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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. 8.

JANUARY 6, 1898

No. 49.

## THE CANADIAN CONTRACT RECORD, PUBLISHED EVERY THURSDAY

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

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## SEALED TENDERS

Addressed to the undersigned will be received up to TUESDAY, JANUARY 11TH, for the work and material required to complete the sub-structure of a

**RAILWAY BRIDGE OVER OTTER CREEK IN TILSONBURG.**

The lowest or any tender not necessarily accepted. Specifications may be seen and all information obtained from

JAMES A. BELL, C. E.,  
St. Thomas, Ont.

## MOUNT FOREST WATERWORKS

Sealed tenders will be received by the undersigned up to 8:30 p.m. of

**Monday, the 17th January, 1898**

Plans and specifications can be seen at Mount Forest, or at the office of the Consulting Chief Engineer, John Galt, Esq., C.E. and M.E., Canada Life Building, Toronto.

Tenders must be accompanied by bank marked cheque for 8 per cent. of tender, and made payable to the Corporation.

The Corporation reserves the right to reject any or all tenders.

J. P. NOONAN,  
Chairman Waterworks Committee,  
Mount Forest, Ont.

## Notice to Architects

Plans and specifications will be received by the County Clerk until noon on WEDNESDAY, JANUARY 19TH, 1898, for a House of Refuge for the County of Kent.

Information as to the size of the building, cost, etc., will be furnished by the County Clerk

J. C. FLEMING,  
Clerk County Kent.

Chatham, January 3rd, 1898.

## CONTRACTS OPEN.

BRAMPTON, ONT.—The good roads by-law was defeated.

CAINTOWN, ONT.—A new school house will be built here in the spring.

MCSCOW, ONT.—Welley Benn is preparing to erect a new residence.

PORT COLBORNE, ONT.—The ratepayers have approved of raising funds for a waterworks system.

PORT ELGIN, ONT.—It is said that a large number of new buildings will be commenced in the spring.

BARRIE, ONT.—The ratepayers have pronounced themselves in favor of purchasing the waterworks system.

ORMSTOWN, QUE.—St. Paul's congregation has finally decided to build an addition to the rear of the present building.

LEVIS, QUE.—It is said that a chapel will likely be constructed next spring adjoining the Grey Nuns convent.

PORTAGE LA PRAIRIE, MAN.—Tenders are asked by the Dominion government for a heating apparatus for a public building here.

HALIFAX, N. S.—Extensive improvements will be made to Her Majesty's dockyard here during the coming spring and summer.

BERLIN, ONT.—The by-law for the issue of \$5,000 debentures for the laying of a trunk sewer was defeated by a vote of the ratepayers.

MONTREAL, QUE.—Eric Mann, architect, is calling for tenders for an entrance to Collin McArthur & Co.'s factory at Maisonneuve.

TEESWATER, ONT.—Voting on the by-law for a House of Refuge for the county resulted in a majority in favor of proceeding with the work.

BOWMANVILLE, ONT.—The by-law to raise \$5,000 for a new fire engine and other fire appliances by issuing debentures was carried by the taxpayers.

HAMILTON, ONT.—The value of buildings for which permits were issued last month was \$49,000, as compared with \$11,950 for December last year.

MAGOG, QUE.—The town have under consideration the control of the waterworks, with a view of locating a pumping station alongside the lighting plant.

LUCKNOW, ONT.—The vote on the by-law to establish a House of Refuge in Bruce County resulted in an almost unanimous vote in favor of the by-law.

SARNIA, ONT.—The ratepayers approved of the by-law to raise funds for the extension of the waterworks and the increasing of the pumping power thereof.

MONCTON, N. B.—Mr. W. J. Croasdale, C.E., has reported unfavorable to the proposed diversion of the main line of the Intercolonial Railway to Springhill, N.S.

HARTVILLE, N. S.—The St. Croix Paper Mills Company are erecting a large building, 40 x 50 feet, and in the spring purpose erecting a stock house 150 feet long.

TILSONBURG, ONT.—At a meeting of St. John's church congregation, the plans for a new church prepared by architect Wilmot, of Toronto, were submitted and approved of.

ST. RAPHAEL, QUE.—The Ste. Philomene Telephone Company purpose putting in a telephone system in the counties of Bellechase, Montmagny and Dorchester. Head office at this place.

KINGSTON, ONT.—The City Engineer has recommended the construction of sewers on different streets.—The by-law to grant \$17,000 for opening up Svdendam street was defeated.

LOCKEPORT, N. S.—A petition has been forwarded to the Minister of Marine and Fisheries requesting the government to grant money to build a stone breakwater from Locke's Point to Thrum Cap buoy, and for the further dredging of the harbor.

