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CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL OF MUNICIPAL AND MUNICIPAL PROGRESS

EVERY WEDNESDAY

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. II.

JANUARY 9, 1901

No. 49.

THE CANADIAN CONTRACT RECORD, PUBLISHED EVERY WEDNESDAY

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 PUBLISHING COMPANY
of Toronto, Limited,
Publishers,

CONFEDERATION LIFE BUILDING, TORONTO.
Telephone 2362.
Branch Office:
Imperial Building, Montreal.
Telephone Main 2299.
Advertising Rates on application.

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

Notice to Contractors

Scaled tenders, addressed to the undersigned, will be received up to 12 o'clock, noon, on MONDAY, JANUARY 28, 1901, for the Construction of a

BRICK CHURCH BUILDING

for the Presbyterian Congregation, Brandon, Man. Plans and specifications and full information as to conditions of tendering and form of contract may be obtained at the office of W. H. Shillinglaw, Architect, City Hall, Brandon, on and after Thursday, December 20. The lowest or any tender not necessarily accepted. Tenders for Steam Heating, Seating and Lead and Plain Glass will be called for at a later date.

J. McDIARMID, M.D.,
Chairman of Building Committee
Brandon, 13th Dec., 1900.

Town of Pictou, N. S., Water Works

TO CONTRACTORS

PROPOSALS FOR

STAND PIPE

Scaled proposals, endorsed, "Proposals for Stand Pipe for the Town of Pictou," will be received at the office of the Town Clerk in Pictou, Nova Scotia, until 4 o'clock p.m. on FRIDAY, THE 18TH DAY OF JANUARY, A.D. 1901.

The amount of security required will be fixed by the Mayor and Council after the bids are opened, said amount to be not less than one-fourth nor more than one-half of the amount of the contract.

The Mayor and Council also expressly reserve the right to reject any or all bids should they deem it for the interest of the Town of Pictou to do so.

Specifications may be obtained of the undersigned Town Clerk, or of the engineers, Lea & Coffin, 53 State Street, Boston, Mass., by sending a deposit of two dollars for each specification, which deposit will be returned to any party making a bona fide bid accompanied by the cheque.

By order of the Town Council.

FRED MACKRACHER,
Town Clerk.

Pictou, N. S. Dec. 25th, 1900.

MUNICIPAL DEBENTURES FOR SALE

The undersigned will receive tenders up to 3 o'clock, p.m. THE 21ST INST., for the purchase of Debentures of the Village of Elmira; amount \$5,000, bearing interest at 4 per cent. Payable in twenty equal annual instalments of \$368 each, due February first each year, first instalment due Feb. 1st, 1902.

J. H. RAUPPEL,
Clerk of the Village of Elmira.

CONTRACTS OPEN.

SALEM, ONT.—Frank Bragg will build an addition to his residence.

CANNING, N. S.—Potter Bros. are making arrangements to build a new steamer.

KIRKTON, ONT.—Wm. Jamieson has commenced the foundation of his new residence.

TILSONBURG, ONT.—The canning factory project has received the sanction of the ratepayers.

BRESLAU, ONT.—G. A. Burrows, carpet manufacturer, is about to build an addition to his factory.

HALIFAX, N.S.—The city engineer has recommended the adoption of water meters to prevent waste.

ISLINGTON, ONT.—The ratepayers on Monday last carried the by-law to raise \$5,000 for steel bridges.

SYDNEY, N. S.—American capitalists are considering the establishment of locomotive works at this place.

DIGBY, N.S.—C. Jamieson, town clerk, wants tenders by 10th inst. for supply of 250 tons of hemlock timber.

DEPOT HARBOR, ONT.—A large addition is about to be built to the store occupied by Meredith & Church.

ALMONTE, ONT.—Voting on the establishment of a house of industry in Lanark county took place on Monday last.

NORTH TORONTO.—The by-law to raise \$10,000 to extend the waterworks system was carried by a majority of 36.

PORT DANIEL CENTRE, QUE.—Peter Nadeau has gone to Grand River to select a site for a saw and shingle mill.

OWEN SOUND, ONT.—W. A. D. Graham is endeavoring to interest capitalists in the establishment of cement works here.

WALKERVILLE, ONT.—J. H. Woolley has purchased a lot on Susan avenue on which he will build a residence in the spring.

