

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

- Coloured covers/  
Couverture de couleur
- Covers damaged/  
Couverture endommagée
- Covers restored and/or laminated/  
Couverture restaurée et/ou pelliculée
- Cover title missing/  
Le titre de couverture manque
- Coloured maps/  
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/  
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/  
Planches et/ou illustrations en couleur
- Bound with other material/  
Relié avec d'autres documents
- Tight binding may cause shadows or distortion  
along interior margin/  
La reliure serrée peut causer de l'ombre ou de la  
distorsion le long de la marge intérieure
- Blank leaves added during restoration may appear  
within the text. Whenever possible, these have  
been omitted from filming/  
Il se peut que certaines pages blanches ajoutées  
lors d'une restauration apparaissent dans le texte,  
mais, lorsque cela était possible, ces pages n'ont  
pas été filmées.
- Additional comments:/  
Commentaires supplémentaires:

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured pages/  
Pages de couleur
- Pages damaged/  
Pages endommagées
- Pages restored and/or laminated/  
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/  
Pages décolorées, tachetées ou piquées
- Pages detached/  
Pages détachées
- Showthrough/  
Transparence
- Quality of print varies/  
Qualité inégale de l'impression
- Continuous pagination/  
Pagination continue
- Includes index(es)/  
Comprend un (des) index
- Title on header taken from: /  
Le titre de l'en-tête provient:
- Title page of issue/  
Page de titre de la livraison
- Caption of issue/  
Titre de départ de la livraison
- Masthead/  
Générique (périodiques) de la livraison

This item is filmed at the reduction ratio checked below/  
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12X	16X	20X	24X	28X	32X

# CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL OF TENDERS AND CONTRACTS

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 THROUGHOUT CANADA.

Vol. 5.

AUGUST 30, 1894

No. 30

**THE CANADIAN CONTRACT RECORD,**  
PUBLISHED EVERY THURSDAY  
As an Intermediate Edition of the "Canadian Architect and Builder."

Subscription price of "Canadian Architect and Builder" (including "Canadian Contract Record"), \$2 per annum, payable in advance.

C. H. MORTIMER, Publisher,  
CONFEDERATION LIFE BUILDING, TORONTO.  
Telephone 2362.  
New York Life Insurance Building, Montreal.  
Bell Telephone 2299.

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

Advertising Rates on application.

At its Convention held in Toronto, Nov. 20 and 21, 1889, the Ontario Association of Architects signified its approval of the CANADIAN CONTRACT RECORD, and pledged its members to use this journal as their medium of communication with contractors with respect to advertisements for Tenders.

The following resolution was unanimously adopted at the First Annual Meeting of the Province of Quebec Association of Architects, held in Montreal, Oct. 10th and 11th, 1890: "Moved by M. Perrault, seconded by A. F. Dunlop, that we the Architects of the Province of Quebec now assembled in Convention being satisfied that the CANADIAN CONTRACT RECORD affords us a direct communication with the Contractors,—Resolved, that we pledge our support to it by using its columns when calling for Tenders."

## 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.  
Branch Office: New York Life Building, Montreal.

### BARTER AND EXCHANGE.

This department has been opened for the speedy barter and exchange of second-hand plant or material, or small lots of new or second-hand materials by builders and others not regularly engaged in the sale of such articles. Advertisements other than those of the above description will not be inserted.

RATES—12 words and under, 15 cents, each additional word, 1 cent (three figures count one word); on two or more subsequent insertions a discount of 20 per cent. will be allowed. Not more than four insertions of an advertisement can be granted.

Replies to advertisements may be addressed to a box at this office, in which case necessary stamps must be sent for re-mailing replies. Advertisements for this department must be prepaid.

**FOR SALE**—Wood and glass partition, 9 feet high, 18½ feet long, including door 3 x 3 feet. Pine, natural finish, ground glass in panels. In use little more than a year. Cost over \$50. Will be sold at a sacrifice. Box 50, CONTRACT RECORD office.

## FOR SALE.

About 500 loads of first-class Gravel, on the Weston Road, 144 yards east of St. Clair Avenue, Toronto Junction. Apply to

WILLIAM McLEOD,  
Georgetown, Ont.

## TO ENGINEERS AND CONTRACTORS

Plans and specifications, with approximate price thereon, are invited by the Corporation of the Town of Port Hope on or before

September the 10th, Inst.,

for a proposed extension and improvement of the present system of waterworks now in use. All information with reference to the same can be had from J. P. Wilson, Chairman of Fire, Water and Light Committee. The said Corporation do not bind themselves to accept any plan that may be submitted, but in the event of any such plan being accepted, the Corporation will pay for the same at such price as may be agreed upon.



