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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. 7. OCTOBER 1, 1896 NO. 35.

THE CANADIAN CONTRACT RECORD,

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Advertising Rates on application.

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NOTICE TO PLUMBERS AND STEAMFITTERS

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

THURSDAY, OCTOBER 8TH, 1896,

For carrying out the necessary works in connection with the Steamfitting, Ventilating, Plumbing, Gasfitting and Electric Wiring, etc., in connection with the erection of the new Municipal Buildings now in course of erection on Queen-street west in this City.

Plans and specifications and form of contract may be seen and forms of tender and all other information obtained upon application at the office of E. J. Lennox, Architect, corner King and Yonge streets, Toronto.

Each and every tender must comply with the terms of the specifications and this advertisement, and be accompanied by a marked cheque, made payable to the order of the City Treasurer, Toronto, equal to 2½ per cent. of the amount of the tender.

Tenders must be on forms supplied by the architect, which provides for the bona fide signatures of the contractor and his sureties, or they will be ruled out as informal.

The lowest or any tender not necessarily accepted.

R. J. FLEMING, Mayor,
Chairman Board of Control.

WILLIAM BURNS,
Chairman Property Committee.

City Hall, Toronto, Sept. 19, 1896.

Steel Rails For Sale

The Corporation of the City of Kingston will receive tenders for the purchase of about 70 gross tons of Second-Hand Steel Rails, Fish Plates, etc.

Sealed tenders, (marked Tenders for Rails), will be received by the undersigned up till 4 o'clock p. m. on MONDAY, OCTOBER 5TH, from whom full particulars may be obtained.

A certified cheque for $50.00 must accompany each tender.

(Sgd.) T. O. BOLGER,
City Engineer.

Kingston, Sept. 23rd, 1896.

HUNTSVILLE, ONT.

WATERWORKS AND ELECTRIC LIGHT

NOTICE TO CONTRACTORS

Sealed Tenders, addressed to the Village Clerk, Huntsville, and endorsed "Tender for Waterworks and Electric Light," will be received until 7.30 p. m. on SATURDAY, OCTOBER 3RD, 1896, for the construction of a system of Waterworks and Electric Light as follows:

1. Power Station.
2. Pumping Machinery.
3. Boilers.
4. Valves, Valve Boxes and Hydrants.
5. Cast Iron Pipe and Special Castings.
6. Trenching and Pipe Laying.
7. Reservoir and Gate House.
8. Dynamo, Engine, Swithboard, etc.
9. Wiring.
10. Bulk Sum Bid.

Plans and specifications may be seen at the Court House, Huntsville, Ont., or at the office of the Engineer, on and after Monday, September 14th, 1896.

A marked cheque equal to 2% of the value of the work tendered for must accompany each and every tender.

The council does not bind itself to accept the lowest tender, and reserves the right to reject any or all tenders.

F. L. HOWLAND, M. D., Reeve.
WM. RUMSEY, Village Clerk.

VAUGHAN M. ROBERTS,
Civil Engineer, St. Catharines, Ont.

Dated Huntsville, Sept. 3rd, 1896.

Notice to Contractors

CANADIAN CONTRACTOR'S HAND-BOOK

A new and thoroughly revised edition of the *Canadian Contractor's Hand-Book*, consisting of 150 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.

Price, $1.50; to subscribers of the CANADIAN ARCHITECT AND BUILDER, $1.00. Address

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

CONTRACTS OPEN.

INGERSOLL, ONT. — The Ingersoll Packing Co. will build another addition to their factory.

NANAIMO, B. C. The by law to raise $3,000 to provide a fire alarm system has been passed by Council.

HILLCREST, ONT — It is reported that the hotel at Hillcrest will be considerably improved for next season.

DUNCHURCH, ONT.—The erection of a new Presbyterian church will in all probability be commenced at an early date.

NIAGARA FALLS, ONT.—It is reported to be the intention of the directors of the Niagara Falls Park & River Railway Co. to extend the road.

HUNTSVILLE, ONT.—Tenders for the construction of a system of waterworks and the installation of an electric lighting system will be opened on the 3rd inst.

COLLINGWOOD, ONT.—A deputation from this town recently interviewed the Minister of Public Works at Ottawa regarding needed improvements to the harbor here.

SMITH'S FALLS, ONT.—The question of establishing a canning factory here is still under consideration. It is proposed to form a joint stock company with a capital of $5,000.

WINDSOR, ONT.—Improvements will be made to Bruce avenue Baptist church, including new seats, a furnace and additional seating capacity. The cost is estimated at $2,000.

ST. CATHARINES, ONT.—Wm. A. Mittleberger, treasurer of the city, will receive offers until the 3rd inst., for the purchase of $5,000 of debentures, payable in 1926, with interest at 4 per cent.

CARGILL, ONT.—William Clark, treasurer of the township of Greenock, will receive tenders for the purchase of debentures to the amount of $1,400, bearing 5½ per cent. interest, repayable in 10 years.

VANCOUVER, B. C.—The by-law to grant the British Columbia Iron Works Co. exemption from taxation has been defeated. In consideration thereof, the company proposed to expend $250,000 on additional buildings and plant.

TILSONBURG, ONT.—The tenders recently received for the erection of a new town hall and fire hall have been found to be too high. The plans will therefore be changed so as to reduce the cost of the building, and new tenders will shortly be called for.

ST. HENRI, QUE.—The Grand Trunk Railway Co. are about to erect a commodious passenger station, 100 feet long by 88 feet wide, brick and stone, with slate roof. The plans have been prepared at the office of Jos. Hobson, chief engineer of the railway.

LETHBRIDGE, N. W. T.—A despatch from Ottawa states that the government is likely to grant financial assistance towards the construction of a railway from

this town to Nelson, through Crow's Nest Pass. Construction work will probably be commenced next spring.

CHATHAM, N. B.—W. T. Connor, town clerk, will receive tenders until Monday, the 5th inst., for a steam fire engine with a capacity of 500 imperial gallons per minute, using 500 feet standard 2½ inch hose. Boiler to be of steel and to have not less than 250 seamless copper tubes.

