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# CANADIAN CONTRACT RECORD

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

EVERY THURSDAY

This paper reaches every week the Town and City Clerks, Town and City Engineers, County Clerks and County Engineers, Purchasers of Municipal Debentures and leading Contractors in all lines throughout Canada.

VOL. 7.

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## THE CANADIAN CONTRACT RECORD,

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Confederation Life Building, TORONTO.

The Owen Sound Dredge and Construction Company, Limited, of Owen Sound, Ont., has applied to the Ontario government for letters patent of incorporation. Dr. Horséy, of Ottawa, is one of the applicants.

### CONTRACTS OPEN.

OTTERVILLE, ONT.—Estimates are being obtained for a waterworks system.

BELLEVILLE, ONT.—An addition is being erected to the Belleville Gas Co.'s works.

FORT COULOGNE, ONT.—F. X. Ouellette will erect a new store next spring.

SPRUCE LAKE, N. B.—Wm. Hanson will rebuild his saw mill recently destroyed by fire.

HESPELER, ONT.—The Brodie Manufacturing Co. have decided to erect a new building.

SIMCOE, ONT.—Tenders are asked for the erection of a brick church and Sunday School.

LEVIS, QUE.—Quebec capitalists are reviewing the question of erecting a brewery here.

NEW WESTMINSTER, B. C.—The Automatic Canning Co.'s factory will be a large solid structure.

SAULT STE MARIE, ONT.—A committee has been appointed to select a site for a post office and custom house.

ASHBURNHAM, ONT.—The Council are considering the question of providing a waterworks system for the town.

ELMVALE, ONT.—A. R. Tudhope has completed the foundation for a new house. Work will not be commenced until next spring.

SHERBROOKE, QUE.—A deputation from this town has requested the provincial government either to erect a new court house or make extensive repairs to the old one.

CHATHAM, ONT.—The council is considering the question of installing an electric light plant to be operated by the town.—The town is considering the question of constructing brick pavements.

COMBER, ONT.—Wm. Newman, C. E., has been instructed by the Tilbury West council to prepare a plan for the deepening and improving of Big creek. This undertaking will involve a large outlay.

BRANTFORD, ONT.—The public school trustees propose to build a new school building on Albion street.—A company of local capitalists are promoting a scheme for an electric railway from Brantford to Paris and Ayr.

KOOTENAY, B. C.—Notice is given by Messrs. Bodwell & Irving, of Victoria, that an extension of time for the commencement of operations under the Kootenay Power Company's Construction Act will be asked for.

WINDSOR, ONT.—Re. the proposed filtering plant the City Clerk writes. The Water Board has obtained a legal opinion as to how the cost of a plant can be raised, but no other action has been taken by the board, City Council or citizens.

WINNIPEG, MAN.—T. G. and Aaron Cox, of Toronto, representing the Central

Canada Loan and Savings Company, will erect a \$50,000 new building here next spring. The structure is designed by Geo. W. Gouinlock, architect, of Toronto.

VICTORIA, B. C.—A by-law has been introduced in council to provide the sum of \$150,000 for the purpose of building a stone and steel bridge at Point Ellice.

VERNON, B. C.—The Cumberland and Vernon Waterworks Company will seek confirmation of their incorporation during the coming session. They propose to take their water from Hamilton creek and several small lakes near the town of Cumberland.

FREDERICTON, N. B.—The City Council have resolved to purchase a road plant, consisting of stone cutter with appliances necessary for working the same; a horse power roller of seven tons or upwards, road machine and road plow, the whole cost not to exceed \$2,700.

OWEN SOUND, ONT.—A sugar mill will be established here by the Owen Sound Sugar Manufacturing Company, which has a capital of \$150,000. Among the promoters are Wm. D. Forest, Michael Robinson, James B. Henderson, James McLachlan and T. E. Vanstone.

WELLESLEY, ONT.—A charter for the construction of a waterway connecting Lake Wahnapiatae and Lake Matagamastung was granted some time ago, but the work has never been carried out. A new charter is now asked for from the Ontario government by J. D. Moore, M. P. P., Wm. Morton and others.

CRYSLER ONT.—Tenders, addressed to J. A. Cockburn, will be received up to 12 o'clock, noon, on Saturday, the 21st inst., for the deepening, widening and straightening, etc., of Casselman creek and tributary, in the 1st and 2nd concessions of the township of Firch. The estimated earth excavation is 17,295 yards. T. H. Wiggins, engineer.