Sealed Tenders, addressed to the undersigned, and endorsed, "Tender for Owen Sound Work," will be received until Friday, the 7th day of September, next, for a work for the improvement of the Harbour of Owen Sound, Grey County, Ontario, according to a plan and specification to be seen at the office of the Town Clerk, Owen Sound, and at the Department of Public Works, Ottawa.

Tenders will not be considered unless made on the form supplied and signed with the actual signatures of tenderers.

An accepted bank cheque, payable to the order of the Minister of Public Works, for the sum of one thousand dollars (\$1,000) must accompany each tender. This cheque will be forfeited if the party declines the contract, or fail to complete the work contracted for, and will be returned in case of non-acceptance of tender.

The Department does not bind itself to accept the lowest or any tender.

By order,

E. F. E. ROY,  
Secretary.

Department of Public Works,  
Ottawa, 20th August, 1894.



## TENDERS FOR ELECTRIC AND GAS LIGHTING

Notice is hereby given that the time for receiving tenders for electric and gas lighting and electric light plant for the City of Toronto has been extended from the 1st of September to the 15th of September next, of which all persons interested are requested to take notice.

W. T. STEWART,  
Chairman Committee on Fire and Light.

Toronto, August 25th, 1894.

Send for a copy of the second edition of the CANADIAN CONTRACTOR'S HAND-BOOK. Price, \$1.50; to subscribers, \$1.

## CONTRACTS OPEN.

**ATHERLEY, ONT.**—The Methodist congregation here contemplate erecting a new church.

**ALLANDALE, ONT.**—Rev. Mr. Clark will shortly erect a new residence on Burton avenue.

**MAGOG, QUE.** Messrs. Heneker and Farwell were in town last week looking for a suitable site for a branch bank.

**VANKEEK HILL, ONT.**—Work is shortly to be commenced on an addition to the Roman Catholic church, to cost \$16,000.

**HALIFAX, N. S.**—Messrs. Brown & Horton have purchased a lot on Coburg road and intend erecting a dwelling thereon.

**TANWORTH, ONT.**—The Presbyterians have purchased the house formerly owned by Chas. Jones and will remodel it for a manse.

**HARROW, ONT.**—Tenders for erecting a two-story brick building, 57 x 30 feet, are being received by Joseph Drummond until to-day.

**KNOWLTON, QUE.**—Surveys are being made by Mr. A. L. Husbands, C.E., of Cookshire, for a system of drainage for this town.

**HAVELOCK, ONT.**—Wm. Matheson will receive tenders until the 31st inst. for the erection of a brick veneer manse in this village.

**WINDSOR, ONT.**—Contracts have not yet been awarded for the erection of the Cameron avenue school, and new tenders may again be asked for.

**SARNIA, ONT.**—The Council have decided to construct a brick sewer on George street, between Milton and East streets; estimated cost, \$4,777.80.

**WOODSTOCK, ONT.**—Messrs. Davis & Van Buskirk, civil engineers, have been instructed to report at an early date on a system of sewerage for the town.

**AYLMER, QUE.**—Messrs. Pratt & Wood, of Ottawa, have submitted an offer to the corporation to take over the county buildings and convert them into a boot and shoe factory.

**NEWMARKET, ONT.**—J. C. Lundy, Inspector, will receive tenders until 8 p.m. of the 1st of September for putting a galvanized iron roof on the Industrial Home for the County of York.

**WINCHESTER, ONT.**—The ratepayers are considering the construction of a system of waterworks and the installation of an electric light plant. The cost of both is estimated at \$15,000.

**OAKVILLE, ONT.**—Peter Kelly, Chairman Fire and Water Committee, will receive tenders until Saturday, September 8th, for supplying 200 feet of 2½ inch fire hose, with couplings.

**RENFREW, ONT.**—A new creamery is to be erected on Mr. Carswell's farm. It will be 126 x 40 feet, with an addition of 50 x 20 feet.—James Guthrie has purchased a lot on Lochiel street, and intends erecting a residence thereon.

**DARTMOUTH, N. S.**—The Town Council have appointed a committee to memorialize the Government to proceed at once with constructing the railway from the town to the I. C. R. main line.