QUEBEC, QUE.—A deputation from this city recently had an interview with the Dominion government authorities regarding the question of constructing a bridge across the St. Lawrence opposite Quebec. The city has offered to subscribe the sum of $500,000 towards the bridge.

CLEARWATER, MAN.—W. Cranston, clerk of the municipality of Louise, will receive tenders until noon of the 6th of October for repairs to and extension of the traffic bridge and approaches at this place. Plans and specification may be seen at the Department of Public Works, Winnipeg.

LITTLE CURRENT, ONT—John MacIntyre, 56 Gluck Building, Niagara Falls, N. Y., invites tenders until noon of the 12th inst. for the construction and equipment of 42 miles of the Manitoulin & North Shore railway, extending from this place to a point on the Soo branch of the Canadian Pacific Railway.

HOWICK, QUE.—D. R. Hay, secretary treasurer, will receive tenders until Monday, the 5th inst., for the reconstruction of the pont flotto at Riverfield, in the parish of Tres St. Sacrament. Dimensions of bridge 125 feet long, 16 feet wide and 70 lbs. live load per square foot; parties tendering to furnish their own plan.

SPRINGHILL, N. S.—Mr. Daniel Macleod, town clerk, writes as follows: Springhill has again taken up the water works question in earnest. An engineer of provincial note is now at work on the ground and is expected to advise soon as to the best plan to be adopted, that is whether a gravitation system will be tried or whether pumping will be resorted to.

VICTORIA, B. C.—Three new salmon canneries will be erected this fall at Rivers Inlet, the sites for which are at present being surveyed by a Vancouver surveyor.—The Consolidated Railway Co. have notified the City Council that they have decided to withdraw from the negotiations with the city in connection with the proposed re-erection of the Point Ellice bridge.

KASLO, B. C.—The engineer's report on the water supply project has been submitted to Council. Of the four schemes proposed, that of obtaining a supply from the Kaslo river is recommended as the best and most practicable. The scheme recommended would give an available daily supply of 1,500,000 gallons. It is proposed to construct at Kaslo a reservoir of 300,000 gallons capacity. Tenders for construction will be invited at once.

ST. JOHN, N. B.—The School Board have extended the time for receiving tenders for heating and ventilating the High School building until the 5th inst.—Geo. McDonald has purchased a site on which he will erect a brick residence.—A site has been purchased by W. H. Thorne for his proposed warehouse.—Tenders are invited by the Common Council, addressed to A. Chipman Smith, director, until Friday, the 2nd inst., for the erection of a warehouse on the Union wharf property at Sand Point. Plans may be seen at the office of Hurd Peters, C. E., city engineer.

LONDON, ONT.—Mr. C. H. Rust, C. E., of Toronto, has submitted his report on the size and cost of the proposed intercepting sewers. His estimates for the work are as follows: Trunk sewer, $77,708; north main sewer, $72,520; south main sewer, $29,963; London South, $9,280.—George White & Sons have been granted a building permit for alterations to their engine works on King street.—John Taylor is about to erect two brick houses on the east side of Wharncliffe road.—Mr. James Winslow, 575 Hill street, will erect a two storey frame dwelling on Marmora street.

WINNIPEG, MAN.—A number of municipalities will take advantage of the drainage act and will construct drains through the municipalities. The ratepayers of Lansdowne have asked permission to construct a drain through Westbourne municipality. R. Young, C. E., will estimate the cost of the proposed work on behalf of the government.—In connection with the question of providing a water supply, the idea of utilizing artesian wells to supply water for domestic purposes seems to meet with favor by the Fire, Water and Light Committee.—It is understood that the Canadian Pacific Railway Co. intend next year to build a through line from Winnipeg to Duluth.

KINGSTON, ONT—Sergeant Snodden will shortly commence the erection of three brick residences, corner Alford and Johnston streets.—Principal Grant, of the Dairy school has received a communication from Jos. Bowden urging the establishment of a plant in connection with the school for the manufacture of condensed milk. The plant would cost from $7,000 to $10,000, and would necessitate the erection of a building to accommodate it.—A joint committee of members of the City Council and the Board of Trade has been appointed to report at a full meeting of these bodies regarding the steps to be taken for the erection of a large grain elevator at this port.

HAMILTON, ONT.—The Finance Committee has granted the sum of $3,000 for the construction of the Garth street sewer.—The application of the Dominion Cold Storage Co., to erect a plant in this city, conditional upon exemption from taxation, has been agreed to by the city council.—Dr. Bryce, of the Provincial Board of Health, has approved of the site for the proposed sewage interception works in the east end of the city. It is stated that at no distant date similar works will be required in the west end.—Building permits have been granted as follows: Henry Bosselman, two-storey brick dwelling on Hannah street west, cost $1,000; Thomas Connors, two-story brick dwelling on Bay street south, cost $1,300.—L. J. Rastrick & Son, architects, for a two storey brick residence on Augusta street for William Newcombe, to cost $1,400, and to A. Milne for a brick dwelling on Elgin street to cost $1,000.

MONTREAL, QUE.—It is expected that the Montreal & Ottawa railway will this year be completed to Alfred, and that it will be extended to Ottawa in the spring. Stations will be erected at St. Eugene, Vankleek Hill, Caledonia Springs and Plantagenet.—The working plans for the East End station and hotel to be built by the C. P. R., have been filed in the city surveyor's office, and the work of construction will be carried on without delay.—Bonsecours market is said to be badly in need of repairs, and steps in this direction will have to be taken by the Council at an early date.—Building permits have been granted as follows: One building on Joliette street, for J. M. P. Allard—masonry, Gedeon Lavoie; carpenter and joiner's work, Joseph Amyot. One house on Ronville street for Cleophas Moineau—masonry, Belangé & Guernon; carpenter and joiner's work, Beauchamp & Lamarche. Six houses, corner Richmond and Wellington streets, for Mme. H. S. Lemas—masonry, Oliver Goyette; carpenter and joiner's work, Louis Trudel; brick, O. Goyette. One building, two stories, on Chausse street, for A. R. Cintrat—masonry, Miron & Desormeau; carpenter and joiner's work, E. W. Desparois.

