

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 19, 1907 — WINNIPEG, VANCOUVER

No. 16

THE CANADIAN CONTRACT RECORD

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in advance.

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PUBLISHERS' ANNOUNCEMENT.

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

Copy and cuts for change of adver-
tisements must reach the publication
office in Toronto not later than Sat-
urday preceding the date of publica-
tion. 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

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

M. CRAWFORD,
Campbellville, Ont.

CITY OF ST. CATHARINES

TO SEWER CONTRACTORS

Sealed Tenders, addressed to the Chairman of the
Committee on Works, will be received by the under-
signed until 12 o'clock noon FRIDAY, 28TH JUNE,
for the construction of the following sewers:

About 1,400 feet of 15" sewer pipe.
About 1,300 feet of 12" sewer pipe.
About 1,340 feet of 10" sewer pipe.
Manholes' Catch Basins, &c.

Plans and Specifications can be seen and Form of
Tender obtained on and after Monday, 17th June.
The lowest or any offer not necessarily accepted.

D. BENZIE, C.E., City Engineer.
City Engineer's Office, 15th June, 1907.

CITY OF WINNIPEG

Point du Bois Hydro- Electric Development

TENDERS FOR CONSTRUCTION AND EQUIPMENT

Sealed tenders, on prescribed forms, addressed to
the Chairman of the Board of Control, Winnipeg,
Canada, and marked on the envelope "Point du
Bois Hydro-Electric Development, tender for.....
..... (here add the particu-
lar item or items as below), will be received at the
office of the undersigned up to noon of

Tuesday, 3rd Day of September, 1907,

for the construction of the General Works, and for
the supply and erection of the various portions of the
equipment for the Hydro-Electric Works and Station
at Point du Bois, for a Transmission Line between
Point du Bois and Winnipeg, and for a Receiving
Transformer Station in Winnipeg.
Copies of the instructions to bidders, plans, specifi-
cations and forms of tender, may be obtained at the
Power Engineer's office, Carnegie Library Building,
Winnipeg.

Each tender must be accompanied by a certified
cheque payable to the order of the City Treasurer
for the sum called for in the corresponding "In-
structions to Bidders," which cheque will become
forfeit to the Corporation in the event of the suc-
cessful tenderer refusing or neglecting to sign a
satisfactory contract when called upon to do so.
Individual tenders will be received for:

- (3) Telephone System.
- (4) General Works at Point du Bois.
- (5) 4,000 H. P. Turbines (five).
- (6) 450 H. P. Turbines (two).
- (7) 3,000 K. W. Generators (five).
- (8) 250 K. W. Generators (two).
- (9) Induction Motors (one).
- (10) Step-up Transformers (five).
- (11) Generating Station, Switching and Accessory
Apparatus.
- (12) Generating Station, Light, Heat and Power
Systems.
- (13) Generating Station, Oil and Air Systems.
- (14) Erection of Transmission System (75 miles).
- (15) Steel Towers.
- (16) High Tension Insulators.
- (17) Electric Transmission Cable.
- (18) Terminal Station.
- (19) Step-Down Transformers (five).
- (20) Terminal Station, Switching and Accessory
Apparatus.
- (21) Terminal Station, Light, Heat and Power
Systems.
- (22) Terminal Station, Oil and Air Systems.
- (24) Testing Transformers and Apparatus.
- (25) Electric Travelling Cranes (three).
- (26) Turbine Governors (seven).
- (27) Auxiliary Apparatus.
- (28) Repair Shops.

An alternative lump-sum tender will be received
for the entire work, including all of the above men-
tioned items together with additional work and
equipment necessary to instal a complete working
plant. As a further alternative, tenderers may in-
clude or group together one or more of the above
items providing that they have also tendered for the
individual items of such group.

The Board reserves the right to reject any or all
tenders, or to accept any tender which shall appear
advantageous to the City of Winnipeg.

M. PETERSON,
Secretary.

The Office of the Board of Control,
Winnipeg, June 8, 1907.

*The numbers are these of the different volumes
of specifications.

C. E'S Assistant—young man with experience,
desires position with C.E., land surveyor or prospec-
tor. Box 110, CONTRACT RECORD, Toronto, Ont.

TO ARCHITECTS

Architect's Superintendent or Clerk of Works is
open for immediate engagement. Apply JOHN
HOLDEN, 177 Seaton Street, Toronto.

Town of Waterloo

Trunk Sewer and Sewage Disposal Works

NOTICE TO CONTRACTORS

Sealed tenders, addressed to the undersigned, will
be received up to noon **TUESDAY, JULY 2ND,**
1907.

1st. For the construction of 4,400 feet of Glazed
Tile Sewer 15 inches in diameter.

2nd. For the construction of two Reinforced Con-
crete Septic Tanks of combined capacity of 250,000
gallons.

3rd. For the construction of four acres of Filter
Beds with the necessary Sewage Carriers, Distribu-
tors, Valve Chambers, Effluent Drains, etc.

Plans and specifications may be seen and forms of
tender obtained after the 15th inst. at the office of
the Town Clerk, Waterloo, Ont. or the Engi-
neers, Davis & Johnston, Berlin, Ont.

FORD KUMPF,
Sec'y Board Sewerage Commissioners,
Waterloo.



Department of Railways and Canals

RIDEAU CANAL

Notice to Dealers in Cement

Sealed tenders, addressed to A. T. Phillips, Super-
intending 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
Superintending 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]

TENDERS

Will be received by the undersigned up to the 25th DAY OF JUNE for the Construction of Certain Cement Concrete Walks in the Town of Uxbridge, approximating 22,000 sq. feet. Specifications to be seen at my office. No tenders necessarily accepted.
J. N. GOULD, Clerk.

CITY OF FREDERICTON DEBENTURES

The holders of "Fredericton Water Debentures," and "City of Fredericton Debt Debentures," falling due on July 20th and August 1st next, who wish to continue their securities, may renew same with the re-issue of City Bonds authorized at the last Session of the Legislature, running for forty years at 4%, payable half yearly.

Persons wishing to continue their loans, as above, are requested to notify the undersigned without delay, stating the amount of the new bonds they are prepared to take.

I. R. GOLDING,
City Treasurer.

Fredericton, N.B., June 14th, 1907.



Temiskaming and North- ern Ontario Railway Commission.

TENDERS FOR STATIONS

Sealed tenders, addressed to the undersigned and endorsed, "Tenders for Stations Diver and Redwater," will be received up to 5 p.m. on the 28th DAY OF JULY, 1907, for the erection of two combined Freight and Passenger Stations, one at Diver and one at Redwater.

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 \$400.00 must accompany each tender.

The successful tenderer must enter promptly into a contract and furnish security for the amount of \$1,000.00 for 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, June 14th, 1907.

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

CONTRACTS OPEN.

GLEICHEN, ALTA.—A new school building is to be erected here at a cost of \$6,000.

HUNTSVILLE, ONT.—A. E. Scott wants bids up to July 1st for repairs to a school building.

LETHBRIDGE, ALTA.—J. C. Smith, of Winnipeg, intends erecting a block of dwellings here.

CARON, SASK.—The ratepayers have defeated a bylaw to spend \$5,000 on a system of fire protection.

NOKOMIS, SASK.—The Grand Trunk Pacific Railway are asking for tenders for erection here of a \$5,000 station.

BATTLEFORD, SASK.—J. J. Dane, Indian Head, has submitted a proposition to the Town Council to erect a flour mill here.

EAST TORONTO, ONT.—A by-law is to be submitted to the ratepayers to provide for road improvements at a cost of \$10,000.

MARMORA, ONT.—The ratepayers have voted in favor of granting a bonus to J. Hayne & Company to establish a stove factory here.

CARMAN, MAN.—The ratepayers have carried a by-law to expend \$16,000 on the completion of the waterworks and sewerage systems.

PORT CREDIT, ONT.—The Country Club, of which J. A. Kammerer is president, are having plans prepared for a large new club house.

BANFF, ALTA.—Lawson & O'Gara, architects, Calgary, have taken tenders for additions and alterations to the school house of this town.