ST. JOHN, N. B.—The new wharf in course of construction gave way and was damaged to the extent of \$60,000.—Ald. Christie has given notice that he will move for the issue of \$14,000 of 4 per cent. debentures to be used for the extension of water and sewerage services.—The D. F. Brown Paper Box & Paper Co., with a capital of \$9,000, has been incorporated, to manufacture paper boxes, etc., and construct wharves, tramways, etc.

QUEBEC, QUE.—Tenders are asked for a heating system for Parent Park.—At a meeting of the Board of Trade resolutions in favor of a bridge over the St. Lawrence at this point were adopted.—The proprietor of the Academy of Music will make extensive interior alterations to the building next spring.—The floor will be lowered several feet, bringing it almost to a level with the main entrance, which will be converted into a large hall.—Mr. H. Staveley, architect, has prepared plans for the Electric Company for an annex of 70 by 26 feet, two storeys high, to be

added to their establishment on Prince Edward street.—There is some talk of a company being formed here to purchase the old exchange building and erect upon the site a modern block, part of which will be occupied by the Board of Trade and the balance leased as stores and offices.

**MONTREAL, QUE.**—The Catholic School Commissioners of St. Henri purpose building a new school. At a recent meeting of the Market Committee it was decided to ask the City Council for a special grant of \$172,000 to expend on Bonsecours market, \$100,000 for expropriation of property for the extension of the market eastward, \$50,000 for the erection of new buildings, and \$12,000 for repairs to the present building.—It is proposed to erect a monument in Montreal to Mr. Mercier.—The James Cooper Manufacturing Co., with a capital of \$99,000, are applying for incorporation, to manufacture mill machinery.—In connection with the unsanitary condition of the city hall, it is probable that a report will be presented to council recommending a thorough overhauling of the entire building, at a cost of \$20,000.—Reports are being prepared on the condition of the McTavish street reservoir, which is said to be leaking, and repairs will probably be undertaken.

**HAMILTON, ONT.**—Charles Mills, architect, is preparing plans for a Methodist church in the town of Simcoe, to be built on the site of the one recently destroyed by fire.—Negotiations are now pending for the conversion of the Hamilton and Dundas railway into an electric road. Mr. B. B. Osler is president of the company.—The ladies of the Y. W. C. A. intend calling a public meeting shortly for the purpose of discussing the advisability of erecting a building on the site of the present structure, to be known as the Women's Institute.—The question of renewing pavements is under consideration by the city authorities. Commissioner MacLoughlin has computed that to replace the existing cedar block pavements with macadam will cost \$90,540. There are 94 miles, but the roadways are of different widths. The total number of square yards is 181,000.—Building permits have been granted as follows: John Hummell, two-storey brick dwelling on Duke street, between Queen and Hess streets, cost \$1,000; Thomas Allan, two two-storey brick dwellings, corner Canon and Catharine streets, cost \$2,400.—Mr. J. W. Tyrell, C. E., of this city, has left for British Columbia, where he has a commission with one of the mining companies to report on the possibility of diverting the course of a river and running it through a mountain by means of a tunnel.

**LONDON, ONT.**—Wm. Gray will build another residence on Bruce street west.—Tenders for the purchase of \$185,000 of debentures will be received by John Pope, treasurer, until Friday, the 20th inst.—It is estimated that a high bridge for general traffic and for carrying the sewerage pipe can be constructed at the foot of King street, across the river, for \$10,000. The estimate for the bridge to carry the sewer pipe alone is \$6,500.—Messrs. S. Chadwick & Son, real estate agents, have completed the transfer of the block of land bounded by Egerton, Grafton and Dane streets and the Grand Trunk railway to Mr. Richard Hargreaves, who will commence the erection of five cottages thereon.—The following building permits have been granted: Joseph Needham, one and a half storey brick residence, south side of Pall Mall street; Joseph Dickson, one and a half storey brick veneer house, west side of Maitland st.; D. Shaw, King st., one and a half storey brick house, south side of King street; O. W. Wickett, King street, one and a half storey brick house, south side of King street; Thomas Reycraft, two brick residences, corner of

King and Rectory streets; Richard Eckert, Dundas street, two storey brick residence, east side Ontario street; Thomas Wilkey, one and a half storey brick residence, east side Quebec street.

