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CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL OF THE PUBLIC WORKS 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.

SEPTEMBER 16, 1897

No. 33.

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Architectural practice of Hewitt & MacLaren, including office fixtures and good will, in the City of Brantford (18,000 population). Splendid opportunity for a young man. HEWITT & MACLAREN, Box 417, Brantford, Ont.



TENDERS FOR SUPPLY OF STONE

Tenders will be received by registered post only, addressed to the Chairman of the Board of Control, City Hall, Toronto, up to noon on Wednesday, the 15th September, 1897, for the supply of 100 tons of stone, suitable for macadam, and to be delivered either in the neighborhood of the Frederick street wharf or the House of Industry.

Specifications may be seen and forms of tender obtained at the office of the City Engineer, Toronto.

A deposit, in the form of a marked cheque, payable to the order of the City Treasurer, for the sum of 2½ per cent. on the value of the work tendered for, must accompany each and every tender, otherwise they will not be entertained.

Tenders must bear the bona fide signatures of the contractor and his sureties, or they will be ruled out as informal.

Lowest or any tender not necessarily accepted.

JOHN SHAW (Mayor),
Chairman Board of Control.

City Hall, Toronto, September 2nd, 1897.

POSTPONEMENT

The time for receiving the tenders called for in the foregoing notice has been extended until noon on

WEDNESDAY, SEPT. 29th, 1897.

JOHN SHAW, (Mayor),
Chairman Board of Control.

Toronto, Sept. 14th, 1897.

Tenders Wanted

Tenders will be received by the undersigned, up to 7 o'clock p.m. on the 28th SEPTEMBER, 1897, for the erection of a Public Library in the Town of Clinton.

Plans may be seen at the office of the undersigned and copies of the specifications will be supplied to all intending contractors.

The lowest or any tender not necessarily accepted.

WILLIAM COATS,
Town Clerk.

TENDERS

Tenders will be received by the undersigned until noon on TUESDAY, SEPTEMBER 21st, for the various works required in the erection of a

STONE AND BRICK RESIDENCE ON ST.
GEORGE STREET, TORONTO.

Lowest or any tender not necessarily accepted.

GORDON & HELLIWELL, Architects,
Confederation Life Building.



NOTICE TO CONTRACTORS

Tenders will be received by registered post only, addressed to the Chairman of the Board of Control, City Hall, Toronto, up to noon on

WEDNESDAY, SEPTEMBER 29TH, 1897,
for the construction of the following works:—

BRICK PAVEMENTS

On Bellevue Avenue, from Bellevue Place to Oxford Street.

Berkeley Street, from Wilton Avenue to Gerrard Street.

Carlton Street, from Parliament Street to Sackville Street.

GRAVEL ROADS

On Foxley Str. et, from Dundas Street to Dovercourt Road.

On Dovercourt Road, from Queen Street to Dundas Street.

On Dufferin Street, from Peel Avenue to Dundas Street.

CONCRETE WALKS

Isabella Street, both sides, from Church Street to Jarvis Street.

Front Street, north side, opposite Nos. 10, 12, 14 and 16.

BRICK WALKS

On Spruce Street, north side, from Parliament to first lane east.

On Drummond Place, west side, from Adelaide Street to first street north.

On Peter Street, east side, from Adelaide Street to 144 feet south.

Wellesley Street, south side, from Sherbourne Street to Homewood Avenue.

Specifications may be seen and forms of tender obtained, at the office of the City Engineer, Toronto, on and after Wednesday, Sept. 22nd, 1897.

A deposit in the form of a marked cheque, payable to the order of the City Treasurer, for the sum of 2½ per cent. on the value of the work tendered for, must accompany each and every tender, otherwise they will not be entertained.

Tenders must bear the bona fide signatures of the contractor and his sureties, or they will be ruled out as informal.

Lowest or any tender not necessarily accepted.

JOHN SHAW (Mayor),
Chairman Board of Control.

City Hall, Toronto, Sept. 11th, 1897.

WATERWORKS CONSTRUCTION

Sealed tenders marked "Waterworks," addressed to the Reeve of Stouffville, Ont., will be received up to 8:30 p.m. on FRIDAY, THE 24TH SEPTEMBER, 1897.

Plans and specifications may be seen and all information obtained at the Clerk's office, Stouffville, Ont., at the office of the Consulting Engineer, John Galt, Esq., Canada Life Building, Toronto.

Tenders to be on forms furnished by the Engineer and accompanied by marked cheque, payable to the Corporation, for 10 per cent. of tender. The lowest or any tender not necessarily accepted.

