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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. 6.

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## THE CANADIAN CONTRACT RECORD,

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## TENDERS WANTED

For the erection and completion of proposed SALVATION ARMY BARRACKS on the corner of Hughson and Rebecca Streets, Hamilton. Plans and specifications can be seen at 61 Napier Street, Hamilton, on Monday, November 21st, and tenders will be received by Mr. H. G. Paull, 106 Wellington Place, Toronto, up to MONDAY MORNING, NOVEMBER 21ST. The lowest or any tender not necessarily accepted.

The vitrified paving brick is growing in popularity. The latest cities to adopt brick paving are Newark, N. J., and Jersey City. Vitrified brick have been much used in the west and for some time; but in the east they are now first obtaining a foothold. They have had a strong prejudice to contend with, but are now acknowledged as filling the requirements for a good and durable roadway capable of standing heavy traffic.

### CONTRACTS OPEN.

KEMPTVILLE, ONT.—Thos. Johnston is rebuilding his foundry.

SUSSEX, N. B.—Captain McKenzie is about to erect a new residence.

SHARBOT LAKE, ONT.—A Methodist parsonage will be erected here.

BLYTH, ONT.—Tenders will shortly be called for a four-roomed school.

SUTTON, QUE.—James Lafleur intends building a new residence in the spring.

COLDWATER, ONT.—The buildings recently burned are to be rebuilt at once.

NICOLET, QUE.—The Government is being urged to complete the harbor works here.

SEAFORTH, ONT.—James Thompson has purchased a lot and will likely build on the property.

ST. STEPHEN, N. B.—W. F. Todd, of this place, will rebuild the MOSS Litter works near Spruce Lake.

NORTH GOWER, ONT.—Wm. Morphy has laid the foundation of a house.—Mr. Ferguson is rebuilding his hotel.

SHERBROOKE, QUE.—The Episcopal church authorities are taking steps to secure the erection of a new church.

PAKENHAM, ONT.—A. H. Tait invites tenders until the 12th of November for the removal of the Agricultural Society's hall.

GANANOQUE, ONT.—Estimates are being made on grading streets and building a dock. The cost will be about \$5,000.

WELLAND, ONT.—A deputation from this town recently interviewed the government in connection with waterworks matters.

HALIFAX, N. S.—Over 20,000 feet of sewer pipe is yet to be laid in the central part of the city, at an estimated cost of \$100,000.

HULL, QUE.—The council has decided to further extend the waterworks pipes. Mr. Hibbert, C. E., will likely supervise the work.

MITCHELL, ONT.—John Roger, C. E., is preparing plans for a house for himself to be built next year, to cost probably about \$2,000.

BROCKVILLE, ONT.—The ratepayers will be asked to vote on a by-law for putting down granolithic pavement on the frontage system.

COLLINGWOOD, ONT.—The Dominion Government has sent an engineer here to take soundings of the harbor with a view of having it deepened.

GODERICH, ONT.—The contract for rebuilding the Albion hotel is still open.—Edward Sharman is preparing to erect a brick residence.

ST. HYACINTHE, QUE.—The United Counties railway will apply at the next session of the Provincial Legislature to obtain amendment to its charter authorizing it to acquire the assets and charter of

the East Richelieu Valley Railway Company.

CARLETON PLACE, ONT.—The by-law to authorize a further expenditure of \$6,000 for a new town and fire hall was carried by the ratepayers last week. The erection of the building will now be proceeded with.

MONTREAL, QUE.—The Y. M. C. A. have decided to purchase the Diocesan college and it will be improved next year.—C. St. Jean, architect, is calling for tenders for a church for the parish of St. Mary, Salorne.

INKERMAN, ONT.—Charles Durant, Township Clerk, will receive tenders until 2 o'clock to-day (Thursday) for constructing two stone piers and approaches for a steel bridge across the Nation river at Baldwin's bridge.