**OTTAWA, ONT.**—A. M. Calderon, architect, has prepared plans for the enlargement of a church and the improving of the lighting and heating.—It is said that the government is considering the advisability of erecting a new wing to the eastern block of the Parliament buildings, to consist chiefly of storage vaults.—Inasmuch as the by-law to raise money to provide a drainage system was defeated, it is now proposed to ask the legislature to empower the City Council to borrow funds for the purpose.—Butterworth & Co., owners of the vacant lot on Sparks street, between the Slater and Sherwood block and Mr. Geo. Howe's store, are arranging for the erection of a four-storey building on the site next spring. The plans have not yet been completed.—The building committee of the Protestant hospital have adopted the plans of Mr. A. C. Hutchison, architect, of Montreal, for the proposed structure. The wing will have 60 rooms for patients, an operating room, dissecting room, pathological department and other facilities.—Arrangements have been completed by the Russell Company for the erection of the new opera house on Queen street. The contracts will be let next month and the building begun in the early spring.—J. H. Balderson, Secretary Department of Railways and Canals, will receive tenders until Saturday next for sheet piling at the Deep Cut, Ottawa. Plans at the above department.—The subsidy of \$3,200 per mile which the Dominion parliament granted the Ontario and Pacific railway lapsed in August last, and a Cornwall delegation last week waited on the Premier and asked that the subsidy be renewed. The delegates were: James Leitch, Q. C., John Hibbard, D. A. Flack, J. Kerr and J. Hibbard, all of Cornwall, and Samuel Coulson, of Montreal. It is said to be the intention to push the road to completion at once.—At the last meeting of the Public School Board a report was presented by the building committee recommending that in anticipation of a new school being erected in St. George's ward next year, also of a four-room addition being made to the Archibald street school, the plans adopted for the erection of Muchmor street school be utilized for the new school and the addition to be erected in 1897; that Mr. Edey be the architect for the addition to Archibald street school, and Mr. E. L. Horwood be the architect for the new school in St. George's ward.—It is said that should the contractor for the Dominion reformatory at Alexandria be willing to give up his contract, the government will consider the advisability of abandoning the work and erecting a number of smaller institutions at different points throughout the province.

**TORONTO, ONT.**—New heating apparatus is required at several of the fire halls.—The property owners on Dovercourt road, from Queen to College street, have petitioned against the construction of a new brick pavement on the initiative, as recommended by the City Engineer.—An effort is being made to secure the necessary funds to enlarge the present building of the Young Men's Christian Association of University College.—Alterations are contemplated to the eastern wing of the Parliament buildings, to provide increased office accommodation. A staircase will be run from the end of the passage on the second floor past the treasurer's offices to the floor above, where there will be room for six large rooms, corresponding to those on the floor below. Of these three will be furnished and put into use without delay. Mr. Waite, architect, of Buffalo, was recently in Toronto

presumably in this connection.—The Minister of Public Works having rejected the plans of the City Engineer for the proposed groynes for the protection of the lake front of the island, the Dominion government will be asked to build such groynes as considered suitable.—A company has been organized in this city to erect a large rink and club house at the corner of Dovercourt road and Harrison streets. Among the promoters are Ald. R. H. Graham, Mr. Thomas Crawford, M. P. 2., Mr. W. W. Hodgson and Mr. Jones, street commissioner.—Letters patent have been issued incorporating the Havergal Ladies College, with a capital of \$50,000, the promoters being S. H. Blake, N. H. Hoyles, J. H. Mason, Frederic Nicholls, S. Caldecott, R. Millichamp, G. M. Wray and F. J. Stewart.—The premises of the Patterson Manufacturing Co., on Front street, Toronto, were wrecked by a boiler explosion last week.—The Court of Revision has confirmed the assessments for cedar block pavements on the following streets: Foxley street, from Dundas to Dovercourt road; Dundas street, from Queen to Arthur; Lisgar street, from Queen to Dundas street.—Mr. Geo. W. Gouinlock, architect, has been instructed by Geo. A. Cox to prepare plans and specifications for a large office building to be erected at the north-east corner of Main and Notre Dame streets, Winnipeg, to cost \$50,000. The plans are nearly completed, and tenders will be asked for in this city and Winnipeg.—Building permits have been granted as follows: Churchwardens of Little Trinity church, King street east, brick fronted dwelling in rear of the church, cost \$1,000; Mr. G. R. R. Cockburn, alterations to warehouse, 62 Bay st., cost \$1,500.—Mr. F. H. Herbert, architect, 9 Toronto street, is receiving tenders this week for a two-storey residence on Walmer road north.

#### FIRES.

Eddy's mills at Eddy Station, Ont., and the Trott mill at Oil City, near Petrolia, were burned on Saturday night last. The loss is \$10,000 and \$13,000 respectively.—The McMurtry hotel at Newtonville, Ont., owned by A. A. McMurtry, of Toronto, was burned on the 7th inst. Insured.—The Methodist church at Wellington, Ont., was burned last week. Insurance \$4,500.—The residence of H. Harvey, at Melbourne, Ont., was recently completely destroyed by fire. There was a small insurance.—A large residence just outside the limits of Ottawa, Ont., owned by Ald. Ford, was burned recently. The loss is \$8,000, partially covered by insurance.

