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CANADIAN CONTRACT RECORD

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

EVERY SATURDAY

Vol. 3.

Toronto and Montreal, Canada, July 30, 1892.

No. 25

THE CANADIAN CONTRACT RECORD,

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

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G. H. MORTIMER, Publisher.

14 KING ST. WEST, TORONTO, CANADA
Telephone 2361.

64 Temple 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 the 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. 20th and 21st, 1890: "Moved by St. Remault, seconded by A. E. Duvalon, 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."

Subscribers who may change their address should give prompt notice of same. In doing so, give both old and new address. Notify the publisher of any irregularity in delivery of paper.

TENDERS WANTED.

I will receive tenders up to THURSDAY NEXT, AUGUST 3rd, for the erection of an Hotel on Simcoe street, Toronto. No tender necessarily accepted.

HERBERT G. PAULL, Architect
Plans at 519 Queen street West.
Correspondence, 106 Wellington Pl.

SEALED TENDERS

Will be received by the Corporations of the Counties of Perth and Middlesex, at the County Clerk's Office, London, until noon on WEDNESDAY, THE THIRD DAY OF AUGUST, 1892, for the erection of an

Iron Superstructure of a Bridge

over the River Thames, on the boundary line between the Townships of Blanshard and West Nissouri, known as "The Perth Bridge." Said superstructure to consist of two spans, viz: one of 86 feet and one of 101 feet, each in the clear. The roadway is to be fourteen feet in the clear, and the superstructure is to be proportioned to a rolling load of 100 pounds on each square foot of roadway surface, with a factor of safety of four. The floor planks and joists are to be of white pine. Tenders are to be accompanied by detailed plans and specifications and straining sheets showing the strains on each part and section in square inches. Tenderers to give the names of two solvent sureties for fulfillment of contract. The lowest or any tender not necessarily accepted. The work to be completed on or before the 15th day of October next.

JOHN CORRIE, T. E. ROBSON,
Commissioner for Perth. County Clerk.
F. B. TALBOT, Middlesex.
Commissioner for Middlesex.
London, July 21st, 1892

TENDERS

will be received until AUGUST 8th for erection of Church of St. John the Evangelist, Toronto. Plans at my office.

EDEN SMITH, Architect,
14 King St. W., Toronto.

School Desks

TENDERS

Will be received by the undersigned until

6th August Next,

FOR

168 AUTOMATIC DESKS

for High School, with 28 rears, seats 17 in high, for delivery about 15th December next.

382 AUTOMATIC DESKS

with separate seats, sizes 12 to 10 in., with necessary rears, of same deliverable immediately, balance about 15th December next.

Must be of latest and most approved style. Tender to state price per desk according to size and guarantee delivery in good condition at Vancouver. It is desirable that a sample desk should accompany tender.

A. H. B. MACGOWAN,
Secretary to Board of School Trustees
Vancouver, B. C., July 21, 1892



Notice to Contractors

Tenders will be received by registered post addressed to the City Engineer, Toronto, up to Eleven o'clock a.m. on TUESDAY, AUGUST 9th, 1892, for the following work and supply of Cement:

CEDAR BLOCK PAVEMENT

On McMurch Street, from Davenport Road to Belmont Street.

Supply of Cement for the current year.

Specifications and forms of tender may be obtained on and after August 2nd, 1892, at the office of the City Engineer.

A deposit in the form of a marked cheque payable to the order of the City Treasurer, for the sum of Five per cent. on the value of the work tendered for under \$1,000, and 2½ per cent. for the value of the work tendered for over that amount must accompany each and every tender otherwise it will not be entertained.

All tenders must bear the bona fide signatures of the contractor and his sureties (see specifications), or they will be ruled out as informal.

The committee do not bind themselves to accept the lowest or any tender

JOHN SHAW,
Chairman of Committee on Works,
Committee Room, Toronto, July 28, 1892.

TO BRIDGE BUILDERS and Contractors.

Sealed tenders will be received by the undersigned up to 6 p.m. on AUGUST 15th, 1892, for the construction of a

Wrought Iron or Steel Bridge

in the Town of Woodstock. Specifications may be seen at the office of the Town Engineer

G. C. EDEN,
Town Clerk.

USEFUL HINTS.

Candle power, which is used as the standard of illuminating efficiency, means the light of a sperm candle, ¾ in. diameter, burning at the rate of 128 per hour.