ST. LAMBERT, QUE.—On November 2 the ratepayers will vote upon the question of a loan for a sewage system and water works. The municipality has purchased a lot on which will be erected a new Protestant school.

STRATFORD, ONT.—There is a slight probability that a city engineer will be appointed.—A by-law to raise funds to erect a poor house will probably be voted on shortly, but it is anticipated by many that it will be defeated.

SOREL, QUE.—The Railway Committee of the Privy Council has approved of the site for the new railway bridge over the Richelieu river here, and the work will be begun at once, Mr. McCarthy, of Montreal, being engineer.—The Baptists are erecting a brick church on Charlotte street.

CHAMBLY, QUE.—The Richelieu River Hydraulic & Manufacturing Co., which is applying for incorporation, propose to construct dams, bridges, waterworks, and establishments for the manufacture of electrical machinery and apparatus. Sicotte & Barnard, of Montreal, are the solicitors for the company.

TRACADIE, N. B.—Mr. Hamilton, C. E., is now locating the route of the proposed branch of the Caraquet railroad. The new line will leave the Caraquet road at a point a few miles west of Shippegan and will cross what is known as Pokenmouche Island, then running through to this point, which is its terminus.

HULL, QUE.—Theophile Viau, of this town, who is the owner of the franchise for an electric railway between Hull and Aylmer, is negotiating with several New York capitalists to purchase the franchise and build the road, and it is probable the sale will take place, in which case construction will be commenced early in the spring.

ST. GABRIEL DE BRANDON, QUE.—R. Rinfret, of Montreal, has been locating a railway from this place to St. Emilie, in the county of Joliette, a distance of fifteen miles. The work is to be begun next spring. The name of the company will be the St. Gabriel and Ste. Emile Rail-

way Company, and the main promoter is Ald. C. Beausoleil, M. P.

**FORT WILLIAM, ONT.**—The company that recently acquired the Kakabeka water power are negotiating with this town for the putting in of an electric light plant, and it is probable the offer of the company will be accepted.—The Canadian Pacific Railway authorities are said to have announced their intention of erecting two more grain elevators at this point.

**ST JOHN, N. B.**—The Board of Management have recommended to the City Council the extension of sewers as follows. Burpee avenue and Mount Pleasant, cost \$4,200; Carlton street, cost \$500; Victoria street, cost \$1,400; Hammond street, cost \$300; Strait Shore road, cost \$550.—It is probable that a new High School will be built in this city at an early date.—The St. John Bicycle Club propose to erect a club house, at a cost of \$6,000.

**SELKIRK, MAN.**—The A. Booth Packing Co., of St. Paul, Minn., are said to contemplate the erection at this point of one of the largest ammonia refrigerators on the continent, having 6,000,000 pounds capacity. The building will be of wood with stone foundations, and will cost in the neighborhood of \$300,000. Work on the new plant will commence immediately on the arrival of A. Booth, sr., his approval of the amended plans being the only remaining step.

**QUEBEC, QUE.**—Mr. Jean Taché has purchased the Gowen block and will turn the structure into an office building, provided with an elevator and all modern conveniences.—The following building permits have been granted: W. Giguère, house, St. Joseph st., cost \$2,500; Mrs. Jean Taché, alterations to building, St. Peter st., cost \$3,000.—It is proposed to apply for an act to amend the charter of the Quebec Central Railway Company, by authorizing the further issue of prior lien bonds to the extent of \$50,000 sterling.

**WINNIPEG, MAN.**—Articles of incorporation of the Duluth & Northwestern railroad, to extend a line to Winnipeg, have been filed in St. Paul.—The City Engineer has estimated the cost of a steam disinfecting apparatus at \$2,800, made up as follows: chamber, car and tracks, \$1,700; building, \$800; accessories, \$300. The work will likely be undertaken by the Council.—The Lake of the Woods Milling Co. contemplate the erection of a grain elevator on Princess street. not likely be commenced until next spring.

