
Long Distance Telephones-Office and Residence
Cable Address "Rodparke" (W. U. Code.)

A. W. Connor, B.A., C.E. H. R. Clarke, B.A., Sc.
W. Mond, B.A., Sc.

CONNOR, CLARKE & MOND
CONSULTING ENGINEERS

Hydraulic, Municipal and Railway Work; Long
Distance Power Transmission; Machinery;
Pumps; Complete Industrial Plants; Fire-
proof Steel or Reinforced Concrete Office and
Mill Buildings; Bridges, Towers, etc.
CEMENT TESTING LABORATORY
36 TORONTO ST. TORONTO, ONT.

J. LEWIS THOMAS
CIVIL ENGINEER

LONDON - - ONTARIO
Consulting Engineer for Municipal and County
Work. Electric Railways, Bridges, Water-
works, Sewerage, Wharves, Docks, etc.
Special attention to Valuations and Arbit-
rations.

WATER SUPPLY APPLIANCES

For Corporations, Municipalities, Villages,
Residences, Etc.
Sprinkler Systems a Specialty.



**Wood and Steel Tanks,
Steel Substructures**

Windmills, Pumps, Gasoline Engines,
Hydraulic Engines, Etc.

ONTARIO WIND ENGINE AND PUMP CO., LTD.
TORONTO
WINNIPEG MONTREAL

John H. Jackson
CIVIL ENGINEER

WATER POWER, ELECTRIC RAIL-
WAYS, STRUCTURAL STEEL.
Niagara Falls, Canada
Associated with Charles H. Mitchell,
C. E., Hydraulic Engineer.

McDOUGALL & McRAE
ENGINEERS

Electric Light and Power Plants.
Electric Railroads.
General Consulting Work.
Citizen Building - OTTAWA

8 TO 10

contracts under construction continually.
That is why we can do work **CHEAPER,**
QUICKER, BETTER, than small contractors.

FOREST CITY PAVING COMPANY,
B. V. HOLE, MANAGER - - - LONDON, ONT.

THE ONTARIO ASPHALT BLOCK CO., L'TD.

MANUFACTURERS OF
ASPHALT BLOCK PAVING
Information and samples furnished municipalities on application.
Main Office: WINDSOR, ONT. Works: WALKERVILLE, ONT.

THE CANADIAN SEWER PIPE CO.



FOR
Sewers, Culverts and Water Pipes
Inverts for Brick Sewers

WRITE FOR DISCOUNTS
ST. JOHNS, P.Q. HAMILTON, ONT. TORONTO, ONT.

"GIANT" AND "NORTHAMPTON"
PORTLAND CEMENT

For Immediate Delivery

The above Cement we fully guarantee to fulfil the
requirements of Canadian and American Societies of
Civil Engineers.

Large stock always carried at Fort William, Port
Arthur and Duluth.

Telegraph, Telephone or write for prices.

STINSON-REEB BUILDERS' SUPPLY CO. Limited
MONTREAL, P. Q.

REGINALD LAWSON

WESTERN REPRESENTATIVE, UNION BANK BUILDING
Phone 3397 - - - WINNIPEG, MAN.

For the Province of Saskatchewan:
REGINA STORAGE AND FORWARDING CO. - - - REGINA

The Canadian Bridge Co., Limited

WALKERVILLE, ONT.

MANUFACTURERS OF RAILWAY AND HIGHWAY BRIDGES

Locomotive Turn Tables,
Roofs, Steel Buildings and
Structural Iron Work of all descriptions

C. J. FENSOM, B. A. Sc.
CONSULTING ENGINEER
Aberdeen Chambers - Toronto
Machinery designed, supervised,
inspected and contracted for.
TESTS — REPORTS
Electric Light Plants, Power Plants,
Pumping Plants.

PILE DRIVING

On land and water by steam.
Pile drivers or drop hammers.
Dams, wharves, bridge building,
trestle work and general contract-
ing.
Submarine diving and all kinds
of submarine work.