NEWMARKET, ONT.—C. E. Lundy is interesting himself in securing the establishment of a sugar beet factory in this town.

STRATHROY, ONT.—A by-law to grant a bonus of \$3,500 to the Cameron & Dunn Manufacturing Co. was carried by a large majority.

PERTH, ONT.—The vote on the House of Refuge by-law for the county of Lanark resulted in the by-law being carried in this town.

ROCK ISLAND, QUE.—The proposed new Mountain House to be built by C. D. Watkins, of New York, will be a four-storey structure.

DARTMOUTH, N. S.—Negotiations are said to have been completed for the erection of a large factory here for the manufacture of jewellery.

ST. MARY'S, ONT.—L. Harstone, secretary St. Mary's Natural Gas Co., invites offers up to Friday, 18th inst., for putting down one gas or oil well.

EDMONTON, N.W.T.—Communications have been received by the council from engineers wishing to prepare plans for proposed waterworks system.

BRANTFORD, ONT.—By laws to expend \$56,000 for street improvements and to purchase a road roller were carried by the ratepayers on Monday last.

COOKSHIRE, QUE.—E. S. Baker, secretary-treasurer of the corporation, wants tenders by February 1st for the supply of a quantity of lumber for bridges.

CHATHAM, ONT.—Buller, Hunter & Co., manufacturers of windmills, of Ridgetown, have in view the erection of a new factory, and may locate in this city.

WINDSOR MILLS, QUE.—The Orford Mountain Railway Co. will apply for a Dominion charter, and will continue the extension of their road in the spring.

DUNDALK, ONT.—Jas. Buchanan will receive tenders up to January 30th for erection of church, brick, stone, sand and heavy timber to be supplied to contractor.

HANOVER, ONT.—The town has offered the Knechtel Furniture Co. a bonus of \$25,000 to assist them in rebuilding their factory burned down a couple of weeks ago.

DARTMOUTH, N. S.—A proposition is under consideration by the corporation to extend Pine street easterly to Canal street and to construct a bridge over the canal end.

ERIN, ONT.—A new school section has been formed at Brisbane, and work is about to be commenced on the erection of a brick school with 9 inch wall, basement and furnace.

THOROLD, ONT.—A by-law to issue \$40,000 of debentures for the purpose of constructing cement sidewalks was defeated by the ratepayers at the municipal election.

BROCKVILLE, ONT.—B. Dillon, architect, is taking tenders this week for furnishing 150 cords of building stone for the proposed addition to the works of the Canadian Oak Belting Co.

LINDSAY, ONT.—By-laws in favor of the town doing its own street lighting, and also to provide funds for the erection of a House of Refuge, received the sanction of the ratepayers on Monday last.

ST. CATHARINES, ONT.—The Collegiate Institute Board have decided to adopt a low pressure system of steam

heating for the Institute building and will engage an expert to prepare plans.

PRINCE ALBERT, N.W.T.—A by-law to provide funds for a waterworks system for this town has been defeated.

CALGARY, N. W. T.—W. M. Dodd, architect, has taken tenders for removal of debris on the Clarence block site.

QUEBEC, QUE.—David Ouellet, architect, is asking for tenders for interior improvements to the parish church at St. Francis, and is also preparing plans for alterations to the school at St. Augustin, Portneuf county.

KINGSTON, ONT.—Some new machinery will be installed in the Kingston penitentiary twine factory.—The by-law authorizing a change in the smelter bonus by-law was adopted on Monday, and the work may now be proceeded with.

OSHAWA, ONT.—The municipal representatives elected on Monday last are almost unanimously in favor of the construction of sewerage and waterworks systems and harbor and road improvements, and it is probable that these works will be proceeded with without delay.

PARRY SOUND, ONT.—The money by-laws were carried by the citizens on Monday, one for \$29,500 for purchase of electric light plant and extension of waterworks system, and the other for \$2,500 for the construction of a steel bridge across the Seguin river.

PETERBOROUGH, ONT.—Work is to be commenced almost immediately on the buildings to be erected by the American Cereal Co.—The Singer Sewing Machine Co., of New York, are considering the establishment of a factory here, utilizing the Dickson water power.