NEWMARKET, ONT.—A contract will shortly be let for construction of a canal from this town to Holland Landing, a distance of four miles.

ST. JOHN, N. B.—The City Clerk wants tenders up to June 27th for supply of 1,000 feet of 2½ inch cotton hose (rubber lined) with couplings.

FORT WILLIAM, ONT.—R. E. Mason, architect, has taken tenders for plumbing, plastering and heating in International Hotel, Westfort.

WELLAND, ONT.—The Welland County Council have decided to contribute toward cost of reconstructing the Laidlaw and Thorold bridges.

MERRITON, ONT.—The Niagara, St. Catharines and Toronto Railway Company are having plans prepared for a new station to be erected here.

SWIFT CURRENT, SASK.—F. Lee, division engineer, C. P. R., Winnipeg, is taking tenders up to to-day for erection of a station building in this town.

BLLENHEIM, ONT.—The Town Council have granted a twenty year franchise to W. R. de Gruchy, of Boston, to supply the town with natural gas.

TRENTON, N. S.—McNeil Bros., of New Glasgow, have decided to locate their works in this town and are having plans prepared for a brick building.

DESERONTO, ONT.—The Crown Furniture Co., of Preston, Ont., have asked the Town Council for a loan with which to erect a factory building here.

BROCKVILLE, ONT.—B. D'Ion, architect, wants tenders up to June 22nd for erection of laundry building at General Hospital. Plans at office of architect.

WALKERVILLE, ONT.—The Ontario Structural Steel Company has been formed in this town and have secured a 20 acre site on which to establish their plant.

LONDON, ONT.—The Roman Catholic Diocese of London have purchased a site corner of Richmond street and Princess avenue on which to erect a building.

FORT WILLIAM, ONT.—An eastern capitalist, represented here by Mr. Fraser of the John King Co., is looking for a site on which to erect a large hotel building.

CAMPBELLTON, N. B.—J. Haines wants bids up to June 21 for erection of hall for the Loyal Orange Lodge No. 64. Plans at office of the architect, J. A. P. Bullman.

DAUPHIN, MAN.—The Dauphin Public School Board will receive up to June 20th preliminary plans for a brick school building containing eight rooms 24 x 30 feet.

TORONTO JUNCTION, ONT.—W. Harris, Secretary-Treasurer Public School Board, wants bids up to June 21st for kalsomining and other repairs to school buildings.

PEMBROKE, ONT.—The Town Council have voted in favor of submitting a by-law to the ratepayers to authorize street and drain repairs at an estimated cost of \$22,000.

ARNPRIOR, ONT.—The Town Council will ask the Power Commission of Ontario to estimate the cost of developing a water-power on the Madawaska river at this point.

WESTPORT, ONT.—D. Deacon,

Village Clerk, wants tenders up to June 22nd for construction of about 6,000 square feet of cement concrete sidewalks. Specifications at Clerk's office.

PORT STANLEY, ONT.—It is understood that Sol. Solomon, of Toronto, is negotiating for purchase of the Fraser House with the intention of making improvements thereto.

BELWOOD, ONT.—T. Goodall, Clerk Township of West Garafraxa, wants bids up to June 22nd for construction of concrete abutments for bridge in the township. Plans at Clerk's office.

MARGARET, MAN.—A. R. McMillan, Secretary Greenfield School District, wants bids up to June 27th for purchase of \$3,500 5% 20 year debentures of the School District of Greenfield.

KINGSVILLE, ONT.—The Town Council have passed a by-law, with the assent of the ratepayers, to raise \$5,000 for the purchase and improvement of 15 acres of land for the purpose of a public park.

CHARING CROSS, ONT.—J. L. Wilson & Son, architects, Chatham, Ont., want tenders up to June 22nd for erection of brick and stone school building. Plans at office of the architects.

GUELPH, ONT.—H. Walker, Treasurer of St. Andrews Sunday school, wants tenders up to June 22nd for alterations and additions to Sunday school building. Plans at the office of the architect, W. F. Colwill.

HALIFAX, N. S.—The City Council have asked the Militia Department to transfer to the Nova Scotia Government the site of the old drill shed for the purpose of erecting thereon the proposed provincial school of technology.

VANCOUVER, B. C.—The Provincial Government have invited tenders for erection of Normal school building. Plans at the offices of the Government agents, New Westminster; Lands & Works Department, Victoria and Provincial Timber Inspector, this city.

MONTREAL, QUE.—Baron de Carols is promoting a company to establish a large structural steel and steel rail works in this city.—The City Council have decided to pave St. Catharine street from Marlborough to the eastern limits, at a cost of \$20,000 and also to lay a granite block pavement on Commissioners street, Victor to Berri streets, at a cost of \$8,000.

KINGSTON, ONT.—F. Gelinus, Department of Public Works, Ottawa, will receive tenders up to June 27th for alterations and additions Tete du Pont Barracks, this city. Plans with P. Smith, architect, this city, and at the office of the above named department.

CALGARY, ALTA.—G. McNeill has completed arrangements for erection of a seven storey brick and stone apartment house at a cost of \$150,000.—The Board of Works have decided to call for tenders at once for the new city hall building to be erected at a cost of \$150,000.

MINNEDOSA, MAN.—E. B. Stevens, Secretary Minnedosa Hospital Association, has invited tenders up to June 21st for erection of a hospital building. Plans at office of the above named gentleman and with the architect, J. D. Atchison, Winnipeg.

VICTORIA, B. C.—Rev. W. W. Bolton is forming a company for the purpose of erecting a large boarding school in this city.—T. M. Brayshaw has invited tenders for erection of a carriage factory.—F. M. Rattenbury, architect, has taken tenders for erection of brick store for W. Wilson.

REGINA, SASK.—A number of ratepayers have petitioned the City Council to use only creosote blocks for street

June 6,000 ewalks.

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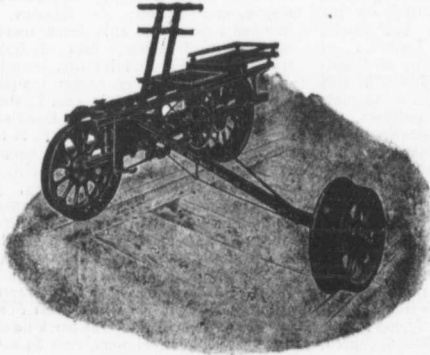
Chain Hoists, Blocks of All Kinds.



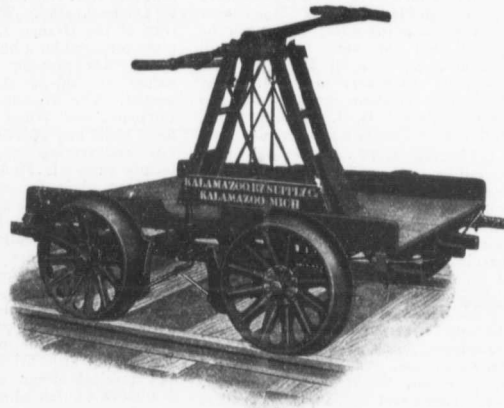
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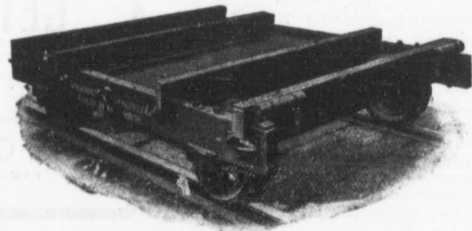
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paving but the by-law sanctioning the expenditure of \$225,000 on pavements provides for the construction of asphalt block and bitulithic pavements as well as those of creosote blocks.—Storey & Van Egmond, architects, want tenders up to June 24 h for erection of eight houses for the R. N. W. M. P.

ST. THOMAS, ONT.—N. R. Darrach, architect, wants tenders up to June 25th for remodelling Scott street school. Plans at the architect's office.—The City Council has decided to open a new street to be known as Trafalgar street and Charles C. Scrase, jr., will erect several dwellings thereon.