We have always a stock in hand to
let of:
Diving Outfits, Portable Boil-
ers, Hoisting and Pumping
Machinery, Etc.
WM. HOOD & SON
10 Richmond Sq. - MONTREAL

The Ontario Accident Insurance Co.

ACCIDENT, EMPLOYERS, ELEVATOR
AND GENERAL LIABILITY

104 St. Francois Xavier St. Montreal

RAILS LOCOTIVES AND CARS

For Contractors, Switches, Gir-
ders, &c.
New and Second Hand.

John J. Gartshore
83 Front St. West,
(Opposite Queen's Hotel.) TORONTO

ELECTRICITY

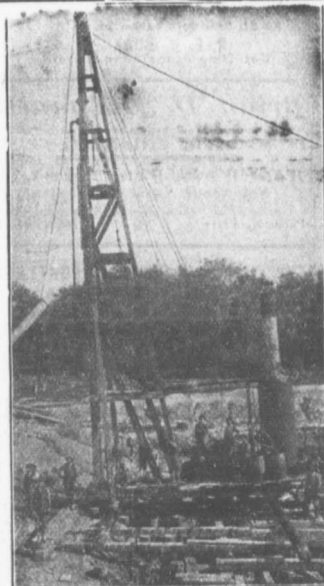
If you desire to keep posted on
the wonderful progress that is
taking place in the use of elec-
tricity for an almost endless var-
iety of purposes, you should sub-
scribe to the

Canadian Electrical News and Engineering Journal

A 44 PAGE MONTHLY.
PRICE \$1 PER YEAR

Write for free sample copy to

The G. H. Mortimer Publishing Co.
LIMITED
Toronto Montreal Winnipeg Vancouver



PILE DRIVING

and Foundation Work.

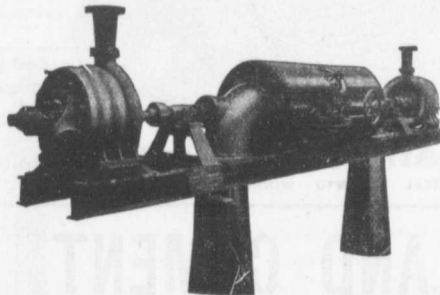
By 5-ton Automatic Steam Pile Hammer,
Water Jet or Drop Hammers, Dock Build-
ing, Submarine Work and Dredging.

BUILDING MOVER AND WRECKER

General Contracting.

JNO. E. RUSSELL, - Toronto
Residence, 1010 Queen St. E.—Phone M. 4656
Office and yard 307 Logan Ave.—Phone M. 2077

PUMPS FOR WATER WORKS



Two Worthington 3-Stage Turbine and McCormack
Water Wheels, built for Port Arthur, Ont., Water
Works, 1440 gal. per minute against 350 ft. head.

WATER WORKS SYSTEMS INSTALLED

Boilers, (Return Tube and Water
Tube,) Tanks, Penstocks,
Mill Machinery.

Builders in Canada of

"WORTHINGTON" TURBINE PUMPS

The John McDougall Caledonian Iron Works Co.,
Montreal. Limited.

Estimates cheerfully furnished

WILLIAM R. GREGG
— ARCHITECT —
Bank of Commerce Bldg., TORONTO, ONT.

SACKETT PLASTER BOARDS

Great time saver. Fire and sound proof. Cheaper than wooden and metal lath construction. In stock at Montreal and Toronto. Address

PERCIVAL W. ST. GEORGE,
80 St. Francois Xavier St. Montreal
R. E. H. BUCKNER,
Ont. Lime Association, Toronto

Brian D. McConnell
CIVIL ENGINEER

Water Works, Water Powers, Sewerage Systems, Railways
Temple Building, MONTREAL
Phone Main 1473

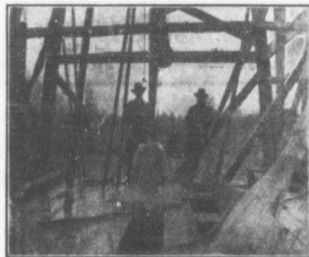
THE GREY AND BRUCE PORTLAND CEMENT COMPANY
of Shallow Lake, Limited.