A modern process of making mosaics is now commonly employed at Rome. A plate, generally of metal, of the required size is first surrounded by a margin rising about three quarters of an inch from the surface. A mass of cement, composed of powdered stone, lime and linseed oil, is then spread over as a coating, perhaps a quarter of an inch in thickness. When set, this is again covered with plaster of paris rising to a level with the margin upon which is traced a very careful outline of the picture to be copied, and just so much as will admit of the insertion of the small pieces of smalto glass is removed from time to time with a fine chisel. The workman then selects from the trays, in which are kept thousands of varieties of color, a piece of the tint which he wants, and carefully brings it to the necessary shape. This piece is then moistened with a little cement and bedded in the proper situation, the process being repeated until the picture is finished, when the whole being ground to an even face and polished, become an imperishable work of art.

"Mortality in Relation to Occupation," a paper read at the late congress on hygiene and demography, by Dr. Wm Ogle does not seem to waste much time on the dust of the occupation of carpenters and joiners. The dust from the ordinary woods used by such men does not seem to have any very baneful effect upon the air passages, for the mortality of these workmen, both from phthisis and other diseases of the lungs average lower for males generally. "The harder kinds of wood, however, such as are used by cabinet-makers, are said to give off a much more injurious dust than do the softer woods used by the carpenters: and that

this is so is not only probably a priori, but is supported by such scanty statistical evidence as I can adduce. For though I am unable to give the mortality of cabinet-makers from phthisis and respiratory diseases by themselves, their mortality from all causes, together is considerably higher than that of carpenters, the mortality figure in Table A for those latter is 148, while that of cabinet-makers and men generally in the upholstering business is 173."

THE MASONRY OF BOILER SETTINGS.

The brickwork about boiler settings is often very imperfectly laid. It is mostly done by contract, with no one to supervise it who understands the severe use to which it is to be put. The brick-layer, who may never have worked on a job of this kind before, builds good looking in side and outside walls, but the space between is apt to be filled up with odds and ends in the most promiscuous manner. Furthermore, he puts the same joints in that he would use if he were building a house, and this is just what we do not want in a boiler-setting, particularly in the fire-brick lining of the furnace. The joints throughout the setting should be thin, and the work should be done as faithfully inside as outside. Kaolin or prepared fire-clay is used in laying the fire-brick, and it should be mixed up so thin that it can not well be used with a trowel. Some mill owners who have had experience in this direction will not allow a trowel to be employed at all, but require the men to use iron spoons. The fire brick should be dipped in water as they are used, so that when they are laid they will not immediately "drink up" the water from the cement. They should then receive a thin coating of the prepared fire-clay or kaolin paste, and be carefully placed in position with as little of the kaolin or fire-clay as possible. Every sixth course, beginning with the grates, should be a row of headers, well bonded into the masonry behind. The headers are of little use unless they are well secured into the walls of the setting, for when the lower courses of fire-brick have burned away more or less, we have to rely on these headers to a considerable extent to hold the upper part of the wall in position. In repairing fire-brick linings the lower courses, which burn out fastest, can be removed and replaced without disturbing the upper part of the wall, provided the headers are secure, while if they are not, the entire wall may have to be rebuilt, and this can not be done without either removing the boiler or tearing down a considerable part of the setting.—Woodworker.

CONTRACTS OPEN.

PEMBRROKE, ONT.—A new general hospital is to be erected.

ASHBURNHAM, ONT.—The establishment of a high school is being discussed.

REGINA, N. W. T.—New schools are to be erected here, at a cost of \$5,000.

HASTINGS, ONT.—A new bridge will be built across the river Trent, at the Narrows.

HALIFAX, N. S.—The City Council will advertise for a loan of \$30,000 to be expended on paving the streets.

EGANVILLE, ONT.—Mr. Jas. Morris, C. L., is preparing plans for a new bridge across the Bonnehere river.

OWEN SOUND, ONT.—Mr. J. C. Forster, architect, is preparing plans for a new school at Heathcote, to cost \$2,500.

NIAGARA FALLS SOUTH ONT.—The Council will shortly advertise for tenders for the construction of a system of water-works.

HARROW, ONT. Tenders will be received until August 6th for the building of a Presbyterian church in this village. Plans at W. H. Hood's.

ST. THOMAS, ONT.—Negotiations are in progress for the purchase of the street railway. Should the transfer be made the tracks will be extended and the cars run by electricity.