BRANTFORD, ONT.—J. Adams has taken out a permit to erect a residence at a cost of \$7,000.—F. Bishop has purchased the Hext Carriage Company's premises and intends converting the lower portion of the building into stores.—It is understood that Pratt & Letchworth intend erecting a new building.

STRATFORD, ONT.—The Perth County Council have decided to improve 191 miles of roads throughout the county and the cost of the work, which will be spread over the next 15 years, will amount to upwards of \$200,000. The new road machinery to be purchased will include 11 stone crushers and two steam rollers. G. L. Griffith, C.E., Milloank, is County Engineer.

OTTAWA, ONT.—The church of the Sacred Heart, which was last week destroyed by fire entailing a loss of \$182,000, is to be rebuilt immediately.—The following building permits have been issued: J. M. Fleury, brick veneered dwelling, Somerset street, cost \$4,000; H. N. Bate, apartments, corner Rideau and Cumberland streets, cost \$16,000; St. Germain and Fraas, brick dwelling, Waverly street, cost \$4,000; Frank Bissonette, brick veneered dwelling, Argyle avenue, cost \$2,800; D. Charlebois, cement block blacksmith shop, Wellington street cost \$3,000.—Tenders will shortly be called for by the Dominion Government for the proposed improvements to Rideau Hall. The estimated cost of the work is \$100,000.

WINNIPEG, MAN.—The City Council have called for tenders for supply of from 5,000 to 10,000 lineal feet of rough curbing. They have also decided to advertise notice of their intention to construct asphalt pavements at a cost of \$15,473 and sewers at a cost of \$3,726.—Eade Bros., architects, are taking tenders up to June 20th for alterations to the Windsor Hotel building.—R. Rogers, Minister of Public Works, wants bids up to June 22nd for excavation of about 14,000 cubic yards in Parish of St. Norbert. Plans with Chief Engineer, Department of Public Works, this city.—The Chairman Board of Control wants bids up to June 27th for installation of plumbing and construction of sewer connections to certain properties. Specifications at City Engineer's office.

TORONTO, ONT.—The Board of Control have instructed the City Architect to call for tenders for erection of the proposed fire hall on Pape avenue.—The Birkbeck Loan Co. intend erecting a five storey building on Adelalde street east to cost \$125,000.—The City Council have given notice of their intention to widen Greenwoods avenue from Queen to Gerrard streets.—The Aluminum & Crown Stopper Co. have purchased property on Parliament street and will erect a five storey building thereon.—A. J. Ratray, architect, has prepared plans for improvements to a residence recently purchased by T. Ambrose Woods.—The Smart Bag Co. intend erecting a factory on Logan avenue.—W. B. Charlton will erect a small apartment house on Major street.—The City Council have passed the Board of Works recommendation to construct a cribwork in connection with the proposed sea wall opposite the Exhibition grounds at a cost of \$45,700.—The Board of Control have decided to confer with the York Township Council in reference to the construction of the proposed steel viaduct from Bloor street to Danforth road.—The Western District of the Orange Lodge are having plans prepared for a hall and lodge room which they propose erecting on the corner of College street and Euclid avenue.—The Universal Tool Co., of Pittsburg, and Wood Bros., of Brantford, have had representatives in this city endeavoring to secure suitable factory sites.—L. Foulds, architect, has prepared plans for a residence to be erected on Galley avenue for James Kyle to cost \$3,000. The same architect will shortly call for tenders for erection of residence on Grace street to cost \$2,500 and extensive alterations to stores at 420 Yonge street.—The following building permits have been issued by the City Architect: J. Wilson, pair semi-detached 2 storey and attic brick dwellings, 141-143 Havelock street, cost \$7,000; Free Methodist Church, alterations to church, Broadview avenue, cost \$2,800; O. C. Aultz, 2½ storey brick dwelling, corner Pelham place and Binscarth road, cost \$5,100; W. B. Charlton, 2 pair semi-detached 2 storey brick dwellings, Sparkhill avenue, cost \$7,000; L. E. Price, pair semi-detached 2 storey rough-

cast dwellings, brick fronts, Bartlette avenue, cost \$3,000; Richard Reed, pair semi detached 2 storey roughcast dwellings, Withrow avenue, cost \$3,000; J. H. McLaren, 2 storey brick dwelling, Alhambra avenue, cost \$5,000; J. Carolan, pair semi-detached 2 storey and attic brick dwellings, Bloor street west, cost \$5,000; Col. Jones, pair semi-detached 2½ storey dwellings, Admiral crescent, cost \$8,000; Mrs. F. A. Sanders, 3 attached 2 storey and attic brick dwellings, 55-59 McMillan street, cost \$8,500; Mrs. Hall, 2 storey brick dwelling Terauley street, cost \$3,000; James Bain, 2 storey and attic brick dwelling, Brunswick avenue, cost \$6,500; Geo. Harron, pair semi-detached, and one detached 2 storey and attic roughcast dwellings, brick fronts, Withrow avenue, cost \$5,400; J. Houden, pair semi detached 2 storey and attic brick dwellings, Roxborough street, cost \$6,000; Joseph Bryant, pair semi detached 2½ storey brick dwellings, 483-485 Dovercourt road, cost \$5,500; N. H. Brady, 2 detached 2 storey brick dwellings, 49-51 Garden avenue, cost \$5,000; Mrs. R. G. McLean, 2½ storey brick dwelling, 23 Elm avenue, cost \$10,000; Wm. Evans, 2 storey brick dwelling, Landsdowne avenue, cost \$3,000; Mr. Ramsey, 4 attached 2 storey and attic brick dwellings, Gerrard street, cost \$7,600; Montreal Loan & Building Co., 2-storey and attic brick dwelling, corner Lindsay and Dufferin street, cost \$3,500; W. Findlay, 2½-storey brick dwelling, Cottingham street, cost \$3,700; F. M. Iigan, 2-storey brick dwelling, McPherson avenue, cost \$2,700; J. H. Moffitt, 2-storey and attic brick dwelling, 36 Abbott street, cost \$3,500; F. C. Daniels Co., alterations to warehouse, 8 Wellington street east, cost \$10,000; J. Ingles Co., 1-storey galvanized iron and steel blacksmith shop, Strachan avenue, cost \$10,000; Mackinnon Cloak Co., 2-storey brick store, Queen street west, cost \$9,000; I. Lennox, 2-storey brick dwelling, 1327 King street west, cost \$3,500; W. Atkinson, 2 detached 2-storey and attic brick dwellings, Huron street, cost \$10,000; E. Burton, 2-storey brick dwelling, 161 Madison avenue, cost \$9,000; McGregor & McIntyre, 1-storey brick iron works, 73 Pearl street, cost \$6,000; Mr. Pickles, 2-storey brick

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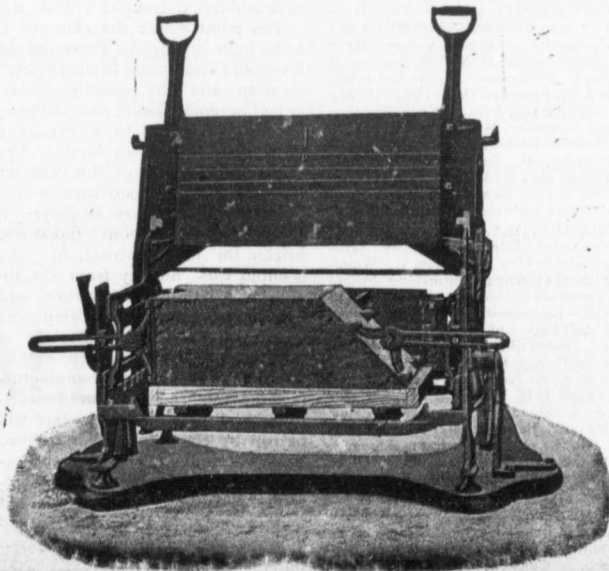
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dwelling, Dundonald street, cost \$5,000; Queen City Oil Company, 2-storey brick dwelling, Esplanade street, cost \$14,000.

CONTRACTS AWARDED.