Manufacturers of
"HERCULES" BRAND OF PORTLAND CEMENT

Very finely ground. Unsurpassed for Sidewalks, Floors and all work requiring the Highest Grade of Portland Cement. For prices address,
A. D. CREASOR, Sec'y-Treas.
Head Office, Owen Sound, Ont.

J. HARVEY
CONTRACTOR
PETROLEA,

Driller of Oil, Gas, Salt or Artesian Wells. Deep Wells a Specialty.



Contracts taken in any part of Canada. Several years experience in Artesian Wells for Municipal Water Works. Estimates or geological information cheerfully furnished.
REFERENCES GIVEN

--- MACHINE BANDED WOOD STAVE WATER PIPE ---



High pressure pipe for Water Works Systems, irrigation power plants, etc. Sizes 20" to 24", half the cost of cast iron. Write for Catalogue.

PACIFIC COAST PIPE CO., LTD. Box 563, Vancouver, B. C.

W. & F. P. CURRIE & CO.
345 St. James St., Montreal

Importers of

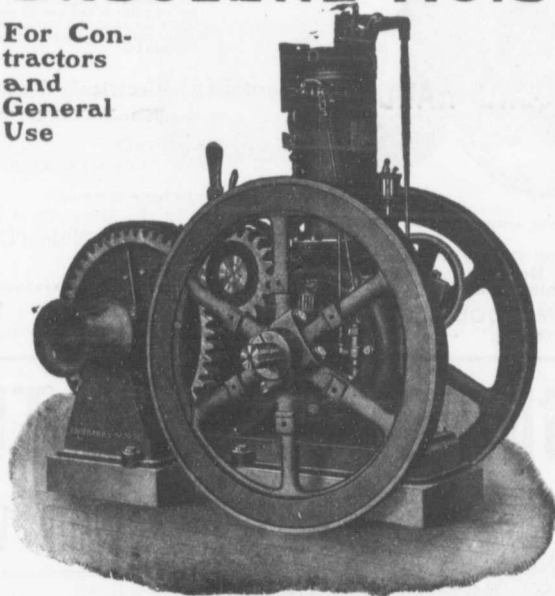
SEWER PIPES,
CULVERT PIPES, ETC.
VENT LININGS,
FLUE COVERS,
FIRE BRICKS,
FIRE CLAY,
WHITING.



PORTLAND CEMENTS.
HIGH GRADE ENGLISH
" " **GERMAN**
" " **BELGIAN**
PLASTER OF PARIS
BORAX,
CHINA CLAY

GASOLENE HOISTS

For Contractors and General Use



Equipped with Variable Speed Device. Can be started or stopped in a moment.

Clean Safe Economical

Send for Circular

The Canadian Fairbanks Co., Limited
MONTREAL TORONTO WINNIPEG VANCOUVER

"RAVEN" PORTLAND CEMENT

— Unexcelled for Strength and Uniformity —

RAVEN LAKE PORTLAND CEMENT CO.

Limited

Long Distance Telephone: RAVEN LAKE, ONT.

Telegraph and Post Office Address: VICTORIA ROAD, ONT.

Janua
Shirle
Contra
224
WIL
Consult
Construc
Bridges,
crete, Re
cations, 1
for Inver
Aberdee
ant
Main 472
T.
CIVIL
Ele
Water
33 Ban
Municip
G.
14 and 25
DO YOU
DO YOU
S
C
P
The bes
cost by
CONTRA
per line,
Replie
dressed
forward.
The Ca
Confes
MONTRE
A vertical image of a tool or pipe is visible on the far right edge of the page.

Telephone: Main 5127.