J. H. RATCLIFF, Reeve.
Stouffville, Ont., Sept. 14th, 1897.

CONCRETE WALKS

Sealed tenders, addressed to the Chairman Board of Works, City of Stratford, Ont., will be received up to one o'clock p.m. on FRIDAY, SEPTEMBER 24TH, 1897, for the supplying of material and labor for the construction of about 1,500 feet of Cement Concrete Walks and Crossings, either of vitrified brick or concrete. Specifications and forms of tender at City Engineer's office.

W. F. VAN BUSKIRK,
City Engineer.

CONTRACTS OPEN.

CARBERRY, MAN.—George Rogers will erect an elevator here.

PEMBROKE, ONT.—The C. P. R. are building a new station.

PENDLETON, ONT.—W. N. Barrie proposes building a new steam grist mill.

PORT DOVER, ONT.—The Grand Trunk Railway Company will erect a new station here.

FALDING, ONT.—R. R. Rankin contemplates making extensive alterations to his store next spring.

BELLE RIVER, ONT.—A joint stock company has in view the erection of a grist mill at this place.

FREDERICTON, N.B.—R. M. Campbell has purchased the Donohue property on which to erect a residence.

ST. MARYS, ONT.—John Elliott, contractor, will erect a brick residence, with all modern improvements.

PRESBOTT, ONT.—Of the \$3,000 required for a new skating rink, the sum of \$2,000 has been subscribed.

DESERONTO, ONT.—The work of rebuilding the Grand Trunk Railway station has not yet been commenced.

L'ORIGINAL, ONT.—Murray & Munro, contractors for the wharf, are now purchasing the necessary supplies.

IROQUOIS, ONT.—A. F. Sherman, reeve, will receive offers until the 27th inst. for putting in an electric light plant.

PARRY SOUND, ONT.—It is the intention of Alex. Logan to improve his furniture store, including brick veneering and plate glass windows.

NORWOOD, ONT.—W. E. Roxburgh proposes erecting a brick block of four stores.—James Pengelly is completing the

erection of a block of five stores for W. E. Roxburgh on the site of the buildings destroyed by fire last spring.

SMITH'S FALLS, ONT.—The Board of Education will spend over \$1,000 in improving the ventilation and sanitation of the Central school.

STOUFFVILLE, ONT.—Tenders for the purchase of \$25,000 of debentures are asked by J. H. Ratchiff, reeve, before Friday, September 24th.

BROCKVILLE, ONT.—A gentleman named Baumgarten has been in the city recently in connection with a proposal to construct an electric railway.

GUELPH, ONT.—The city council will probably purchase a road roller at an early date.—It is rumored that the G. T. R. intend building a new depot here.

BEACHBURG, ONT.—H. R. Dunn, township clerk, will receive tenders until the 25th inst. for the construction of a bridge over Fraser's Mill Creek.

RAT PORTAGE, ONT.—Reduction works are to be established on the old Dick & Banning water power by the Ottawa Gold Mining & Development Company.

NAPINKA, MAN.—Tenders are asked by A. Cates, secretary treasurer school district of Napinka, until the 17th inst., for the purchase of \$3,000 of debentures.

ALMONTE, ONT.—Several ratepayers are urging the council to purchase an electric light plant. The matter will probably be considered in the near future.

LANARK, ONT.—At a public meeting held recently, a resolution was passed favoring the granting of a bonus of \$10,000 to the Lanark County Electric Railway.

CROWLAND, ONT.—Tenders are asked by Orlin Kinney until Friday, the 17th inst., for the construction of a bridge, including earth and stone work and laying of pipe.

ROSSLAND, B.C.—The Merchants Bank of Halifax have purchased a site, corner Columbia avenue and Spokane street, on which a branch bank, to cost \$15,000, will be erected.

DIGBY, N. S.—Clarke Bros. have in contemplation the erection next spring of a three-story mercantile establishment, having plate glass and other modern improvements.

ST. ANDREWS, N. B.—Rev. Alex. P. Bowser, of Wilmington, Del., has purchased a site at this place on which he will at once commence the erection of a summer cottage.

HULL, QUE.—Mr. H. J. Beemer, president of the Gatineau Valley and the Pontiac Pacific Junction Railways, has requested a bonus of \$50,000 from the town. It is intended to erect workshops, wharf extensions, etc.

WINNIPEG, MAN.—Tenders will shortly be asked for work designed to lower the waters of Lake Manitoba, a scheme for which Parliament appropriated \$25,000 at its last session. Surveys of the proposed works have been made.

LINDSAY, ONT.—A deputation from the county of Haliburton have requested the Ontario government to grant financial aid to the township of Stanhope in rebuilding the Baskilong bridge. The estimated cost of the work is \$1,200.