TORONTO, ONT.—The City Engineer, in his report presented to the Board of Works on Monday last, recommended the construction of the following pavements. A 24 foot asphalt pavement with stone kerbs on Wilcox street, from St. George to Robert street, cost $11,000; 24-foot asphalt pavement on Spadina avenue, from King to Queen st. on each side of the boulevard, the street railway track to be paved with asphalt and scoria blocks on each side of the rails, cost $24,200; 24 foot brick pavement on Harbord street, from St. George to Bathurst, cost $21,200; 21-foot brick pavement on sand on Grange avenue, with stone kerbs, from Spadina avenue to Esther street, cost $3,900; 24-foot macadam pavement on Grange avenue, from Spadina to Beverley, cost $1,570; a brick walk on West Market street, King to Front street; cement walk on Sherbourne, east side, Wilton to Gerrard; cement walk on Bay street, east side, from Wellington to Melinda; cement walk on Church street, east side, King to Adelaide; cement walk on Yonge, both sides, from Bloor to Davenport road; cement walk on Bloor street, south side, from Yonge to Jarvis streets; cement walk opposite 9 and 11 Wilton Crescent.—In view of the early construction of an asphalt pavement on Front street from Yonge to Church street, the City Engineer again recommended that a 24-inch water main be laid on that street from Simcoe to Sherbourne for fire protection, at a cost of $36,000. If funds for the work are not forthcoming, he recommends that the pipes be laid on that section of the street which is to be asphalted, the cost being $8,500. The Park Commissioner has prepared estimates of improvements to the northern part of Queen's Park. The cost is placed at $8,485.—The City Engineer has been instructed to report on the probable cost of converting the 8,000,000 gallon Worthington engine from low to high duty.—Building permits have been granted as follows: Mrs. Anne Hill, 2 storey and attic bk. dwelling, Bedford Rd., immediately south of Lowther ave., cost $9,500; F. H. Herbert, architect. Same architect, det. 2 story and attic bk. dwelling, 2 Walmer Rd., cost $4,000; Jas. Green, pr. s. d. 2 story and attic bk. dwellings, 66-68 Shaftesbury ave., cost $3,500; Alex. Johnston, pr. s. d. 2 story and attic bk. dwellings, 77-79 Crawford st., cost $6,000.

OTTAWA, ONT.—The Dominion supplementary estimates were presented to Parliament last week. Among the appropriations are the following: C. P. R. construction, $20,000; Intercolonial railway, increased accommodation at Halifax, $45,000; extension of the Halifax Cotton branch, $40,000; increased accommodation at Levis, $48,500; improvement of Collingwood harbor, $20,000; Rainy River, improvement of navigable channel, $15,000; Toronto public buildings, renewals, improvements and repairs, $81,000; Arnprior post-office, etc., $10,000; Burlington channel, repairs to piers, $10,000; Cobourg, repairs to piers, $3,000; Goderich, reconstruction of breakwater and repairs to piers, $28,000; Kincardine, repairs to piers, $15,000; Kingsville, repairs to landing pier, $10,000; L'Original, reconstruction of wharf, $14,500; Port Burwell, improvement of harbor, $15,000; River Thames, dredging at the mouth of, $6,000; Thornbury, repairs to wharf, $1,000; North Channel, deepening, widening and straightening, $100,000; Cornwall canal, enlargement, $100,000; Galops canal, enlargement, $50,000; Murray canal, equipment, $5,000. In addition to the above are the following for the Maritime provinces: Nova Scotia—Boularderie, wharf at Ross Ferry, $2,800; Church Point, extension of break-

water, $4,000; Hantsport, wharf, $6,000; Margaretville, reconstruction of pier, $3,000; Morden, repairs to wharf, $4,000; Oyster Pond, repairs to breakwater, $700; Port Hood, repairs to wharf, $1,500; Port Maitland, Yarmouth Co., repairs to breakwater, $3,500; Trout Cove, repairs to breakwater, $4,000; Yarmouth harbor, repairs to protection works, $3,000. New Brunswick—Anderson's Hollow, repairs to Breakwater, $1,100; St. John harbor, repairs to and extension of protection work at Base of Fort Dufferin, $3,400; Herring Cove, repairs to breakwater, $1,000. Prince Edward Island—China Point, repairs to pier, $600; New London, repairs, $750; Port Selkirk, repairs to wharf, $600; Summerside harbor, protection works, $7,500; Tignish, repairs to breakwater, $2,500.—For the city of Ottawa the following sums are granted. Fire escapes, printing bureau, $1,100; renewal of sidewalks, front of Parliament buildings, $3,500; repairs, public buildings, $12,252; public buildings, lighting, $2,548; Rideau Hall and grounds, $4,107; bridge approaches, $5,956; new boilers, East Block, $5,000; new parliamentary sidewalks, roadways, etc., $17,000; repairs Sappers' bridge, $6,000. There is also a sum of $7,000 for a permanent paving of the approach to the Hull side of the Chaudiere bridge.—J. R. Booth will build a granolithic sidewalk from the central station to the corner of Besserer and Little Sussex streets.—A by-law will shortly be submitted to the ratepayers to provide $444,458 for the construction of the main drainage system, made up as follows: Western sewer, in brick, $198,561; eastern sewer, in brick, $127,891.50; tributary sewer, in brick, $41,882.50, relief sewer, in brick, $46,123; extension western outlet, $20,000; right of way, $10,000. — The government has been memoralized to grant a subsidy for the proposed interprovincial bridge at Nepean Point, and a sufficient sum will likely be placed in the estimates.

FIRES.

