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# CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL OF  
PUBLIC WORKS • TENDERS • ADVANCE INFORMATION • AND MUNICIPAL PROGRESS

EVERY THURSDAY

This paper reaches every week the Town and City Clerks, Town and City Engineers, County Clerks and County Engineers, Purchasers of Municipal Debentures and leading Contractors in all lines throughout Canada.

VOL. 8.

JULY 29, 1897

No. 26.

## THE CANADIAN CONTRACT RECORD, PUBLISHED EVERY THURSDAY

As an Intermediate Edition of the "Canadian Architect and Builder."

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CONFEDERATION LIFE BUILDING, TORONTO.  
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Bell Telephone 2299.

Information solicited from any part of the Dominion regarding contracts open to tender.

Advertising Rates on application.

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## Notice to Contractors

A new and thoroughly revised edition of the *Canadian Contractor's Hand-Book*, consisting of 250 pages of the most carefully selected material, is now ready, and will be sent post-paid to any address in Canada on receipt of price. This book should be in the hands of every architect, builder and contractor who desires to have readily accessible and properly authenticated information on a wide variety of subjects adapted to his daily requirements.

C. H. MORTIMER, Publisher,  
Confederation Life Building, TORONTO.

## GRANOLITHIC WALK

Tenders, addressed to the undersigned, and marked on envelope "Tender for Walks," will be received by the Town of Cornwall until six o'clock, p.m., of FRIDAY, AUGUST 13TH, 1897, for the construction of about 578 lineal feet of Granolithic Walk, four (4) feet wide. Specifications can be had on applying to the Town Clerk.

The lowest or any tender not necessarily accepted.

GEORGE S. JARVIS,  
Town Clerk.

Town Hall, Cornwall, July 24, 1897.

## TOWN OF INGERSOLL

Scaled proposals will be received by the undersigned up to 4 p.m. FRIDAY, 30TH JULY, for the work to be done in draining, grading and paving with macadam and cobble stone of a portion of Thames street in the Town of Ingersoll.

Plans and specifications may be seen and forms of tender obtained at Town Clerk's office, Ingersoll, or at the office of Davis & VanBuskirk, engineers, Wood stock.

Lowest or any tender not necessarily accepted.

W. R. SMITH,  
Town Clerk, Ingersoll.

## FOR SALE

16 inch "Foster" Y level, nearly new; cost \$100; will sell cheap. Box 26, CONTRACT RECORD.

## DEBENTURES

TENDERS, sealed and addressed to the undersigned, and marked on envelope "Tender for Debentures," will be received by the Council of the Town of Cornwall until 6 o'clock, afternoon of FRIDAY, AUGUST 6TH, 1897, for the purchase of debentures of said Town amounting to ninety-eight thousand (\$98,000) dollars, and issued for the purchase of Waterworks. Said debentures are payable in thirty (30) equal annual instalments of principal and interest at the office of the Ontario Bank, in Cornwall, on the first day of August in each year during their currency.

The highest or any tender not necessarily accepted.

GEORGE S. JARVIS,  
Town Clerk.

Town Hall, Cornwall, July 15th, 1897.

## TENDERS

FOR

## STEEL BRIDGE

Scaled Tenders addressed to the Engineer in charge, will be received up to 6 p.m. MONDAY, AUGUST 9TH, 1897, for the construction of a Steel Bridge at Hanover. The following tenders are required:

- (1) For the construction of a steel bridge with flow, span 72 feet, roadway 18 feet clear, travelling load 120 lbs. per square foot, height above top of water 12 feet F. of S. 4.
- (2) For the construction of two rough ashlar abutments per cubic yard, estimate 300 cubic yards.
- (3) For the construction of two iron pile abutments per lineal foot, to sustain a load 10,000 lbs. on each abutment. Estimated length, 25 feet.
- (4) For the construction of two iron or steel cylinder abutments same as No. 3.

Each party will submit plans and strain sheets subject to the approval of the engineer. Tenders will be opened at Hanover on Thursday, August 12th, 1897. Lowest or any tender not necessarily accepted.

R. McDOWALL,  
Engineer in Charge,  
Box 621, Owen Sound.

CHAS. McKINNON, Commissioner for Grey Co.  
ROBERT LONG, Commissioner for Bruce Co.  
Owen Sound, July 24th, 1897.

## BUSINESS NOTES.

Beauchamp & Lamarche, contractors, Montreal, have dissolved partnership.

Joseph Sagnon and Hector Piquette, painters, have commenced business in Montreal.

Louis J. Pothier and Ovila Charpentier, bricklayers, Montreal, have formed a partnership.