GRENVILLE, ONT.—Tenders are wanted by Monday, Sept. 20th, for cleaning and repairing the West Flamboro' swamp drain. Particulars may be obtained from Ira N. Binkley, township clerk, to whom tenders are to be addressed.

VICTORIA, B. C.—Hunter & Oliver, solicitors, have made application for the incorporation of a company to construct a railway from Portland Inlet, Cassier district, to a point near Teslin Lake, with power to construct bridges, wharves, docks, etc.

KING, ONT.—The ratepayers of King township have carried a by-law granting a bonus of \$12,000 to the Aurora & Schomberg Railway Co. This is said to ensure the building of the road at an early date, as the company hold both Dominion & Provincial charters.

ST. THOMAS, ONT.—At the last meeting of the School Board a motion recommending the Council to grant \$35,000 for a new school was carried.—Jas. A. Bell, city engineer, estimates that it will cost \$79,578 to build six and a half miles of electric railway in this city.

ST. JOHN, N. B.—Robert Ritchie has purchased property on Charlotte street and will erect thereon a large brick building containing tenements and stores.—Hon. A. T. Dunn was recently at Pisarino arranging for the construction of a new bridge there, to 1 300 feet long, with approaches.

CHATHAM, ONT.—The subject of repairs to the settling basin, which collapsed recently, is still under consideration by the city authorities.—Samuel Glenn, jr., is taking tenders this week for the erection of a frame residence. Powell & Carswell, architects.—Mr. Merritt, city clerk, writes that the council have received a proposition from the Essex Natural Gas Co. to pipe from the Essex Gas Wells to Chatham, and have the gas supplied to the city by Oct. 1st, 1898, at a cost of 25 cents per M until pumping is required; then to be 40 cents per M. The council have passed a by-law accepting same under certain conditions.

QUEBEC, QUE.—The water power of Shawenegan Falls, on the St. Maurice river, was sold last week to Mr. David Russell, of Montreal, representing a syndicate intending to manufacture calcium carbide for acetylene gas. One of the conditions of the sale was that the company shall expend \$2,000,000 within eighteen months in the erection of buildings and plant and otherwise developing the water power. Within two years thereafter an additional two million dollars must be expended.—The Bell Telephone Co. contemplates the erection of an eight-story building at the corner of St. John and St. Angele streets.

KINGSTON, ONT.—The city clerk has given notice that it is proposed to construct a tile sewer on King street, from Beverley street to Livingstone avenue, at a cost of \$3,948.—Tenders are asked by the church wardens of St. George's cathedral for the purchase of \$35,000 of debentures. The date limit is Oct. 1st. Particulars may be obtained from Walkem & Walkem, solicitors.—Lieut.-Col. Lake, quarter master general, was in the city recently and visited the several eligible sites for the proposed drill hall. He states that a decision regarding the site will shortly be made, when the preparation of plans will be commenced.

OTTAWA, ONT.—E. L. Horwood, architect, has been granted a permit for additions to a residence, corner Somerset and Metcalf streets.—The foundation for the new roundhouse to be built by the Canada Atlantic Railway has been commenced. The building will be of iron, stone and brick, and will accommodate 30 engines.—J. B. Fraser has taken out a building permit for a dwelling on Cooper street, to cost \$10,000.—The Protestant Hospital board of directors have instructed the architect to prepare plans for a laundry building to cost about \$2,000.—It is said to have been decided by the authorities of the Canada Atlantic Railway to construct both roundhouse and freight sheds immediately.

LONDON, ONT.—The schools of the city are overcrowded, and the ratepayers are urging the erection of a new building in the southern part of the city.—The Water Commissioners have decided to

put in a main on William street, south of South street.—The Board of Works have decided to invite tenders for sections L, M, N and O of the sewerage system, extending from the corner of Richmond and Mill streets to the corner of Dundas and Egerton streets. The total length of the four sections is 11,694 feet, and the average depth 15 feet 1 inch. The work must be completed in eight months if divided in two sections, and in one year if tendered for in bulk.—John Elliott, contractor, has purchased property, corner Jones and Wellington streets, on which to build a residence.

HAMILTON, ONT.—Notice has been given by the city clerk that a pipe sewer will be constructed on Argue street, at a cost of \$475.—It is said that a deal is being negotiated between the G.T.R. and the Hamilton & Dundas Railway, which will include the extension of the latter to the Beach, and the erection of a station at the corner of James and Main streets.—The City Engineer has estimated the cost of a sewer on King street west, from Pearl street to the T. H. & B. Railway, at \$3,600.—The following building permits have been granted. David Phillip, two-story brick dwelling on Liberty street, cost \$1,400; E. B. Patterson, two 2 story brick dwellings, corner James and McAuley streets, for Mrs. Hardy, cost \$2,400.—The police commissioners have asked the city council to purchase the property at the corner of King William and Catherine streets, to be used for police headquarters.—At a recent meeting of the directors of the Hamilton, Ancaster & Chedoke Railway Company, it was stated that the remaining funds necessary to build the road had been promised in two weeks.