Shirley Davidson, B. A. Sc.
(McGill University)

Contracting and Consulting Engineer
Bank of Ottawa Building,
224 St. James Street, MONTREAL.

WILLIAM FRY SCOTT
STRUCTURAL ENGINEER

Consultation or Design: Buildings, Building Construction, Foundations, Walls, Roofs, Bridges, Masonry, Fireproof, Reinforced Concrete, Reinforced Brick, Steel, Timber, Specifications, Examinations, Valuations, and Reports for Investment.

Aberdeen Chambers, Cor. Adelaide and Victoria Streets, TORONTO, ONT.
Main 4724 North 4206

T. T. SIMPSON

CIVIL AND CONSULTING ENGINEER
Electric, Hydraulic Plants, Waterworks, Sewerage, Bridges.
33 Bank St. Chambers, OTTAWA.

Municipal and Other Bonds and Debentures Bought
Highest Prices Paid.

G. A. STIMSON & CO.
14 and 26 King Street West - TORONTO

**DO YOU WANT TO BUY
DO YOU WANT TO SELL**

**SECOND-HAND
CONTRACTORS'
PLANT**

The best results can be obtained at small cost by an advertisement in the CANADIAN CONTRACT RECORD. The rate is 10 cents per line, twelve lines to an inch.

Replies to advertisements may be addressed in care of this paper and will be forwarded without extra charge.

The Canadian Contract Record
Confederation Life Bldg., TORONTO
BRANCH OFFICES:
MONTREAL - WINNIPEG - VANCOUVER

Contractors to H. M. Governments

ALLAN, WHYTE & CO.

Clyde Patent Wire Rope Works, Rutherglen, Glasgow, Scotland

WIRE ROPES for Cableways, Aerial Ropeways, Elevators, Cranes, Derricks, Pile Driving, Drilling, etc.

Large stocks carried by **DRUMMOND, McCALL & CO.,**
MONTREAL AND TORONTO

Crushed Stone and Slag

Best for Concrete. Any quantity shipped promptly.
Get our prices. Long distance phone 286.

Doolittle & Wilcox, Limited, Dundas, Ont.

Advertisements in the CONTRACT RECORD bring results

THE UNITED STATES FIDELITY AND GUARANTY Co.



Acts as Sureties on Contractors' Bids or Tenders and on Final Bonds
Rates Reasonable. Set our Agent in your town or write direct to us
Head Office for Canada: 6 Colborne Street, Toronto
A. E. KIRKPATRICK, MANAGER

WE WILL BOND YOU

WIRE ROPE



All Kinds and Sizes and For All Purposes. Standard and Lang's Patent Lay.

PRICES RIGHT

Rope Fittings

PROMPT SHIPMENTS

Rope Grease

THE B. GREENING WIRE CO., LIMITED
HAMILTON, ONT. MONTREAL, QUE.



THE GALT FIRE HYDRANT

Endorsed as the best Hydrant on the market, easily operated and perfectly safe against damage above ground. Circulars give full information of this and other MUNICIPAL SUPPLIES, CATCH BASINS, MAN-HOLE COVERS and FRAMES, Etc.

The R. McDougall Co., Limited,
Galt, - Canada.

Prices of Building Material

PRESSED BRICK, Per M.

TORONTO PRESSED BRICK AND TERRA COTTA WORK
F. O. B. Milton, Ont.

Red No. 1	\$13 00
" 2	11 50
" 3	10 00
Buff No. 1	17 00
" 2	13 00
" 3	25 00
Brown	30 00
Roman Red	35 00
" Buff	40 00
" Brown	40 00
Hard Building	8 00
" Sewer	8 00
" Backing	7 00

Moulded and Ornamental from \$2.00 to \$5.00 per 100.
Terra Cotta String Courses and Frieze, from 50c. to \$2.00 per ft. run.
Roofing Tiles, \$20.00 per 1,000.

DON VALLEY BRICK WORKS.