William Taylor has commenced the manufacture of drain tiles at Carleton Place, Ont.

John Fraley & Co., contractors, Sudbury, Ont., are announced to have assigned to F. Cochrane.

The Art Work Manufacturing Co., of Toronto, will, it is said, purchase the Hess factory at Toronto Junction, with the object of opening a factory.

## CONTRACTS OPEN.

SUSSEX, N. B.—Stephen Taylor will build a residence.

RINGTOWN, ONT.—A site is wanted for a House of Industry.

COMBER, ONT.—F. Fortier proposes building a dwelling for 1897.

MITCHELL, ONT.—Philip James proposes erecting a residence.

NORTHAMPTON, N. B.—It is the intention of C. Estey to erect a residence.

WOODSTOCK, N. B.—Mr. Burt, of Burt & Lee, will erect a dwelling on Green street.

WINDHAM CENTRE, ONT.—The Presbyterians propose to erect a new church edifice.

COBCOONK, ONT.—Henry Doughty is building the foundation for his new store and dwelling.

SAKNA, ONI.—It is the intention of the Dominion government to erect a new post-office here.

VERNON, B.C.—It is expected that the waterworks and electric light by law will be carried by the ratepayers.

CHATSWORTH, ONT.—A. A. Park is receiving tenders for erecting a large store and residence at Williamsford.

GALL, ONT.—The local Exhibition Association propose to erect a new building 100 feet in length in Dickson Park.

HINTONBURG, ONT.—The George Matthews Co. intend building a block of stores on the north side of Richmond road.

OTTAWA, ONT.—Mr. Patrick Kennedy has obtained a permit for a brick veneered residence on Gilmour street, to cost \$2,000.

FRENCH RIVER, ONT.—It is the intention of S. Phillips to erect a large hotel at this place, plans for which are now being prepared.

SIMCOE, ONT.—A new building 50 feet square has been started at the corner of Kent and Peel streets by Messrs. Wells & Innis and J. Gunton & Co.

COLLINGWOOD, ONT.—Tenders are asked by S. J. Coleman until Saturday next for the erection of a two-story brick store on Hurontario street.

CARTWRIGHT, MAN.—Plans are being prepared for a stone school to be built here. W. H. Shillinglaw, architect, Brandon, has charge of work.

NELSON, B.C.—A. E. Hodgins is preparing plans for a provincial jail to be built near the south-eastern limits of the city. Estimated cost, \$10,000.

WINDSOR, ONT.—William Lyons having refused to proceed with his contract for constructing water mains, the council have decided to invite new tenders.

STRAITORD, ONT.—The Y. M. C. A. have under consideration the erection of a new building, and have appointed a committee to raise funds for the purpose.

UXBRIDGE, ONT.—Mr. I. J. Gould,

owner of the electric light plant, will install an incandescent lighting plant if sufficient encouragement can be obtained.

**PETERBORO, ONT.**—Tenders are invited until the 31st inst. for piers and abutments of a swing bridge crossing the Trent canal at Rosedale. Address, L. K. Jones.

**BRANTFORD, ONT.**—The Brantford Plow Co. are making arrangements for extensive additions, including a new blacksmith shop, 150 x 50 feet, and other buildings.

**TILBURY, ONT.**—James Stewart, banker, will receive tenders until July 30th for erecting a brick veneered manse. Plans at the office of J. L. Wilson & Son, architects, Chatham.

**BRANDON, MAN.**—It is proposed to extend the city water service to the General Hospital, requiring about 1,000 feet of 2-inch cast-iron pipe, etc. W. H. Shillinghaw, city engineer.

**FREDERICTON, N. B.**—The city will construct asphalt pavements on several streets.—John T. Clarke & Son propose erecting a brick block at the corner of York and King streets.

**TROUQUAIS, ONT.**—The ratepayers will vote on a by-law to purchase the present water works system. Should the purchase be made a new steam pumping engine will be installed.

**SOURIS, MAN.**—Plans are now being prepared for a brick church, with basement for Sunday school, to seat 400, for Presbyterian congregation. W. H. Shillinghaw, architect, Brandon.

**DRESDEN, ONT.**—Mr. James Gordon, who is at present erecting an elevator, expresses his willingness to erect roller flour mills also, if sufficient encouragement to do so is given him.

**TORONTO, ONT.**—Mr. J. R. Heakes, Ontario government architect, visited Algonquin Park last week for the purpose of arranging for the erection of headquarters for the fire rangers.

**SMITHS FALLS, ONT.**—On the 14th of August, the ratepayers will vote on a by-law for the purpose of extending the Beckwith street sewer and for providing a system of heating and ventilating at the central school.