FERNIE, B.C.—Construction of sewerage system for this town: H. McDonald, contractor.

CHATHAM, ONT.—Erection of residence for O. L. Lewis: J. Pigott & Sons, contractors.

GRAND FALLS, N.B.—Erection of new church for Roman Catholic congregation: J. MacVay & Son, contractors.

PORT COLBORNE, ONT.—Carpenter work in residence for J. Mathews: Augustine & Son, successful tenderers.

BRAMPTON, ONT.—Construction of cement sidewalks for the town: Royal Artificial Stone Paving Co., Guelph, contractors.

ST. JOHN, N.B.—Installation of heating and plumbing system in new Royal Bank building: G. & E. Blake, contractors.

SASKATOON, SASK.—Installation of heating and plumbing system in National Trust block: M. Isbister & Son, contractors.

REGINA, SASK.—Erection of business block for R. H. Williams: Saskatchewan Realty Co., contractors. Estimated cost \$50,000.

GLACE BAY, N.S.—Installation of heating system in new school house: C. Estano, Sydney, N.S., successful tenderer at \$1,996.

NIAGARA FALLS, ONT.—Erection of block of buildings for J. Logan: J. T. Blair, A. B. Robertson, W. Delany and J. T. Henderson.

HARRISTON, ONT.—The James Smart Mfg. Co., Brockville, have been awarded contract for installation of Kelsey system of heating and ventilating in school house here.

MEDICINE HAT, ALTA.—Furnishing sewer pipe for the city: W. F. Lee, Winnipeg, successful tenderer at \$11,500. Other bidders, J. Rae, \$12,850, and W. B. Marshall Co., \$12,960.

MOUNT JOY, ONT.—James Smart Manufacturing Co., Brockville, has been awarded contract for installation of Kelsey system of heating and ventilating in Mount Joy Public School.

STRASSBURG, SASK.—W. F. Braden, this village, has been awarded contract by the C.P.R. for construction of 40 miles of new road and erection of two stations and four section houses.

NORTH BAY, ONT.—Erection of stores building for the Temiskaming & Northern Ontario Railway Commission: O'Boyle Bros. Construction Co., this town, successful tenderers. Estimated cost \$20,000.

HALIFAX, N.S.—Erection of rink building for a local company: S. M. Brookfield, Limited, contractor. Estimated cost \$30,000.—Erection of grand stand for the city: J. McInnes & Son, successful tenderers at \$19,925.

LONDON, ONT.—Construction of asphalt pavement on Clarence street for the city: Barber Asphalt Paving Co. successful tenderers at \$9,300.—Erection of buildings for Western Fair Board: Kernhan & Wilson, this city, contractors.

ATWOOD, ONT.—At a recent meeting of the Elma Township Council the contract for improvements to the 14th concession drain was awarded to Curtin & McGarth at \$2,200. Other bidders, Paschal Pigeon, \$2,274, and Crowley & McDonnell, \$2,274.

DURHAM, ONT.—The Bentinck Township Council have awarded contracts as follows: Construction of steel bridge with concrete flooring: Jenks & Dresser, Sarnia, at \$2,800; concrete abutments for the above bridge: Magle & Loody, Dublin, at \$4,70 per yard.

NEW WESTMINSTER, B.C.—Erection of addition to the Central school building: Marshall & Bowell successful tenderers at \$10,623. Other bidders, G. Turnbull, \$11,676; T. Turnbull, \$11,415; Mansarg & Cousins, \$11,935; Buckland & Smith, \$12,468.50; J. A. Bowman, Vancouver, \$13,773.

OTTAWA, ONT.—Installation of heating system in three public school buildings: Thompson & Livock, successful tenderers, as follows: Percy street, \$2,549; Osgoode street, \$2,639; First avenue, \$2,956.—Installation of mechanical ventilation system in three public schools, B. F. Sturtevant & Co., successful tenderers at \$9,624.

MONTREAL, QUE.—The Eadie-Douglas Co., Canadian agents for the White Fireproof Construction Co., have been awarded the following contracts for reinforced concrete construction: Westmount school, Montreal; Montreal Street Railway power house; addition to Royal Victoria Hospital, Montreal; Sovereign Bank Building, Toronto; Gillett building, Toronto, and Confederation Life Building, Toronto.

TRURO, N.S.—Erection of armoury for Dominion Government: F. Wilson, this town, successful tenderer, at \$8,000.—Installation of fire alarm system for the town: Cells, signal boxes and tapper, Northern Electric & Mfg. Co., Montreal, 568.12; insulators and wire, Farquhar Bros., Halifax, \$915.05; gongs, whistle and blowing machine and gong and indicator, John Starr Son & Company, Halifax, \$1,695.

TORONTO, ONT.—The City Council have awarded following contracts: Construction of asphalt pavements, Palmerston avenue, Barton to Follis avenues, Godson Contracting Co., at \$2,900; Esther street, Queen to St. Patrick streets, Barber Asphalt Paving Co., at \$6,000; Macdonell avenue, Queen street to north end of street, Godson Contracting Co., at \$10,209. Bitulithic pavement, Balmoral avenue, Avenue to Poplar Plains roads, Warren Bituminous Paving Co., at \$3,483.

WINNIPEG, MAN.—J. Chisholm, architect, has awarded contract for erection of warehouse for W. Wood & Co. to the General Construction Co. Estimated cost \$56,000.—Erection of blacksmith shop, car repairing shop and planing mill for Canadian Northern Railway: S. Brown, contractor. Estimated cost of buildings \$200,000.—On the recommendation of the Board of Control, the City Council have recinded contract for cement recently awarded to W. F. Lee and have awarded same to T. Black.

WESTMOUNT, QUE.—The Town Council have awarded contracts for this year's supplies as follows: Cement, Hyde & Webster and W. McNally & Co.; scoria blocks, F. D. Lawrence; vitrified brick, Hyde & Webster and D. McGill; building and sewer brick, Stinson Reeb Builders' Supply Company, Hyde & Webster and D. McGill; lumber, Shearer, Brown & Wills and J. H. Redfern; vitrified pipe, F. Hyde & Co., Hyde & Webster and W. McNally & Co. In all cases the successful tenderers were the lowest bidders.

CALGARY, ALTA.—The City Council have awarded contracts as follows: Erection of addition to power house: Woodward & Co., \$2,732; furnishing boilers and appliances, Hancock & Wilcox, at \$13,476.—Erection of two racing stables, sales building and addition to grand stand: Gunn & Boyd, successful tenderers at \$13,332. Other bidders, T. Underwood, \$17,400; racing stables and grand stand only, J. H. Bennett & Co., \$12,200; Lloyd & Sloan, \$10,297; two racing stables only, Peers & McLeod, \$9,000; I. A. Hill, \$2,750; one racing stable only, Swallow & Garden, \$4,350.—Erection of fifteen dwellings for Judge Travis: T. J. Short, contractor.

VANCOUVER, B.C.—Erection of four storey warehouse for C. P. R.: Smith & Sherborne, contractors. Estimated cost \$25,000.—Construction of wharf and

erection of three warehouses thereon for the Johnson Wharf Co.: British Columbia General Contract Co., this city, successful tenderers.—The Pacific Coast Pipe Company, Limited, of Vancouver, has received the contract from Maddock Bros., Ltd., for the furnishing of about 5 miles of 22 and 24 inch wood pipe to supply water to a large tract of fruit land which they are irrigating. The system will be installed next fall and winter. Some of this pipe is to serve under 450 feet head pressure.

GUELPH, ONT.—Erection of residence for J. G. Sully: J. Chubb, contractor.—W. T. Tanner, architect, has let contracts as follows: Residence on McTague street for J. Fielding, stone and brick work, Taylor Bros.; carpenter work, W. Stratton; lumber, R. Stewart & Co.; plastering, W. Harris; painting, T. A. Cormie; tinsmithing, W. Heather; plumbing and heating, Stevenson & Malcolm. Residence on Glasgow street for T. McMaster, stone and brick work, J. Oakes; carpenter work, W. Stratton; lumber, R. Stewart & Co.; plastering, J. J. Mahoney; painting, H. E. Pass; tinsmithing, T. E. Rudd; plumbing and heating, Stevenson & Malcolm.