BRANTFORD, ONT.—It is rumored that a new sewing machine company will erect a factory in this city, and that the Gould Bicycle Company are interested.—A by-law to expend \$4,500 upon a new butchers' market was defeated on Monday last.

GUELPH, ONT.—In a report on the streets of the city and the improvement thereof, Mr. A. W. Campbell, Ontario Road Instructor, recommends the purchase of a road roller and stone crusher. He also refers to the necessity for a better sewerage system.

WALKERTON, ONT.—There is an agitation on foot for a general hospital. A committee has recommended that an effort be made to raise \$5,000 to purchase a site and erect the necessary buildings.—The town has voted in favor of establishing a County house of refuge.

STRATFORD, ONT.—Messrs. H. C. McBride, of London, and Beaumont Jarvis, of Toronto, have been chosen by the Council to make an expert examination of the dismantled City Hall walls, and to select the best plans submitted by the local architects for a new building. A report will be presented this week. The plans of H. J. Powell, architect, are likely

to be accepted, the building to cost \$25,000.

**COLLINGWOOD, ONT.**—A meeting was called by the Mayor last week to discuss the granting of a bonus to the G.T.R. for the building of an elevator. The meeting was declared in favor of granting a bonus of \$25,000 upon the condition that the company would build an elevator of 70,000 bushels capacity.

**CHATHAM, ONT.**—By-laws have been passed by the Council to raise \$1,547 for local improvement works. In this issue of the RECORD plans are invited for a three-story building for a House of Refuge, to cost about \$15,000. The by-law to raise funds for the purpose was carried by the ratepayers.

**GALT, ONT.**—Four by-laws were defeated here on Monday. They were for a new fire-hall, a fire alarm system, enlargement of the market square, and a partial sewerage system for the town. The laying of about \$20,000 worth of cement walks last year is said to be the reason for the defeat of these by-laws.

**SHAWENEGAN, QUE.** The Shawenegan Manufacturing Company are applying for letters patent of incorporation, to manufacture calcium carbide, acetylene gas and electricity. Among the promoters are Peter Lyall, contractor, Montreal; Chas. Riordon, paper maker, St. Catharines, and J. R. Barber, paper maker, Georgetown, Ont.

**VANCOUVER, B.C.**—The Canadian Pacific Railway Company has informed the City Council that unless the citizens pass the proposed by-law to exempt the railway property from taxation and to guarantee it for eight years against liability in respect of a bonus granted to any opposing railway, the company must decline to incur the present contemplated expenditure of some \$400,000 on new terminal buildings.

**WOLFVILLE, N.S.**—The Nova Scotia Hotel and Improvement Co., composed largely of Boston capitalists, has been organized, the purpose being to erect summer hotels in different parts of Nova Scotia. Hon. J. W. Longley, J. F. Masters, C. H. Miller, M.D., B. H. Calkin, M.D., and George W. Borden are some of the directors. The first hotel will be erected at this place, where 8½ acres of land has been secured as a site. The cost of construction is placed at \$25,000.

**ST. THOMAS, ONT.**—The bill to guarantee the bonds of the St. Thomas Street Railway Company to the amount of \$50,000 was passed in the Private Bills Committee of the Ontario Legislature last week. The company hope to commence the work of construction in the early spring.—J. H. Still, of the Electric Street Railway Company, will receive tenders until the 15th inst. for 12,500 cedar and 2,500 tamarack or hemlock ties, not less than 6-inch face and 7 feet long, also for 600 trolley poles 28 feet long and not less than 6½ inch diameter at small end.

**VICTORIA, B.C.**—The Mountain Tramway and Electric Company are seeking incorporation from the provincial legislature, to construct ropeways and tramways to the various branch railways controlled by the C. P. R. The company also ask power to supply heat and light.—J. Gerhard Tiarks, architect, has been commissioned to prepare plans for two bungalow dwellings to be erected by Sir Charles H. Tupper and Hon. F. Peters on the Oak Bay road. Each house will be 100x70 feet, supplied with electric light, and during the winter one side of the verandah will be entirely enclosed with glazed sashes.

**LONDON, ONT.**—J. W. Metherall has taken out a permit to erect a brick store on Dundas street, east of Adelaide, and a brick stable, to cost \$2,377 and \$500 respectively.—Hyatt Bros. will build two

brick veneer cottages on Oak street, at a cost of \$750 each.—Mr. Thomas S. Hobbs, M.P.P., states that the plans for the new Normal school to be built in this city have been approved of by the Ontario government. The school will be built of brown stone and buff pressed brick. It will cost at least \$75,000, and the land and furnishings will bring the total cost to nearly \$100,000. It will probably be built during the coming summer.—The hospital by-law was carried by a large majority.