**MONCTON, N. B.**—The plans of J. C. Dumaresq, architect, of Halifax, have been accepted for the new school building, estimated to cost \$28,000. Tenders for pressed brick and building stone will be received until August 10th.

**QUEBEC, QUE.**—Jes. P. Ouellet, architect, is preparing plans for the reconstruction of St. Gedeon church.—Harry Staveley, architect, has prepared plans and called tenders for the erection of a building on McMahon street for A. E. Pleiffer.

**SHERBROOKE, QUE.**—An agreement, subject to the approval of the ratepayers, has been approved of by the city council granting a site for new railway workshops, on condition that the railway company build and maintain shops to cost not less than \$30,000.

**LONDON, ONT.**—U. A. Graydon, city engineer, will receive tenders until 5 p.m. to-day (Thursday) for laying 36 and 43-inch concrete tile on Dundas street east.—Accommodation is required for 150 pupils in the third ward, a four-room school will likely be built.

**FERGUS, ONT.**—James Beattie, county clerk, will receive tenders until Saturday, July 31st, for hot water heating apparatus to be placed in the House of Industry near this town. Plans at the offices of the county clerk and William & Walter Stewart, architects, Hamilton.

**STRATHALLAN, ONT.**—The contracts for drainage works in East Zorra, advertised recently in the **CONTRACT RECORD**, have not yet been awarded. Contractors can see plans and specifications of the

work at the office of Wm. M. Davis, C.E., Woodstock, Ont., until August 9th.

**ROSSLAND, B.C.**—The city council is discussing the desirability of borrowing \$150,000 to provide funds for sewerage, lighting and other purposes.—It is stated that a large railway corporation have purchased the water power at Cascade City and will establish car shops and terminal facilities at that point.

**BARRIE, ONT.**—The county council of Simcoe have decided to erect a county Industrial Home at an estimated cost of \$50,000. \$4,000 has been granted for the purpose by the Provincial Government. The remainder will be contributed by the county. It is probable that the building will be erected in this town.

**CHATHAM, ONT.**—J. L. Wilson & Son, architects, have prepared plans for a school house for school section No. 4, Tilbury East, and tenders for erection are invited until August 7th by A. L. McCarthar, Merlin P.O.—The county council have decided to erect a House of Refuge, tenders for which are now invited.

**SACKVILLE, N. B.**—Plans have been prepared for remodelling the Methodist church, at a cost of \$10,000. A wing will be added to each side. Tenders have been called for a new \$5,000 school building to be built on Bridge street. The Baptist congregation have resolved to erect a parsonage, at a cost of \$2,000. The site has not yet been selected.

**KINGSTON, ONT.**—The Board of Trade has recommended a bonus of \$35,000 to the Montreal Transportation Co., to assist in the erection of an elevator.—The corner stone of the new chapel in connection with the House of Providence was laid last week. Estimated cost, \$5,000.—The contract for the Mooers elevator, to be erected in this city, specifies the following materials: 615 kegs of wire nails; 66,000 lbs. drift bolt iron; 615 squares of galvanized iron; 7,300 feet of manilla rope; 8 endless belts, running from 125 to 350 feet long; 650 elevator buckets; 4,000 elevator bolts and 4,000 elevator washers.

**WINNIPEG, MAN.**—A deputation from the municipality of Montcalm waited upon the Provincial government last week with a view of securing financial assistance towards rebuilding several bridges recently swept away by floods.—A new grain firm at the head of which is T. T. W. Brady, purposes erecting ten elevators during this summer. Five of these will be located at Carberry, Beresford, Winkler, Sintalouta and Oak Lake.—The city council has given notice of its intention to construct a sewer on Nena street to cost \$12,000, and a sewer on Cornish street and Assiniboine ave., to cost \$4,900.

**HAMILTON, ONT.**—Mr. Barrow, city engineer, will probably recommend the enlargement of the high level reservoir as a means of increasing the water pressure.—Ground was broken last week on the proposed Intercolonial Radial Railway, which will extend from Hamilton to Guelph.—J. F. Rastrick & Sons, architects, want tenders before Saturday next for the erection of a stone and brick car house and railway station at Beamsville for the Hamilton, Grimsby & Beamsville Electric Railway.