**PORTAGE LA PRAIRIE, MAN.**—The Town Council has passed a resolution asking the Dominion Government to erect the new post-office on a site between the Imperial Bank and the fire hall.

**QUEBEC, QUE.** Hon J. C. Patterson, Minister of Militia, will shortly make an inspection of the Citadel walls in this city, with a view to the expenditure of the money voted by parliament last session for repairs.

**HULL, QUE.** Mr. Vaner, C.E., is preparing the plans for the proposed power house. Mr. Monck, of Ottawa, will make an offer to the Town Council at its next meeting to erect a market building, at a cost of \$10,000.

**GUYSBORO, ONT.**—Alex. Torey, secretary, will receive tenders until the 5th of September for erecting an academy building in this town, to be completed before the 20th of February, 1895. Plans may be seen on application to the secretary.

**CHATHAM, ONT.** Mr. Bell, C.E., of St. Thomas, has been engaged to report on the value of the waterworks plant offered for sale to the corporation, and to prepare an estimate of the cost of obtaining the future water supply from Lake Erie.

**SUBURBY, ONT.** A by law for the construction of waterworks and sewerage systems and the installation of an electric light plant was carried by the ratepayers on Wednesday of last week. The estimated cost of the waterworks is \$50,000, and the electric light and sewerage, \$10,000.

**KINGSTON, ONT.**—Petitions have been presented to Council for granolithic walks on the following streets: Brock street, between Wellington and Bagot streets; Clarence street, opposite the Ontario Bank building; King street, between Brock and Clarence streets.—Ald. G. W. Robinson is establishing a summer resort on Welborn's point, on the Bay of Quinte. Cottages will be erected thereon.

**MONTREAL, QUE.** A meeting of the Chambre de Commerce was held last week to discuss the proposed new building to be erected on the corner of St. James street and St. Lambert hill. Nothing definite was decided upon. Messrs. Resther & Son, architects, are preparing plans for the furnishing of the premises, cor. De Bresoles and Le Royer streets, to be occupied by Messrs. Hudon, Hebert & Cie. Messrs. Roy & Gauthier, architects, are preparing plans for two churches, one to be erected at Sarsfield, Ont., and the other at Vinton, Que.

**HAMPTON, ONT.**—It is proposed to construct a sewer on John street north from Strachan to Wood streets.—It is reported that Thomas S. Bell, C.E., has been engaged by some local capitalists to report on the feasibility of utilizing the

water power at Chedoke Falls for lighting the park and the southwesterly part of the city with electricity.—Debentures will shortly be issued to raise \$210,000 for pavements, new schools, and the House of Refuge.—It is stated that news have been received from Mr. J. N. Young to the effect that work will be commenced at once on the branch of the Toronto, Hamilton and Buffalo railway from this city to Brantford.

WINNIPEG, MAN.—It has been decided to erect a new church in the north end in connection with the mission recently established by Wesley church. J. F. Fowler and W. D. Pettigrew have been appointed to arrange the details.—A large four-story brick structure is to be erected on the old Princess opera house site by W. A. Pierce. The upper flats will contain 110 rooms and the ground floor will be fitted up for stores.—Tenders are invited by Mr. Robert Watson, Minister of Public Works, until Monday, September 3rd, for the excavation of a cut at the Fairford river, at its outlet from Lake Manitoba. Length of cut, 1200 feet, width, 200 feet, average depth, 9 feet. The quantity of excavation will be between sixty and seventy cubic yards. The work is to be completed before the 15th of November next.—The Committee on Works has recommended that tenders be called for the erection of the following works at Maryland street bridge: approaches and fender, estimated cost \$4,250; rubble masonry at north abutment, estimated cost, \$1,200.