MONTREAL, QUE.—The Jesuit Fathers have in contemplation the erection of a new college in Westmount. Plans for the building have been prepared, but the site has not yet been definitely decided upon.—The Grand Jury, in their presentment to Judge Wurtele, in the Court of Queen's Bench, recommends that a central prison be built in this city, also one at Quebec.—The Road Committee have decided to continue the paving of Notre Dame street west, and to ask the citizens to sanction a loan of \$40,000 for the purpose.—Architect Gauthier, of this city, has been instructed to prepare plans for an \$18,000 addition to the Catholic church at St. Thomas of Alfred. Rev. Father Lombard is the parish priest.—St. Stephens church is to be removed to the corner of Dorchester street and Atwater avenue, where a new building will be erected. Plans for the same have been prepared by Messrs. Taylor & Gordon, architects, and as soon as negotiations for the purchase of the property are completed, work will be commenced.—Macduff & Lemieux, architects, are calling for tenders for a store and six tenements to be built at the corner of Charlevoix and Chateauguay streets for Cyrille Pare.

TORONTO, ONT.—Building permits have been granted as follows: H. H. Fudger, residence on Maple avenue, cost \$7,000; Providence Loan & Investment Co., alterations north-west corner King and Victoria streets, cost \$2,000.—Prof. Ramsay Wright, of Toronto University, has recently returned from Algonquin Park, where he has been examining a site for the establishment of a station for biological purposes.—Mr. Keating, city engineer, was in Hamilton last week inspecting the sewage disposal works now in course of construction in that city. He gives it as his opinion that Toronto will shortly be compelled to adopt some system of treating the sewerage.—In his fortnightly report to the Board of Works, the City Engineer has recommended the construction of the following works: 15-inch tile pipe sewer on Dowling ave., from the north side of King st. to the south side of Leopold st.; cedar block pavement on lane south of Front st.;

cedar block pavement on Church st., from Front to the Esplanade, cost \$3,250; brick walk on the west side of Bond st., from Shuter st. to Wilton ave., cost \$817; brick walk on the north side of Gould st., from Mutual st. to Church st., cost \$474; concrete walk on north side Queen st., from University st. to Simcoe st., cost \$670; concrete walk on the east side of Bay st., from Wellington to No. 77 Bay, cost \$380.—The City Clerk has received a sufficiently signed petition for a concrete sidewalk on the east side of Bay st., from Wellington st. northward.—Petitions have been received against the following works: Brick walk on Mercer st.; gravel roadway on Garden ave., from Sorauraen ave. to Roncesvalles ave.; gravel roadway on Dufferin st., between Peel ave. and Dundas st.; brick sidewalk on Lakeview ave., between Harrison st. and Churchill ave.—The Board of Works have passed a recommendation that a cedar block pavement be constructed on Arthur street, between Euclid ave. and Bathurst street—Ald. Hubbard has announced his intention of moving for the appointment of a committee to make arrangements with the Consumers Gas Company for a supply of gas to Island residents. It is proposed to construct a pipe along the marsh break-water and across the eastern channel.

FIRES.

The shingle, saw and grist mills of J. Woodruff, at Sydenham, Ont., were completely destroyed by fire on the 8th inst. Loss \$10,000, partially covered by insurance.—A brick Catholic church at Fort Augustus, P.E.I., was gutted by fire on Monday of last week. Loss \$20,000, insurance small.—The dwelling house, barn and store of W. A. Campbell, at St. Martins, N. B., has been burned. Loss \$2,500; no insurance.—The Palmerston Woollen Mills at Palmerston, Ont., owned by Mr. Waterhouse, were burned to the ground last week.—A number of buildings at Port Elgin, Ont., were destroyed by fire on the 12th inst. Among the burned buildings are Eby's drug store, with the G.N.W. Telegraph office, Ittner's grocery store, Hutton's harness shop, White's furniture store and Mrs. Campbell's residence.—A. M. Bell & Co.'s hardware establishment at Halifax, N. S., was destroyed by fire on the 11th inst. The building was owned by the Estate of E. Brown, and was badly damaged.—A disastrous fire occurred at Quebec on Saturday last, destroying the red brick building at the corner of Prince Edward and Cowan streets owned by J. M. St. Pierre. The loss is estimated at \$100,000.—The village of South March, Ont., on the Ottawa, Armprior & Parry Sound Railway, was almost totally wiped out by fire on Monday last. The loss is between \$40,000 and \$50,000, a small portion of which is covered by insurance.—The Deaf and Dumb Institute at Fredericton, N. B., a brick building erected a few years ago through the efforts of Professor Woodbridge, was consumed by fire a few days ago.—Warehouses at Charlottetown, P.E.I., owned by Brace, McKay & Co., were burned on the 10th inst.