Building permits have been granted as follows: James Holden, reconstruction of the Temple livery stable on Catherine street, cost \$2,000; John Shuart, two-story brick dwelling on Gibson avenue, cost \$1,200.—The ratepayers will vote on a by-law on August 12th to provide the sum of \$110,000 for the following works: Brick pavement—cab stand, King st.; Main st., James to Catharine sts.; Gore st., James to Hughson sts. Macadam roadway—James st., Hunter to Aberdeen ave.; Barton st., James to Wentworth; Stuart st., James to Caroline; King st., Bay to Locke; King st., Wellington to Wentworth; Main st., Catharine to Wellington; Main st., Macnab to James; Mac-

nab st., Main to Stuart (except King to Merrick); Market st., Macnab to Caroline; John st., Gore to Murray. Tar macadam—York st., Macnab to Locke; John st., King to Gore; John st., Main to Hunter; King William st., John to Murray; Hughson st., Main to Gore.

**MONTREAL, QUE.**—A new office building is to be built on the site of the old Barron block on St. James street.—Hon. A. G. Blair, Minister of Railways and Canals, has stated that a new bridge would be built by the government at Seigneurs street. An engineer has been instructed to report upon the matter. With regard to building a bridge at Atwater ave., the matter is still under consideration.—Sheriff Thibeau, on behalf of the Quebec government, has written to the city council asking permission to construct a bridge between the court house and the building at the intersection of Notre Dame and St. James streets. Plans have not yet been completed, but it is quite probable the request will be granted.—The city surveyor has submitted the following statement of funds required for permanent works: Craig street, \$5,000; Notre Dame and St. James streets, repairs to Trinidad pavement, \$2,500, Logan Park boulevard, \$17,715, paving Maisonneuve street, from Dorchester to St. Catherine street, \$15,000, St. Catherine street, work from Drummond to Mountain streets, moving back sidewalk and altering paving, \$1,600.

—Voting on a by-law to provide funds for the erection of a public library building will take place in Westmount about the 1st of September.—The market committee will ask for an appropriation of \$10,000 to build cattle sheds at the eastern abattoir.—It is thought that during the present week a plan of the proposed harbor improvements will be agreed upon by the harbor commissioners and the Dominion authorities, and that work will be commenced at an early date.—Mr. Edward Maxwell has prepared plans for a store, dwelling and stable to be built for Mr. Alfred Joyce.—Mr. J. Forget Despatie has prepared plans for one cottage to be erected on Laval Park.—G. A. Monette, architect, is calling for tenders for two houses to be built for Mr. Benjamin Ethier.—L. R. Montbriand, is calling tenders for one building to be erected on Panet street for Messrs. Racette & Bros.

#### FIRES.

A portion of the business centre of the town of Warton, Ont., was destroyed by fire on the 25th inst. The insurance on the burnt buildings is small.—The foundry and machine shop of John Bunn, at Cayuga, Ont., has been burned; loss, \$2,000.—M. Dean's saw mill, at Sprucedale, Ont., was destroyed by fire on the 22nd inst.—Beltz's hat and fur store, on Dundas street, London, Ont., was damaged by fire recently to the extent of \$2,500; building and stock insured.—The saw mill of John Harley, of St. Gabriel, County of Rimouski, Que., was burned last week.—The east end abattoir on Delorimer avenue, Montreal, was almost completely destroyed by fire last week. The loss is estimated at \$10,000.—The buildings of C. G. Langevin & Co., Acton Vale, Que., consisting of saw, grist, carding and fulling mills were totally consumed by fire on the 22nd inst.—Michaud's bakery at Quebec, Que., has been damaged by fire to the extent of \$10,000.

#### CONTRACTS AWARDED.

**EGMONDVILLE, ONT.**—The contract for improving the drain has been let, at the price of \$985.

**CAMPBELLFORD, ONT.**—The new bridge to be built by the Trenton Bridge Works will cost \$11,980.

**CHATHAM, ONT.**—The tender of J. Smith has been accepted for sewers on Centre street and Deleware avenue;

price \$1,800.—Mr. Link, contractor, has been given the contract for cooperage work for Mr. Drader.

BRUSSELS, ONT.—R. G. Wilson has the contract for a church at Molesworth and a brick residence at Newry.

HALIFAX, N.S.—The tender of Longard Bros. has been accepted for heating apparatus for St. Patrick boys' school.

WINNIPEG, MAN.—G. W. Meldrum has the contract for building twenty-four elevators throughout western Manitoba and Assiniboia.

DIGBY, N. S.—The Londonderry Iron Works has been given the contract for cast iron water pipe for the Lawrencetown waterworks system.

FREDERICTON, N.B.—The city council have accepted the tender of the Bank of Halifax for the purchase of \$12,500 of debentures, at a premium of \$137.