FIRES.

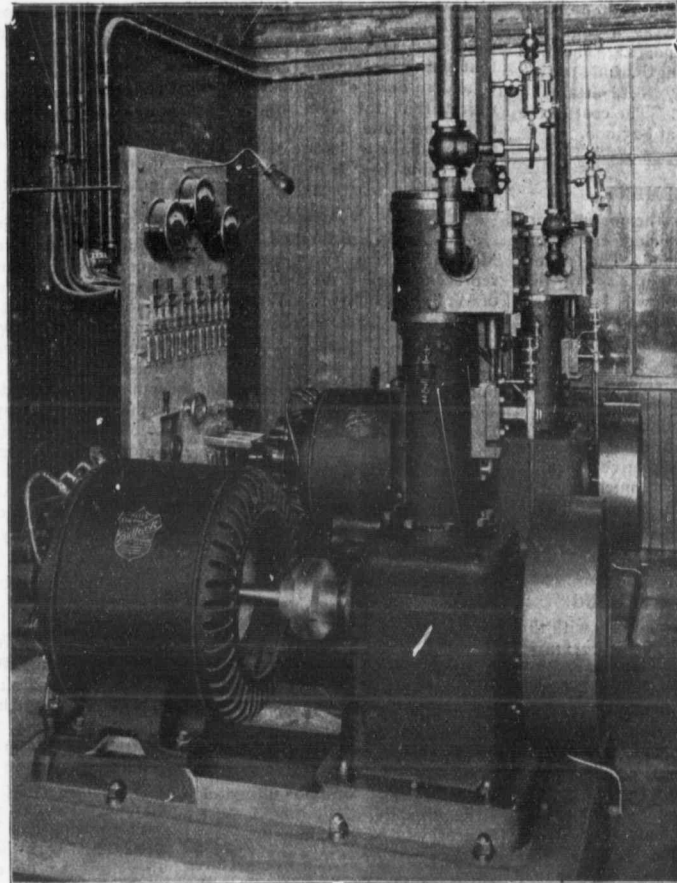
The Tingley Block, Sydney, N.S., loss \$7,000.—Works of the Canadian Shipbuilding Co., Bridgeburg, Ont., loss \$75,000.—Plant of the Canadian Woodenware Co. and adjoining buildings, Hampton, N.B., loss \$50,000.

A COLOSSAL CHIMNEY.

A New York company has received a contract to build the tallest chimney in the world—in fact the tallest structure of any sort save the Eiffel Tower and the Washington Monument. The chimney will rise 506 ft. above the top of the foundation, and will have an internal diameter at the top of 50 ft. The size of the chimney has been proportioned for leading off 4,000,000 cubic feet of gases a minute, with a maximum temperature of 600 deg. Fahr. The gases, mainly from the smelter furnaces, will travel 2,000 ft. through flue ducts before reaching the chimney. The chimney is designed so that an additional 60 ft. may be put on at any time in case additional draught is desired.

The point where the chimney is to be built is 3,535 ft. above the sea level, and on account of the exposed location and the usually strong gales sweeping over, the chimney has been designed to withstand a gale of 125 miles an hour. The total dead weight of the chimney is estimated at 17,000 tons, and if common bricks were employed it would require about 6,000,000 bricks for its construction. To scaffold this chimney from the inside will be quite a feature, and four electric lifts will be employed to carry up men and material. A new brickyard will be built especially for the purpose of manufacturing the required perforated radial brick, and the entire brick plant will be run by electrical power derived from waterfalls. The company expects to finish the chimney, the contract price for which, without foundation, is in the neighborhood of £40,000, in about one year's time.

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LARGEST CONCRETE WALL.

What is said to be the largest wall of concrete ever constructed has just been completed at Duquesne, Pa., a suburb of Pittsburgh. Over 200 men were employed six months in building the wall, which will be used by the United States Steel Corporation as a route for hot metal and cinders. The wall is 5,000 feet in length, and starting at a height of 7 feet, attains a height of 47 feet. The cost of the wall is estimated at \$25,000.

SLAG CEMENT.

A new plant for the manufacture of slag cement is being erected in the North of England. The Passow process will be adopted. In this process air is blown into basic blast-furnace slag, and in this way calcium disilicate and lime are probably obtained. The product is then ground extremely fine, and lime or Portland cement added, if on testing it is found that no free lime is present, or that the lime content is below 38 per cent. Slag cement is, of course, much cheaper than true Portland, but its tensile strength, though good, is not so high.

A CONCRETE CEILING.

The imambra connected with the Mohammedan mosque at Lucknow, India, contains the largest room in the world without columns, being 162 feet long, 54 feet wide and 53 feet high. It was built during the great famine in 1784 to supply work for a starving people. It is a solid mass of concrete of simple form and still simpler construction. In its erection a mould or frame work of timber and brick several feet in thickness was first made, which was then filled with concrete. The concrete was allowed about a year to set and dry, when the mould was removed. Although the building has been standing 122 years, it is said to show no signs of decay or deterioration. — Builder, London.

NOTES.

R. & J. Poag, builders, Hamilton, have dissolved partnership.

Mr. Geo. L. Griffith, C. E., has been appointed Engineer for the County of Perth.

Alderman Wright and City Engineer Smith, of Regina, Sask., have recently been in Toronto gathering information regarding street paving for their city.

Statistics gathered from 37 towns throughout the Canadian West show that building actually under way therein amounts to \$22,500,000. This is, of course, exclusive of Winnipeg. In Edmonton alone there is six million to be expended in new structures.

In our issue of the 29th ultimo on page 14, under the head of "Notes," we stated that the firm of Hennault & Hefferman, who are installing a system of waterworks for the city of Portage La Prairie, had assigned to the Canadian Bank of Commerce. Messrs. Hennault & Hefferman have intimated to us that such was not the case, and that they have not assigned to the Canadian Bank of Commerce. We regret that the item appeared in this paper, and it is with pleasure that we make this statement. The item came to us in the ordinary course as a matter of news, and it was published by us in good faith.

Mr. A. W. Campbell, Deputy Minister of Public Works, addressed representatives of the municipalities of Welland County last Wednesday on the county system of good roads.

The Quebec Government having decided to form a system for the improvement of their roads, have sent a deputation to confer with the Department of Public Works of the Ontario Government on the subject.

It has been reported that the Red River Valley Brick Corporation, of Grand Forks, N.D., have under consideration the establishment of a large brick plant at Vancouver, B.C., and with this object in view Mr. Lewis Campbell, the secretary of the concern, intends shortly to visit Vancouver.

Announcements are made that plans are nearing completion for the merger of several cement concerns in the East States which will be known as the National Cement Company. It will have a capital stock of \$35,000,000 ultimately. C. L. Murphy, of Plainfield, N. J., is president of the company.

The Ingersoll Town Council have voted in favor of purchasing the waterworks system at a cost of \$95,000 and will likely submit a by-law to the ratepayers in the near future to authorize the transaction. The purchase of the gas and electric light plants is also under consideration.

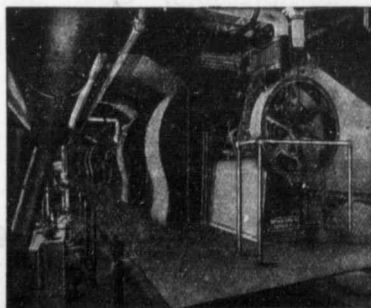
L. H. Gaudry & Co., Montreal and Quebec, recently received an order from the Frontenac Gas Company, of Quebec, for 40 miles

of cast iron pipes. Large orders have also been placed with this firm by the City of Quebec and the Quebec Gas Company. The total quantity of the three orders mentioned amounts to about 4,000 tons or over 200 car loads.

The Town Council of Indian Head, Sask., have just completed the purchase of the property in which the springs are located from which the water supply for the town is obtained.