OTTAWA, ONT.—Mr. Chamberlain, general manager, Mr. G. A. Mountain, chief engineer, and Mr. Fauquier, chief contractor of the Ottawa and Parry Sound Railway, recently left on a survey of the proposed route of the railway through to the Georgian Bay, in order that during the coming winter preparations may be made for the completion of the line next summer.—Wm. Beardsley will erect a brick residence on lot 10, south side of Wilbrod street, at a cost of \$3,000.—Dr. Robinson has taken out a building permit for a residence on Frank street, to cost \$6,000.—J. H. Balderson, Secretary Department of Railways and Canals, will receive tenders until noon on Saturday, the 1st of September, for the supply and delivery of about 11,000 barrels of Portland cement. Specifications may be seen at the office of the chief engineer.—Tenders are also invited by the above department until the 18th of September for the construction of a new channel in Lake St. Louis, section No. 1. Plans for this work may be seen at the office of the chief engineer, Ottawa, and at the superintending engineer's office, Montreal.—Tenders are invited by E. F. E. Roy, Secretary Department of Public Works, until tomorrow (Friday) for the erection and placing of three tubular boilers in the Parliament buildings in this city. Plans may be seen only at the above department.—Tenders are also invited by E. F. E. Roy until the 5th of September for the construction of a hot water heating apparatus in the post office building in the city of Quebec, plans for which may be seen at the Department of Public Works in this city, and at the Dominion Public Works office, Quebec.—Plans are being prepared by the Public Works Department for a wooden bridge with non trestlework across Pond Creek, for which purpose the sum of \$3,000 was voted by Parliament last session. Tenders will be called next week.

TORONTO, ONT.—It is said that three new double-end ferries will be built the coming winter for the Hanlan Ferry Co. The boats will be of steel.—A resolution has been adopted by the Parks and Gardens Committee requesting the Commissioner to prepare an estimate of the cost of reclaiming certain marsh lands at Island Park. The above Committee has been authorized to provide funds for the construction of 1,000 seats for the various parks.—The Court of Revision will meet on Friday to confirm the assessments for a block pavement on Adelaide street, and for a sewer on Preston avenue.—Building

permits have been granted as follows: Wm. Hutchison, three two-story bk. dwellings, 203 Sherbourne st., cost \$7,000; James Clark, 2 story and attic bk. dwelling, 892 Manning ave., cost \$1,600; Col. Grasett, two story bk. addition, 66 St. Patrick street, cost \$1,000; T. Buley, two story bk. dwelling, 1 McGee st., cost \$1,500; Barchard & Co., three story bk. packing box factory, 135-151 Duke st., cost \$7,000; Jas. Blackey, 3 story bk. storage warehouse, 369 Spadina ave., cost \$3,000, A. R. Barlington, architect; Wm. Scott, 1232 King west, det. 2 story and attic bk. dwelling, 145 Dunn ave., cost \$3,000.

#### FIRES.

The old Methodist church and a house belonging to P. Lane, at Lachute, Que., were completely destroyed by fire recently. Loss, \$10,000.—A building at Paris, Ont., belonging to Gillies Bros., lumber merchants, has been destroyed by fire. Loss \$5,000.—A store building at Bryanston, Ont., owned by David Bann, of Biddulph, was destroyed by fire last week. The loss is partially covered by insurance.—A house at Acadia Mines, N. S., owned by J. M. Blaikie, was burned recently. No insurance.—McKechnie's saw mill and lumber yard at Durham, Ont., was damaged by fire recently to the extent of \$15,000; no insurance.—The Fleming wood and lumber mills in Tay township, near Midland, Ont., were destroyed by fire last week. Loss about \$15,000.—Mr. Blueman's brick dwelling at Beaverton, Ont., was burned on the 23rd inst. The loss is partially covered by insurance.—Mr. Wurtel's saw and grist mills at River David, near Sorel, Que., were burned last week. No insurance. They will be rebuilt immediately.—Philip's sheding and stave mills at Courtright, Ont., were destroyed by fire on the 27th inst. Loss, \$3,000; no insurance.—William Dore's carriage factory at Wingham, Ont., was burned recently. The loss is mostly covered by insurance.—The large flour mill of Tew & Marshall, at Plattsville, Ont., was consumed by fire on the 22nd inst. The loss will reach \$30,000; insurance \$6,000.—A large brick mansion near Newcastle, Ont., owned by Asa Wilmot, was burned to the ground a few days ago. The residence was insured.—The public school building on cedar street, Ottawa, was consumed by fire on the 26th inst. Loss, \$8,000; insurance \$4,000.—The premises of T. Moore, lumber merchant, on Mignonne street, Montreal, were destroyed by fire on Tuesday last. Loss, \$10,000.

#### CONTRACTS AWARDED.

TILBURY CENTRE, ONT.—Messrs. Bechard & Oldershaw, of Chatham, have been awarded the contract for erecting the new R. C. parsonage here. The cost will be about \$2,500.