PENETANGUISHENE, ONT.—The Fire and Water Committee have decided to ask the Council to submit a by-law to the ratepayers to raise the sum of \$25,000 for extending the water works system.

GATINEAU, ONT.—The Townships of East and West Templeton have agreed to grant the sum of \$5,000 each, towards the erection of a new bridge over the Gatineau river leading into Hull.

BRANTFORD, ONT.—The expert appointed by the Council to report on the tenders received for electric street lighting, has recommended that the city purchase an electric light plant and operate the same.

VANCOUVER, B. C.—Mr. G. W. Towle, architect, of New Westminster, has completed plans for the new edifice for the congregation of the First Presbyterian church, and tenders will be called for at an early date.

HAMILTON, ONT.—William Stewart, architect, is calling for tenders for the erection of a four-story wholesale iron warehouse to be erected on the south-east corner of Hughson and King William streets, for Messrs. Wood, Vallance & Co.

GANAHOQUE, ONT.—The Rathbun Company, of Deseronto, have made a proposition to the Council that they will build an iron bridge across the Gananoque river on the condition the Government grant them the \$14,000 already promised for the purpose, the town paying for approaches and filling in.

KINGSTON, ONT.—The Freemasons are discussing the erection of a fine temple on Princess street.—The Government will be asked for the 'Lete du Pont' barracks as a site for the proposed grain elevator. The cost of the building is estimated at \$200,000, a bonus of \$50,000 being asked from the city.

LONDON, ONT.—It is proposed to erect a new edifice to replace St. Mary's church on Hill street.—The City Engineer will receive tenders until Monday next for the construction of tile drains on Stanley street, Thornton avenue and Oxford street, also for a cedar block pavement on Adelaide street, between King and Dundas street.

WINNIPEG, MAN.—Mr. H. G. Carter, architect of Minneapolis, is preparing plans for the new opera house to be erected by the Ross-McKenzie syndicate. The building will be of brick and will cost about \$40,000. Tenders will be called for immediately on completion of the plans, in order that the building may be completed this fall.—A new block will be erected next spring on the corner of Portage avenue and Main streets.

OTTAWA, ONT.—E. F. E. Roy, Secretary Department of Public Works, will receive tenders until Friday, the 12th August, for the erection of Land and Registration Offices at Prince Albert, N. W. T.—It is stated that tenders will be asked, during the present month, for the remaining sec-

tions of the Soulange canal.—Tenders will be received at the Department of Public Works, until Friday 12th August, for the erection of a post office at St. Henri, Que. Plans at above Department and at office of A. Raza, architect, Montreal.—The C. P. R. are considering the construction of a line of railway from Coblen to Parry Sound. Chief Engineer Ramsay is at present taking surveys.—The Trustees of the Scandinavian church have selected a site on Ann street on which to erect the proposed new edifice. Rev. A. H. Hvistendahl, pastor.

OWEN SOUND, ONT.—The Secretary of the Department of Public Works at Ottawa will receive tenders until Saturday, the 6th August, for dredging the harbor at this place.

MONTREAL, QUE.—The City Surveyor will receive tenders until Wednesday, the 3rd of August, for the construction of sewers on the following streets. St. Alexander street, from Craig street to Languechene street. Beaudry street, from St. Catherine street to Robin street; Barre street, from Eleanor street westward; St. Catherine street, from eastern city limits to Nicolet street, Duluth avenue, from St. Urbain street to Esplanade avenue; St. Elizabeth street, from St. Catherine street to Mignonne street; King street, from Common street to William street; Ontario street, from eastern city limits to Nicolet street; Ontario street, from Gale street to Harbor street.—The City Council has given notice that sewers will be constructed on Cherrier street from end of existing sewer, westward, and on St. Catherine street, from Marlborough street westward.—The Council are looking for suitable sites on which to erect the proposed incinerators.—The congregation of Erskine church have decided to expend the sum of \$2,000 on improvements.