**LONDON, ONT.**—Moore & Henry, architects, have in hand the construction of an addition to the Dominion Mills, Talbot street.—Mrs. Martin has been granted a permit for a brick house on the Wortley Road, near Bruce street, to cost \$1,700.—McBride & Farncombe, architects, are receiving tenders this week for a brick veneered building.—In connection with improvements to the waterworks system mentioned in our last issue, the cost of constructing storage ponds, as estimated by Superintendent Moore, should have been given as \$2,700.

**GUELPH, ONT.**—The City Council have decided to engage Mr. Willis Chipman, C. E., of Toronto, to report on a complete system of sewerage for the city. Mr. Joseph Powell, chief engineer of the International Radial Railway Company, accompanied by Dr. Burns, Mr. Alex. McKay, M. P., and Mr. Fred. Carpenter, of Hamilton, were in the city last week in connection with a scheme to build an electric railway from Hamilton to Guelph, via Dundas, Galt, Berlin and Waterloo. The delegation interviewed the City Council on the matter.—P. Hartnett invites tenders for remodelling the market building, from plans by G. R. Bruce.

**HAMILTON, ONT.**—The Sewers Committee have authorized the construction of sewers on Herkimer streets, and Stanley avenue.—Building permits have been

granted as follows: Eli Van Allen for a brick addition to factory on George street, cost \$1,000.—At the last meeting of the Finance Committee it was decided to petition the Government to deepen the Burlington canal to 16 feet. Chairman Colquhoun was authorized to introduce a by-law to provide for the issue of \$50,000 debentures for the new Collegiate Institute, and tenders for that amount are invited by the City Clerk, until the 7th day of November.—At the next session of the Dominion Parliament application will be made for a charter for the Hamilton, Brantford and Pacific Junction railway. The proposal is to build a line from a point on the T. H. & B. railway near Copetown to connect with the C. P. R. at Schaw Station.

**TORONTO, ONT.**—The plumbing and heating of the new city hall and court house, for which tenders have not yet been invited, will probably cost \$100,000. The work will not be undertaken, of course, until the roof is finished, and tenders will likely be invited next summer.—The City Engineer's report presented to Council on Monday last recommends that the Provincial Government be allowed to lay a stone or asphalt sidewalk from the front of Parliament buildings south to the roadway into Queen's Park, and that the city put in the necessary crossings at certain points. A brick sidewalk, 12 feet 6 inches wide is recommended for the south side of Queen street west, from John street to Spadina avenue, at a cost of \$3,288, and a number of wooden sidewalks. The construction of a macadam road on Berkeley street from Wilton avenue to the Esplanade is withdrawn, it having been petitioned against.—The cost of putting an iron roof and corridors on the new city hall is estimated at \$50,000.—Building permits have been granted as follows: John Minto, 461 Davenport rd., det. 2 story and attic bk. dwelling, cost \$2,500.

**OTTAWA, ONT.**—Arrangements have been made with Mr. King Arnoldi, architect, to visit Montreal and New York in connection with the hospital wing, in order that the latest improvements in hospital construction may be embodied in its erection. Much interest is being taken in the proposed drainage scheme, some of the aldermen contending that the plan of providing drainage for Hintonburg, Ottawa East and Jareville, at an extra expense of \$79,744 will defeat the whole scheme.—Alderman Davidson is about to erect four new houses on a lot recently purchased on Portland avenue.—The Grey Nuns have recently purchased Gleniffer House in New Edinburgh ward, and propose to utilize the building as an asylum. The Bethlehem refuge at the corner of Anglesea square and Chapel street, will probably be offered for sale, it is believed that the Grey Nuns will build a new convent on the site. It is also predicted that within a year large additions will be made to the property just purchased to accommodate St. Josephs orphanage.—Owing to the recent loss of two ships in the Straits of Belle Isle, the Dominion Government will be petitioned to extend the gulf telegraphic system to the Straits, and to establish lighthouses. Two routes are under consideration for the telegraph line, one being from Esquimaux Point by a series of cables along the North Shore with landings 30 to 60 miles apart. The other is to use the present line from Anticosti to Health Point, and from thence by cable to Belle Isle Light, a distance of 280 miles.—Application will be made to Parliament to incorporate the Edmonton District Railway Company.—The Winnipeg Great Northern Railway Company, better known as the Hudson Bay railway, will ask parliament, at its next session, for an extension of time for the completion of the main line to Saskatchewan river, and for power to build a branch