T. B. Tait's shingle mill at Burk's Falls, Ont., was destroyed by fire on the 23rd inst. The loss is about $4,000, partially covered by insurance.—On Wednesday of last week fire destroyed the old marble works building at Delhi, Ont., owned by Jacob Loveren. The loss is about $11,000.—The dwelling of John Connors, near Maidstone, Cross, Ont., was burned last week. Loss $4,000; no insurance.—A number of dwellings at Etchemin, Que., were destroyed by fire a few days ago. There was a very small insurance on the building. — The farm residence of C. Doley, near Cornwall, Ont., has been burned. — The Silica Sand & Gravel Co's. premises on Mill street, Montreal, were damaged by fire on the 27th inst. to the extent of $5,000.

CONTRACTS AWARDED.

PERTH, ONT.- Mr. Martin, of Smiths Falls, has the contract for a new vault in the cemetery here.

FERGUS, ONT.—The council has let the contract for laying 10,000 feet of sidewalk to the Guelph Pavement Co.

NAPANEE, ONT.—Boyle & Son have the contract for the galvanized iron work, plumbing and heating of Herrington & Warner's offices.

OTTAWA, ONT. — The contract for building the proposed addition to St. Andrews Glebe Mission has been awarded to George Stokand.

FREDERICTON, N. B.—.—Mr. Willard Kitchen has been given the contract for alterations to the legislative buildings, at the price of $5,000.

PAISLEY, ONT.—Mr. Ersted, of Elmwood, and D. Hopper, of Arran, have been awarded the contract for the erection of the Methodist parsonage.

VICTORIA, B. C.—The contract for building an addition to St. Joseph's hospital has been awarded to Geo. C. Mesher. Cost $29,000. S. Maclure, architect.

ST. JOHN, N. B.—Tenders were received as follows for plumbing in the new high school building: J. E. Fitzgerald, $2,548; Thomas Campbell, $3,028; Henry Crawford, $3,000; J. H. Doody, $2,087; G. & E. Blake, $3,290. The tender of Mr. Fitzgerald has been accepted.

TORONTO, ONT. — The contract for plumbing and heating of the new Sanitorium at Gravenhurst has been awarded to the Bennett & Wright Co., of this city. —Worthington, Garrett & Armstrong have the contract for supplying steam heating apparatus for three stores on Yonge street for G. A. Case.

WINNIPEG, MAN.—The contract for a drain in the municipality of Westbourne has been awarded to J. W. Lamb, of Neepawa.—A. R. Leich has been given the contract for the erection of the superstructure, and Cleveland & Bedun for the masonry work of a bridge over the Pembina river, north of Killarney.

LONDON, ONT.—John Piggott & Sons, of Chatham, have been given the contract for frame work for the Grand Trunk car shops.—Mr. Mills, the contractor for the new Grand Trunk car shops has sublet to the Hamilton Bridge Co., the iron work, to Robert Thompson & Co., the supply of lumber, and to Irwin & Sons of Hamilton, the galvanized iron work.

MONTREAL, QUE.—Cox & Amos, architects, have awarded the contracts for one building at St. Anne de Bellevue, two stories, stables, sheds, etc., for F. D. Shallow to Jos. Reid & Co., of St. Johns, Que.—A. Sincennes & Courval, architects, have let contracts as follows for two cottages, three stories, on Arlington avenue, Westmount: Masonry, C. Lemay; carpenter and joiner's work, M. Dagenais; roofing, plumbing and heating, not let; brickwork, Stanislas Rochon. Dagenais & Son are the proprietors. Same architects are also preparing plans for three houses to be erected on Chambord street for Real Cloutier.—W. E. Doran, architect, has awarded the contract for alterations of a house on St. Catharine street for Brodeur & Co. All trades to Martel & Son.

BUSINESS NOTES.

The assignment of James D. Baker, plasterer, Montreal, was announced last week. The liabilities are placed at $38,000.

Henry P. Wall and R. J. Wall have formed a partnership in Montreal as dealers in paints and oils under the style of Wall Bros.

SCREWS IN WOODWORK.

Screws are more extensively used than formerly in putting together various kinds of wood framing, and even in cabinet and chair work screws are pressed into service in places where their use would not have been tolerated by manufacturers in the earlier portion of the present century. Although their existence is generally concealed in furniture and fancy work, they are often present, nevertheless, and too often they are used as a substitute for dowels, dovetails and tenons, in the manufacture of cheap work. It is an instructive and remarkable fact that our building workmen of a century or two back, in many operations in carpentry and joinery, discarded as far as was possible, the use of nails or screws, depending more on carefully-jointed work, put together by means of mortise, tenon, dovetail, hardwood dowel or oaken pin. Their work might have taken a longer time to execute than that done by our present race of joiners and woodworkers, but it was infinitely more lasting, and kept together so long as the timber or wood continued sound. The nearly universal remedy now for every broken article on the part of the jobbing joiner and cabinet maker is to repair it with the aid of nail or screw. Glue is even often dispensed with, or used where it will exercise little sustaining power, and colored putty is not only made to cover the heads of sunken nails and screws on the face of a piece of work, but used also to hide bad joints and workmanship. Some years ago the writer examined an old oaken staircase and handrail in a college, which work was executed more than two centuries since, and in the construction of which not a nail or screw was used. From time to time, over long years, some slight repairs were made, but the workmen during their operations were never able to discover that a nail had been used in the original construction. There were mortises and tenons, grooves and tonguing, wooden pins or dowel work, but no iron fastening of any kind. The writer also examined more than one old roof in which the use of iron spikes, nails, and other iron fastenings was dispensed with, and the joining of the timber was effected without their aid. In the hinging of doors and other framework it is necessary

(To be Continued.)

to use screws, but unfortunately many workmen, if not watched or cautioned, will not do the screwing properly or in a workmanlike manner. In deal, pine, and other soft woods a bradawl is sufficient to make an opening for the screw, which opening, of course, should be less than the thickness of the body and short of the length of the screws used. It will be found, however, that most workmen, not content with tapping the screw a fourth of an inch or so, to give it a hold before applying the screwdriver, will actually drive the screw into the wood two-thirds of its length with the hammer. This the workmen will do to save themselves trouble.