MONTREAL, QUE.—Chas. Bernier, architect, has awarded contracts for a six story tenement building to be erected on Beaudry street for Mme. Jos. Lachapelle, as follows: masonry, L. David; brickwork, Z. Theriault; carpenter and joiner's work, N. Gauthier; plastering, G. Leveille; plumbing and roofing, G. O. Quintal; painting, E. Belanger.—A. Prefontaine, architect, has awarded contracts for a contagious disease hospital in connection with Villa Maria Convent, Notre Dame de Grace, as follows: masonry, O. Martineau; brickwork, P. Brunet; carpenter and joiner's work, Chas. Prefontaine; other trades not let.—L. G. Chausse, architect, has awarded contracts for a three story tenement building on St. Cuthbert street for Mr. J. McD. Hains as follows: masonry, Latreille & Frere; carpenter and joiner's work, G. G. Frere; other trades not let.—Theo. Daoust, architect, has awarded contracts for a cottage on Elm avenue, Cote St. Antoine, for Miss A. B. Coughlin as follows: masonry, Latreille & Frere; carpenter and joiner's work, P. Chapleau; roofing, plumbing, etc. Louis Landry; brickwork, Jos. Carriere; plastering, H. Contant; painting and glazing, A. Carriere.

#### BUSINESS NOTES.

D. Turcot & Fils, stone masons, have dissolved partnership.

Wm. J. Adams, builder, of Brantford, Ont., has assigned to Charles E. Oles.

Collerette & Fessier, carpenters and joiners, Montreal, have dissolved partnership.

The Toronto Lumber and Manufacturing Co. are reported to have assigned to G. M. Gardner, with liabilities about \$20,000, and assets nominally the same.

A statement of the affairs of Messrs. Stevens & Burns, machinists, of London, shows assets of about \$20,000, and liabilities \$180,000. It is probable that arrangements will be made which will enable the company to continue business.

#### CRANES AND CHAINS

Entire establishments are very often brought to a complete standstill on account of a crane being unable to lift a load, which the crane itself is strong enough to hold up, but which the hoisting gear is not powerful enough to raise or control. The purpose of this article is to point out some ways by which, as long as the structure itself—the mast, the boom and the rest of its framing—is strong enough as well as the building to which it is fixed, if it is so fastened, the lifting power of the gears may be increased.

Once in a while with hand cranes this is done by having, instead of the ordinarily-used spur and pinion, another pair having greater pitch ratio; thus if there is for "every-day" use a 46 in. spur served by an 8 in. pinion, making four and one-half to one, with a distance between centres of 22 in., to have another pair with a ratio of seven to one, the spur having a pitch diameter of 38 in., to the pinion's 5½ in. The four and one-half to one gears being removed, the seven to one can be keyed on in their place. These gears should have wider faces than those who do less work, as the strain on the teeth is greater.

Another way is to fasten to the end of a beam a ring or a stud to which the hook of the hoisting rope or chain may be attached after the rope or chain is passed through a single block having a hook to which the load may be made fast. The result of this will be that for every foot of chain that is hauled in by the windlass the load will be raised only 9 in.; so that the hoisting power of the crab will be about doubled. It would be just doubled if it were not for the friction of the extra block.

Of course neither of these methods will enable a crane to raise a weight greater than can be properly put on its frame or on the chain and gears. If there should be any doubt about the latter, the windlass may be made to do double work without putting an extra strain on the frame which bears it, or on the chain itself, by catching hold of one end of the load and raising it, using the other as a fulcrum; raising as high as convenient, blocking up at raised end, catching hold of the other end and doing the same thing, and so on, alternately raising, blocking, and shifting. This plan will answer better for long articles, such as very heavy girders or posts, or for long cylindrical boilers, than for short ones like marine engines.

This plan of increasing the hoisting power of a crane is sometimes desirable, not because the crane itself or its chain or gear may be weak, but because of lack of good hoisting power. In some parts of the country, or in some conditions of the labour market, there may be insufficient man power at the crane; but if the gear may be changed from four and one-half to one up to seven to one, one strong man can do as much work with it as two light ones, or two light men do as much work as two strong ones.

Where there is no crane that may be made of sufficient power, or where the existing cranes will not reach, there should be someone about the place who has ingenuity enough to rig up a tackle out of a few ropes or chains, and blocks, attached to the overhead timbers of the building, if

there are any available; and if there are not, by the use of spars or of long balks resting on the wall plates or in the upper window opening or set in a tripod on the ground. Such spars should be lashed together with a rigger's hitch or with some of the suitable rope fastenings which may be learned from Brainard's little book on "Knots, Splices, Bends, Hitches, and Lashings." Care should be taken to have the spread of the timbers as great as possible in order to give sufficient room among them to manoeuvre the piece to be lifted, although it must also be remembered that the more spread such tripod has, for a given length of leg, the less load it can carry—a fact which must be borne in mind in handling heavy weights with long light timbers, the strength of which has never been proved. (All such timbers, if not perfectly square in cross section, should be so placed that the strain will come on them in the direction of their greatest width. Thus a two by eight is sixteen times as strong edgewise as crosswise to a load applied at right angles to its length; and while this same ratio does not apply to where it is used as the legs of a tripod, and gets strain partly endwise and partly crosswise, this fact should be borne in mind and taken advantage of).