CAMDEN EAST, ONT.—David L. Brown, of Deseronto, has secured the contract of building the new Anglican church. The edifice will be of brick, 79x28 ft.

WINDSOR, ONT.—The Board of Water Commissioners have accepted the tender of Henry Collins, of Detroit, for the new intake and wells, at the price of \$5,400.

BELLEVILLE, ONT.—Messrs. Phippen & Quinlan, of this city, have received the contract for \$60,000 worth of stone from Mr. Onderdonk, contractor for the Soulanges Canal. The stone will be taken from their quarries at Crookston.

MINNEDOSA, MAN.—The contract for J. W. Tedder's house here has been let to C. W. Hall, Brandon. The building is three-story and basement, brick veneered with cement, brick made by S. Fairbairn, of Minnedosa, cost \$8,000. W. H. Shillinghaw, architect, Brandon.

GUELPH, ONT.—H. J. Powell, architect, of Stratford, has accepted the following tenders for building the Coffee block in this city: Masonry, Foster & Rundell; carpentry, A. Stiffler; plastering, J. J. Mahoney; painting, A. Cormie; plumbing, Feek & Co.; tinsmithing, A. Rumford.

CORNWALL, ONT.—The contract has been let for the building of the Ottawa & New York Railway from Cornwall to Ottawa, a distance of 52 miles. The scheme includes the building of bridges across the St. Lawrence from the main shore, a short distance above this town, to Massena Point.

COLLINGWOOD, ONT.—The contracts for building the post-office in this town were let on the 17th inst. as follows: Brickwork, Arthur Court; foundation, Michael Boland; cut-stone work, H. McAstorker; woodwork, Bryan Mfg. Co.; plastering, Henry Wynes; plumbing and sheet iron work, J. H. Duncan; painting and finishing, Frank C. Munson; interior fittings, etc., Bryan Mfg. Co.

OTTAWA, ONT.—The contract for improvements to the Russell House has been let to E. C. Horn. Purdy, Mansell & Mashinter will do the plumbing work, and the Canadian Granite Co. the marble work. J. B. McElfatrick & Sons, architects.—Contracts have been let as follows for Thackeray's new block: Masonry and brickwork, Mr. Matthews; carpentry, Thackeray & Co.—James Copping has received the contract from Mr. G. M. Bailey, architect, for the erection of two houses on Spenset street, to cost \$5,000.

RENFREW, ONT.—Tenders for the construction of water works and sewerage systems have been received by the council as follows: Thomas McQuillan, Toronto, \$52,275; Three Rivers Iron Works Co., Montreal, \$51,874; Broder & McNaughton, Ottawa, \$64,750; Clark & Connolly, Toronto, \$58,750; G. A. Dana, Brockville, \$61,974; Morris & McDougall,

Renfrew, \$59,000; Barnett & Allan, Renfrew, \$59,845. The council have recommended the acceptance of the tender of the Three Rivers Iron Works Co., provided that their sureties are satisfactory.

TORONTO, ONT.—Tenders have been accepted by the city as follows: Gravel roadway on O'Hara ave., cost \$1,968, and on Dunn ave., cost \$4,824, John Maloney & Co.; cedar block roadway on Gladstone ave., Bryce & Co., \$3,699; cedar block roadway on Queen st., from Gwynne to Roncesvalles, Van Vlack & Co., \$7,293; gravel roadway on Melbourne ave., and concrete sidewalks on Victoria st. and on Queen st. in front of Osgoode Hall, Constructing & Paving Co.—The York County Council have accepted tenders as below for the construction of a new Infirmary at the Industrial Home, Newmarket. Masonry and plastering, William Collingwood, Mount Albert, \$720; carpentry, William Cane, Newmarket, \$1,500; painting and glazing, J. S. Taylor, Aurora, \$166; tinsmithing, G. A. Binns, Newmarket, \$145.

MONTREAL, QUE.—Contracts for drains have been let as follows. Sydenham street, O. Gosselin, \$3 for excavation, \$1.40 for rock, and 45 cents for filling, Anderson street, A. Campeau & Co., \$6.50 excavation and \$3.05 rock, Chambord street, O. Desrochers, \$4.41 excavation and \$3 rock; Lagauchetiere street, M. Bellehumeur, \$5.17 excavation and \$4 rock.—Messrs. Paquet & Godbout have been awarded the contract for the erection of a new Roman Catholic church at Barford at the sum of \$14,800.—Jos. A. Mercier, architect, has let contracts for one house on Marie Anne street, and three tenements to be built for Mr. Jos. Giroux, as follows. Masonry, Germain & Therrien, carpenter and joiner's work, H. Papineau; roofing, Amable Lauzon; plumbing, A. Charpentier & Co.; bricklaying, Daniel Deslongchamps; plastering, Theophile Leclaire; painting and