CONTRACTS AWARDED.

HASTINGS, ONT.—The new town hall will be built by Doozee Bros., their tender being \$4,088.

FREDERICTON, N.B.—Kitchen & Shea have secured the contract for placing a furnace in St. Dunstan's R. C. church.

AMHERST N.S.—Rhodes, Curry & Co. have the contract for stone for a large building to be erected in an American city.

COBDEN, ONT.—Ross township council have decided to purchase a road machine from the Good Roads Machinery Co., of Hamilton.

OTTAWA, ONT.—The tender of E. G. Laverdure has been accepted for putting in a new boiler at the city hall, at the price of \$270.

ROSEDALE, ONT.—The Central Bridge & Engineering Co., of Peterboro', have been given the contract for a new iron bridge to be built here.

WOODSTOCK, ONT.—H. H. Howell and S. J. Pole are the successful tenderers for the skating and curling rink, to be 175 x 81 feet. The contract price is \$4,542.

INGERSOLL, ONT.—Contracts for R. A. Skinner's dwelling and livery have been let as follows: Carpenter work, F. Richardson; painting, Lowry & Adair; tin-smithing and plumbing, Jas. Sinclair.

WINNIPEG, MAN.—John Girvin has received the contract for new warehouses for the Standard Oil Co., to be solid brick on stone foundation, one story and basement. One will be 40 x 80 feet and the other two 25 x 60 feet.

GUELPH, ONT.—L. C. Wideman, architect, has accepted tenders as follows for Thomas Newstead's residence. Excavating, masonry, lath and plastering, Shaw & Dunbar; carpentry, David Williamson and Matthew Lee; iron work, A. Rumford; painting and glazing, W. Scriven.

HAMILTON, ONT.—The contract for machinery for the sewage disposal works has been given to D. Ritchie, at \$4,985. R. & J. Poag, who tendered for carpenter work at \$1,639, made an error in their tender, and the contract has been awarded to F. Taylor, at \$2,030.—John Armstrong has been awarded the contract for building a sewer on O'Reilly street, at 22 cents per foot.

MONTREAL, QUE.—W. McLea Walbank, architect, has awarded the contract for reparations of ten houses on Terrace Molson for F. W. Molson to Lecompte & Son.—Smith & Bond, architects, have accepted the following tenders for a bank

building to be built on St Etienne street, Pointe St Charles, for Wm Mann: Masonry, John Quinlan; carpentry, D. M. Long; bricklaying, R. E. Edwards & Son—Walter Livermore, architect, has let contracts as follows for two buildings, store, dwellings and stables, on St. Matthew street, for Henry Russell: Masonry, Alp. Charette; carpentry, Jos. Ash; bricklaying, C. E. Wand.—Additions are being made to a house on Osborne street for Mr. Wm. Trenholme. Architect, Cajetan Dufort. Contractors: Masonry, H. Dufort; carpentry, Wm. McDonald.—Mesnard & Daoust, architects, have in hand a stone and brick cottage on Stanley street, for L. J. Gabowry; G. Guilbault, masonry contractor.

RESERVOIR FAILURES.

In a recent number of the Engineering News a description is given of the failure last July of two earthen dams having masonry heart walls erected at Melzingak by the Fishkill and Matteawan Water Company. The dams are stated to have been well designed and built, whilst the area of discharge over the by-washes was in accord with rules proposed by an eminent American engineer. The two dams were comparatively small, and were located one above the other on a mountain stream. The upper had a capacity of 8,000,000 imperial gallons, whilst the lower could impound 64,000,000 gallons. The upper dam was 340ft. long and 38ft. high, whilst the lower was 400ft. long and 34ft. high. In each case there was a masonry heart wall 3ft. thick at the bottom, tapering to 1ft. or 1ft. 6in. at the top, and

(Continued on Page 4.)