**ST. JOHN, N.B.**—The Harbor Improvement Committee of the Common Council have decided to give the New Brunswick Cold Storage Company a lease of five lots on Prince William street as a site for a cold storage building.—C. H. Peters will build a residence at the corner of Leinster and Wentworth streets, from plans by H. H. Mott, architect. Mr. Mott has also prepared plans for an R.C. church to be built at Fox Creek, of local freestone, 100x60 feet, with vestry 30x40 feet.—Cushing & Co. have not yet accepted the proposition of the city to supply 340,000 gallons of water for the operation of a pulp mill. They want no stipulation as to the quantity.—Mr. Julius Spiers, of New York, representing a New York syndicate, was in the city last week negotiating for a site on which to erect a pulp mill.

**WINNIPEG, MAN.**—A deputation waited on Mr. Whyte, of the C. P. R., last week, requesting that a spur line of railway be constructed from Lariviere to Snow Flake, a distance of 12 miles.—A substantial business block, four stories in height, will be built on Princess street facing the market square. The structure will occupy the present site of the office and warehouses of Frank Fairchild.—W. Brown & Co., wholesale tobacconists, will erect a bonded warehouse this coming spring. Other buildings are also in contemplation.—City Engineer Ruttan is at present on a visit to different cities for the purpose of inspecting methods of disposing of garbage with a view of obtaining information for the guidance of the City Council in adopting a system here.—The congregation of Wesley church will select a site this week for a new church to be erected in the spring.

**OTTAWA, ONT.**—The Massey-Harris Company have commenced work on a new warehouse at the C. P. R. depot. E. L. Horwood, architect.—E. F. E. Roy, secretary Department of Public Works, will receive tenders until Friday, 21st inst., for extending the pier at Margaree, Inverness county, N. S., according to a plan to be seen at the offices of E. G. Millidge, Esq., resident engineer, Antigonish, N. S., and John A. McLeod, Esq., Margaree, N.S., and at the above department. Mr. Roy will also receive tenders until January 24th for the construction of a heating apparatus in public building at Portage la Prairie, Man. Plans at post-office there and at above department.—The Stickeen & Teslin Lake Railway Co., a Montreal concern, is applying for incorporation. Other applications to Parliament are by the Northern & Yukon Railway Co., for a railway from Edmonton by the Peace river through Teslin Lake, with spurs to the head waters of the Mackenzie river; the British Columbia & Northern Railway Co., for a road from Ashcroft past the head of the Stickeen to Fort Selkirk in the Yukon; the Yukon & Pacific Railway Co., from Skagway or Dyea to Bennett, Selkirk and Dawson.—The ratepayers of Gloucester township have passed a resolution objecting to this city running its main sewer through the township on the present terms.—Robert Surtees, City Engineer, will receive tenders until the 11th inst. for the following annual supplies: Oils, lead pipe, brasswork, hardware, hydrants, valves, castings, cast iron pipe and fire alarm supplies.—The Minister of Public Works is said to have been de-

layed in his plans for lighting the Parliament buildings, but it is understood that tenders for a plant will shortly be asked for. It will require over 3,000 incandescent lights, and it is also intended to supply electric power for working the pumps in the building.—County School Inspector R. H. Cowley has recommended the following improvements to schools: No. 12, Fitzroy, new desks; No. 7, Huntley, new school building; No. 16, Goulbourne, new building; No. 17, Goulbourne, better ventilation.—The by-law to bonus the Ottawa & New York Railway Co.'s workshops to the extent of \$75,000 was carried by the ratepayers.—Chrysler & Bethune give notice of application to parliament for the incorporation of a company to build a railway from some point near Montreal along the Gatineau and St. Maurice rivers to Bell River and Rupert Bay.