All hoisting chains should be annealed from time to time. After they break and kill someone is the wrong time to anneal them; prevention is better.

The bearings of all blocks should be kept well lubricated with black lead, either with or without tallow or other grease. Those which have hinged shells are better than those with solid blocks, because they will permit the rapid reeving through them of ropes or of chains having hooks on their ends, it being easier to open a snap block, lay the rope or chain in the groove, and close and latch the shell, than to unbend the rope from the hook or detach the chain from it—especially in view of the swivel that should be at the hook.

A large masonry weir has recently been completed across the Goulburn River in Victoria under the direction of Mr. Stuart Murray. It is 695 feet long, exclusive of the space occupied by regulators of the irrigating canals at each end, which add 230 feet more. The masonry weir itself is about 33 feet high, 43 feet wide at the base and 11 feet wide on top, and rests on alternating beds of sandstone, slate, and pipeclay standing almost vertical. The body of the work, according to a report issued by the Victorian Government, consists of large blocks of concrete banded together, bedded and jointed in cement mortar, the facing of the masonry being cut granite. The blocks were made up of 1 part of Portland cement, 2 parts of sand, and 4½ of 2½-inch broken stone. Above the masonry are 21 flood gates, each 20 feet long and 10 feet high, which can be lowered into recesses in the concrete when it is necessary to pass the flood water. The gates are operated by screw gearing driven by three 30½-inch Leffel turbines.

#### MUNICIPAL DEPARTMENT.

##### CONVENTION OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.

The annual convention of the American Public Health Association will take place in Montreal on the 25th, 26th, 27th and 28th of September. It is expected that about three hundred members of the association will be in attendance. Among others, the following questions will be brought up for consideration: The pollution of water supplies; the disposal of garbage and refuse; the nomenclature of diseases and forms of statistics; protective inoculation in infectious diseases; national health legislation; the cause and prevention of diphtheria; the prevention of the spread of yellow fever.

Mr. James Woodyatt, City Clerk of Brantford, Ont., died at Belleville on the 20th inst., at the age of 75 years. He had held the position for 35 years.

MUNICIPAL ENGINEERS, CONTRACTORS, AND MATERIALS.

J. M. SHANLY
M. CAN. SOC. C. E. CIVIL ENGINEER
STANDARD BUILDING MONTREAL
Surveys, Plans, Estimates, &c., for Water Works, Sewerage, Water power projects, Bridges, Railways, &c. CONSTRUCTION SUPERINTENDED

WILLIS CHIPMAN, B. A. Sc.,
M. Can. Soc. C. E.; M. Am. Soc. C. E.; M. Am. W. Ass'n.
CIVIL AND SANITARY ENGINEER
Water Works - Sewerage Sewage Disposal
103 BAY STREET TORONTO.

J. McDougall, C. E.,
ENGINEER OF THE COUNTY OF YORK
GENERAL MUNICIPAL ENGINEER
Consulting Engineer for Municipalities in regard to Electric Railway and other Franchises.
Specialties: Bridges, Foundations, Electric Railways, and Roads. Surveys made: Plans, Specifications and Agreements prepared, and work superintended.
COURT HOUSE, TORONTO.

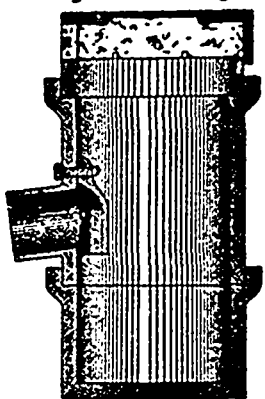
JOHN GALT
C. E. AND M. E., M. CAN. SOC. C. E.,
Consulting Engineer.
20 Years' Practical Experience in England, United States and Canada in Civil, Sanitary, Hydraulic, and Mechanical Engineering.
SPECIALTIES: WATERWORKS, SEWERAGE, ELECTRIC RAILWAYS.
Office: Rooms 99 and 100, CANADA LIFE BUILDING, TORONTO.