KAMLOOPS, B. C.—Tenders are asked by J. J. Carment, city clerk, up to Tuesday, 15th inst., for supply of cast iron pipe for intake and mains, also for 1/4 inch gauge steel riveted intake pipe 12 inches diameter. Specifications from city clerk or Willis Chipman, C. E., Toronto.

YARMOUTH, N. S.—Bowman B. Law, Jas. Burrill, John H. Killam, E. K. Spiny, and Geo. Bingay are applying for incorporation as the Bay Shore Railway Co. The capital is \$250,000, and it is the intention to construct a line of street railway from Yarmouth to Port Maitland, a distance of twelve miles.

MOOSMIN, N.W.T.—At a meeting of citizens held recently it was unanimously resolved that a line of railway starting at this point and running in a north-westerly direction to the Qu'Appelle Valley should be built. A committee consisting of the mayor, Messrs. J. B. Brown, R. D. McNaughton, and A. Whyte, was appointed to further the scheme.

VANCOUVER, B. C.—Extensive improvements to the Hastings race-track are contemplated, at a cost of several thousand dollars.—Col. Tracey, C. E., has prepared plans for extensive improvements at the False Creek flats, the cost of which is estimated at \$250,000.—N. S. Hoffar, architect, has taken tenders for erection of two storey brick block for Thos. Downie.

MONTREAL, QUE.—General Manager Reeve, of the G. T. R., returned from Portland last week, after having selected a site for a new grain elevator to cost \$300,000 and to have a capacity of one million bushels.—Hutchison & Wood are the architects for the new Royal Insurance building to be built on the west side of Place d'Armes. The building will be built of Ohio sandstone and will be eight stories high. It will be of steel and fire-proof construction.—Local capitalists are said to be organizing a company to build 100 coke ovens here to supply coke for Sudbury, Midland and other points.

ST. JOHN, N. B.—A strong syndicate, in which Charles Burrill, of Weymouth, N.S., W. H. Rowley, of Ottawa, G. McArthur, of this city, and others, are inter-

ested, are about to close the purchase of the Knight lumber property at Musquash, where they will build pulp and paper mills.—At a meeting of the Water Board held last week city engineer Murdoch submitted a plan for the enlargement of the Little River reservoir, the cost of which he estimates at \$50,000. This includes the following items: New gate house and fittings, \$5,900; embankment one-half mile long, \$17,000; clearing and grubbing land, \$5,700; removing vegetable matter, \$3,300.

WINNIPEG, MAN.—The city will construct a sewer on Furby street, from Ellice avenue to Notre Dame avenue, by day labor, at a cost of \$3,139.—The C. P. R. Co. will likely let the contract this week for the new steel bridge to be constructed over the Red river between this city and St. Boniface, which will cost in the neighborhood of \$150,000. The dimensions are: Total length, 772 feet; four spans, 120 feet clear; swing span, two clear openings of 114 feet; two abutments and five piers going to rock bottom; 70 feet from base of rail.—It is reported that McKenzie & Mann propose to coconstruct a line of railway from Winnipeg to Quebec city to the north of the country traversed by the C.P.R.—The C.P.R. have been conducting extensive investigations with a few to the irrigation of large tracts of land in the district of Alberta. The scheme is an expensive one, as in many districts where there are no available rivers artesian wells will have to be put down to secure the necessary water.

OTTAWA, ONT.—The Public School Board, at a meeting held last week, decided not to rebuild the Wellington street school at the present time. The building committee recommended that an eight-room school be built on a new site, and that tenders be asked for the work.—The St. Anthony Lumber Co., whose head office is in this city, have under consideration the construction of a railway in the woods to haul the logs from one stream to another leading to their mills at Whitney.—The congregation of Grace church have decided to build a Sunday school building on property adjacent to the church, but work will not be commenced until sufficient money has been subscribed.—Building permits have been issued as follows: John F. Stewart, double brick veneered tenement house on Rochester street, cost \$2,000; Adolphe Larose, brick veneered dwelling on Rochester street, cost \$1,200; P. T. Contara, brick shop and dwelling on Queen street, cost \$3,500.—Plans are now being prepared for the new pulp mill and power house to be erected on the site of the Hull Lumber Co.'s saw mill at the Chaudiere, and work will likely be commenced early in the spring. Those interested include W. C. Edwards, M.P.P., H. K. Egan and Hiram Robinson.—The Clerque Iron & Nickel Steel Co. of Canada will apply at the next session of parliament for incorporation, for the purposes indicated by the name.—Incorporation will be sought for a company which proposes to build a railway from Fort Steele, B.C., to Elko or some other convenient point on the Crow's Nest Railway between Elko and Wardner, thence on either the east or west side of Wigwam River to the international boundary line; also a line from Fort Steele to Widemere, thence to the town of Colden, on the main line of the Canadian Pacific Railway.