#### CONTRACTS AWARDED.

**OTTAWA, ONT.**—W. H. Davis & Son were awarded a contract last week for dredging the Galops channel. The sum involved is between \$8,000 and \$9,000.

**TORONTO, ONT.**—The plumbing and heating contract for Mrs. Copeland's residence has been let to the John Ritchie Plumbing and Heating Co., of this city. Kennedy, McVittie & Co., Barric, architects.

**KINGSTON, ONT.**—Arthur Ellis, architect, has let contracts as below for alterations to a building for the Massey-Harris Co.: mason work, Alexander McCarthey; carpenter work, Geo. Hunter; plumbing, Nugent & Taylor; painting, G. W. Milo.

**WINDSOR, ONT.**—John McDougall, of Montreal, has been awarded the contract for putting a polarite filtering system into the city water works, at a cost of \$20,000. The contractors agree to put in five steel sand filters, erected on five polarite chambers built of brick and cement.

**HAMILTON, ONT.**—The Finance Committee of the City Council have opened

tenders for city debentures, amounting to \$206,000. The committee accepted the tenders of R. S. Morris, at \$86,703 for \$85,000, which is equivalent to 102, and the Bank of British North America, at 102½ for \$35,000 jail debentures. New tenders will be asked for the remaining \$85,000.

**QUEBEC, QUE.**—The City Council has awarded a contract for the construction of a bridge over the St. Charles to join Parent Park.—Joseph Gosselin, of Levis, has obtained a contract for making considerable improvements at the Roman Catholic church at Cacouna, at the tender of \$3,500. The contract for the heating apparatus for both church and presbytery has been awarded to Mr. Vezina, of this city.—C. A. Parent has commenced the construction of a building at the corner of St. Helen and St. Margaret streets. It will be a three storey brick building, 65 x 40 feet, and furnished with an electric elevator. The contractors are. Masonry, F. Parent; joiner work, Mongeon et Fils; roofing, N. Barbeau; painting and glazing, Wilbrod St. Cyr. Thos. Raymond, architect. Cost \$5,000.—Mr. Martin Foley, merchant tailor, is about to erect a new three storey building on the site of that gutted by fire some weeks ago on Mountain Hill. The front will be of Deschambault stone, with handsome cornices and large plate glass windows. Mr. W. J. Peters will be the contractor, and the structure will cost about \$4,000.

#### SOME SPECIAL GLUES FOR WOODWORKERS.

**GLUE FOR ARTICLES EXPOSED TO THE HEAT.**—The following compound may be used like ordinary glue, but it is not affected by fire or heat—in fact, it is fireproof:—Ingredients: Linseed oil, two parts; quicklime, one part. Preparation: Put the lime into the oil and stir up, then boil the mixture until it is reduced to a suitable consistency, and spread out this compound on glass or glazed tiles, and let it dry out in the air, but in the shade. To use, melt the hardened compound in an ordinary glue-pot in the usual way, but without the addition of water.

**GLUE FOR WOOD, GLASS, STONE, ETC.**—The following compound is one which readily allows glass to be firmly attached to wood, stone, &c.—Ingredients: cabinet-maker's white glue, wood ashes. Preparation: Soak the glue for twelve hours, then pour off any water not absorbed, and melt the softened glue by heating it in an ordinary glue-pot, and when nearly boiling hot, stir in sufficient wood ashes to make the compound the consistency of honey. Use in the usual way.

**A WATERPROOF GLUE.**—Ingredients: Ordinary glue, four parts; venice turpentine, one part. Preparation: Soak the glue in the least possible quantity of water to soften it completely, then melt this in the glue-pot, and, while hot, stir in the venice turpentine and well mix. This glue is useful for woodwork exposed to damp and moisture, as it is not affected thereby.

**TO CEMENT GLASS IN METAL FRAMES.**—Ingredients: Litharge, two parts; dry white lead, one part; boiled linseed oil, three parts; copal resin, one part. Preparation: Heat the oil, and then stir in the litharge, white lead, and

copal resin (powdered) in the order named. Prepare this cement only when about to use it, as it is very quick drying.