**TORONTO, ONT.**—Among the new companies incorporated by the Ontario government are the following: The Klinch Brick & Stone Slab Company of Toronto, Limited; capital stock, \$75,000; composed of J. W. Klinch, Mrs. E. J. Klinch, W. Cooke, Mrs. H. C. Klinch, and Miss A. S. Cooke, all of Toronto. The Hamilton Acetylene Gas Machine Company, Limited, capital stock, \$45,000, and consisting of G. S. Bingham, Mrs. A. Seguin, F. A. Carpenter, W. R. Moore and S. D. Biggar, of Hamilton, and J. D. Forsyth, of Claremont. The Perth Woollen Company, Limited, capital stock, \$25,000; composed of G. D. Ross, Montreal, T. A. Code, Hon. John Haggart, Mrs. J. M. Millar and Mrs. Jennie L. Code, of Perth. The Producers' Oil, Gas & Mining Company of Welland, Limited, capital stock, \$10,000, and composed of J. F. Carmody and Mrs. Kate C. Carmody, of Dunnville; D. W. Murphy, Toledo, Ohio; J. Hardy and N. Shaffer, North Baltimore, Ohio.—The City Engineer has received a petition against an asphalt pavement on Elgin ave., between Avenue road and Bedford road.—Messrs. Gordon & Helliwell have taken out a permit to make alterations and additions to the Industrial Refuge, corner of Balmuto and McMurrich streets, to cost \$9,000.—Park Bros. & Co., 48 Colborne street, have completed arrangements for the erection of a large storage warehouse, solid brick, on Wellington street, near the Toronto Club.—The Ontario government has made a proposition to the City Engineer to construct within the precincts of the Central Prison a reservoir capable of holding 200,000 gallons of water, for use in case of fire. The government will at its own cost extend the main in the Northey Manufacturing Company's yard to the reservoir.—The Mayor has received notice that the plans and programme of the Architectural Competition for the University of California would be forwarded in a few days. Architects who wish to enter the competition will be furnished with the programme upon application to the trustees of the California University.—R. T. Coady, City Treasurer, will receive proposals until Tuesday, 25th inst., for the purchase of \$1,036,600 of 3½ per cent. debentures.—Building permits have been granted as follows: Metallic Roofing Co., two story bk. add. to factory, n.e. cor. King and Dufferin streets, cost \$2,000; Edward Hooper, Gerrard st. east, brick addition, n.e. cor. Simcoe and Front streets, for Grand Union Hotel, cost \$30,000.

#### FIRES.

The two-story hotel on the waterworks property at Springbank, London, was destroyed by fire on December 30th. Loss, \$4,000; insurance \$1,200.—The office at Clarke Bros' malthouse at Kingston, Ont., including furniture, has been destroyed by fire.—A brick building at Oakville, Ont., containing a music store and photograph gallery, was burned on Monday

last. It was owned by Mr. Commins and was insured for \$4,800.—The Methodist parsonage at Central Kingsclear, N. B., occupied by Rev. Hedley Marr, was destroyed by fire recently. Loss \$1,000.—A building at Moncton, N. B., owned by the Merchants Bank of Halifax and J. L. Black, of Sackville, was damaged by fire a few days ago to the extent of \$2,000.—The dormitory wing of St. Charles Seminary, at Sherbrooke, Que., was recently gutted by fire. The loss will probably reach \$10,000.—The Turkish Bath Hotel at Montreal was damaged by fire last week to the extent of \$5,000, covered by insurance.—An hotel at St. Joseph, Que., was burned on Monday last.

#### CONTRACTS AWARDED.

**BELLEVILLE, ONT.**—At the last Council meeting the offer of Hanson Bros., of Montreal, of \$13,534.50 for \$13,000 of debentures, was accepted.

**QUEBEC, QUE.**—The contract for the works at St. Jerome church, Lake St. John, has been awarded to Emile Morrissette, of Quebec, for the sum of \$7,995. David Ouellet is the architect.

**DORCHSTER, N.B.**—James Reid has the following contracts in hand at Windsor, N.S.: New Academy, cost \$33,568; residence for Mrs. E. Dimock, cost \$10,000; repairs to court house, cost \$5,000.

**ST. JOHN, N.B.**—J. E. Wilson, of this city, has been awarded the contract for the steel ceilings and galvanized iron work in connection with the new Victoria hotel at Windsor, N. S.—Twelve tenders were received for the purchase of \$125,000 of 4 per cent. debentures. That of J. C. MacIntosh, Halifax, of \$135,081.25 with accrued interest, was accepted.

**MONTREAL, QUE.**—Labelle & Deschamps have secured the contract for plumbing, roofing and electric wiring in three houses for C. Parrie, Point St. Charles, Que.—The Dominion Bridge Co.'s tender has been accepted for the erection of the new bridge for the municipality of St. Francois de Beauce. Cost \$20,000.—J. A. Karch, architect, has let contracts as follows for two houses, stone and brick, on Cadieux street, for Jos. Jobin: Masonry, T. Binda & Son, carpentry, Jos. Jobin.