TORONTO, ONT.—The city council has given notice of its intention to construct the following works: 4 in. x 10 inch wood curbing on both sides of Adelaide street, from Spadina to Bathurst, cost \$1,100; cement concrete sidewalk on Wellington street, north side, from York to Simcoe street, cost \$604; on Richmond street, south side, from Bay to Shepard street, cost \$331; on Peter street, east side, from a point 144 feet 3 inches south of Adelaide st. to the north side of

King street, cost \$266; on Richmond st., north side, from a point 141 feet 10 inches west of Bay street to the east side of York street, cost \$1,122; on Wellington street, north side, from Bay st. to a point 31 feet east of York street and opposite Mincing lane, cost 1,416; asphalt pavement on each side of street railway tracks, with 4 inch stone curbing, and three rows of paving blocks laid next the rails, on College street, from Yonge street to Spadina avenue, cost \$57,410; macadam roadway, with wooden curbing, on Coalmine road, from Dundas street to St. Anne's road, cost \$1,900; 24 feet cedar block pavement, laid on gravel foundation, with wood curbing, on Huron street from St. Patrick to Cecil street, cost \$2,750.—Mr. T. W. Horn, who recently sold his house on St. George street, will, it is said, shortly build another residence.—Dr. J. K. Johnston, of Beverley street, proposes to erect a residence on a site owned by him on the west side of Humber Bay.—Mr. Geo. T. Gorrie is said to be considering the advisability of erecting a pair of semi-detached houses on the property adjoining his residence on Bathurst street.—The Lithographed Tin & Can Co., Limited, with capital of \$200,000, has been formed and may erect a factory in this city.—Specifications of cast iron and steel pipe required by the corporation of Kamloops, B. C., may be seen at the office of Willis Chipman, C.E., 103 Bay street, this city.—Watson, Smoke & Smith, solicitors, will make application to parliament for incorporation of a company to build a railway from this city to Georgian Bay.—Tenders are wanted by Saturday, 12th inst., for carpenter work of dwelling. Plans at R. H. Graham's, corner Queen and Shaw streets.—A building permit has been granted to J. L. Greenway for a two storey brick dwelling on Pearson avenue, near Roncesvalles avenue, to cost \$1,800.

CONTRACTS AWARDED.

GREENWOOD, B. C.—The contract for round house here has been let to A. G. Creelman.

HALIFAX, N.S.—The contract for the provincial bridge at Pennant has been let to D. W. B. Reid.

QUEBEC, QUE.—Store for Mr. Boulanger: Mr. Gignac, contractor; 60 x 30 feet: three stories.

TECUMSEH, ONT.—The contract for building the new canning factory has been let to Joseph Jacques.

LENCOE, ONT.—Granolithic sidewalk debentures have been sold to G. A. Stimson & Co., of Toronto, at a premium of \$26.

DESERONTO, ONT.—The contract for erection a cottage on Second street for Mrs. Margaret Deline has been let to Albert Brant.

KAMLOOPS, B. C.—David Bain, of New Westminster, has secured the contract for building bridge across the Thompson river at this place.

VICTORIA, B. C.—Three storey pressed brick office block, corner Bastion and Langley streets: John Coughlan, contractor. The architect is F. M. Rattenbury.

MONTREAL, QUE.—The Forsyth Granite & Marble Co. have been awarded the contract for the marble work and tiling in the new Grand Trunk office on McGill street.

GESTO, ONT.—Colchester North council has let the contract for No. 1 section of the 12th concession drain to John Donnelly at \$360, and that for No. 2 section to Murdoch Campbell at \$480.