**GLUE FOR CABINET WORK, LEATHER, MOTHER-O'-PEARL, INLAYING, ETC.**—Ingredients: One quart rye whisky, one quart water, 9oz. rice starch (powdered), 2½oz. cabinet-maker's white glue, 2½oz. venice turpentine. Preparation: Mix the two fluids and stir in the starch to make a paste. Separately dissolve the glue in an equal weight of water in a glue-pot and, while hot, stir the venice turpentine into it. Finally stir in the starch parts while keeping the glue-pot on the boil, so as to cause the starch to thicken. This compound is particularly suited for gluing leather, baize, &c., on tops of tables, as it does not penetrate the fibre like common glue, neither does it crack nor become harsh, but secures a firm adherence between the articles glued together.

**FLEXIBLE GLUE FOR LEATHER, ETC.**—The following compound is one to use in gluing together materials that are not to be kept rigidly tight:—Ingredients: Gutta percha, sixteen parts; pure rubber, four parts; pitch, four parts; shellac, one part; linseed oil, raw, two parts. Preparation: Make the oil very hot and then melt in it the gutta percha and rubber; next add the shellac, and when that has dissolved by the heat add the pitch. To use melt and apply hot.

**A UNIVERSAL CEMENT FOR ATTACHING METAL TO GLASS, CHINA, IVORY, LEATHER, &C.**, is prepared by melting together equal parts of gutta percha and common pitch, and, when well incorporated, pouring the mixture into cold water, whence it becomes black, solid, yet elastic, and softens by heat, and if raised to 100 degrees Fabr., it is a thin fluid. To use it is laid on in the liquid form like ordinary glue, or else used as a soft paste or putty, according to requirements. The proportion of the ingredients may be varied.

**LEATHER, TEXTILES, AND METALS** may be fastened by the aid of the following compound:—Ingredients: Glue, vinegar, white-pine turpentine (or venice turpentine), white lead. Preparation and use: Soak the glue in water until well softened, then pour off any superfluous water, put the glue in the glue-pot, and pour over it enough vinegar to cover the glue, and melt the glue in

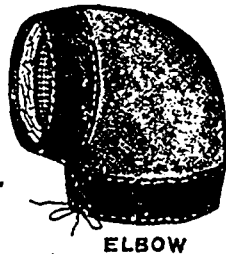
the usual way; stir up the mixture, make it as hot as possible, and then stir in one-third of the bulk of the turpentine, and reduce the compound to a workable consistence by adding more vinegar before removing the pot from the fire. To use this glue, first paint the metal with a white lead paint, allow that a day to partly dry, then lay on the hot glue, and before it cools or chills lay on the leather or other material and press it firmly over the metal.

**GLUE FOR PASTE BOARD, TEXTILES, ETC.**—The following compound is useful for gluing millboard, cardboard, leather cloth, leatherette, textiles, canvas, &c., to wood:—Ingredients: Glue, turpentine, water, starch paste. Preparation: Dissolve the glue in the usual way with as little water as possible, and then stir in a little oil of turpentine. Then add a thick paste of starch in the proportion of two parts of starch paste for every one part of glue originally taken; allow the compound to cool before use, and use it cold.

**TO FIX IRON IN WOOD.**—The carpenter sometimes wets the screws or nails before inserting them in the wood so as to cause them to oxidize (rust) and thereby become firmly attached to the hole in which they are placed. A much better plan is to dip them in a strong solution of sal ammoniac, which will oxidize much quicker; but it would be as well to point out that by the iron becoming rusted it is also weakened, and eventually becomes so rotten by the corrosive oxidizing action as to break up or crumble to pieces. The best remedy to cause screws, bolts, nails, &c., to remain tightly fixed in the wood is to dip them into common glue to which some powdered chalk has been added. They will not readily shift when this has dried.

#### TO PREVENT LEAKS IN SLATE ROOFS.

T. M. Clark, in "Building Superintendence," says: "The worst leaks in a slate roof come from the improper position of the gutters, by which wet snow sliding from the roof is caught and held back. It soon freezes to the roof along the lower edge, the upper portion remaining free, and the water subsequently running down the slope is caught in a long deep pocket, in which it rises rapidly until its level reaches that of



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WRITE FOR PRICES AND CATALOGUE.

the upper edge of a course of slates or shingles, over which it pours in a sheet, to find its way into the rooms below. Next to this defect, insufficient flashing in valleys is perhaps the worst. As metal is expensive, the roofer's interest is to save as much of it as possible, and the superintendent must consider the circumstances of pitch and extent of roof surface draining into the valley, and the slope of the valley itself, which should determine the depth which the water will probably obtain in it. In certain cases, where the roofs are large, this may be eighteen inches or more in summer showers, and the only security is to make the valley flashings of corresponding size."