A difficulty is often experienced by persons who wish to withdraw a screw by finding that though it will turn round upon the application of the screwdriver, yet it will not unscrew out. In this case a well-grounded suspicion may be entertained that the screw in question was driven, or nearly driven, home originally by the hammer, instead of gradually by the screwdriver, and that no regular thread corresponding with the screw exists in the wood. Under such circumstances it becomes necessary often to wrench off the hinge or hinges by force, at the risk of their breaking, and this often happens. When hinges have lain undisturbed for long years on old doors or other framings, perhaps for a quarter of a century or double that time, it becomes difficult to extract the screws, although they may have been originally properly driven. This arises from the screws rusting in the wood, and sometimes from other causes. Workmen themselves often fail to withdraw a screw, and are forced to break the hinge to enable them to get under the head of the screw and wrench it out. They often split, and break too, fancy and delicate woodwork articles in their effort to take off hinges, locks, mountings, and other finishings, despite that simple methods exist for extracting screws that have rusted in the wood. One of the most simple and readiest methods for loosening a rusted screw is to apply heat to the head of the screw. A small bar or rod of iron, flat at the end, if reddened in the fire and applied for a couple or three minutes to the head of the rusted screw will, as soon as it heats the screw render, its withdrawal as easy by the screwdriver as if it was only a recently-inserted screw. As there is a kitchen poker in every house, that instrument, if heated at its extremity, and applied for a few minutes to the head of the screws, will do the required work of loosening, and an ordinary screwdriver will do the rest without causing the least damage, trouble, or vexation of spirit. In all work above the common kind, where it is necessary to use screws, and particularly in hinge-work or mountings, fancy fastenings and appliances affixed to joinery or furniture work, we would advise the oiling of screws or the dipping their points in grease before driving them. This will render them more easy to drive and also to withdraw, and it will undoubtedly retard for a longer time the action of rusting.

MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

MUNICIPAL DEPARTMENT

SEWAGE DISPOSAL.

The following remarks on sewage disposal are taken from an address by Mr. Francis J. C. May, M.I.C.E., delivered at a conference of Municipal and County Engineers, Newcastle:

This I consider one of the most difficult problems of the present day, notwithstanding all the experiments and experience gained during the last 25 years. It is one which every engineer, or surveyor of a local authority, has, in some measure or other, to deal with. It is therefore incumbent upon us all to take advantage of every opportunity for educating ourselves on this subject, on all its several bearings and details. It is a subject which permits of no universal method of treatment. It is governed almost entirely by local circumstances, relating to the nature of the soil and subsoil, the position of the locality and the surroundings, the nature of the trade and the habits of the community, among other circumstances too numerous to mention. Local authorities of towns on the borders of our seas or rivers avail themselves largely of the facilities for discharging their sewers into the waters, some in its crude condition, others more or less treated by mechanical or chemical methods to remove the solids and to purify the effluent. Other authorities of towns or villages not so fortunately situated are dependent solely upon those methods which have been devised for disposing of both solid and liquid sewage on the land, mostly in connection with the water-carriage system. The first method I consider a barbarous, although cheap method of disposal. I am not inclined to find much fault with local authorities for adopting it, as I consider it is the most sensible way of dealing with the sewage, where it can be done without harm to others, under the present unsatisfactory state of the question. I do, however, think it is incumbent upon all engineers concerned with this subject to endeavor to devise some more satisfactory method of disposal. I am strongly of opinion that our attention should be given, as much as possible, to devise some means whereby all fœcal matter, urine, etc., may be returned to the land in its natural condition, to fertilise it, and to repay with interest that which has been taken from it. This cannot be done so long as we rely almost wholly on the water-carriage system. A system which, while it affords the readiest means of removal of our filth, also destroys all its great manurial value, and is, in my opinion, a sinful waste of the products of nature. I think that the combined efforts of the scientific chemists and engineers are required, the one to render such matter in the dwelling at once innocuous and inodorous, the other to devise some ready means for its discharge therefrom into suitable receptacles, which may be removed daily and conveyed direct to the land, without in any way creating a nuisance. I think that pneumatic or electric power should in future be so easily manipulated as to enable future engineers to accomplish this purpose. Seeing what a valuable commodity water is, how difficult and expensive it is to obtain a plentiful supply at the present time, and how the absolutely necessary consumption must largely increase with the present growth of our population, the time, in my opinion, is not far distant when the large consumption of pure and clean water now expended on the water-carriage method of removal of sewage will be considered a wilful waste, and public opinion will demand from engineers that some more scientific and rational method shall be devised by them. As one having had experience of both the first and second methods, I am able to say, from my own experience, with reference to the second method, that, in my opinion, there has not yet been devised a wholly satisfactory system for the application of sewage to the land in such a condition as to obtain the fullest beneficial results from this waste product of animal life. It is not my intention to make distinctions between the several methods that are in vogue, or to advocate one system in preference to another, but I wish only to remark that, in my opinion, the great cause of failure in each case is the increase of volume and the loss of value consequent upon the dilution effected by the water-carriage system. I therefore feel convinced that a great revolution of opinion and practice will eventually arise, and that future generations will be astonished at our insane waste of the valuable products of animal life, so necessary for the reproduction of vegetable life; and at our ignorance in using such a valuable necessity of life as pure water, to enable us easily to effect that waste. I regard this question as one of the most important that should engage the attention of engineers and local authorities entrusted with the health, wealth and prosperity of the whole community. It is one well worthy of the best labors and intellect and both chemists and engineers in the interest of public health, and as one which will bring to them its own reward in increased and increasing opportunities for work and practice.

NOVEL INSURANCE SCHEME.