#### REDUCTION IN FREIGHT RATES.

The Canadian Pacific Railway Company have announced a reduction in the freight rate on several lines of goods from Montreal and eastern points to the Northwest. On certain building materials the reduction is ten per cent. Some of the articles affected are: Boiler and pipe covering, roofing, window glass; iron, including bar, band, Canada plates, galvanized, sheet, pipe, pipe fittings, nails, spikes and horse shoes; bar, band; Canada plate, galvanized iron, nails and spikes, in kegs, boxes or cases, nails and spikes in bags, pipe, wrought iron, all sizes; pipe fittings or connections (iron) such as joints, elbows, Y's; pipe fittings, N.O.S., in boxes, kegs or barrels; pipe, cast iron, under 5 inches diameter; pipe, cast iron, 5 inches diameter or over, inside measurement; sheet iron; paints of all kinds and oils; paper, building and roofing; wire, all kinds; woodenware.

Mayor & Keith, marble dealers, Hamilton, are reported to have assigned to W. F. McGiverin.

#### PAINTING BRICK WALLS.

(Concluded).

For stopping cracks, I deem it advisable to use waterproof cement and give it time to dry, then it will not show streaks. Plaster of paris will eventually crumble out; while puttying with whitening putty is hard to do, without the cracks are perfectly clean and free from dust. Putty does not do well in large cracks, anyway, such as are generally found in brick walls. Cement will adhere better to the sides of the cracks than either putty or plaster of paris. Moreover, when dry, there is not much danger of its absorbing moisture and crumbling.

Brick made from clay that contains potash of soda will effloresce. This efflorescence is a white incrustation which forms on the outside of the brick and will exude through paint, giving the work a bad appearance. Brick efflorescence is not characteristic of all parts of the country, but in localities where it occurs there is considerable difficulty experienced with it. It is said that painters on the seacoast are troubled with it more than anywhere else. So far there have been many remedies proposed, but none seem to effectually prevent it. Liberal applications of coal oil appear to give the best results. Coal oil seems to neutralize the salts, rendering them inactive. Silicate of soda (water glass) is also recommended for its prevention, and probably would be a good thing to use, provided the work would always remain dry. Silicate of soda is a poor product for any kind of work where moisture enters into the conditions.

Muriatic acid will, of course, remove any salt of potash deposit, but it will come back again; besides, the cost would be too great if the case is a bad one. It is said by brick manufacturers that the chloride of barium mixed with the clay during the process of manufacture will neutralize the salts and effectually prevent the efflorescence of brick after they are laid in the wall. But the painter does not make the brick, and, of course, he cannot regulate this matter. However, we are sure of one thing—if barium neutralizes the salts in the clay, it will neutralize them, more or less, when applied to their surface in the form of a wash. Chloride of barium is very cheap, and we think the suggestion is worthy of a trial. Baryta water is extensively used in the laboratory as a neutralizing agent. Some authorities claim that the salts are deposited on the brick by the action of the atmosphere. The fact is, it will occur after the brick is well painted; hence, if it is deposited by the action of the air, it would be present on painted wood surfaces, as well as on that of brick. We are compelled to conclude, then, that it exudes from the brick, although conditions, to some extent, may exert an influence on the exudation. We do not dispute, however, that the air near the seashore may deposit salt crystals which would be detrimental to good service of paint; but we fail to understand why they should be deposited on brick surfaces more than on others.

Once in a while, a stain will appear on a wall, which, when the cause is discovered,

(Continued on page 4)

# “ASBESTIC”

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**THE ROYAL VICTORIA COLLEGE**, Montreal.

**THE PROTESTANT INSANE ASYLUM**, Verdun, near Montreal.

**THE GRAND HOTEL**, St. Hyacinthe, Que.

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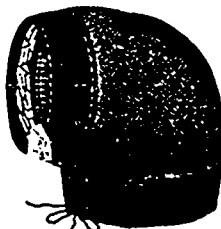
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is found to come from material of different kinds that occupies the interior. Salt water will soak through the wall, making a stain which no paint will counteract as long as the building is used for storing salt. It would be a difficult matter to enumerate all the causes of stains that appear on painted brick walls. The only safe plan is for the painter to discover the cause, and, if possible, remove it.

In rare instances, the paint turns black a few days or weeks after its application. Why it should do so is one of the mysteries of painting. Although there are several reasons advanced, there seems to be none of them plausible. Probably the nearest approach to an explanation is, the brick contains some kind of a caustic alkali which compounds with the fat of the oil enough to discolor it. Coal oil is also recommended as an alleviation for this aggravation, applied the same as for efflorescence.