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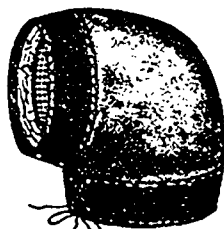
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THE PROTESTANT INSANE ASYLUM, Verdun, near Montreal.
THE GRAND HOTEL, St. Hyacinthe, Que.
THE NEW CUSTOMS-APPRAISERS STORES, NEW YORK, now building, which will consume 5,000 tons.
THE PARLIAMENT BUILDINGS, OTTAWA, portion of which was recently destroyed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

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carried up to within 1ft. at the top of the bank. This wall was backed with earth on each side, the upper slope being covered with stone pitching. The earth work in the case of the lower dam had been somewhat carelessly put in place, but with the upper one greater attention had been paid to securing good work. The by-wash in the case of the upper dam was 4ft. long, its crest lay 1½ft. below the top of the bank, whilst in the case of the lower dam the by-wash was 75ft. long and 18in. deep. This small difference between the levels of the top of the banks and the crests of the overflow weirs is the point most to be criticized, especially as a certain settlement of the main bank had occurred in each case, further reducing the margin of safety. Another objectionable feature was to be found in the laying of a pipe through the bottom of the banks, but this had, as it happened, no bearing on the failure. This arose by the upper bank being topped by a flood, although on the day of the accident the water level in the reservoir had been 7½ft. below the crest of the upper overflow weir, and the rainfall recorded in the neighboring meteorological stations was nothing extraordinary. Apparently, however, there must have been a local fall of very great intensity, which rapidly filled the reservoir, and which the by-wash proved inadequate to carry off. Once the bank was topped, the dam soon gave way, and the flood, passing down, of course, carried away the lower bank, which nothing could then have saved.

HANGING PAPER.

In hanging paper where the room has been occupied for some time it is essential, if good work is desired, that the room be cleaned out, floor washed, and the walls washed down or well brushed; not a fly speck should be left to be covered by the paper. The old adage: "Clean out the sides and corners, and the middle will take care of itself," holds good in the matter of preparing walls for papering. Perhaps in the whole art of decoration there is no department where cleanliness is so imperative as in hanging paper, and when work is commenced the workman should have at hand pumice-stone, a basin of clean water, a clean towel, and a sponge, all of which should be in a position where they may be used whenever required. The best paper-hangers use a large round paste brush and eschew the flat brush used by men who are not well up in the business. It is claimed—and justly, too—that the round brush takes up the paste much more cleanly than the flat one, and that it can be turned by the hand when spreading the paste, and thus prevent the paste from soiling the printed side of the paper. It also has other advantages, as it can be used in any shape it may be taken up, and can be worked drier than the flat brush.

NOVEL KIND OF FLOORING.

A novel kind of flooring has been provided in the power station of the Edison Electric Illuminating Company. This floor consists of a huge casting of cement forming the undivided floor of the entire station. The floor proper is 4in. in thickness, but at intervals of 15ft. there is cast on the back or under side of this 4in. web a beam 18in. in depth and 9in. in width, running crosswise of the station, and resting upon the supporting piers of brick. The floor is further stiffened by longitudinal ribs 14in. in depth, and tapering from 4in. to 6in. in width, placed 3ft. 6in. apart, running between the heavier crosswise beams lengthwise of the station. These stiffening projections are a part of the main casting, so that the floor is virtually one immense casting of cement, with stiffening ribs on its under sides supported upon brick piers. The floor is entirely fireproof, and is said to cost less by one-third than a floor involving the use of iron beams, while it affords a firm foothold and presents a surface sufficiently smooth to be easily kept clean. It will be interesting to learn what effect oil will have upon it.

CONCRETE AS USED IN FRANCE.

A concrete is used in France for building purposes that possesses the necessary qualities of solidity and hardness. It is composed of eight parts of sand, gravel and pebbles; one part of common earth, burned and powdered; one part of powdered cinders, and one and a half parts of unslaked hydraulic lime. These materials must be thoroughly beaten up together; their mixture, when properly moistened, gives a concrete which sets almost immediately, and becomes in a few days extremely hard and solid, properties which may be still further increased by the addition of a small quantity—say, one part—of Portland cement. It is stated that many large buildings have been constructed of this material in France—in one case a house three storeys in height, 65ft. by 45ft., standing on a terrace, having a retaining wall built perpendicular 20ft. high and 200ft. in length.

Every part of this structure was made of hard concrete, including foundations, vaults of cellars, retaining wall, and all walls exterior and interior, as well as the cornice work, mouldings, string courses, parapets, and balustrades, and the building has no band iron in the quoins or other plan to bind it together. All lintels over doors and windows and sills are composed of the same materials, being cast in moulds.

BUSINESS NOTES.

A new firm of plumbers in Montreal is A. Charpentier & Co.

Cote & Huot, contractors, Montreal, have dissolved partnership.

T. W. Cole, painter, of Stratford, Ont., is reported to have assigned.

A demand of assignment has been made upon Beauchamp & Deslauriers, sash and door manufacturers, St. Henri, Que.

It is announced that the Coleman-Hamilton Co., dealers in sewer pipe, cement, etc., Toronto, have been closed out by their creditors. The business was connected with the United States Fire Clay Co., of Pittsburg, Pa., which recently became financially embarrassed.