ALAN MACDOUGALL
M. Can. Soc. C. E. M. Inst. C. E.
CONSULTING CIVIL, SANITARY AND HYDRAULIC ENGINEER
82 East Adelaide St. TORONTO
NOTE.—Mr. Alan Macdougall is NOT the engineer for the County of York.

JOHN D. EVANS, O.L.S.
MEM. CAN. SOC. C. E.
LAND SURVEYOR
Civil Engineer: Architect and Patent Solicitor.
Special attention given to Consulting and Municipal Work.
GRASS' BLOCK, FRONT ST., TRENTON, ONT.

E. D. MORRIS
Direct Importer and Dealer in
Best English and Canadian
PORTLAND CEMENTS
Vitrified, Paving and Fire Bricks, Fire Clay, &c.
Offices: 36 Victoria St. TORONTO

THE "IMPROVED"
ST. GEORGE GULLEY
OR STREET DRAINING WELL.



PATENTED 1885 AND 1893.
Made of cast iron and vitrified tile.
OVER 6,000 NOW IN USE.
Not ONE complaint.
For further particulars, apply

LEWIS SKAIFE, Manager
New York Life Building MONTREAL.

Fire Bricks and Cement

DRAIN AND WATER PIPES
SANITARY EARTHENWARE
LONDON PORTLAND CEMENT
GUARANTEED GENUINE.
Paving and Scoria Bricks for Stables, Sidewalks, Yards, etc.
Large quantities on hand and to arrive. We handle only the best quality. Prices lower than ever.

F. HYDE & CO.
31 Wellington Street, MONTREAL,
Sole Agents for
THE "GRAHTRYX" SMOKE TEST AND DISINFECTING MACHINE.

Artificial Granite Stone
Pavements

STREETS, SIDEWALKS, BASEMENT FLOORS, ETC.

The attention of municipalities and others interested is called to the excellence of this material.

A. GRAHAM
Sole Proprietor and Patentee
226 Pleadilly St. LONDON, ONT.

DEBENTURES WANTED.

Municipalities issuing debentures, no matter for what purpose, will find a ready purchaser by applying to G. A. STIMSON, 9 Toronto Street, Toronto. N.B.—Money to loan at lowest rates on first mortgage.

TESTS OF OUR Thorold CEMENT

Show it is the best Hydraulic Cement for Abutments and Piers for Bridges, Concrete for Foundations, Cisterns, Cement Drain Pipe, Floor for Cellars and Stables, Sewers, and all Mason Work in moist or wet places.

10,000 BARRELS

of Thorold Cement were used in the construction of the Great St. Clair Tunnel, Joseph Hobson, Esq., Grand Trunk Railway, chief engineer; Wm. Gibson, Esq., M. P., contractor.

MANUFACTURED BY
ESTATE OF JOHN BATTLE,
Thorold, Ontario.

PORTLAND CEMENT

BEST AND CHEAPEST IN TORONTO.
JOSSON, PETERS and BURHAM Brands for highest class work.
WHITE HORSE, R. W., IMPERIAL, &c., FROM \$2.00 PER BARREL.
A. E. S. Smythe & Co., 25 George St., Toronto. Telephone 1948 or call and see us.

THE GOPP BROS. CO., (LIMITED)

The only Manufacturers in Canada and Sole Owners of the Canadian Patents of the American
CHAMPION ROAD MACHINES
CHAMPION ROCK CRUSHER
CHAMPION STEEL ROAD ROLLER
Catalogues Free. Correspondence Solicited
ADDRESS: COPP BROS. CO. HAMILTON, ONT.

CANADA PIPE AND FOUNDRY CO. . . . .

Manufacturers of
Cast Iron Pipes and Special Castings
Works: MONTREAL AND ST. HENRI, QUE.
CORRESPONDENCE SOLICITED.

THE STANDARD DRAIN PIPE CO.

OF ST. JOHNS, P. Q., (LIM.)
Manufacturers of
Salt-Glazed Vitrified SEWER PIPES
Double Strength Railway Culvert Pipes, Inverts, Vents,
AND ALL KINDS OF FIRE CLAY GOODS.

THE G. & J. BROWN MFG. CO.

Railway and Contractors' Plant.
BRIDGE BUILDERS
BELLEVILLE, ONT.