line from Portage la Prairie to connect with the main line.—The promoters of the Ottawa and French river canal announce that they propose shortly to apply to the Provincial Governments of Ontario and Quebec to subsidize the undertaking by granting 10,000 acres of land for every mile of canal constructed. They also have an application before the Dominion Government for a guarantee of the interest on the bonds to be issued to build the first section of the canal.—Only fifty miles of the Ottawa, Arnprior and Parry Sound railway remains yet to be built, which it is expected will be constructed before October of next year.

#### FIRES.

The planing mill of S. S. Cooper, at Clinton, Ont., was destroyed by fire on the 24th inst., together with all machinery. Loss, \$6,000; insurance, \$2,000.—The Academy building at Pictou, N. S., was completely consumed by fire last week. It was a brick structure erected at a cost of \$25,000. Insurance, \$12,000.—The saw mill of George Dutch & Sons at Black Point, Restigouche Co., N. B., was burned a few days ago. The proprietors have decided to rebuild on a more extensive scale.—The general store of Ferguson Brownell at Amherst, N. S., has been burned. Loss \$4,000; insurance, \$2,000.—Joseph Rainville's dwelling, bakery and stable at Stoney Point, Ont., were destroyed by fire on the 27th inst.—The Barber terrace on Princess street, Winnipeg, was gutted by fire on Monday last. Loss about \$3,000, covered by insurance.—A house at Kin-cardine, Ont., owned by Mr. Hussie, was burned last week.—Wm. Graham's brick cottage on Colborne street, Whitby, Ont., was consumed by fire recently. Insurance \$600.—The planing mill and windmill factory of George McWilliams, at Peterboro', Ont., has been partially consumed by fire. Loss covered by insurance.—Fire destroyed the packing building and storage sheds of the Sydenham Glass Co. at Wallaceburg, Ont., on the 29th inst. Insured.—The village of Levie Ridge, Que., was swept by fire on Tuesday last, causing damage of about \$100,000. The extensive works of the Dominion Lime Co., were completely destroyed.—A block of eight houses at Dundas, Ont., owned by George Burrows, have been burned.

#### CONTRACTS AWARDED.

**GODERICH, ONT.**—E. A. Causey, of Stratford, has been awarded the contract of building the R. C. church here.

**PERTH, ONT.**—Stephen Bennett has been given the contract for erecting the canning factory here, at the price of \$1,887.

**FORT WILLIAM, ONT.**—The contract has been let to R. Lawrence, of Port Arthur, for the rebuilding of the old post-office building.

**ESSEX, ONT.**—The County Council have awarded the contract for repairs to the county buildings to Frederick Navin, of Goderich, at \$19,999.

**ALEXANDRIA, ONT.**—The contract for an electric light plant and for wiring the streets has been awarded by the village council to Ahearn & Soper, of Ottawa.

**WOODSTOCK, ONT.**—Robert Whitelaw, of this town, has been awarded the contract by the Ontario Government for supplying the power plant for the new Dairy School at Strathroy.

**ST. JOHN, N. B.**—A new machine shop, 40x50 feet, of brick, two stories high, will be built for Jos. Thompson. Adams & Belyea will do the woodwork and McArthur & Clark the masonry work.

**QUEBEC, QUE.**—N. Laine has been awarded the contract for the decoration of the interior of the House of Refuge for the Sisters of the Delivrance.—O. Matte has been awarded the contract for hot

water heating apparatus for the Church of Aulse, Gaspé.