glazing, Jos. Giroux.—The City Health Department, Montreal, has awarded contracts for stables on Amos farm; all trades to Chapleau & Leboeuf.—L. R. Montbriand, architect, has let the contract for one building on Clarke street for Ald. Lemain; all trades to R. Cloutier.—Eric Mann, architect, has let contracts for a house on Drolet street; all trades to G. F. Denman.—The directors of the Canadian Pacific Railway have given the contract for doors, sashes, etc., for their east end Dalhousie depot, to M. W. Baril.—Taylor & Gordon, architects, have let contracts as follows for ten houses to be erected on William street for Mr. H. B. Ames: Masonry, H. Dufort; carpenter and joiner's work, W. M. Long; bricklaying, Amos Cowan.—Mr. Jos. Charette, architect, has given the contract for all trades to R. Laberge for alterations and improvements to Mr. P. A. Rodier's house on Notre Dame street.

**DURABILITY OF FLOORING.**

Some interesting tests of flooring materials recently made in Philadelphia are described in the Scientific American. The investigators used an ordinary iron rubbing wheel, such as is used by stone workers for rubbing a smooth face on marble or sandstone. The samples to be tested were cemented to blocks of sandstone, and laid, face downward, on the rubbing wheel, which revolved at the rate of 75 revolutions a minute and was kept supplied with sharp sand and water. The blocks to which the floorings were cemented were of equal weight, so that the rubbing was effected under nearly the same pressure in all cases. Curiously enough, the material which resisted best

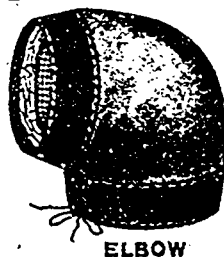
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  - THE ROYAL VICTORIA COLLEGE**, Montreal.
  - THE PROTESTANT INSANE ASYLUM**, Verdun, near Montreal.
  - THE GRAND HOTEL**, St. Hyacinthe, Que.
  - THE NEW CUSTOMS-APPRAISERS STORES, NEW YORK**, new building, which will consume 5,000 tons.
  - THE PARLIAMENT BUILDINGS, OTTAWA**, portion of which was recently destroyed by fire and rebuilt.

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this severe test was india rubber tiling, which, after an hour's rubbing, lost only one-sixty-fourth of an inch of its thickness. Next to this, English encaustic tile gave the best results, losing only one eighth of an inch in an hour's treatment. The artificial stone known as "granolithic" was third, losing three-eighths of an inch, while North river blue stone lost nine-sixteenths of an inch. All the marbles wore away very rapidly. A piece of marble mosaic disappeared entirely in 35 minutes, while solid white Vermont marble lost three-quarters of an inch in an hour's rubbing. Most of the wood floorings, indeed, resisted abrasion better than the marble. White pine, for example, lost only seven-sixteenths of an inch under treatment which removed nearly twice as much from solid marble. Yellow pine showed substantially the same resistance as white pine, while oak lost more than either of the pines. It would seem as if the treatment with water was hardly fair to the wooden floorings, which depend a good deal on their elasticity for resisting wear, but, even under such unfavorable circumstances, their superiority to stone is remarkable.

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slightly heated turpentine or camphor oil are added, and at last the coloring substance and 150 to 200 parts of water. All these additions have to be made slowly while stirring must not be neglected. The paint is spread on luke-warm, and is dry within six hours.

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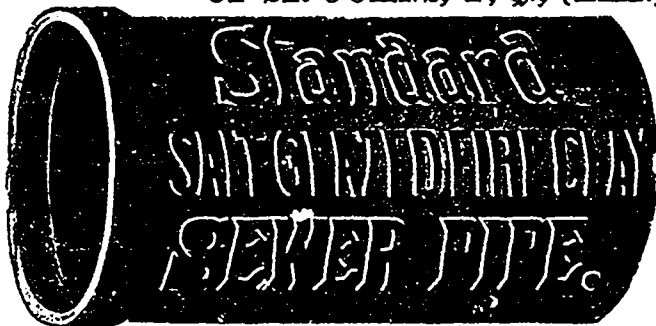
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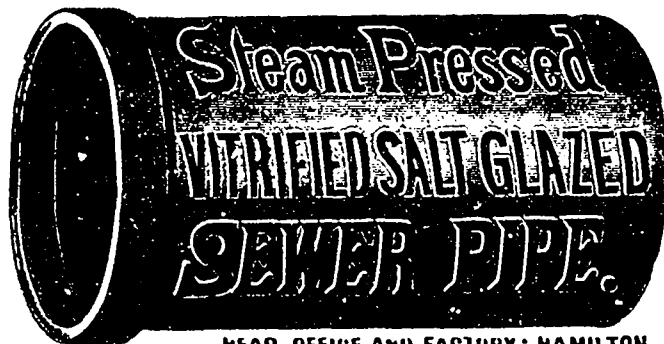
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## MUNICIPAL DEPARTMENT