ST. JOHN, N. B.—Five tenders were received by the school trustees for the purchase of \$60,000 3 1/2 per cent. bonds, as follows: David Brown, \$2,500 at par; J. R. Inch, \$2,000 at par; T. G. Merrit,

\$20,000 at one fifth of one per cent. premium; the Taylor estate, \$10,000, at one eighth of one per cent. premium; City Chamberlain, for the whole issue at par. It was resolved to accept the four tenders and that the city be offered the remainder at par.

FIRES.

Residence of W. A. Marsh, boot and shoe manufacturer, Quebec, damaged to extent of \$4,000.—Building at Brandon, Man., occupied by D. A. Reesor, loss \$10,000.—Two storey block on Main st., Winnipeg, owned by W. R. Baker, loss \$12,000, also stores of S. Barraclough, H. B. Macy and T. A. Thurman.—Building at corner of Buckingham and Barrington streets, occupied by the Globe Laundry and A.M. Banks, damaged to extent of \$8,000.

CEMENT IN SOUTH AFRICA.

No country is a better customer for cement than South Africa. All public buildings, warehouses, stores and residences are built of brick, cemented on the outside. No wood or frame houses are seen. The expert Malays, the masons in this country, are adepts in producing very pleasing effects with cement in the outside finish of buildings. The bricks used in South Africa are two-sevenths larger than the American bricks and are "laid up" principally with "mud," the inferior clay found here, instead of mortar (lime) or cement. Over the whole surface, cement is laid. Bricks of different shapes form the window sills, caps, columns, pilasters, mouldings, etc., and over these is spread the cement, forming a very pleasing exterior, the natural stone being closely imitated. Many of the large buildings are "spattered" with the cement, presenting a rough exterior very striking, and even durable. I know of no cities that have more handsome and unique building exteriors than the cities of this colony. Cement is also used in making drain pipes, sidewalks, stoops, tiles, chimney pots or tops. Brick exteriors are never seen, as the bricks are inferior, the best qualities being made of clay and coal cinders.

Of the cement imports for 1899, amounting to 126,672,875 lbs., Belgium furnished 18,423,628 lbs.; Germany, 7,448,395 lbs.; other countries, 605 lbs.; and the United Kingdom the balance. During 1900 the imports of cement from Germany have been increasing rapidly, as it has been found that German cement is equally as good as the best English Portland and can be bought at 1s (24 cents) per barrel cheaper. Belgian cement is good and sells at 18d (36 cents) cheaper than the English.

When I left the United States, our manufacturers of cement were producing an article which was proved by tests to be as good as the English, and that cement ought to find a large market here. While the United States, at the present time, would be hampered on account of the excessive steamship rates to this country which would prevent competition with the German and Belgian cements, yet I am convinced, with equal rates, the United States cement could find a market here in large quantities. Cement of the desired quality will never be manufactured

here, as the ingredients do not exist.—J. G. STOWE, U. S. Consul-General.

REPAINTING WORN SURFACES.

A correspondent writes to the Painters' Magazine as follows: I have a number of frame houses to renovate that have not been painted for years and are badly weather-beaten, and, of course, it will require quite a great deal of linseed oil for first coating. Couldn't I make a good job of it by using for this coat glue water and ochre, and then put on two coats of lead and linseed oil paint? Would not this also answer for a brick building where the brick is quite soft and porous? Also must the glue water and ochre mixture be kept warm during the application?

Answer: We do not approve of ochre alone as a priming for wood, even when mixed with pure linseed oil, and always advocate the addition of white lead for the purpose. Glue size, when properly applied, is good enough to economize with on interior painting, but will not answer at any time for exterior work. The two coats of lead and linseed oil paint applied over a first coat of glue water and ochre would only mean the waste of a lot of good material and labor, whether it be applied to frame or brick work. Your lead and oil paint is not impervious enough to stop the ingress moisture and its action on the glue and even if it were the moisture in the brick would act on the glue and throw off the surface coats. If you must economize, do not attempt to do it on priming, but rather on succeeding coats, because the first coat is to painting what the foundation is to a building. To cheapen the cost of paint and yet obtain fairly good results, it has been recommended that lead and linseed oil be mixed to proper consistency for brushing in one pot, and a similar quantity of bolted whiting with water in another pot, and when well mixed the two are to be thrown together in a larger package and beaten until they are amalgamated, when the required driers are added and the mass strained. This paint when applied in temperate weather and given plenty of time to dry is as good as many of the so-called linseed oil paints on the market, and you need have no apprehension about its use, as you would necessarily have if employing glue size.