GRANBY, QUE.—The Empire Tobacco Co. have given Messrs. Neil & Kent the contract for an addition to their buildings which will be 40 x 70 ft., two stories high, cased with metallic brick and gravel roof.

SEAFORTH, ONT.—F. Gullridge has supplied the sand pressed brick for the new Commercial hotel, he having bought the right to manufacture that brick in the county of Huron. The bricks are made of sand, cement and chemicals.

OTTAWA, ONT.—The Upper Ottawa Improvement Co. has awarded a contract to the Bertram Engine Works, of Toronto, for the construction of two side-wheel steamers 130 feet long by 26 feet beam, to be used for towing lumber.

WINNIPEG, MAN.—The contract for draining St. Andrew's marsh has been awarded by the Provincial Government to C. Whitehead & Co., of Brandon, at the price of \$91,760. The other tenderers were S. Gaudaur, of St. Boniface, and J. Kennedy, of Fargo. The contract calls for 850,000 cubic yards of ditching, by which 104,000 acres of land will be reclaimed.

TRENTON, ONT.—The Wm. Hamilton Mfg. Co., and the Canadian General Electric Company have been awarded the contract by this town for the water power and general machinery, electric light plant, etc., for a three-phase plant to be erected here. The contracts involve an expenditure of \$50,000, and it is proposed to run electric wires to Belleville, twelve miles distant, for power transmission.

TORONTO, ONT.—The contract for steam heating the Queen's hotel, Barrie, has been awarded to John Ritchie, of this city.—The contract for asphaltting Leader Lane, from Wellington street to Colborne street, has been awarded to the Warren-Scharf Co., at \$792.—The tender of Gardner & Co. for a cement sidewalk on south side of Front street, opposite Union Station, at \$550, has been recommended for acceptance.

MONTREAL, QUE.—The following tenders were received for improving the drainage at the city hall: Robert Mitchell & Co., \$685; Leclerc & Lamarche, \$800; Blouin, Girard & Collard, \$939; S. Crevier, \$650; J. Bisson, \$450. The latter tender has been accepted.—P. A. R. Labelle, architect, has awarded contracts for a seven storey carriage building for B. Lebourg on Osborne street as follows: excavation, F. Rochon; masonry, Labelle & Payette; iron work, Imperial Bridge Co., other trades not let.

**PUNCHES.**

A large number of tests of punches of different forms were recently made by Mr. George S. Allen. The object of the experiments was to determine: (1) Which of the various shaped punches now in common use for punching iron and steel did its work with the least maximum pressure and the relation of unit stress to distortion as the punch passed through the plate; (2) the effect of clearance upon the power required by the punch; and (3) the effect of the form of punch and the amount of clearance upon the tensile strength of the punched plate. The results of the test may be summarized as follows: 1. A punch to work easily and not injure the metal should not be cupped out. 2. A double punch—that is, one which first punches a small hole and then reams it out by means of a shearing counter-punch—leaves the plate stronger, but requires at least twice the power necessary to run

a flat punch. 3. The ordinary flat punch leaves the plate about ninety per cent. as strong as a drilled and reamed plate. 4. A mill spiral punch is preferable to one which has the spiral cut in a lathe.

The Prismatic Glass Co., of Toronto is applying for charter.


Albert Arter, painter, Ottawa, Ont., has been succeeded by Arter & Co.

Holmes Bros., tinsmiths, Winchester, Ont., are reported to have assigned.