Nos. 1, and 2, Red Pressed Bricks	.....
Nos. 1 and 2 Buff Pressed Brick	.....
No. 1 Brown Pressed Brick	.....
Pompeian Red, Buff and Brown Pressed Bricks	.....
Ornamental Bricks of all kinds for Mantel purposes	.....
Enamelled Bricks of all Colors	.....
Porous Terra Cotta Fireproofing of all Descriptions	.....
Vitrified Street-Paving Bricks	.....
Semi-Vitrified Foundation Bricks	.....
Common Stock Red and Grey Bricks	.....
Sewer Bricks	.....
Stone or Macadamised Roadways	.....

Please write to head office, 34 Toronto St. Toronto, for catalogue and prices.

BEAMSVILLE BRICK AND TERRA COTTA CO.

F. O. B. Beamsville.

Red Peerless Facing	\$16 00
" No. 1	14 00
" No. 2	12 00
" No. 3	10 00
Brown Peerless Facing	30 00
" No. 1	18 00
" No. 2	20 00
" No. 3	18 00
" No. 4	15 00
Moulded and Ornamental Brick from \$3 to \$10 per C	.....
Roman Red (Size 12 x 4 x 1 1/2 in.)	30 00
" Buff	30 00
" Brown	15 00
Vitrified Paving Brick No. 1	18 00
" " No. 2	8 00
Sewer	8 00
Roofing Tile	22 00

LUMBER

CAR OR CARGO LOTS, F. O. B. TORONTO.

Per M. Ft.

1 inch No. 1 Pine cuts and better	\$19.00 to \$21.00
1 1/2 to 2 inch No. 1 cuts and better	54.00 56.00
1 inch No. 3, Pine cuts and better	38.00 42.00
1 1/2 to 2 inch No. 3 cuts and better	41.00 45.00
1 inch Pine Dressing and better shorts	24.00 26.00
1 x 4, 6 and 8 Common	21.00 22.00
1 x 10 and 12 Common	22.00 25.00
1 inch mill run sidings	24.00 26.00
1 inch mill run	25.00 26.00
1 x 10 and 12 mill cuts	18.00 19.00
1 inch dead cull sidings	14.00 15.00
1 1/2 inch Flooring	30.00 31.00
Hemlock, 1 x 4 to 8 inch	17.00 18.00
2 x 4 to 8 inch, 12 to 16 feet	18.00 20.00
2 x 4 to 10 inch, 18 feet	20.00 22.00
1 1/2 inch No. 1 1/2 ft. Pine Lath	5.00 5.25
1 1/2 inch No. 2 1/2 ft. Lath	4.25 4.50
1 1/2 inch No. 1 1/2 ft. Hemlock Lath	4.00 4.25
XXXX Pine Shingles	3.00 3.25
XX Cedar Shingles	2.25 2.30
B.C. Shingles:	
XXXX 6 butts to 2 inch	3.40
XXXX 6 to 2 1/2 inch	3.64
XXXXX 5 to 2 inch	3.93

HARDWOODS—PER M. FEET CAR LOTS.

Ash, white, 1sts and 2nds, 1 to 2 inch	\$33.00 to \$35.00
Ash, black, 1sts and 2nds, 1 to 1 1/2 inch	28.00 30.00
Birch, M. R. 1 inch	21.00 23.00
" 1 1/2 inch to 2	23.00 25.00
Basswood, Common and better, 1 to 1 1/2 inch	23.00 24.00
Basswood, 1 1/2 to 2 inch	24.00 26.00
Elm, soft, mill run, 1 to 1 1/2 in.	23.00 24.00
Elm, rock, mill run, 1 to 1 1/2 in.	23.00 25.00
Maple, common and better, 1 to 1 1/2 inch	22.00 23.00
Oak red plain, 1sts and 2nds, 2 to 4 inch	44.00 46.00
Oak, white, 1sts and 2nds, 1 to 1 1/2 inch	42.00 44.00
Oak, quartered, 1sts and 2nds	70.00 80.00

We are the largest buyers of Western School Debentures in the British Empire

School Trustees will do well to communicate with us when having debentures to offer for present or future delivery:—

HIGHEST PRICES PAID. PROMPT SETTLEMENT.