#### TO REMOVE RUST.

A mixture of rosolic acid, sulphuric acid, tartaric acid, ferrous sulphate, potash-alum and maucilage has been patented by Dr. August Buechner, Heidelberg, Germany. The invention consists in the production of a compound of various substances which not only serve for the extirpation of rust, but also for preventing the metal surface from becoming again covered with rust, as is the case wherever chloride, organic and inorganic acids are employed. As regards these, it was necessary to wash the surface of the metal off carefully after use, with clean water, to remove the said substance. But this could only be accomplished in an imperfect manner, as a certain quantity of moisture or diluted acid would remain in the pores of the metal, which caused the rust to return quickly. It was also observed that objects of iron and steel, from which the rust had been removed, by the use of acids or chlorides, showed a still greater formation of rust after a short time than before, and that even thorough rubbing off and greasing could not prevent that. Therefore, the use of acids and chlorides has been abandoned, and rubbing down with emery and other polishing materials substituted to remove the iron mould present, but by this latter method the parts not attacked by rust of the article are usually injured at the same time. On the other hand, it is not always possible to get at the rust with emery, owing to the shape of the articles. By the use of the liquids composed as described below, this evil is obviated, inasmuch as all rust can be removed at once by applying the liquid, and a reappearance of the rust does not take place. Any anti-rust preparation can only be of practical use if the condition be fulfilled. The medium used consists of the six ingredients named above.

The mixture should be prepared as follows:

1. Melt 5 grams (77 grains) gumtragacanth entirely in 200 water and liquify in a dish on the water bath.

2. Dissolve 3.5 grams (54 grains) of tartaric acid in 50 parts water and mix with 0.5 parts of chemically pure sulphuric acid by shaking. Into the acid mixture, when still warm, put the finely pulverized rosolic acid and leave alone until dissolved.

3. Both substances enumerated under 1 and 2 are united by pouring the latter into the former. Stir the whole until a homogeneous mass ensues.

4. Finally add a solution of 10 grams (144 grains) of pure ferrous sulphate and 5 grams (77 grains) of potash alum in 100 parts water to this mixture. Shake the whole well in a bottle and filter over spun glass.

For removing rust from larger objects, coat the oxydized spots repeatedly with the liquid, leaving the remedy to act for some time. Smaller articles that cannot be treated singly, such as rusty sewing needles, thimbles, knife blades, steel pens, bottle stoppers, screws, etc., should be laid into the liquid diluted with a little water, until all rust has become loosened. The goods are then taken from the bath, rinsed off well and finally agitated for some time with a mixture of 6 parts dry sawdust, 3 parts fine chalk and 1 part pulverized burnt lime. The iron or steel itself or their polish is not attacked by the remedy.—Painters Magazine.

#### ARTIFICIAL STONE COMPOUNDS FOR BUILDINGS.

The following formulæ, by "W. C. S." in the Building News, gives the methods of preparing some of the best known products used as artificial stones, concretes, etc.:

No. 1.—Ingredients: 10 parts of hydraulic lime which has fallen to a powder, with water to form a paste; 25 parts of gravel, 5 parts of coal ashes or wood ashes, water q. s. Preparation: Thoroughly mix the mass and add sufficient water to make the mass equal to 50 parts bulk, then pour the mass into moulds made of wooden boards and allow it to set.

No. 2.—Ingredients: 125 parts of hydraulic lime which has fallen to a powder, mix with sufficient water to form a paste, then add 250 parts of ground oyster shells and 150 parts of ground peat ashes and sufficient water to make the whole

equal to 500 parts in bulk. Then pour into mould until set, as in No. 1.

No. 3.—Ingredients: 100 parts ground quartz sand, 2 to 10 parts finely ground plumbic oxide, water-glass (silicate of soda) q. s. Mix the solids together, and then moisten with water-glass until thoroughly mixed, and firmly press into moulds. When set, the stone mass thus formed should be burned.

No. 4.—Ingredients: 1 part of cement (Portland), 3 parts of sand, dilute sulphuric acid (1 part acid to 50 parts water). Preparation: Mix the sand and cement into a dough with the acid fluid and submit to a strong pressure. Then dry the stones in the air for two days and afterwards steep them for 12 hours in water and acid (3 of acid and 100 of water), and finally dry them.

No. 5.—Ingredients: 2 parts of Portland cement, 1 part of sand, 1 part of cinders, solution of green copperas q. s. Preparation: Dissolve the green copperas in water until no more will dissolve. Separately mix the three solids together in the dry state, and then moisten them with the solution of copperas; press the mass into molds and allow them to dry in a warm place for two weeks; then take the blocks out of the moulds, steep them in water for 24 hours and finally dry for four weeks.