TORONTO, ONT.—Mr. W. F. Oliver will shortly erect a large pressed brick residence on Enderly Road, East Toronto.—Mr. Disern will also erect a residence on Enderly Road.—A company has applied for incorporation for the purpose of building railway rolling stock. The capital of the company is \$500,000. The promoters of the enterprise are: Wm. Wainwright, G. T. R., Montreal; Samuel Insull, Chicago Edison Company; Isaac Anderson, Standard Oil Company, Toronto; M. D. Barr, Edison Company, Toronto.—Mr. J. O. Orr, chairman parks and gardens committee, will receive tenders until Thursday, the 4th day of August, for the earth work and carpenter work required to be done at the new rifle range on Lake Shore Road.—Mr. George Verral, chairman markets and license committee, will receive tenders until Monday, August 8th, for the construction of a subway under the Grand Trunk and Canadian Pacific railways at the south side of the old cattle market.—H. G. Paull, architect, 106 Wellington Place, is preparing plans for ten stores to be erected on Queen street west. Tenders will be called for at an early date.—The following building permits have been granted: Ed. Davey, cor. Berryman rd. and Berryman st., two story bk. dwelling, n. side 48 Bernard ave., nr Bedford rd. cost \$1,200; Toronto Electric Light Co., bk boiler house and wooden dynamo house, covered with iron, and bk. office, foot of Scott st., cost \$20,000; Trustees Church of Messiah, rectory, cor Avenue rd. and Dupont st., cost \$6,000; Jas Robertson & Co., s.w. cor. Dorset and King sts., add. to factory, cost \$1400; Trustees Bethany Chapel, chapel bldg. n.e. cor. University and Christopher sts., Chas. Steinle, alterations and additions to No. 2 Ontario st., cost \$3,000; also, packing house, rear of 266-270 King st. E., cost \$8,000.—Mr. J. A. Fowler, architect, has prepared plans for a residence to be erected on Sherbourne street.

FIRES.

The Convent de Notre Dame, at Williamstown, Ont., was destroyed by fire last week. The loss is said to be very heavy, the building only being insured for \$1,500. The erect on of a new building will be commenced at once.—The shoddy mills of Messrs. Harting & Co., at Simcoe, Ont., were burned on Monday last, loss \$2,000, insurance \$2,000.—On the 22nd inst., fire destroyed Mr. Mann's private dwelling, store and outbuilding at Stutsville, Ont. also the dwelling of Mr. Curdy, loss over \$10,000, insurance \$7,500.—Mr. S. L. Purdy's saw and shingle mill at Carleton, Ont.,

was burned on Tuesday last, loss \$2,000.—The residence of Mr. Fred Abraham, at Sarnia, Ont., was destroyed by fire on the 26th inst.

CONTRACTS AWARDED.

OTTAWA, ONT.—Mr. W. W. Wylie is building an electric street car for the Winnipeg electric street railway.

SRLKIRK, MAN.—The contract for the erection of the new fish hatchery has been awarded to Messrs. Thomson & Co., of Winnipeg.

BELLEVILLE, ONT.—The G. & A. Brown Manufacturing Company, have been awarded the contract for building steel bridges at Elmira and Thornbury, Ont.

HAMILTON, ONT.—Messrs. Pennington & Baker of this city, have been awarded the contract for furnishing the new opera house at Lindsay, and a Presbyterian church at Prescott.

BROCKVILLE, ONT.—Mr. Chas. E. Simpson has been awarded the contract for the erection of the new Durham block on the corner of King and Broad streets, the contract price being \$10,625.

ST. JOHN, N. B.—Contracts have been awarded for the erection of the power house on Union street for the electric street railway. Messrs. B. Mooney & Sons have secured the mason work, and Mr. W. L. Price, the carpenter work.

BRANTFORD, ONT.—Messrs. Patterson & Corbin, of St. Catharines, have secured the contract to furnish the city with electric street cars.—It is understood that Messrs. Elliott & Plun, of this city, are the lowest tenderers for the construction of the electric street railway.

WOODSTOCK, ONT.—Two tenders have been received for furnishings for the new Court House, viz., Office Specialty Co., Toronto, \$8,135, and the Canadian Office and School Furniture Co., Preston, \$7,470. The latter tender has been accepted by the committee.

MONTREAL, QUE.—The road committee have awarded the contract for St. Hubert street sewer to Mr. Robert Parker, at \$9,337. Mr. Laporte secured the contract for a sewer on Mount Royal avenue, between Cote St. Louis and Montreal.—Messrs. Bourgin & Cadieux have been awarded the contract for the repairs to No. 3 fire station, at the price of \$3,650.

TORONTO, ONT.—The following tenders were accepted at a meeting of the road committee held on Tuesday last. Cedar block pavement with granite toothings on track allowance, Queen street from Davies avenue easterly to the railway crossing, D. L. Van Vlack, \$8,490. Spadina avenue Queen street to Bloor street, same kind of pavement, Toronto Construction and Paving Company, \$26,659; sewer on Roseberry avenue, Smith & Wilson, \$490.