NAY, ANDERSON & CO.
Regina, Sask.

Lafarge (NON-STAINING) Cement

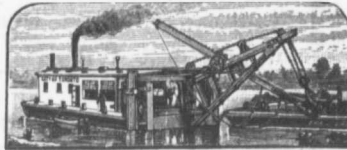
PORTLAND CEMENT FIRE BRICKS
DRAIN PIPES FIRE CLAY
CULVERT PIPES SEWER BRICK
SEWER BOTTOMS

F. HYDE & CO.,

King, Queen and Wellington Sts. - MONTREAL

M. BEATTY & SONS, LIMITED

WELLAND, ONTARIO, CAN.



Dredges, Ditchers,
Derricks
Steam Shovels,

Submarine Rock Drilling Machinery, Mine Hoists, Hoisting Engines, Centrifugal Pumps for Water and Sand, Stone Derricks, Clam Shell Buckets, Steel Skips, Coal and Concrete Tubs, and other Contractors' Machinery.

The Toronto Pottery Company, Ltd.

Toronto, Ontario

Manufacturers and Jobbers of

Contractors' Supplies

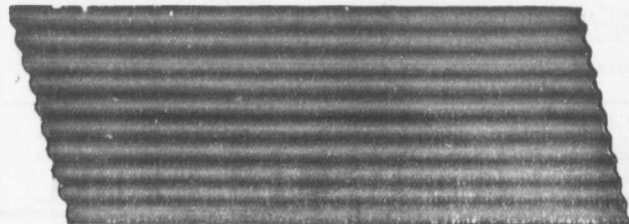
Fire Brick, Paving Brick,

Portland Cement, Sewer Pipe

Write for prices

CORRUGATED IRON

600 TON STOCK. PROMPT DELIVERY.



Pedlar's Corrugated Steel Sheets are manufactured on a 38,000 lb. Oh Press—one corrugation at a time—and are guaranteed straight and true to size. Six Hundred Tons in Stock in Oshawa, Montreal, Toronto, Ottawa and London, in gauges varying from 28 to 18, both painted and galvanized. Made in 1/2", 2" or 2 1/2" corrugation—corrugation lengthwise or across the sheet. Sheets 2 3/4, 4, 5, 6, 8 or 10 feet long at no extra charge. Ask for Catalogue No. 14 R and give specifications for prices.

We are the largest makers of Sheet Metal under the British Flag.

ESTABLISHED 1861 — CAPITAL INVESTED, \$250,000.

THE PEDLAR PEOPLE

Montreal, Que. Ottawa, Ont. Toronto, Ont. London, Ont. Winnipeg, Man. Vancouver, B.C.
321-3 Craig St. W. 423 Sussex St. 11 Colborne St. 64 Dundas St. 16 Lombard St. 615 Pender St.

Write your nearest office. Head office and Works, OSHAWA, ONT.

"Keeping Everlastingly at it Brings Success."

Stackpole Patent Im

Because no s
It sweeps Ch
cision. It w
less gearing
reasonable c



FROST PROOF HYDRANTS

OUR

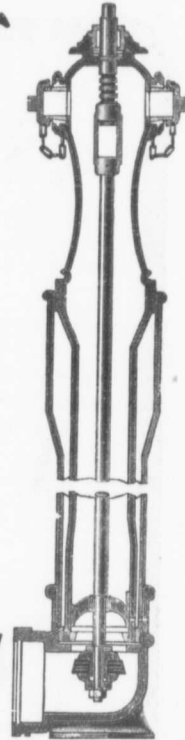
Toronto Hydrants are fitted with frost cases separated from the hydrant, thereby preventing injury due to upheavels of the ground by frost.