In estimating for slatework much depends on the quality of the slate and on the manner in which they are laid or "hung." The manner may be in the weathering and the lap, or in the finishing of the "tails" of the slates, as like shingles, they may be wrought with a circular, a pointed, or an elliptical end, to which the cost will be very much increased. For an ordinary roof, slates left squared at their tails, the cost at the present time in the Middle and Western states will run from seven to twelve dollars per square of 100 feet. Near the quarries the lesser, or even a lower sum, may obtain.

Among the best American publications devoted exclusively to slate may be mentioned "Stafford's Slate Tables," by H. N. Stafford, New York, 1880, price \$1.50, and the "Slate Roofer," by D. Auld, Jr., Cleveland, 1882, price \$1.00. There are a number of good English works on the subject, but few will fill the wants of American workmen. A number of good articles appeared in some of the older building journals years ago in this country, but few of the present generation remember anything about them. We may refer to this subject again in a more practical manner.

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load the same, as much as one man can shovel into the wheelbarrow.

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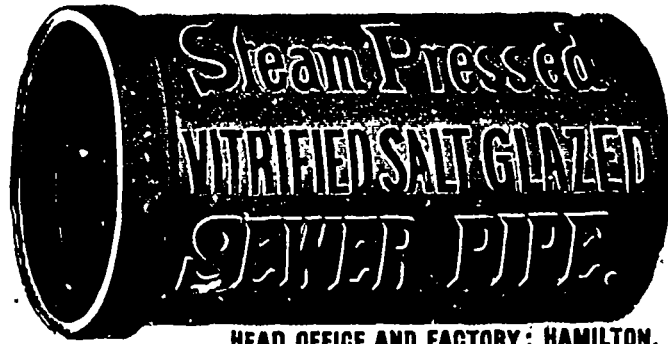
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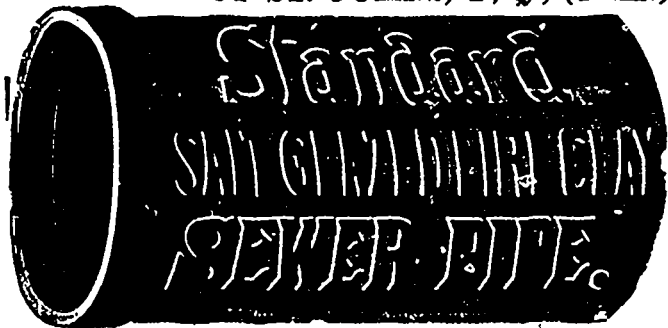
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# MUNICIPAL DEPARTMENT

## THE IMPORTANCE AND ECONOMY OF PAVEMENT MAINTENANCE.

By S. WHITNEY, IN *ENGINEERING MAGAZINE*.  
(Concluded.)

It ought to require no argument to establish the proposition that the same reasons that make it desirable to construct a good pavement apply as well to the keeping of it in proper repair. If it is necessary to pave a street for economic reasons, it is equally necessary that the pavement shall be maintained in such condition as to accomplish its purpose. If a pavement is desirable for sanitary reasons, it is equally desirable that, after it is secured, it shall be kept in such condition as will best attain that end. If a street is paved for the reason that it will promote the comfort of the people using it or living along it, and that it will add to the beauty and desirability of property adjoining it, certainly these ends will not be accomplished unless it is kept clean and in good repair. In short, if the pavement is considered of sufficient value to justify the expenditure of the large sum necessary for its construction, it should be of sufficient importance to be maintained in as nearly as possible its original good condition.

It is a downright waste of public funds to build good and beautiful streets, and then allow them to be ruined for the want of proper attention.

A famous saying has been so paraphrased as to read: "The price of good roads is eternal vigilance." This is forcible, but hardly accurate, the fact being that only as much vigilance and business sagacity are necessary as the good business man applies to his private business, as the efficient railroad manager applies to the care of his track, his structures, and his rolling stock, as the prudent manufacturer applies to his machinery, or as the wise landlord applies to his buildings.

It is not possible here to go into details regarding the methods of repair. These will obviously differ somewhat with the different kinds of pavement to be dealt with, and some general observations only will be attempted.