No. 6.—Ingredients: 10 parts unslaked lime, 3 to 4 parts of water, 40 to 60 parts of dry sand, 2½ to 10 parts of hydraulic cement. Preparation: Mix the lime with the 3 or 4 parts of water and then mix in the sand, and finally the cement. Afterwards grind the compound and press into moulds.

No. 7.—Ingredients: 1 part of alum, 15 parts water, 2 parts hydraulic lime, 10 parts sand, 1 part cement. Preparation: Dissolve the alum well and then add the other ingredients and work up to the required consistency; press into moulds and allow to remain for 24 hours. The blocks of stone thus prepared will not be fit for use for at least 14 days; but to be thoroughly hard requires longer drying.

No. 9.—Ingredients: 4 parts of coarse sand, 1 part of cement, gravel q. s., lime-water q. s., 2 parts of fine sand, 1 part of cement, 1 part of dry metallic coloring matter. Preparation: Mix the sand, cement and gravel with sufficient lime-water to form a paste; press this into moulds and cover the surface with a composition made up of the fine sand, cement and coloring matter. When the surface is nearly dry brush it over with a solution of water-glass.

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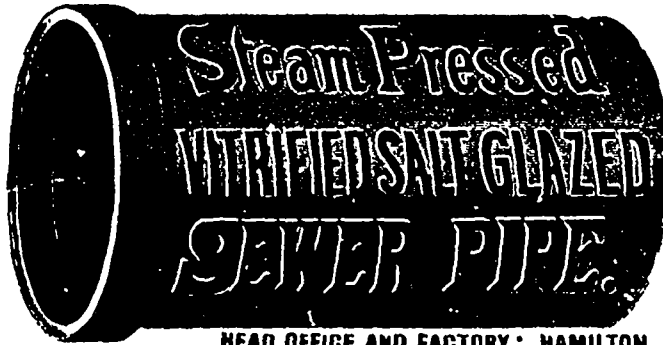
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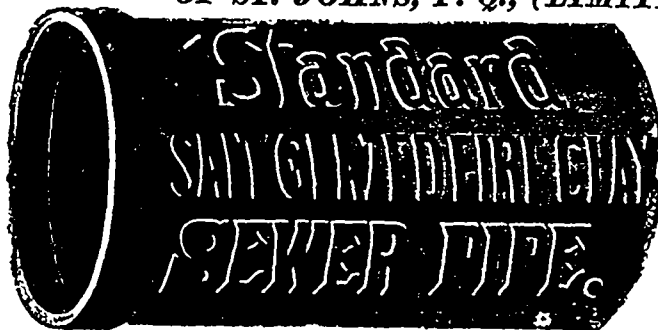


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# MUNICIPAL DEPARTMENT

## WOODEN BLOCK PAVEMENTS.

One of the important streets of Atlanta, Ga., is now being paved with wood blocks treated by a process invented by Mr. H. F. Williams, of San Francisco. The pavement consists essentially of a 6-inch concrete foundation, on which the squared wood blocks 4 inches deep are laid, with the fiber vertical, the joints being filled with a specially prepared asphalt.

The blocks are sawed from 6x6-inch timber which has been fairly well seasoned, each block containing a foot of lumber, board measure. They are then submerged in a kettle of liquid asphaltum heated to 300 degrees Fahrenheit, and kept there until all moisture is effectually expelled. They are afterward placed over the kettle in a box which has a screen bottom to allow the drippings to fall back into the kettle. The blocks are left in the bath from 10 to 30 minutes, or long enough to destroy the properties causing dry rot. When this treatment is finished, the wooden surfaces have become sealed by a coating of the asphaltum, and look as if they had been painted with coal tar.

The blocks are laid on the concrete so as to break joints in the unusual manner, and the surface is then covered with Williams' asphalt cement, which fills all the joints and covers the surface to a depth of about an eighth of an inch. A layer of sharp sand is sprinkled over the top, and the pavement is complete. The pavement is laid by the Williams Block Pavement Company of Atlanta, at \$1.80 a square yard, under a ten-year guaranty with good bond.

Before the city entered into a contract for this work, Mayor C. A. Collier obtained a report on the way in which similar pavements in San Francisco are wearing. This was written by Mr. Henry L. Collier, United States Examiner of Surveys, and reads, in part, as follows:

The paving on California street was laid 19 years ago. Two years ago the Spring Valley Water Company cut through it, the distance of two blocks, to lay water pipes; the paving blocks were found to be as sound as when first laid. I had one cut out in September last, and the one selected was in the crossing of two streets. Found it to be perfectly sound. Submerged it in water for eight days, with no perceptible increase of weight, and on splitting it open found no sign of the water having permeated it. I see no reason why this pavement should not last for twenty years more. The surface of the street where the Williams paving is laid is as good now as when first put down. It has had no repair work except two light coatings of asphalt, prepared by Mr. H. F. Williams, the patentee. Where the water company

cut through their trench, it was easily, inexpensively and excellently repaired. No sign of settling. With the exception that the asphalt coat looks a little fresher than the rest, I see no difference between this placed two years ago and that of nineteen years' standing.