Waterworks Supplies
of every description

CANADA FOUNDRY COMPANY

LIMITED

HEAD OFFICE AND WORKS: TORONTO, ONT.



District Offices: MONTREAL, HALIFAX, OTTAWA, WINNIPEG, VANCOUVER, ROSSLAND

The British Columbia General Contract Company, Limited

Telegraphic Address: "Dredging"

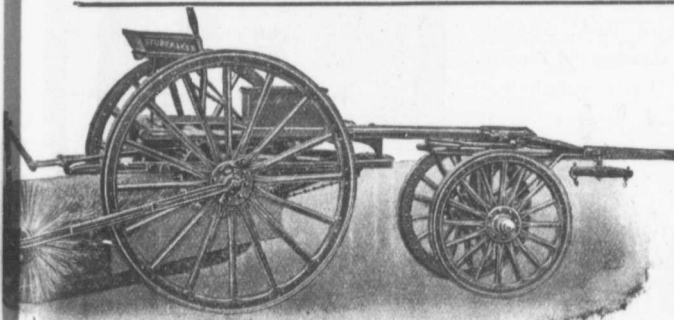
Fairfield Building, VANCOUVER, B. C.

ENGINEERS and CONTRACTORS

Municipal Works and Buildings
Bridges

Concrete Construction
Harbor Works

Railways
Dredging and Reclamation



Stackpole

Patent Improved **Street Sweeping Machine**

Is the Standard of Perfection

Because no sweeper so effectually does the work for which it is designed as "The Studebaker." It sweeps Clean. No sweeper is constructed with the same degree of care and mechanical precision. It wears Well. "The Studebaker" has the smallest number of working parts, and has less gearing than any other sweeper made. It is free from all unnecessary complications. With reasonable care it does not get out of order. Send for complete descriptive catalogue.



Studebaker Sprinkler

(PATENT IMPROVED.)

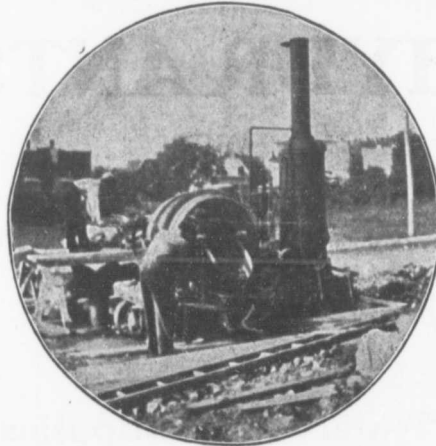
Does not clog or get out of order. Greatest width of spray
Can be graded from driver's seat to any volume.

We also make an . . .

IMPROVED VERTICAL SPRAY

for Pavements

Geo. Heaman, Mnfr., London, Ont.



Ransome Concrete Mixers

are the most up-to-date mixers on the market.

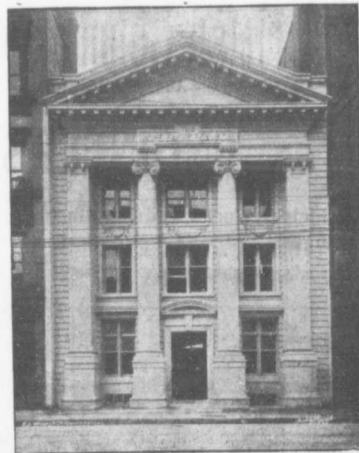
SIMPLE IN CONSTRUCTION - EFFICIENT - EASY TO OPERATE

Let us explain how you
can save

\$18 to \$20 per week

Mixers supplied, with or without
power—All capacities.

The illustration shows the Home Bank, Toronto,
built by R. A. Rogers & Co., Contractors, Toronto,
who own and operate Ransome Mixers exclusively.



Let us send you our Concrete Handbook

F. H. Hopkins & Co.

Successors to the Late James Cooper
MONTREAL

Dunn Bros., Winnipeg, Agents
Gorman & Clancy, Alberta Agents.