Drummond McCall Pipe Foundry Company,
MONTREAL
MANUFACTURERS OF

CAST IRON WATER AND GAS PIPES
WORKS: LACHINE, QUE. PRICES ON APPLICATION.

HAMILTON AND TORONTO SEWER PIPE CO.

FOR SEWERS, CULVERTS, AND WATER PIPES. INVERTS Fire Brick Sewers
Write for Discounts.
HEAD OFFICE AND FACTORY: HAMILTON, CANADA.

MUNICIPAL OFFICIALS should see to it that in the erection of town and city PUBLIC BUILDINGS, the installation of water works plant, etc., the advantages of MINERAL WOOL



are made use of for deadening sound in floors and partitions, insulation of heat and cold, fireproofing, etc., also SECTIONAL MINERAL WOOL COVERING for steam pipes, boilers, exposed water pipes, etc.

CANADIAN MINERAL WOOL CO., Limited, 122 BAY ST., TORONTO.
Montreal Agent: LEWIS SKAIFE 707 NEW YORK LIFE BUILDING



CENTRAL BRIDGE AND ENGINEERING COMPANY, (LIMITED) Peterborough, Ont.

WM. H. LAW, Manager and Engineer. MANUFACTURER OF

RAILWAY AND HIGHWAY BRIDGES

Viaducts, Piers, Roofs, Turntables and Girders in Steel and Iron.

Tension members forged without welds. Riveting done by hydraulic or compressed air machines. Specialties: Good workmanship and strict adherence to specifications and drawings.

CAPACITY: 2,000 TONS PER ANNUM.

D. BAER & CO.

BUILDERS OF THE

Bear Patent

COMBINATION BRIDGE DOON, ONT.

All communications promptly answered.

Prices of Building Materials.

CONDITION OF THE MARKET.

With the country trade the demand for builders supplies is keeping up fairly well, but there has been no marked improvement in the city trade. General hardware is moving freely, the demand being mostly for shelf goods. A moderate jobbing improvement is reported in lead pipe and galvanized iron. Iron pipe is quiet and prices remain unchanged. The arrivals of cement in Montreal for last week were 2,300 barrels of Belgian. The total receipts at that port for the season up to date are 2,250 barrels of English and 15,325 Belgian, as against 27,000 and 15,075 barrels last year. Business in that line is very limited. The price of glass is unsatisfactory, and cutting is being practiced. We quote \$1.20 to \$1.25 for first break.

LUBRICAL.

CAR OR CARGO LOTS.

Toronto. Montreal.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various materials like pickets, shingles, and cements.

VALID QUOTATIONS.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists materials like mill cull boards, shipping cull boards, and various types of shingles.

Toronto. Montreal.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists types of ash and dressing stocks.

BRICK-M M

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists common walling and sewer pipes.

Pressed Brick, Per M:

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of pressed bricks and roof tiles.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists 1st and 2nd quality bricks.

SAND.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists per load of sand.

STONE.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists common rubble, large flat rubble, and foundation blocks.

Freestone Quarries

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of freestone.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists Madoc rubble and floating stone.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists Ohio freestone and various dimensions.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of stone and their prices.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of stone and their prices.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of stone and their prices.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of stone and their prices.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of stone and their prices.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of stone and their prices.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of stone and their prices.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of stone and their prices.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of stone and their prices.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of stone and their prices.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of stone and their prices.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of stone and their prices.

Toronto. Montreal.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of cement.

Toronto. Montreal.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

Table with 4 columns: Description, Toronto, Montreal, and another Toronto column. Lists various types of nails.

INDEX TO ADVERTISEMENTS

In the "Canadian Architect and Builder."

Large index table with multiple columns: Architects, Cements, Heating, Roofers, Contractors' Plant and Machinery, Cut Stone Contractors, Chimney Topping, Drain Pipe, Electric and Gas Fixtures, Electric Wiring, Elevators, Building Stone Dealers, Builders' Hard-ware, Creosote Stains, Cedar Shingles, Church and School Furniture, Church Reflectors, Art Woodwork, Bricks (Pressed), Builders' Supplies, Dumb Waiters, Electric Wiring, Fire Brick and Clay, Galvanized Iron Workers, Grates and Tiles, Heating, Roofers, Reproduction of Drawings, Sanitary Appliances, Shingle Stains, Siding Blinds, Stained and Decorative Glass, Terra Cotta, Wall Paper and Ceiling Decorations, Wire Manufacturers, Wall Plaster, Wall Tile, Window Blinds.