### CORNWALL WATERWORKS AR- BITRATION.

A despatch from Cornwall dated July 13th says: The corporation took possession of the Cornwall Water Works Company's system and plant this afternoon, after having deposited in the Ontario Bank here to the credit of the company the sum of the award made by the Board of Arbitration, with interest to date. Mr. James Strickland was appointed superintendent, at a salary of \$60 per month. The company's employees at the pump-house barred the door, and refused to admit the new superintendent. Chief Cameron and three policemen were sent for, and forced their way through a window and opened the doors. The company threatens to appeal from the award of the arbitrators. The town officials are issuing a circular, warning citizens not to pay the water rates to the company's officials for water after this date.

### FILTRATION OF SEWAGE EFFLUENTS THROUGH COAL.

A noticeable paper read before the Midland Counties District meeting of the English Association of Municipal and County Engineers last month was that by Dr. George Reid, Medical Officer of Health, Staffordshire County Council, describing some experiments made with common coal as a filtering medium for effluents from artificial sewage disposal works. It seems that a year or two ago Mr. Garfield, the Manager of the Wolverhampton Sewage Disposal Works, noticing that a pool of foul water that was leaking away through a heap of coal slack, emerged from the slack in a clear limpid stream, was led to construct a small filter of fine coal in order to try its effect on the Wolverhampton sewage effluent. Analyses from the coal filter were so satisfactory that Dr. Reid, who was then experimenting on the merits of different methods of artificial sewage disposal, constructed three small experimental coal filters, each having an area of 16 square yards.

In constructing the coal filter Mr. Garfield recommends a thickness of filtering material of 5 feet, distributed as follows: On the top of the effluent drain pipes is put a layer of 6 inches of coal in size about that of a  $\frac{1}{2}$ -inch cube. This layer is "blinded" with one of  $\frac{1}{4}$ -inch cubes, above which comes a 9-inch layer of  $\frac{3}{8}$ -inch cubes and on top of that a 21-inch layer of 1-16-inch cubes. The top course is a 2-foot layer of coal dust that has passed through a 3-16-inch mesh, the fine dust not being removed as in the other layers.

The best results have been obtained by turning the sewage effluent on to this filter at the rate of 1,000,000 gallons per acre per day for a period of 12 hours and

then allowing 12 hours for aeration. As in other artificial filters, the nitrifying property increases with time, but from the first the filter is said to possess high purifying powers apart from nitrification. The filters constructed by Dr. Reid were only 42 inches in depth instead of 5 feet, but the sewage treated was ordinary weak domestic sewage from a town with only a few water-closets and which had been treated with precipitation by alumino ferric and lime. The sewage was also largely weakened by rainfalls of considerable duration.

### DISPOSAL OF GARBAGE.

A writer in the Toronto Globe, on the subject of the disposal of garbage, says: During my recent visit to Great Britain I was made acquainted with the methods followed in working over a dozen systems of disposing of sewage in large towns. In England they have been experimenting and spending large sums of money in trying to find out some simple process for over thirty years. It is an easy matter to clarify sewage and take out the heaviest dirt similar to the process at Hamilton, but a hard one to extract the chemical poisons and dangerous microbes. Moreover, the precipitants generally used to compel the dirt to separate from the water nearly always leave an ingredient in the clarified water that sets up a fermentation after a few days that causes putrefaction, and creates more danger than if the sewage entered the streams in the raw state. So it is necessary to either purify the sewage water properly or else let it enter the fresh water untreated. So nearly all the sewage works in Great Britain clarify the sewage first, then purify it by passing the clarified fluid through a good filter or through farm lands. But our climate would be too severe in winter to purify sewage by irrigation through land, and it would be altogether too expensive at all times.

It has always been held that charcoal is the proper filtrate to use in purifying sewage, but its use was barred on account of the cost. At present the cost of purifying sewage in the Old Country is from 40 to 75 cents per head of contributory population, and to go higher would not be tolerated. About six years since a person patented a very simple method of creating a suitable charcoal at a nominal cost, and using it to clean sewage at a cost of less than twelve cents per head. I visited a

works constructed under the patent, and was amused with the simplicity and efficiency of the system, and the purity of the effluent. It requires no pumps, sludge presses, or other expensive machinery. One man at night and one for day duty is all that is necessary to handle the working part with sewage from 20,000 people. The first expense in plant is small compared with other sewage disposal plants.