USEFUL HINTS

To soften putty so as to remove window panes make a batter of caustic soda and soft soap, or take equal parts of potash and fresh slaked lime, both in powder, mixing these with water to the consistency of soft soap, and mix this with a like quantity of soft soap. Apply this with a wooden stick or spatula to the putty, which will soften it in a short time, so that it can be removed with the putty knife. But be careful to keep the mass off your hands, as it is very caustic in either case.

BUSINESS NOTES.

W. J. Poupore, contractor, has entered an action against the Lachine Rapids Hydraulic & Land Company, of Montreal, to recover \$86,463 which he claims to be due him in connection with the construction of the company's works near Lachine.

LEGAL.

LA ROSE V. LA FOREST.—In this action, which recently came up for hearing in the Supreme Court of Quebec, a painter agreed to paint the roof of a house for a certain sum. He supplied himself with some rope, in order that he might be able to get at certain parts of the building, but when he got to the roof he saw a ladder there. He asked his employer (the owner of the house) if he might use it, and the latter assented. The ladder was provided with crotchets to hook over the reach-pole and keep the ladder in place. The crotchets were attached to the ladder by screws, one of which was loose, and when the painter was on the ladder this screw gave way; he fell and was severely injured. He sued the owner for damages, claiming that as he had supplied him with a defective ladder, he was responsible for the consequences. But the judge decided that the owner of the house was not responsible, both because he had only lent the ladder when asked to do so and had not supplied it for the work, and also because it was the duty of the painter, who knew all about such things, to examine the ladder before using it. The action was therefore dismissed. Quebec Official Reports, vol. 17, page 331.

MARKET CONDITIONS.

The situation in iron and steel remains practically unchanged, say Dun's Bulletin, of New York. Business in all branches continues exceptionally brisk for the mid-winter holiday season, and it is surprising that prices do not advance. Probably one reason is the depression in the market for fuel—coke being maintained with great difficulty by the leading producer, and outside concerns selling freely at concessions. Ore is also expected to be cheaper after the reopening of navigation, but this is some distance off. One other feature is the question of freight rates, and there is much talk of reduction shortly. Possibly last year's disastrous inflation of prices also has a depressing effect. At any rate some combination of forces holds the various quotations practically steady in the face of remarkable activity, and every prospect of permanent prosperous conditions. Frequently demands cannot be filled, both on domestic and foreign account, one important export order being refused this week, owing to the time of delivery desired. No cessation of demands from the railroads is noticed and many thousands of tons of rails have been added to the new year's contracts. Rolling stock also is needed in greater amount than makers can furnish. Rails go to Australia, and there is a noticeable demand for light rails to be used on trolley and other street car lines. Cleveland figures of iron ore shipments down the lakes show an aggregate of 18,570,310 tons, against 17,501,196 last year. The increase is less than was generally anticipated.

A meeting of the Wire Nail Manufacturers' Association was held in Toronto last week. All the wire nail manufacturers of the Dominion were represented, and the principal subject discussed was the price list for the coming year. It was decided in the meantime not to make any alteration in prices, but if circumstances arise so as to make any change advisable another meeting of the association will be called.

A change was announced last week in the price of putty, quotations being 5c. per 100 lb. higher on bulk in barrels and 10 to 15c. on bladder in barrels.

Several important changes have been made this week in our cement price list.

THE HYDROSTATIC LEVEL IN BUILDING CONSTRUCTION.

By OWEN B. MAGINNIS.

The science of modern building construction necessitates the introduction of such instruments, tools and appliances as will expedite the work and lessen expense by economizing time. Such an implement is the hydrostatic or water level. The instruments most popular for leveling in laying out large works are the engineer's transit, theodolite or architect's Y level, all of which are of the utmost utility for mechanical operations. However, the form of improvised water level is, perhaps, most adaptable, as it can be easily and cheaply made, is accurate in its action and simple in its application. It consists of a long piece of ribbed rubber hose or pipe, half an inch internal diameter, with pieces of transparent glass tubing, 12 or 18 ins. long, inserted at each end. These glass tubes should, if obtainable, be graduated into inches and parts of inches down to sixteenths, but if graduated tubes are not to be had, smooth tubes of clear, thick glass of chemical tubing will do, and a quarter or half-inch section can be cut off the end of the rubber pipe and set over the glass tubes, which will slide up or down so as to form a gauge.