It may first be noted that, as in medicine, "an ounce of prevention is worth a pound of cure." If pavements are properly cared for and protected, the amount of repair work will be greatly reduced. They should be properly cleaned. While a blanket of street dirt may not be very injurious to some kinds of pavement, it will certainly greatly impair the life and usefulness of others. This is particularly true of wooden and asphalt pavements. There are the strongest reasons for keeping pavements clean, regardless of the fact that cleanliness is an important factor in maintaining

them, but it should not be overlooked that the life of a pavement is prolonged, and the cost of its maintenance reduced, by keeping it clean. Pavements should not be sprinkled more than is absolutely necessary to prevent the discomfort and injury to property of flying street dust. Proper cleaning will reduce the necessity of sprinkling to a minimum. The excessive use of water is a positive nuisance on paved streets. It reduces the dirt to a mantle of mud and slush that is more objectionable to those using the street, particularly pedestrians, than dust. It makes thorough cleaning impossible. These should be sufficient reasons for properly regulating the quantity of water used for necessary sprinkling. When it is added that it hastens decay, increases the effect of abrasion and wear, and thereby abridges the life and usefulness of the pavement, there is seen to be abundant reason for regulating this pernicious evil. Those who doubt its destructive effect should visit a stone-sawing establishment, where they will learn that the saws used for cutting the stone would have little or no effect were it not for the constant stream of water supplied between the saw and the stone.

Street pavements should have the usual police protection accorded to other public works. The hauling of unusual and destructive loads over them, the building of bonfires on them, the spilling on them of oils and chemicals, and the careless or accidental placing or dropping on them of gravel, broken stone or brick, and refuse of all kinds, should be prohibited under penalties. While it is impossible to avoid cutting into pavements to lay or repair pipes or other underground structures, this should be allowed only under stringent and well-defined regulations. The necessity for regulating this evil is so evident that one would think that every city would adopt and enforce the necessary legislation to control work of this character; but not so. Only a small number of American cities have taken the subject in hand properly. No official, corporation, or private individual should be permitted to make openings in any pavement except under stringent regulations providing for prompt restoration of the pavement to its original condition.

If all these and other like requirements were complied with, the necessity and cost of pavement repairs would be very greatly reduced.

The one general and important rule to follow with regard to necessary repairs is to make them promptly. If this rule be strictly followed, it will be found that the cost of maintenance will be reduced to a small fraction of what it would be were the repairs to be delayed until the slight defect had become a yawning gulf in the pavement. The saying, "a stitch in time saves nine," is nowhere more true than when applied in pavement maintenance.

The passage of an extremely heavy load may cause a slight depression in a pavement in some weak spot. The wheels of following vehicles drop into this depression, subjecting it to a blow where before only a steady pressure was exerted.

This will deepen and extend the depression, and, as the force of the blows increases more rapidly than the depth of the depression, that spot of the pavement will soon be destroyed; and, as the adjoining pavement is deprived of lateral support, the depression not only deepens, but extends in every direction, until it becomes an unsightly and dangerous hole in the street which it will cost dollars to repair, though at the beginning a few cents would have been sufficient. It is no exaggeration to say that, in every city having a considerable area of paved streets, many thousands of dollars could be saved annually by adopting and adhering to the policy of prompt repairs. —Engineering Magazine.

### AN IMPORTANT AWARD.

Municipal bodies in Ontario will be interested in the arbitration just concluded to determine the amount to be paid for the next five years under the Municipal Act by the city of Ottawa to the county of Carleton on account of the jail and court house expenses. For the five years up to 1870, the city paid the annual sum of \$5,900. Then in 1890 the city was persuaded into increasing the amount to \$9,750 per annum. This year the county wanted \$10,800, which the city refused to pay, but offered the county \$10,000. The county declined to accept the sum, and an arbitration was decided upon. Judge Deacon, of Pembroke, was the county arbitrator, Taylor McVeity, the city representative, while Judge Bell, of Chatham, was appointed third arbitrator by the Lieut.-Governor of Ontario. The city's case was fought by city solicitor McTavish, with the result that the award, on which all the arbitrators are in accord, gives the county a net annual payment of \$8,104, or \$1,900 less yearly than they were offered. The arbitrators disallowed the county's claim for compensation for common use with the county by the city of the court house and jail. The decisions in county of Kent v. Chatham, and county of Lincoln v. St. Catharines had an important bearing on the award.

An amendment to the Municipal Act passed at the last session of the Legislature makes one or two important changes to which the direction of municipal authorities should be directed. The new councils elected on the first Monday in January will meet on the following Monday, instead of the two weeks interim formerly allowed; and existing councils will cease to have power to vote money for any purpose, pass any by-law or enter into any contract or bargain involving the payment of money, or dismiss or appoint any official after the 31st of December. The old council practically ceases to have any power between the first day of the month and the sitting of the new body on the second Monday, which may be as early as the eighth, or as late as the fourteenth. Another amendment requires city and town deputy-returning officers to proceed directly from the polling place to the clerk's office with the ballot boxes, on no consideration taking the box to their home.

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Prices of Building Materials.

Toronto. Montreal.

Toronto. Montreal.

CONDITION OF THE MARKET.