The corporation of the city of Glasgow hove adopted a somewhat novel scheme of fire insurance; the purpose or object of it is to secure artizans indemnity against loss by fire in their dwellings. The proposed scheme, which is virtually industrial fire insurance, says the Insurance Post, will take the form of taxation, tenants whose rents are under £10 per annum only being dealt with. The proposed tax will not exceed 1d in the £, *that is to say, a tenant paying an annual* rent of £6 would be taxed to the extent of 6d. The rate of compensation will be in proportion, a maximum limit of £50 being observed; in other words, the amount of damage recoverable being fixed at the rate of £5 for every £1 of rent. While the plan seems a reasonable one, no doubt there will be found difficulties in working it. A large number of collectors and appraisers will be indispensible, the loss of adjustments of this class of the community being, as a rule, remarkably difficult to deal with. If, however, the Glasgow corporation, which has always shown a great amount of sagacity, can work their industrial fire insurance at a profit, the system will soon be adopted by other large municipalities.

LAYING ASPHALT GUTTER STRIPS.

The work of laying asphalt strips along the gutters of granite-paved streets in New York City for the convenience of bicyclists, and to aid the Street-Cleaning Department in keeping the gutters clean, is now in progress on Hudson street, which connects the asphalt pavement on Eighth avenue with the asphalt pavements in the lower business portion of the city. The granite blocks are removed from 4-foot strips adjoining each curb, and enough of the square stones laid flat on their sides to cover the old sand foundation and form a base for the asphalt without incurring expense for concrete. The vertical space gained by turning the blocks on their sides gives room for the binding course and asphalt, bringing it flush with the remainder of the pavement. At the cross-streets the strip is widened out and carried back to the building line to take in the crosswalks. The old stone crosswalks have been in poor condition for some time and this was found to be the cheapest way of repairing them. A liquid coating along the lower edge of the strip to protect it from water completes the work.

QUEER PAVEMENTS.—In Liverpool and Manchester, England, developments have been in progress in the manufacture of paving slabs from the residue falling from the grate bars of the city refuse destructors. After the clinkers are crushed and molded into shape the slabs are worked under hydraulic pressure, and in one instance, at least, have been laid and doing very satisfactory service for two or three years.

WATER MAIN BROKEN BY LIGHTNING.—A curious freak of lightning is reported from East Gloucester, Mass., by superintendent of water works John W. Moran. During a thunder shower there on September 6th lightning struck the water main on Mount Pleasant avenue and broke it in nine places in a distance of 2,000 feet. These breaks were all that were evident after the storm, but a fuller examination will be necessary to ascertain the exact extent of the damage.

The amount of granolithic sidewalk *now fronting the business places and* homes of citizens of Blenheim, Ont., is over 64,000 square feet. The cost has been over $8,000, to be paid in twenty annual payments.

MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

ENGINEERS

INDEX TO ADVERTISEMENTS

In the "Canadian Architect and Builder."

Prices of Building Materials.

CONDITION OF THE MARKET.

TORONTO: In most lines of builders' supplies a little more activity is apparent than existed a week ago, probably as the result of the approach of the winter season, when buildings are nearing completion. Plumbers' supplies have improved, some houses being quite busy. The heavy metal trades are quiet. Hamilton pig iron is being sold at $16.50 for No. 1 in 100-ton lots, while the Southern furnace people have withdrawn their quotations from the Toronto market. Iron pipe and lead pipe and traps are in some request.

MONTREAL: A feature of the market has been the lower quotations for Hamilton pig iron, which has been offered at $17.75 per ton. Some Nova Scotia brands have been placed at $16.50. It is stated that the United States manufacturers of wrought iron and steel pipe are about to form an organization, embracing the most extensive plants in America. A better feeling is reported in paints and oils, and prices remain firm. In cement a decided improvement has taken place, some large contracts having been made for public works, amounting to 50,000 or 60,000 barrels, and three other sales are reported of 4,000 barrels. Stocks are light, and all the cement coming forward is sold, consequently higher values are looked for in the near future.

LUMBER.

CAR OR CARGO LOTS.

	Toronto.		Montreal.	
	$	$	$	$
1¼ to 2 clear picks. Am ins	33 00	@36 00	40 00	@45 00
1¼ to 2 three uppers, Am ins.		37 00	40 00	45 00
1¼ to 2, pickings, Am ins		26 00	27 00	30 00
1 inch cleat			40 00	45 00
1 x 10 and 12 dressing and 1 better	20 00	22 00	18 00	20
1 x 10 and 12 mill run	16 00	17 00		19
1 x 10 and 12 dressing	20 00	22 00		1[illegible] 00
1 x 10 and 12 common	13 00	14 00	8 00	10 00
Spruce culls	10 00	12 00	8 00	10 00
1 x 10 and 12 culls	9 00	10 00		9 00
1 inch clear and picks	28 00	32 00	35 00	40 00
1 inch dressing and better	20 00	22 00	18 00	20 00
1 inch siding, mill run	14 00	15 00	12 00	16 00
1 inch siding, common	12 00	13 00	10 00	13 00
1 inch siding, ship culls	11 00	12 00	10 00	12 00
1 inch siding, mill culls	9 00	10 00	8 00	9 00
Cull scantling	8 00	9 00	8 00	9 00
1¼ and thicker cutting up plank	24 00	26 00	22 00	25 00
1 inch strips, 4 in to 8 in. mill run	14 00	15 00	14 00	15 00
inch strips, common	11 00	12 00	10 00	12 00
1¼ inch flooring	16 00	17 00	12 00	15 00
1¼ inch flooring	16 00	17 00	12 00	15 00
XXX shingles, sawn, per M 16 in	2 25	2 30	2 60	2 60
XX shingles, sawn	1 40	1 60	1 70	
Lath	1 60			1 50

YARD QUOTATIONS.