For preserving wire ropes, carried under water or under the earth's surface, a mixture of 35 parts of slaked lime and and from 50 to 60 parts of tar is recommended. The compound is boiled and applied to the article hot. For dry-lying cables a thick mixture of graphite boiled in tallow, and one of crude linseed oil and vegetable tar have both been tried with success.

WHITE CEMENT.—White cement of the same character as Portland cement is made by grinding together three parts of chalk and one of kaolin, burning at a red heat and grinding again. The cement made by this process hitherto has shown a tensile strength only about one half as great as that of good Portland cement, but it has the hydraulic quality and other characteristics of Portland cement, and it is to be hoped that the manufacture may be so improved as to increase the tensile strength to the point required for making artificial stone. If a white cement can be found for a matrix it will be easy to obtain aggregates of light color by utilizing white sand, marble dust, white talc, and so on, suitable for making a concrete which could be used in place of marble.

MUNICIPAL DEPARTMENT.

PAVED AND DIRT ROADS COMBINED.

During the summer of 1891, the project of constructing a permanent road between the city of Bloomington and the town of Normal, Illinois, was agitated with considerable vigor and enthusiasm. The distance to be built was about 1½ miles. The soil is the ordinary dark loam, which becomes so muddy when it is wet and so hard and smooth when it is dry. No hard road material is near by. Plans of various kinds of roads were proposed and discussed. To make a complete paved road like the city streets, with stone or plank curbing, was too costly, and besides for a general mixed travel it was generally conceded that a dirt road, when dry and smooth, was preferable to any other that could be constructed. The result of canvassing the matter fully was the adoption of a roadway combining the excellence of both, which could be built at an expense not considered expensive. The plan was proposed by Dr. Z. Waters, of Bloomington, and would have been carried out had not financial difficulties arisen which prevented the execution of the plan at that time.

The road consists of a paved center roadway made of good paving brick. In the place of curbing for the purpose of holding the brick in position, the outer edges of the roadway are arched or curved downward so as to be supported by the firm earth. Just inside of the ends of the brick on each side of the center are laid tile drains about 18 inches deep, and parallel with the road center, for the purpose of keeping the roadbed dry, and especially for keeping the earth firm at the outer edge of the pavement. The pavement is 18 feet wide, but the outside foot on each side is taken up in making the curve, leaving an available brick roadway of 16 feet. The earth is drawn over the outer curve or arch, so that a well prepared earth is left on each side, which it is expected will be generally used during the summer and fall, when earth roads are good everywhere, but when too wet for use the hard road will be used, leaving the dirt road to dry without being ruined by travel when it is not suitable for use.

The following is a description of the manner in which the road is to be built. The bed is to be prepared by excavating sufficient earth for the pavement, so that the surface of the pavement and dirt roads at the sides will be left at the desired grade when the work is finished. The sub-grade for the pavement should be eleven inches lower than the top of the pavement when finished. Tile drains on either side should be laid about eighteen inches deep, just inside the outer border of the brick, and the trenches filled with porous material like coal cinders, though we do not think this is at all essential. After the road-bed is prepared and made the proper shape, it is to be rolled well with a heavy roller, after which a covering of coal cinders, two inches thick, shall be spread evenly, and well rolled. Upon this a covering of sand must be placed to form a bed upon which to place the foundation brick. Upon this prepared bed a course of brick is to be laid flat ways, the long way of the brick in the direction of the road. A covering of sand should be placed on this course of brick and brushed into the crevices, and sufficient left on the top to form a bed for the surface brick. Good paving brick should now be laid on edge with the long dimension of the brick cross ways of the road. The curved part of the pavement at the outer edge, however, should be laid with the long dimensions of the brick, parallel with the line of the road, so that the curve may be well made, and also for the purpose of properly resisting the impact of loads as they are drawn on and off the pavement. The work is finished by placing a coat of sand upon the surface, and sweeping it into the crevices and rolling with a heavy roller. The earth is well drawn over the outer edges of the brick, and the outer surface ditches cleaned and graded to carry off the

MUNICIPAL ENGINEERS, CONTRACTORS, AND MATERIALS.

water, and the road is constructed and ready for use.

The points claimed for this road are: First, it secures the excellence of the city paved street, and also the acknowledged beauty of the country road in its season. Second, it admits of early cleaning and repairs. Third, it is one of the most durable roads, when good material and workmanship are employed.