TORONTO: There is perhaps a little more activity in builders' supplies, the mild weather permitting of work being advantageously carried on. Building paper is in good demand, and a larger movement is reported in pig lead, galvanized iron, iron pipe, and glass. For the latter some good-sized orders have been booked within the past few days. Paints and oils are being sold freely in the east, but in the north and west there is less activity. Cement is quiet, at \$2.35 for Portland.

MONTREAL: In some lines there is a fair movement, among which may be mentioned cut nails, building paper, and heavy metals. Orders are, as a rule, however, for small lots. A better feeling is reported in paints and oils, and the volume of trade is expected to increase before the close of navigation. The receipts of cement last week were 5,450 bbls. English and 3,800 Belgian. Sales are announced of one lot of 3,000 barrels of Belgian, one lot of 1,200, one lot of 250 at \$1.80 ex-wharf, and one lot of 500 English at \$1.95. The tone of the market is firm in sympathy with strong advices from abroad, and higher prices are looked for after the close of navigation.

LUMBER.

CAR OR CARGO TONS.

Toronto. Montreal.

Table listing lumber prices for various types of wood, including clear picks, three uppers, pickings, and various sizes of cull boards and joists.

VOID QUOTATIONS.

Table listing void quotations for mill cull boards, shipping cull boards, Hemlock scantling and joist, and various sizes of scantling and joist.

Table listing prices for flooring, dressed, B.M., and various types of sawn lumber, including Cherry, White ash, Black Ash, Dressing stocks, Picks, and Three uppers.

BRICK—M

Table listing brick prices for Common Walling, Good Facing, Sewer, Pressed Brick, Red No. 1, Buff, Brown, Roman Red, Hip Tile, Ridge Tile, and Ornamental brick.

SAND.

Table listing sand prices per load of 1 1/2 cubic yards.

STONE.

Table listing stone prices for Common Rubble, Large flat Rubble, Foundation Blocks, Kent Freestone Quarries, River John, N. S., brown Freestone, Ballochmyle, New York Blue Stone, Granite, Moat Freestone, Thomson's Gatelawbridge, Credit Valley Rubble, Credit Valley Brown Course, Credit Valley Brown Dimension, Credit Valley Grey Coursing, Credit Valley Grey Dimension, Clark's N. B. Brown Stone, Brown Free Stone, Madoc Rubble, Madoc dimension floating, Cape Bauld, and Cocaigne.

OHIO FREESTONE, FROM THE GRAFTON STONE CO.'S QUARRIES.

Table listing Ohio freestone prices for No. 1 Buff Promiscuous, No. 1 Buff Dimension, No. 1 Blue Promiscuous, No. 1 Blue Dimension, Sawed Ashlar, Sawed Ashlar, Sawed Flagging, and Granite paving blocks.

SLATE.

Table listing slate prices for Roofing, Terra Cotta Tile, and Ornamental Black Slate Roofing.

PAINTS. (In oil, @ lb.)

Table listing paint prices for White lead, Red lead, Venetian, Vermillion, Indian, Yellow ochre, Yellow chrome, Green chrome, Paris, Black lamp, Blue, ultramarine, Oil, linsced, Putty, Whiting, Paris white, Litharge, Sienna, and Turpentine.

CEMENT, LIME, etc.

Table listing cement and lime prices for Portland Cements, German, Newcastle, Belgian, English, Canadian, Roman, and Superfine.

Hydraulic Cements.

Table listing hydraulic cement prices for Thorol, Queenston, Napanee, Hull, Ontario, Keene's Coarse Whites, Fire Bricks, Lime, Plaster, and Hair.

HARDWARE.

Table listing hardware prices for Cut nails, Steel, Cut nails, Fence and cut spikes, and Fine blued nails.

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

Table listing casing and box, flooring, and tobacco box nail prices for 12d to 30d, 8d and 9d, 6d and 7d, and 4d to 5d.

FINISHING NAILS.

Table listing finishing nail prices for 3 inch, 2 1/2 inch, 2 inch, 1 1/2 inch, and 1 inch.

SLATING NAILS.

Table listing slating nail prices for 5d, 4d, 3d, and 2d.

COMMON BARREL NAILS.

Table listing common barrel nail prices for 1 inch, 3/4 inch, and 1/2 inch.

CLINCH NAILS.

Table listing clinch nail prices for 3 inch, 2 1/2 inch, 2 inch, 1 1/2 inch, and 1 inch.

SHARP AND FLAT PRESSED NAILS.

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STEEL WIRE NAILS.

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Galvanized Iron.

Table listing galvanized iron prices for Adam's-Mar's Best and Queen's Head.

Structural Iron.

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