Many of the troubles which have been a problem to the lime manufacturers find a complete solution when they begin to hydrate their product and sell it in that shape. Hydrated lime never air slacks, the product of the plant is much more nearly uniform, and the reputation of the goods is not so much in the hands of people who don't understand that it takes time to make lime putty by the use of common lump lime and water. It looks as if the time is fast approaching when to be a lime manufacturer is synonymous with being a hydrator of lime, since it is now demonstrated that hydrated lime is at once more economical and a decided improvement in the quality of the material itself.

Tearing down buildings with a minimum waste of marketable material requires much care and judgment. The steel skeletons of modern buildings are most valuable, and are so carefully taken down that the modern house wrecker is able to restrict the loss almost entirely to the rivets. This old material is used in new structures, it frequently being found convenient to design the new structures with a view to using it. Where buildings are erected with the knowledge that they are to be demolished after serving a definite and short lived purpose, such as those used for expositions, the wrecking companies keep a careful record of the material which goes into the buildings to be able to bid intelligently upon the contract for tearing them to pieces, and also to know in advance just what material and in what sizes they will have it available for sale or use when the buildings are finally razed.



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THE OUTLOOK.

Toronto is now threatened with a general tie-up of the building trades and the men are still considering whether or not they will "take holidays." Already a large number of men are out and should the whole of the building trades cease work the large amount of building now under way will be very seriously affected.

From Vancouver comes the report that in building circles there is the usual activity of this season, with better tone owing to much more settled labor conditions than earlier in the season. Lumber prices locally have also considerably reduced and contractors are able to get their orders filled. All classes of building material have become well stocked up of late, freight coming forward by rail in very satisfactory manner.

In Nova Scotia building operations are very brisk and in Halifax there is a scarcity of cement reported. There is a pressing demand for this material, some of the contractors requiring 7,000 barrels to complete work now on hand, and as the steamers only carry 500

barrels per trip the supply is at present unequal to the demand. There is little or no improvement to the iron pipe situation. Jobbers still report a scarcity of 3/4 inch and 1 1/4 inch pipe. There is a good demand for both of the above sizes.

From the district of North Battleford, Sask., comes the complaint of scarcity of building materials. It is said that the railroads cannot carry a sufficient number of cars to convey the materials in and consequently a considerable amount of

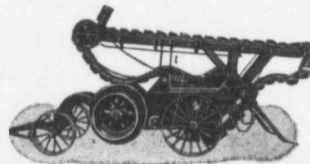
building in the locality is being delayed.

Building operations in Ottawa generally have had a set back by the recent strike, and while it is now over there is barely time enough for many buildings to be finished by the fall. That, with some prospective builders, is an influence against new work. There is also a comparative scarcity of labor.

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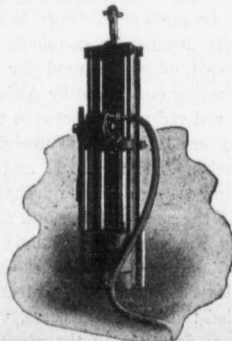
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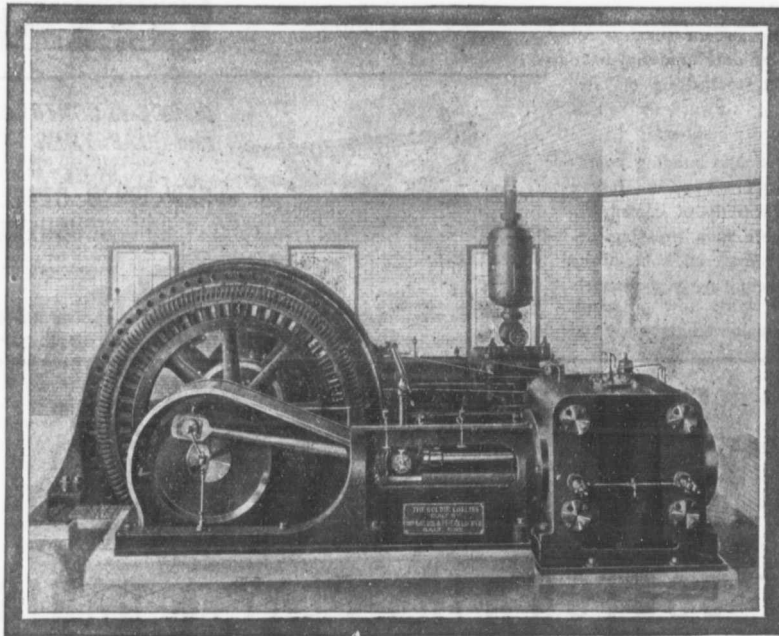
FALCON FORGE CO.
MONTREAL

THE BARRIE MUNICIPAL LIGHTING PLANT

The first electrical installation was made in Barrie some sixteen years ago by a private company, the equipment comprising one 16 foot x 66 inch horizontal return tubular boiler, and a 14 and 28 x 36 Brown engine. A 133 cycle, single phase, 2,200 volt alternator of approximately 50 kilowatts capacity was installed, together with an equipment of direct current series arc machines. In 1899 the plant passed into the hands of the municipality, and was completely remodelled. The old boiler and engine rooms were made into one, and a 12 and 22 x 30 Wheelock engine was installed. Two new boilers, 16 feet x 73 inches, each containing 96 3 1-2 inch tubes, were purchased from the Goldie & McCulloch Company, A new smoke stack was built, and a 150 kilowatt, 66 cycle, S.K.C. generator of the two-phase type, wound

sure of 165 pounds to the square inch. A cross compound, high speed Corliss engine with steam actuated dash pots was purchased from the Goldie & McCulloch Company, and a 350 kilowatt, two phase, sixty cycle, 2,300 volt, 150 revolutions per minute, Bullock generator was mounted directly upon its shaft. This generator, which is shown in the illustration, was supplied by Allis-Chalmers-Bullock, Limited, Montreal.

The Goldie & McCulloch engine is designed to run in parallel with a second machine of this type which it is proposed to install in the present power house. The high pressure cylinder is 14 inch diameter x 30 inch stroke, and the low pressure cylinder 28 inch diameter x 30 inch stroke. The engine runs at a speed of 150 revolutions per minute. The flywheel is 12 feet in diameter and weighs 16,000 pounds. This



GENERATING UNIT, BARRIE LIGHTING PLANT.

for 2,200 volts, was installed. The arc machine equipment was enlarged, and new switchboards purchased for the two generators. The load on the plant steadily increased, until in 1903 it was found necessary to install meters.

Considerable controversy arose as to the frequency of the meters to be used, but this was finally decided at sixty cycles, and, as matters stand at present, every consumer using three lights or over is purchasing current on the meter basis. This made a material reduction in the load on the plant, but three years later it was found necessary to increase the capacity. This question was very carefully worked out, and we understand that the town has to-day one of the most economical equipments to be found in the Province of Ontario.

The old boiler house was considerably enlarged, and a new Backcock & Wilcox boiler was installed therein. This new boiler contains some 2,000 square feet of heating surface, and is designed for a working pres-

sure of 165 pounds to the square inch. A cross compound, high speed Corliss engine with steam actuated dash pots, which enable a quick cut-off to be obtained even with the high rotative speed at which the engine is running.

There is also mounted on the shaft of the engine a double-flanged pulley 42 inches in diameter, which is used for driving a 17 kilowatt exciter, furnished also by Allis-Chalmers-Bullock. This pulley is mounted between the generator and the flywheel, and hence is not unsightly.

A 12 and 18 x 18 independent jet condenser was also purchased from the Goldie & McCulloch Company, and a heater of the open type was installed by the Canada Foundry Company. Two duplex, outside packed plunger pumps were supplied by the Deane Steam Pump Company, of Holyoke, Mass., and these, with the old duplex pump formerly used in the plant, comprise the feed water supply. One pump, operating under a Williams governor, supplies

water from the hot well to the heater, while one of the other pumps takes its water from the heater and delivers same to the boiler, the third pump being held as a spare. The pump connections are so arranged that at any of the three machines may be used either for supplying the heater or delivering to the boiler, and hence the equipment is extremely flexible.