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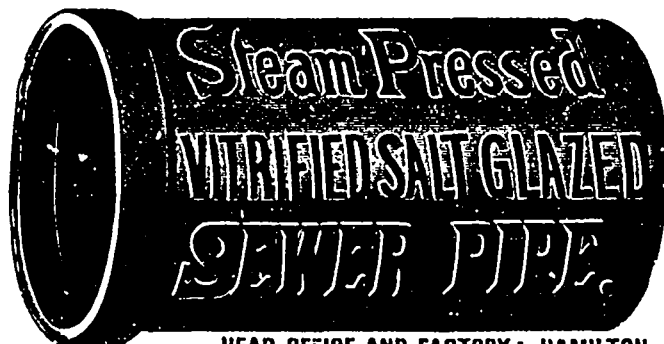
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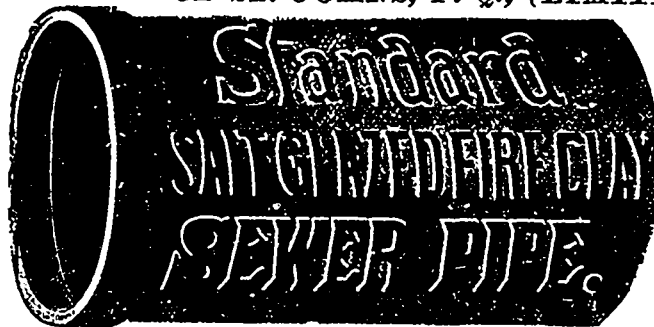


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MUNICIPAL DEPARTMENT

THE LAYING-OUT OF PARKS, RE- CREATION GROUNDS AND OPEN SPACES.

(Concluded.)

The greatest mistake that is usually made in forming shrubberies is too close planting, and in this respect nurserymen err very largely. In shrubberies the knife should be rarely seen; it is far better to give plenty of room between each shrub, and the spaces filled up here and there with, say, a clematis growing over an old trunk of a tree, a strong-growing rose such as a Gloire de Dijon or Ayrshire rose, a clump of tiger lillies, a tree peony, or other tall-growing herbaceous plants, and all shrubberies should have a small width left for a border. Where the edge comes into contact with grass there is probably no more effective plant for a line of colouring than a good strain of white or yellow violas.

It is with the judicious planting of shrubberies and single trees on grass that the best effect is given to a site. The edges of shrubberies generally conform to too geometrical curves. Little nooks should be made here and there, while in another place the edge should jut out into the adjacent turf like a peninsula—in fact, the less the artificial appearance the better the effect.

A lake forms a very valuable adjunct to a site if there is a small feeder running through the latter; and if a small lake can only be obtained its size can be easily disguised by making an island or two, or forming juts of land covered with trees or shrubs, so that only a narrow view can be obtained from one end to another, and patches of shrubberies made along its banks with an interval of grass sloping to the water. In this, as in shrubberies, as natural an appearance should be given to a sheet of water as possible, and all geometrical or formal lines avoided; a weeping willow or birch might be planted here and there, and also bulrushes and the common yellow iris along the water's edge. These latter would have to be avoided if any public boating is done.

It is, perhaps, in exposed positions at the seaside where the greatest difficulties are to be met with in laying out open spaces, on account of the limited species of shrubs or trees that will withstand the strong winds and the saline properties with which the air is impregnated. In such positions it is, perhaps, best to form a screen with some of the hardiest kinds of shrubs and trees, make the paths in the positions they will eventually be required, and lay down the whole of the remainder with grass until the screen has attained a sufficient growth for protection, when the planting of shrubberies with less hardy plants may be proceeded with, as by so

doing success is doubly assured. Of shrubs, the tamarisk, Japanese euonymus, and sea buckthorn, planted closely together, form a good screening hedge, and if a row of either the Austrian, Corsican, or maritime pines, or of deciduous trees the mountain ash or sycamore, be planted closely together behind the hedge, a screen of 10 ft. in height would soon be obtained, when the planting of the remainder of the shrubs and trees of a more delicate constitution can be proceeded with. The Contract Journal.

PURIFICATION OF WATER BY METALLIC IRON.

This process was suggested about ten years ago by Sir Frederick Abel, and was first practically applied at Antwerp, where foul water, drawn from a source a little better than a sewer, has been converted into a drinking water—bright, clear, and wholesome; and this explains why Antwerp has been so free from epidemics of cholera and other diseases since these works have been in operation. This method of purifying water can no longer be considered as in the experimental stage; it has been installed in some of the important cities of Holland, France, Turkey, and India, and has been recommended for improving the water supply of Florence, Italy, by Sir Douglas Galton, the eminent English engineer and sanitarian. While it cannot be said that the process gives a perfect water, it certainly gives one which is wholesome, as has been shown in many continental towns.