Mill cull boards and scantling		10 00	10 00	12 00
Shipping cull boards, promiscuous widths		13 00		13 00
Shipping cull boards, stocks		16 00		16 00
Hemlock scantling and joist up to 16 ft	11 00	12 00		10 00
Hemlock scantling and joist up to 18 ft	12 00	13 00	12 00	13 00
Hemlock scantling and joist up to 20 ft	13 00	14 00	13 00	14 00
Cedar for block paving, per cord		5 00		5 00
Cedar for kerbing, 4 x 14, per M		14 00		14 00
Scantling and joist, up to 16 ft		14 00		14 00
" " 18 ft		15 00		16 00
" " 20 ft		16 00		16 00
Scantling and joist, up to 22 ft		17 00		17 00
" " 24 ft		19 00		19 00
" " 26 ft		20 00		21 00
" " 26 ft		22 00		23 00
" " 30 ft		24 00		25 00
" " 32 ft		27 00		27 00
" " 34		29 50		29 50
" " 36 ft		31 00		31 00
" " 38 ft		33 00		33 00
" " 44 ft		34 00		36 00
Cutting up planks, 1¼ and thicker, dry	25 00	28 00	25 00	30 00

B. M.

1¼ in. flooring, dressed, F M.	26 00	30 00	28 00	31 00
1¼ inch flooring, rough, B M.	18 00	22 00	18 00	22 00
1¼ " dressed, F M.	25 00	28 00	27 00	30 00
1¼ " undressed, B M.	18 00	19 00	18 00	19 00
1¼ " dressed	18 00	20 00	18 00	22 00
1¼ " undressed	12 00	15 00	12 00	15 00
Beaded sheeting, dressed	20 00	35 00	22 00	35 00
Clapboarding, dressed		12 00	8 00	12 00
XXX sawn shingles, per M 18 in	2 60	2 70		3 00
Sawn lath	2 50	2 60	2 50	2 60
Cedar		2 90		2 90
Red oak	30 00	40 00	30 00	40 00
White	37 00	45 00	35 00	55 00
Basswood, No. 1 and 2	28 00	30 00	18 00	20 00
Cherry, No. 1 and 2	70 00	90 00	70 00	80 00
White ash, No. 1 and 2	24 00	35 00	30 00	35 00
Black Ash, No. 1 and 2	20 00	30 00	18 00	30 00
Dressing stocks	16 00	22 00	16 00	22 00
Picks, American inspection		30 00		40 00
Three uppers, Am. inspection		50 00		50 00

	Toronto.		Montreal.	
BRICK— per M				
Common Walling		6 50		6 00
Good Facing		8 00		8 50
Sewer	8 50	8 00	8 50	9 00
Pressed Brick, Per M:				
Red, No. 1, f.o.b. Beamsville		15 00		
" " 2		13 00		
" " 3		9 00		
Buff		21 00		
Brown		24 00		
Roman Red		30 00		
" Buff		35 00		
" Brown		40 00		
Sewer		7 50		
Hard Building		6 0		
Roof Tiles		22 00		
Hip Tile (each)		20		
Ridge Tile "		60		
1st quality, f.o.b. at Port Credit		12 00		18 00
2nd " " " "		10 00		15 00
3rd " " " "		8 00		12 00
Hard building brick		6 50		
Ornamental, per 100	3 00	10 00		
SAND.				
Per Load of 1½ Cubic Yards		1 25		1 25
STONE.				
Common Rubble, per toise, delivered		10 00		11 00
Large flat Rubble, per toise, delivered		14 00		18 00
Foundation Blocks, per c. ft.		32		50
Kent Freestone Quarries Moncton, N. B., per cu ft., f.o.b.		1 00		
River John, N. S., Brown Freestone, per cu. ft., f.o.b.		95		
Ballochmyle	80	90	65	75
New York Blue Stone				1 05
Granite (Stanstead) Ashlar, 6 in. to 12 in., rise 9 in., per ft.				25
Moat Freestone			60	70
Thomson's Gatelawbridge, cu.			75	80
Credit Valley Rubble, per car of 15 tons, at quarry		7 00		
Credit Valley Brown Coursing, up to 10 inch. per sup. yard, at quarry	1 50	1 75	1 50	1 75
Credit Valley Brown Dimension, per cu. ft. at quarry		60		60
Credit Valley Grey Coursing, per super. yard, at quarry		1 00		1 00
Credit Valley Grey Dimension, per cu. ft., at quarry		45		45
Clark's N. B. Brown Stone, per cubic foot, f.o.b.		1 15		1 00
Brown Free Stone, Woodpoint, Sackville, N.B., per cub. ft.		1 15		1 00
MadocRubble, delivered, per toise	14 00	14 50	14 00	14 50
Madoc dimension floating, f. o. b. Toronto, per cubic ft.	30	32		
Cape Bauld, N. B., Brown Freestone		90		70
Cocaigne, N. B., Gray Freestone (olive-green)		90		70
OHIO FREESTONE, FROM THE GRAFTON STONE CO.'S QUARRIES.				
No. 1 Buff Promiscuous		90		1 10
No. 1 Buff Dimension		95		1 05
No. 1 Blue Promiscuous		60		70
No. 1 Blue Dimension		65		75
Sawed Ashlar, No. 1 Buff, any thickness, per cub. ft.		1 10		1 20
Sawed Ashlar, No. 1 Blue, any thickness, per cub. ft.		80		90
Sawed Flagging, per sq. ft., for each inch in thickness		06½		07½
Above prices cover cost freight and duty paid. For small lots add 5 to 10 cents per cubic foot.				
Quebec and Vermont rough granite for building purposes, per c.ft. f.o.b. quarry	33	1 50		
For ornamental work, cu. ft.	35	2 0		
Granite paving blocks, 8 in. to 12 in. x 6 in. x 4½ in., per M		50 00		
Granite curbing stone, 6 in. x 20 in., per lineal foot		70		
SLATE.				
Roofing (*square*).				
" red		18 00		20 00
" purple		00		10 00
" unfading green		9 00		6 00
" black		8 00		5 50
Terra Cotta Tile, per sq.		25 00		
Ornamental Black Slate Roofing		8 50		
PAINTS. *(In oil, per lb.*				
White lead, Can., per 100 lbs.	6 25	5 50	5 50	6 00
" zinc, Can., " "	6 50	7 50	6 50	7 50
Red lead, Eng	4 00	5 00	4 50	5 00
" venetian, per 100 lbs	1 60	1 75	1 60	1 75
" vermillion	90	1 00	90	1 00
" Indian, Eng	10	12	10	12
Yellow ochre	5	10	3	5
Yellow chrome	15	20	15	20
Green, chrome	7	12	7	12
" Paris	20	25	14	20
Black lamp	15	25	12	25
Blue, ultramarine	15	20	12	18
Oil, linseed, raw, *per Imp. gal.*	50	59	58	59
" " boiled "	53	63	62	63
" " refined, "	78	85	75	75
Putty	2¾	2½	2¾	2½
Whiting, dry, per 100 lbs	60	80	60	75
Paris white, Eng., dry	90	1 25	90	1 00
Litharge Eng	4	5	4 50	5 00
Sienna, burnt	10	15	12	15
Umber, "	8½	12	12	15
Turpentine	40			
CEMENT, LIME, etc.				
Portland Cements.—				
German, per bbl		3 25	2 55	2 65
London "	2 50	2 75	1 92	05
Portland Cements.—				
Newcastle "		2 50	1 85	1 95
Belgian, Jesson, artificial	3 40	2 50	2 65	2 75
English, artifical, per bbl	2 60	2 90	2 55	2 65
Belgian, natural, per bbl	2 30	2 40	1 70	1 85
Canadian "	2 30	2 50	1 80	1 85
Roman "			2 00	2 25
Parian "	4 50	4 75	5 50	5 75
Superfine "	6 50	7 00	8 00	9 00
Hydraulic Cements.—				
Thorold, per bbl		1 50	1 25	1 50
Queenston, "		1 50	1 50	1 60
Napanee, "		1 50		1 50
Hull, "		1 50		1 50
Ontario, "		1 25		
Keene's Coarse "Whites"	4 50	4 75	4 50	4 75
Fire Bricks, Newcastle, per M	27 00	35 00	15 00	21 00
" Scotch "	27 00	35 00	19 00	21 00
Lime, Per Barrel, Grey		40		
" " White		50		
Plaster, Calcined, N. B.		2 00		
" " N. S.		2 00		2 50
Hair, Plasterers', per bag	80	1 00		