Water is poured into the rubber hose pipe and glass tubes till the ends overflow, when they are kept full by placing a small tip or faucet at the ends of the tubes. When in use, the faucets must be opened in order to allow the water to find its own level. One glass tube is placed against the wall which has been built to the required height, being held firmly against the face of the wall with the gauge set 4, 6 or 8 inches from the top as desired, the gauge being kept at the edge of the brick or stone wall templet, from which the required level is to be measured. Here it is held by one man, while another carries the other glass tube to the object to be measured. When the water is exactly on the line of the gauge the level point is determined, and the distance of the detail above or below the gauge will denote the discrepancy in the relative heights.

Many masons use this instrument with a rod for finding depths of trenches for walls, piers, etc., for leveling for templets, sills, water tables or other details, especially in an excavation which is crowded

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with piers, shores, derricks or appliances, which, of course, render the use of the transit or Y level impossible.—Scientific American.

CHINESE BUILDING.

In the course of an article on Chinese architecture by the Rev. W. Hoopyns Rees in the Magazine of Art, he says: "The walls are constructed of kiln-made bricks, which cost 10s per 1,000, or of sun-dried bricks, which cost about 2s 6d per 1,000. The latter, after setting, make firm walls, unless exposed to rain and wind and sun, so, to guard against these evil effects, the walls on the outside are plastered over with a double coating of chaff and mud or mud and lime, and this process has to be repeated annually. The doors have two leaves, having a pin above and another below to serve as hinges. Door-sills are movable, with holes in the centre to admit cats and dogs. These doors can never be made to close tightly, so there is plenty of fresh air. The windows are made of wooden gratings, fixed in the wall to prevent their being stolen, and are covered with oiled paper. The beds are of adobe, and the quilts of all the occupants are piled upon them, whilst the cooking is done in a large iron pot near the bed, so as to allow the heat to curl up the flues under the bed. The only chimney is a small hole at the corner of the roof to allow an exit for the smoke; but the rooms are suffocatingly stuffy, and the whole house is festooned with black webs, and the ceiling has a thick coating of creosote, all of which are allowed to remain with no effort to remove the obnoxious things except at the Chinese new year, when a brushing, not by any means thorough, takes place.

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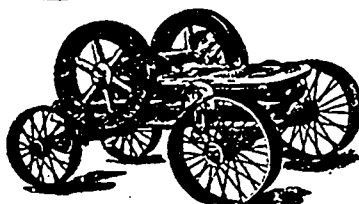
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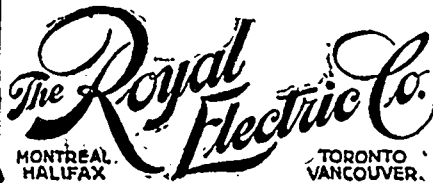
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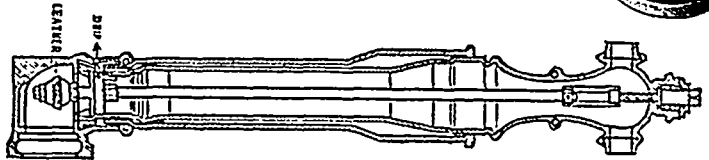
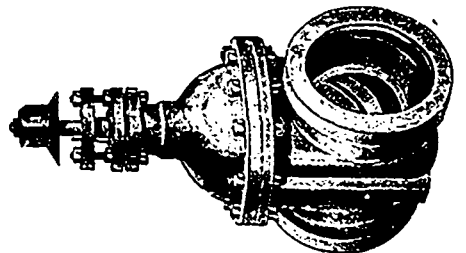
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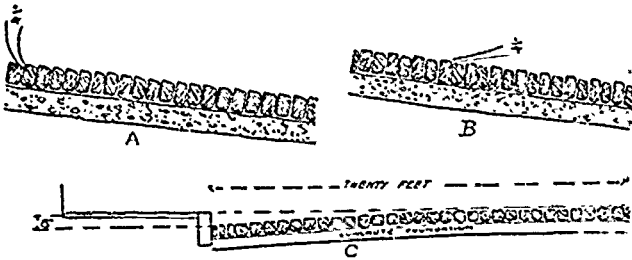
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(Continued from last issue.)