The pavement on Sacramento street, near Montgomery, has been subjected to more traffic, consequently more abused. Express teams stand on it all day; the south drain next to the sidewalk is never dry. I had a block cut out from where the horses, for years, stood constantly. The surface had become somewhat irregular, but the block, when taken up, proved to be perfectly sound. This paving has been down 19 years, and has received no repairs.

That at the foot of Market street is subject to constant travel; thousands of the heaviest freight trucks pass over it daily. This paving has been down eighteen months, yet the surface is as regular now as when laid. No sign of wear, and no repair work done. Before the rains begin, Mr. Williams informs me, he will place a light coating of asphalt on it.

The paving in front of the Emporium, on Market street, has been down about 15 months. It is subject to constant travel—thousands of heavy freight teams pass over it daily. The surface is as smooth and regular to-day as when first completed. No repair work has been given it. In September last the gas company cut a trench through it. The blocks looked as if they were new, no sign of wear, and were found to be waterproof.

I also inspected the paving near wharf on Howard street, and the new Spreckles pier paving. The former has given entire satisfaction, though subjected to very heavy traffic. The latter, the day on which it was completed, the warehouse constructed upon it was consumed by fire. The stringers supporting the paving were so badly burned as to necessitate the taking up of the paving, which was found to be unhurt, save being charred slightly on the top surface. By scraping the tops and putting on a new coat of prepared asphalt, I would have preferred them to new blocks.

The paving laid 19 years ago was simply dipped in Mr. Williams' prepared asphalt. No precaution was taken, except to see that the blocks were well

seasoned. Now, the blocks are boiled in the asphalt.

## THE MUNICIPAL ACT.

Mr. Kidd has introduced two bills in the Ontario Legislature to amend the Municipal Act. They provide for the following additions to the Consolidated Municipal Act:

"In case of arbitration under the preceding provisions of this section in determining the compensation to be paid for the use by a city or town of the court house, gaol or house of correction of the county, the arbitrators shall, so far as they deem the same just and reasonable, take into consideration the original cost of the site and erection of the said buildings, and shall allow such amount as they may deem reasonable for such use of the said buildings by the inhabitants of the city or town in common with the inhabitants of the county, although there may be no separate use thereof by such city or town as a municipality."

"When in any city or town the court house and gaol have been erected at the sole expense of the county after the separation of such city or town from the county, and when such city or town has not erected separate buildings, then the award may determine what sum shall be annually paid to the county as the share or contribution of such city or town in respect of the use of such buildings by the inhabitants of such city or town, and, in estimating such amount, the arbitrators may award a proportion of the interest upon the cost of such buildings, computed at the rate of five per cent., having due regard to the extent of the use of the said buildings by the inhabitants of the said city or town and county respectively."

A dispatch from Renfrew, Ont., says: The first fire test of Renfrew's new waterworks system was made yesterday under the superintendence of the Chief Engineer, Willis Chipman, of Toronto. It was a most successful exhibition. At one time five fine streams were playing over the flag poles of ten of the tallest buildings in town. The extensive sewer system, put in at the same time, will not be tested till next spring.

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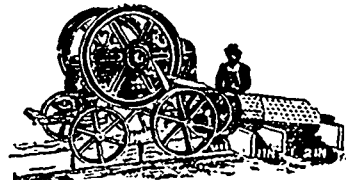
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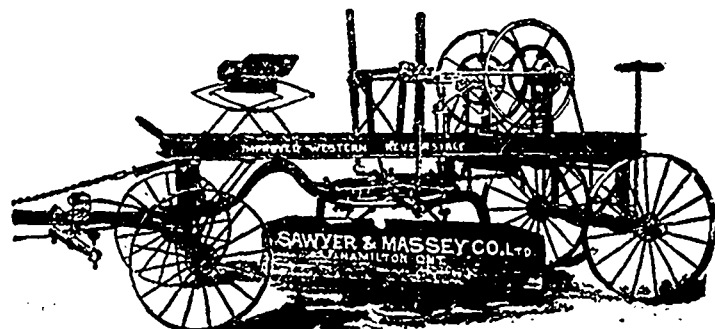
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