HARDWARE.

Cut nails, 50d & 60d, per keg		2 75		2 75
Steel " " "		2 85		2 85

CUT NAILS, FENCE AND CUT SPIKES.

40d, hot cut, per 100 lbs		2 80		2 80
30d, " " "		2 85		2 85
20d, 16d and 12d, hot cut, per 100 lbs		2 90		2 90
10d, hot cut, per 100 lbs		2 95		2 95
8d, 9d, " "		3 00		3 00
6d, 7d, " "		3 15		3 15
4d to 5d, " "		3 35		3 35
3d, " "		3 73		3 75
2d, " "		4 25		4 25
4d to 5d cold cut, not polished or blued, per 100 lbs		3 25		3 25
3d to 5d cold cut, not polished or blued, per 100 lbs		3 65		3 65

FINE BLUED NAILS.

3d, per 100 lbs		4 25		4 25
2d, " "		4 75		4 75

CASING AND BOX, FLOORING, SHOOK AND TOBACCO BOX NAILS.

12d to 30d, per 100 lbs		3 25		3 25
10d, " "		3 35		3 35
8d and 9d, " "		3 50		3 50
6d and 7d, " "		3 65		3 65
4d to 5d, " "		3 85		3 85
3d, " "		4 25		4 25

FINISHING NAILS.

3 inch, per 100 lbs		3 60		3 60
2½ to 2¾ " " "		3 75		3 75
2 to 2¼ " " "		3 90		3 90
1½ to 1¾ " " "		4 10		4 10
1¼ " " "		4 50		4 50
1 " " "		5 00		5 00

SLATING NAILS.

5d, per 100 lbs		3 60		3 60
4d, " "		3 60		3 60
3d, " "		4 00		4 00
2d, " "		4 50		4 50

COMMON BARREL NAILS.

1 inch, per 100 lbs		4 25		4 25
¾ " " "		4 50		4 50
¾ " " "		5 00		5 00

CLINCH NAILS.

3 inch, per 100 lbs		3 60		3 60
2½ and 2¾ " " "		3 75		3 75
2 and 2¼ " " "		3 90		3 90
1½ and 1¾ " "		4 10		4 10
1¼ " "		4 75		4 75
1 " "		5 25		5 25

SHARP AND FLAT PRESSED NAILS.

3 inch, per 100 lbs		4 10		4 10
2½ and 2¾ " " "		4 25		4 25
2 and 2¼ " " "		4 40		4 40
1½ and 1¾ " " "		4 60		4 60
1¼ " " "		5 25		5 25
1 " " "		5 75		5 75

STEEL WIRE NAILS.

Steel Wire Nails, 70c. and 5% discount from printed list.

Iron Pipe:

Iron pipe, ¼ inch, per foot	6c.	6c
" " ⅜ " "	7	7
" " ½ " "	8½	8½
" " ¾ " "	12	12
" " 1 " "	17	17
" " 1¼ " "	24	24
" " 1½ " "	30	30
" " 2 " "	43	43

Toronto, 65 per cent. discount.
Montreal, 60 to 65 per cent. discount.

Lead Pipe:

Lead pipe, per lb	7c.
Waste pipe, per lb	7½

Discount, 30 % off in small lots.

Galvanized Iron:

Adam's—Mar's Best and Queen's Head:		
16 to 24 guage, per lb	4½c.	4¾c.
26 guage, "	4¾	5
28 " "	5	5¼
Gordon Crown—		
16 to 24 guage, per lb	4¼	4½
26 guage, "	4½	4¾
28 " "	4¾	5

Note.—Cheaper grades about ½c. per lb. less.

Structural Iron:

Steel Beams, per 100 lbs	2 75	2 50
" channels, "	2 85	2 60
" angles, "	2 50	2 30
" tees, "	2 80	2 60
" plates, "	2 55	2 35
Sheared steel bridge plate		2 35

(Corrected up to September 30th