The heater discharge is equipped with a thermometer, and a similar device has been placed on the outlet of the condenser, so that the highest possible temperatures may be continuously maintained. The steam delivered to the heater is the exhaust from the feed pumps and condenser, and is just sufficient at full load to give a feed temperature a little over 200 degrees Fahrenheit.

All low pressure piping was supplied by the Garth Company, of Montreal, while the high pressure lines, which consist of extra heavy pipe, flanges, and fittings, put together with copper gaskets, were supplied by the Walworth Company, of Boston, Mass. A new 50 light constant current transformer, with full complement of lamps and absolute cutouts, was furnished by the Canadian Westinghouse Company, Hamilton, Ont., who also supplied the arc and generator switchboards.

Pending the installation of a second direct connected unit, the old boilers, the Brown engine, and the S.K.C. generator are being retained, but when the times comes for the change, this belted equipment will be discarded, and a new engine designed for working on 150 pounds initial pressure will be installed.

As the plant stood before the present changes were commenced, the engine room was completely filled, and hence, to put in the new unit, the Wheelock engine had to be taken out. The new installation has been made throughout with the idea in mind that future enlargements will not in any way whatsoever disturb the existing equipment, and this will be appreciated as a very desirable condition of affairs, and directly opposite to that which existed a year or so ago.

The new engine and generator were put into commission on December 12th, 1906, and the official tests were made in March of the present year. When operating at its most economical point, the engine developed an indicated horse-power on approximately 13 1-2 pounds of steam per hour. This is with a boiler pressure of 160 pounds and a 27 inch vacuum in the condenser. This remarkably high vacuum for a condenser of this type is made possible through the general arrangement of the exhaust piping, and it is being maintained continuously.

Mr. K. L. Aitken, consulting engineer, of Toronto, had charge of the recent remodelling and enlarging of the Barrie equipment.

SPECIFICATIONS FOR PORTLAND CEMENT FOR THE BUILDER.

For the benefit of our readers, we publish herewith the specifications governing Portland cement, which have been compiled by the Michigan Technical Laboratory, Detroit, Mich. They are designed to meet the requirements of the general building public and are as follows:

1. Tests: All tests shall be made in accordance with the methods prescribed by the Committee on Uniform Tests of Cement of the American Society of Civil Engineers, reported January 21st, 1903, and

amended January 20th, 1904, except in the following particular:—

(a) The boiling test, hereinafter described, shall be substituted for the "steam" test.

2. Acceptance: The acceptance or rejection of a cement shall rest with the chief engineer, and shall be based upon the following requirements:

3. Specific Gravity: The specific gravity of the cement shall be not less than 3.10.

4. Fineness: It shall leave a residue of not more than 8 per cent. by weight on the No. 100, and not more than 25 per cent. on the No. 200 sieve.

5. Time of Setting: It shall develop initial set in not less than twenty minutes, and must develop hard set within ten hours.

6. Tensile Strength: Briquettes one inch square in cross section shall develop not less than the following tensile strengths and shall show no retrogression in strength within the periods specified:

Age.	Strength.
24 hrs. (in moist air)	175 lbs.
7 days (1 day in moist air, 6 days in water).....	500 lbs.
28 days (1 day in moist air, 27 days in water).....	600 lbs.
ONE PART CEMENT, THREE PARTS STANDARD SAND.	
7 days (1 day in moist air, 6 days in water).....	170 lbs.
28 days (1 day in moist air, 27 days in water).....	240 lbs.

7. Soundness: Two pats of neat cement of normal consistency, about 3 inches in diameter, one-half inch thick at the centre and tapering to thin edges, and a ball of the same material about 1 1-4 inches in diameter, shall be kept in moist air for a period of twenty-four hours.

(a) A pat is then kept in air at normal temperature, and observed at intervals for at least 28 days.

(b) A pat is kept in water maintained as near 70 degrees Fahr. as practicable, and observed at intervals for at least 28 days.

(c) The ball is placed in water at normal temperature, which is gradually (in about half an hour) raised to boiling and maintained there for three hours.

The pats to pass the requirements satisfactorily, shall remain firm and hard and show no signs of distortion, blotching, checking, cracking or disintegration. The ball when removed from the water shall show no signs of checking, cracking or disintegration.

8. Chemical Requirements: The cement shall not contain more than 1.75 per cent. of anhydrous sulphuric acid (SO₃), nor more than 4 per cent. of magnesia (MgO).

THE SIPHON UNDER THE HUDSON AT STORM KING.

In fifteen years New York City will be drawing its water from the great Ashokan reservoir, in the heart of the Catskills. The water will be brought to the city by a huge concrete and steel aqueduct, 100 miles long, and the largest in the world. The most striking feature of this aqueduct will be the stupendous siphon under the Hudson at Storm King. This is a feat of tunneling that puts to blush all the tunnels around New York City. The subways under the Hudson now constructing go down about ninety feet below the water; but the Storm King siphon will be sunk 650 feet below the surface of the water and 1,100 feet below the aqueduct gradient. If this were built on the air pressure principle, used in the East River tunnels, all the workmen would perish from the pressure as soon as the work had gone a little below 100 feet under the water. As the engineers found it would be necessary to go below the fatal limit at Storm King, they decided to build a tunnel or siphon so far down below the river bottom that it would be in solid rock and not allow water to leak in. Going down over 600 feet, they calculate that little or no water will come in, and therefore they will not have to do the work or dig under pressure from compressed air.—C. H. Cochrane, in the Broadway Magazine.

CAST IRON AND ITS QUALITIES.

The strength of cast iron has recently been the subject of a discussion by the Birmingham Association of Mechanical Engineers. To some engineers all cast iron is alike; but, as Mr. F. J. Cook, who introduced the subject, showed, those who are brought much into contact with foundry work know that the strength, hardness, and ability of cast iron to resist corrosion vary enormously. Much depends upon the conditions attending the casting, and in particular upon the rate of cooling after running the molten metal. It is a matter of common knowledge that cast iron can be made exceedingly hard and strong by casting it in an iron mould, the

iron of which acts as a chill. The rate of cooling, and hence also the hardness and strength of a casting, is greatly influenced by the shape and thickness of the metal, and in general a heavy casting is weaker than a fairly small one run from the same metal. The amount of carbon present in the iron is of importance, and especially so the form in which it exists, whether combined or in the separated (graphitic) form. The latter iron is the softer and easier to work. Silicon up to about 2 per cent. has a marked effect on iron, increasing the strength. Sulphur tends to make iron hard but brittle by increasing the combined carbon. Manganese has a somewhat similar effect. Either too high or too low

a casting temperature leads to weak castings, whatever the quality of the iron used.—The Building News.

REINFORCED CONCRETE TESTS.

Reinforced concrete tests made at the University of Wisconsin testing laboratories during the past four years indicate that concrete cracks before evidences of the break can be detected by the eye, and that after it has cracked, though only minutely, its strength in tension is zero. Comparative tests of reinforced and plain concrete bars made at the university show that the first indication of cracking appears on the reinforced

(Continued on Page 14).

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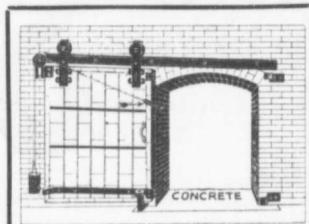
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beams at about the same load at which the plain beams fail. It is therefore considered probable that concrete reinforced with steel will not stretch more before cracking than plain concrete and that consequently the tensile resistance of concrete should not be taken into consideration in reinforced concrete design. A discussion of the subject has recently been published by the university, in the form of a bulletin prepared by Mr. E. A. Moritz. This bulletin also gives information concerning tests made in the laboratory to determine the best form of steel reinforcement. The anchoring of the rods at the ends of the beams, which has been frequently advocated, did not seem to strengthen them materially. The experiments apparently demonstrate that the cracking in the plane of reinforcement is not due to the pulling out of the rod, but rather to the pulling of the concrete upward away from the rod, and cannot be prevented by anchoring the rod at the end. In most reinforcements with bent rods, the angle of these rods with the horizontal has been too large and the area of the rods too small.—Engineering Record.