The estimated expense of the road completed was about forty-one dollars per lineal rod. While this expense is more than a country road can bear, yet for a heavily traveled road—which is almost a city street in the volume of travel which must be provided for—it is cheap, and can be profitably built. The part that is paved is equal to any street pavement, while the cost is less than half that usually expended. It is a question whether this kind of road may not be very profitably constructed in the streets of many of our smaller towns, where the expense of complete paved streets prevents all attempts to make their main thoroughfares any better.—C. G. Elliott, in *Drainage Journal*.

PENETRATION OF IMPURITIES INTO WATERMAINS.*

When water-mains under pressure are buried in the earth, there is generally no fear that matter will penetrate into them, even if openings occur in the pipe. On the other hand, there is everywhere a belief that if there is a hole in a pipe under pressure, and the water escapes, there will be no possible entrance for bodies from the surrounding earth. Nevertheless this may be the case, and occurs in the maintenance of modern water-works. Naturally, the attendant circumstances are then exceptional, but are easily explained by an investigation of the nature and direction of the defects in the pipe and the velocity of the water.

When there is a flow of water through a man it is impossible for foreign matter to penetrate into the pipe through openings perpendicular to, or at an obtuse angle with, the direction of the flow, provided the main is under pressure. The case is entirely different, however, when the hole is at an acute angle with the direction of flow. In such a case, if there is a very slight or no flow in the pipe, the water will be forced out as in the former instances, but it is different with a greater velocity. At a certain rate of flow, the water will begin to suck in substances through the orifice, after the principle utilized in an injector.

Such an occurrence has actually been noticed in a stop and waste cock of a service pipe in Berlin. The waste takes place through the side of seat.

Waste cocks are sometimes used in Berlin by consumers on their own premises, but are not attached by the water-works department because a waste through leakage often occurs. Such a defect occurred in the seat of the cock in question. A small channel was formed between the valve and its seat, and the leakage gradually increased until large enough to permit a suction to arise through the hole, by which sand was drawn into the cock. This sand frequently settled in the bibbs, rendering it impossible to use them, and an investigation was accordingly made to determine the source of the trouble. In this way the absorption of sand and colored liquids through the cocks into the pipes was definitely proved and the interesting fact established: that under certain conditions impurities may enter a system of pipes under pressure.

*A translation of a paper by G. Oestert Chief Engineer of the Municipal Water-Works of Berlin, in the *Gesundheits-Ingenieur*.

ISAAC USHER & SON,
THOROLD, ONT.

Manufacturers of
QUEENSTON CEMENT

Proved by Government tests to be the best Canadian natural cement. Write for prices, &c.

Established 1841.

THOROLD CEMENT

MANUFACTURED BY

ESTATE OF JOHN BATTLE,

Thorold, Ontario.

THOROLD, 25th March, 1879.

JOHN BATTLE, Esq. Thorold.

Sir:—I beg to state that during the past four years about one million bushels of Thorold Hydraulic Cement have been used in the construction of the Canal Works in my charge. This experience enables me to testify to the excellence of the article, especially when carefully burnt and thoroughly ground in the manner now carried out at your mills.

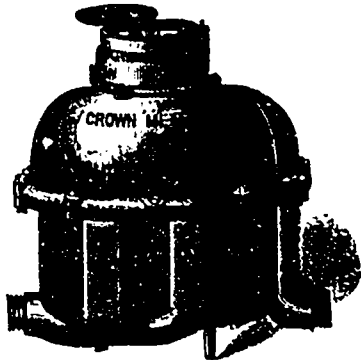
I am sir your obedient servant,

THOMAS MONRO
Engineer in charge of Welland Canal Enlargement.

National Meter Co.

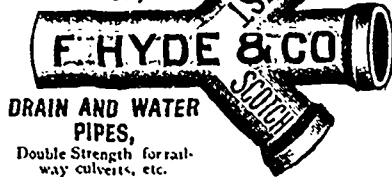
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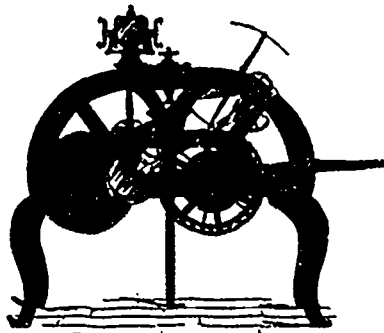
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