The method used is that known as the Carbonized Refuse process of purifying sewage. The sweepings from streets, the garbage from dwellings, and any poisonous material, excreta, etc., that should be destroyed, is placed in a muffled kiln or destructor, and the clinkers and ashes raked out of the furnace are used to filter the sewage. The largest clinkers are placed at the bottom of a concrete tank, then a layer of smaller, and again another layer of still smaller, the three layers being covered by eight inches of the finest ashes or charcoal powder taken from the furnace. This is the filtrate that cleans and extracts all the poison from the sewage, and discharges a bright, sparkling stream of pure, tasteless water. The sewage arriving from the town is run through a sieve, then through a roughing tank composed of coke or broken clinkers, then it overflows onto the filters. In about three days the filter will be covered with about two inches of solid sludge, which is shovelled off along with about two inches of the charcoal, and carted away for manure and it is said to be equal to any patent manures sold. The advantages of the system are that it works by gravitation, only requiring about four feet fall from the beginning to the end of the process. It continues requiring attention only to clean the sludge from the surface of the filters, and attend the fires of the kiln or destructor. The works can be left to care for themselves for several hours at a time until the fires need stirring. No precipitant is required except dye water is filtered, because the charcoal is strong enough to extract everything out of domestic sewage.

By this method two nuisances are disposed of. The garbage and filth of the towns are disposed of, and all danger to health is destroyed at about one-third the cost of other systems. The kilns or destructor furnaces require no other fuel but the garbage they burn or carbonize; there is nothing at all to buy, and there is a valuable manure to sell. Moreover the wages are very small.

Mr. W. F. Van Buskirk has been appointed city engineer of Stratford, at a salary of \$1800.

Mr. C. H. Wallace has been appointed first assistant city engineer, at Hamilton, at a salary of \$1,000, and Mr. J. R. Heddle second assistant engineer, at \$600.

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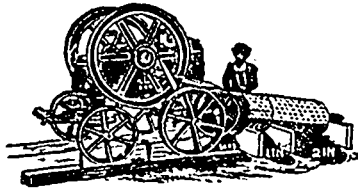
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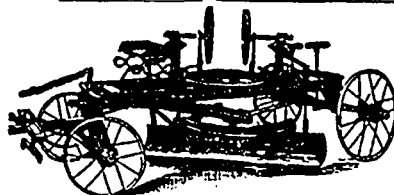
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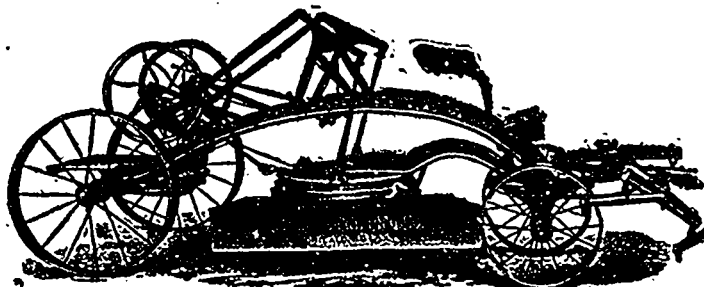
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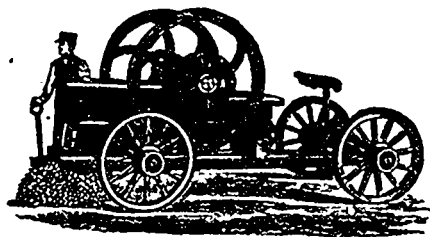
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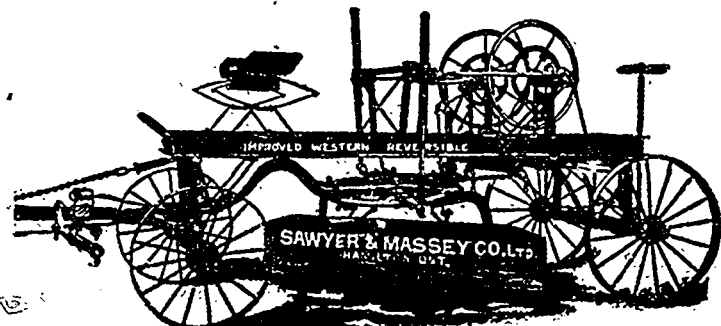


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