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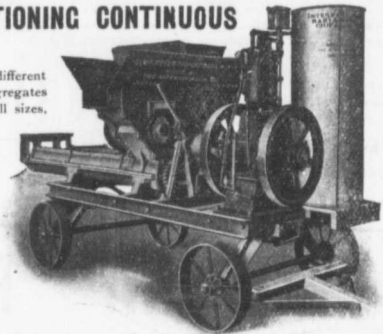
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NOTES.

As recently announced, application has been granted by the Winnipeg City Council to Mr. A. M. Frazer of that city, for permission to erect a 14 storey office building. The proposed building, which has been designed by Mr. John D. Atchison, architect, Winnipeg, will be one of the most elaborate buildings of its kind on the continent. The first three storeys will be of granite, while brick and terra cotta will be used above that. The corridors will be finished in marble wainscoting to the height of seven feet, above which glass will be used. The four elevators will be of the most modern design, the doors working automatically. An artesian well will be sunk on the site and a tank with a capacity of 25,000 gallons placed on the roof for fire protection. The cost of erecting the structure is estimated at \$1,000,000.

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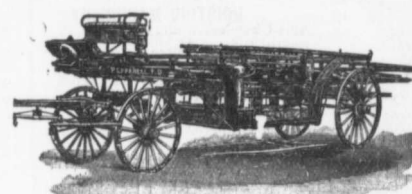
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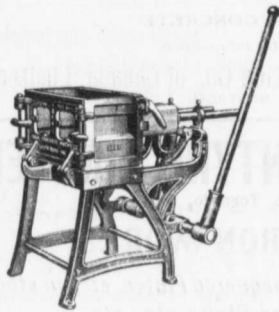
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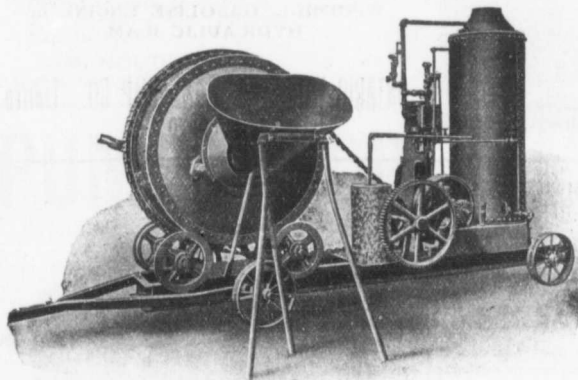
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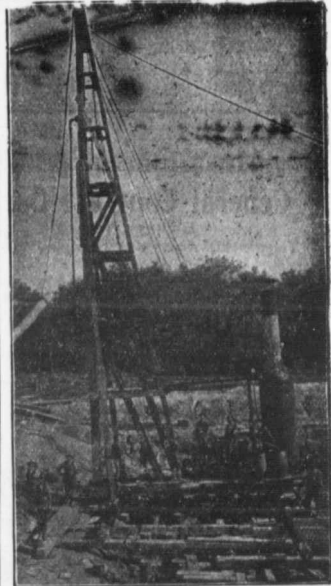
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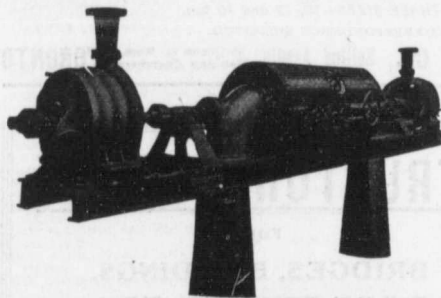
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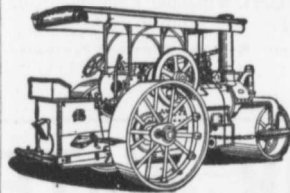
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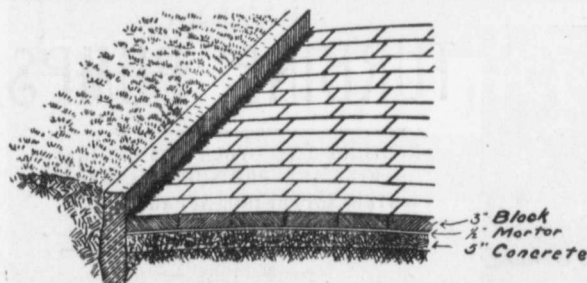
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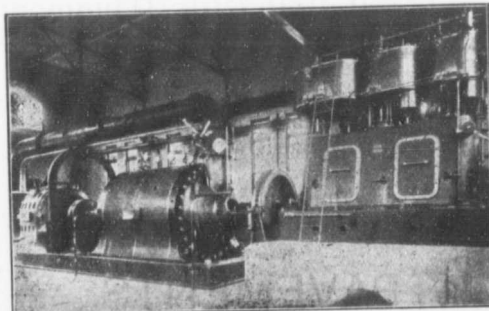
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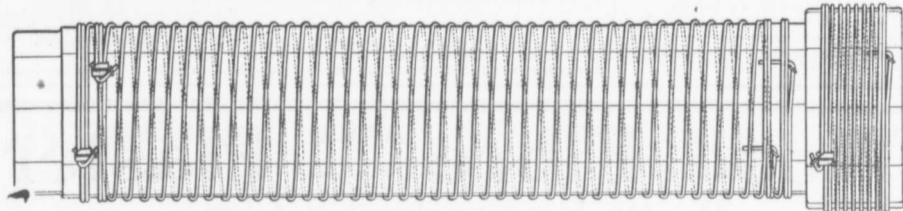
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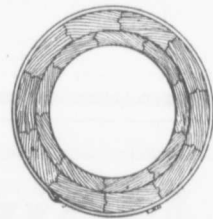
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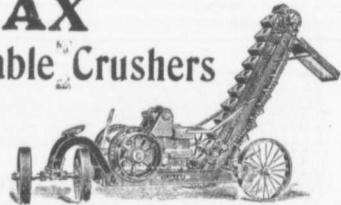
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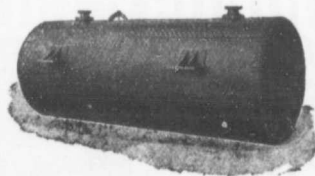
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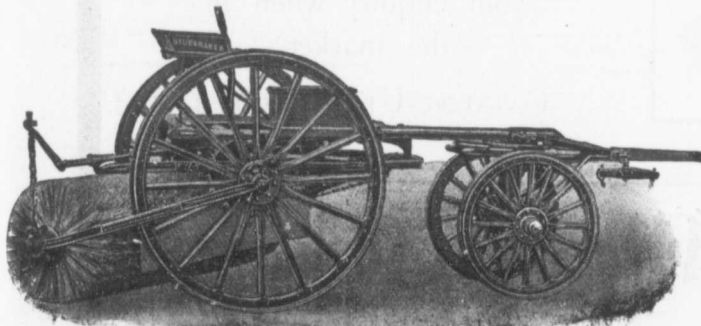
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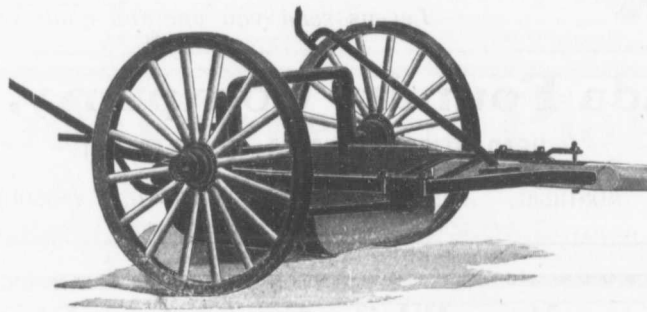
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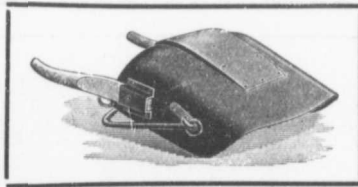
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