When the process was first introduced at Antwerp, its original birthplace, by Dr. Anderson, who designed the mechanical appliances for agitating the water with scraps of iron, it was considered that the iron had a more or less pronounced chemical action upon the dissolved organic impurities of the water, but it now seems that the real action is one of coagulation, the formation of a precipitate in the water tending to throw out of solution the dissolved organic substances, and this view of the process applies equally well to its action upon microbes, which become entangled in the gelatinous precipitate, and either subside with it to the bottom of the settling tank, or remain behind on the surface of the sand filter through which the water is passed.

After being agitated with the metallic

iron, Dr. Dupre examined water where there was only sand filtration and found the microbes were from 1,300 to 3,000 per cubic centimetre, but directly the iron process was applied, the number sank to 100, they very rarely exceeded that, and sometimes went down as low as 5. The effect of filtration of water by this process is not so much to remove chemical substances as to remove microbes. It is true that water may be foul and objectionable irrespective of microbes, but the main advantage of the iron process is that it removes the microbes so completely. Dr. Dupre says:—"This can only be done by very perfect sand filtration at the rate of 4 in. per hour; but if the rate is varied by ½ in. per hour, or an inch, the whole process breaks down, and you jump at once into hundreds of microbes. With the iron process, you may vary the rate from 4 in. to 20 in. without apparently affecting the numbers at all. The film of iron which is formed is such a perfect medium that even continued disturbances in the rate does not seem to affect the result."

The apparatus for purifying the water is a hollow cylinder, either of cast-iron or built up of plates like a boiler, supported horizontally upon hollow trunnions, through one of which the water to be purified enters; after traversing the cylinder, it leaves by the other trunnion. The cylinder is caused to rotate about its axis by means of a gearing, which is driven in any convenient way. Fixed inside the shell of the cylinder, and running longitudinally, are six shelves, five of which are curved in the direction of the motion of the cylinder. The sixth shelf is not curved, but is formed of a number of square flat plates arranged en echelon to insure a more continuous and regular action of the apparatus.

The cylinder is charged with a certain quantity of metallic iron, according to size—a purifier capable of treating 1,000,000 gallons of water in twenty-four hours requiring a charge of two tons or more. The iron may be in any convenient form, but that most commonly employed in practice is burrs or punchings from plates. Cast-iron borings are very efficient, and, weight for weight, much cheaper. The charge of iron, in whatever form, is spread evenly along the bottom of the cylinder before commencing the work.

(To be Continued.)

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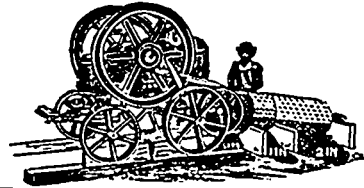
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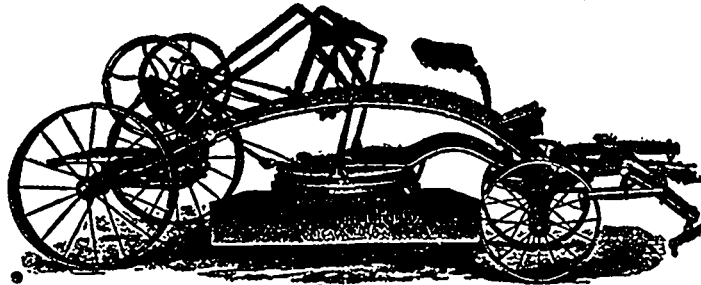
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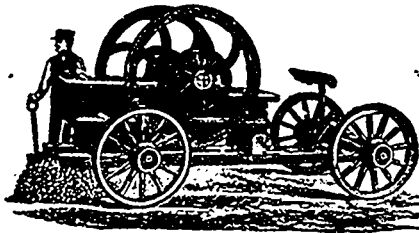
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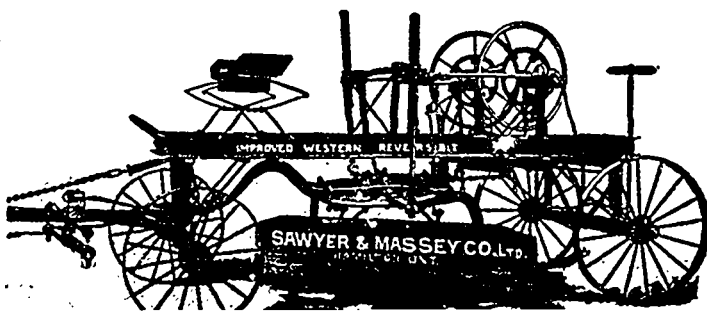


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