Bituminous mixture is, however, by far the best grouting material, and is composed of the following, namely, pitch and tar in the proportion of 2 $\frac{2}{3}$ gallons of tar to one-hundredweight of pitch, thoroughly boiled in a special pitch boiler made for the purpose. These boilers vary in size, but there are two sizes in general use. The



larger size holds nine hundred-weight of pitch and 24 gallons of tar, and when boiled this makes about 150 gallons of the mixture. The smaller size will hold half this amount. One hundred and fifty gallons of this grouting mixture, as above, will flush the joints of about 22 superficial yards of paving. The quality and suitability of this mixture depends greatly upon the quality of the pitch and tar used. The proportions given above are for the best materials.

Inclines exceeding 1 in 26 should not be paved with granite setts, although steeper gradients are paved in this manner; but considerable danger arises from the use of granite upon inclines greater than that mentioned.

A small projection, say $\frac{1}{4}$ inch, made in each course when the stones are being laid (see sketch A) upon steep hills, will be found to be a great improvement, and safer for vehicular traffic (the projection affording a foothold for the horses) than the ordinary method of paving, as laid upon practically level roads. Another method of dealing with this point is shown on sketch B, every alternate course being lowered.

The curvature of the surface is shown upon sketch C. This varies according to the longitudinal gradient, but that shown upon sketch is very satisfactory for a level or nearly level road. If the cross gradient is too great, heavy vehicles, when using the roadway gradually slide into the channel, and it is most difficult to get the vehicle on to the centre of the road again.—Charles T. Ruthen, C. E., in "Stone."

*From "The Builders' Journal and Architectural Record."

CEMENT FLOORS FOR BRIDGES.

The committee which went from Middlesex county council last week to inspect the cement floors adopted in the new iron bridge in Elgin county were very favorably impressed with the innovation. The floors consist of a corrugated steel bottom covered with a layer of cement, a centre filling of grout and a top covering of cement, giving a solid, stone-like surface similar to the cement sidewalks laid down in the city. The committee will recommend to the council the experimental use of the flooring on the next iron bridge erected by the county, and it is probable the trial will be made. In view of the constantly increasing price of plank and the cost of frequently renewing plank floors, the experiment will doubtless be watched with interest, not only throughout the country, but in this city and other municipalities. — London, Ont., "Advertiser."

WATERWORKS AND SEWERAGE.

The waterworks and sewerage system of Prescott, Ont., has been completed, at a cost of \$87,500. It is said that Prescott has the greatest amount of pipe under ground for this purpose of any town in Canada. The following figures speak for themselves:

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feet of 12 inch water pipe; 2,468 feet of 10 inch water pipe; 9,853 feet of 8 inch water pipe; 21,534 feet of 6 inch water pipe; 3,896 feet of 4 inch water pipe; 9 hydrants; 2 valves 12 inch, 3 valves 10 inch; 16 valves 8 inch; 30 valves 6 inch; 5 valves 4 inch. In all 38,463 feet of water pipe—7.22 miles.

SEWERAGE SYSTEM.

2,491 feet of 15 inch pipes; 6,341 feet of 12 inch pipes; 11,649 feet of 10 inch pipes; 6,708 feet of 8 inch pipes. In all 27,189 feet—5.15 miles.

LEGAL DECISIONS AFFECTING MUNICIPALITIES.

SLATER VS. VILLAGE OF BEETON.—Judgment in action tried at Barrie brought by administratrix of estate of Mar Slater, deceased to recover damages for injuries resulting in the death of Mary Slater owing to alleged nonrepair of Main street in the said village. Held that the plaintiff has failed to satisfy the onus of proof as to negligence causing the injury and the preponderance of evidence is in favour of the finding that defendants have not been negligent; and taking into consideration the character of the horse the deceased was driving when it ran away, the condition of the harness and the place where the wheels of the vehicle beyond doubt crossed the gravel (the alleged obstruction in the highway) and other circumstances, a finding cannot be made in plaintiff's favour. Action dismissed without costs.

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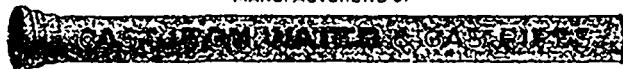
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