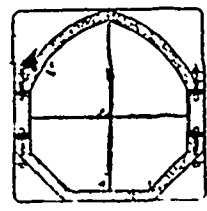
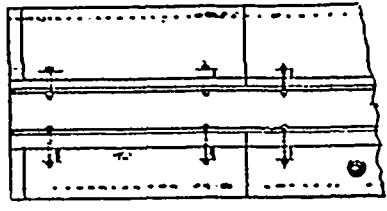
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(Continued on page 4)

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well founded—that it could not be trusted. And further, if the material were uniform in quality, it was believed to require—perhaps it did at one time require—special careful handling while being worked, specially trained workmen to handle it, and altogether a gingerly kind of treatment which could not be obtained in ordinary circumstances. Not a few manufacturers saw that much of this was at least great exaggeration, if not pure fancy, and were firmly enough convinced of the value of the new material to go on using it through evil report and good. They staked much upon their belief, however, and were compelled to insist strenuously upon the steel makers leaving nothing undone which should ensure the uniform character of their material. The steel makers were nothing behindhand in the matter, and have probably done more in ten years to perfect their material than had ever before been done in such a case in half a century. Mr. Barnaby, in a paper which he read before the Institution of Naval Architects in 1875, put the question definitely thus: "What are our prospects of obtaining a material which we can use without such delicate manipulation and so much fear and trembling? . . . We want a perfectly coherent and definitely carburized bloom or ingot, of which the rolls have only to alter the form in order to make plates with qualities as regular and precise as those of copper and gunmetal, and we look to the manufacturers for it." I believe it may now be said with certainty that we have not been looking to the manufacturers in vain. In the first place, within the last few weeks I have been testing in my laboratory at University College ordinary commercial samples of all the three materials mentioned by Mr. Barnaby, and the following are the results, three similar pieces of each material being tested at a time: The difference between the highest and lowest tenacities of three bars of ordinary (cast) copper amounted to 29.5 per cent. of the strength of the highest, the same difference with ordinary gunmetal being 21.6 per cent., and with hard gun metal 12.4 per cent. With five sets of steel samples on the other hand, of different sizes, cut from ordinary boiler-plates, the differences were 1.5 per cent., 0.7 per cent., 7.1 per cent., 4.8 per cent., and 2.9 per cent respectively. Taking the mean in each case as a rough comparison, we have 21.2 per cent. in copper and gunmetal against 3.40 per cent. in mild steel, and even taking the highest and the lowest of the fifteen specimens (although they were of very different sizes) the difference is only 9.6 per cent. It is hardly too much to say that there is no iron in the market that can hold its uniformity and freedom from failure in working against the steel now supplied by our leading manufacturers, or that can stand equally well the same strictness and frequency in testing. Mr. William Denny, of Dumbarton, whose firm has been building ships very largely in steel since 1876, says that in one small steamer they are now building of iron they have had more failures than in their whole consumption of about 7,000 tons of steel. In the case of a number of light-draught steamers of iron which he at one time sent out to India in pieces, they were invariably annoyed more or less by

corners of plates coming off, angle irons cracking, and so on, during shipment and transshipment. Last year he built and shipped in the same way six paddle steamers entirely of steel, without losing by breakages anything whatever. Another well-known mechanical engineer, who uses both steel and iron on a very large scale, tells me that he hardly ever has to return less than 15 per cent. of his best Yorkshire iron, on account of defects in working, while he absolutely never has any failure with steel. It would be easy to multiply testimony of this kind.

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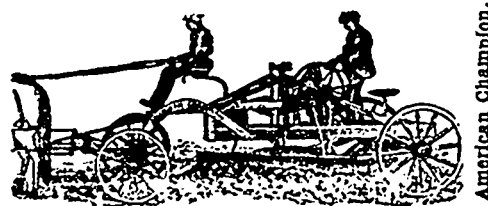
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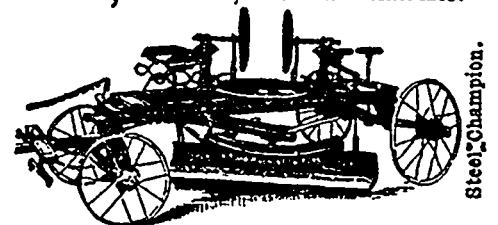
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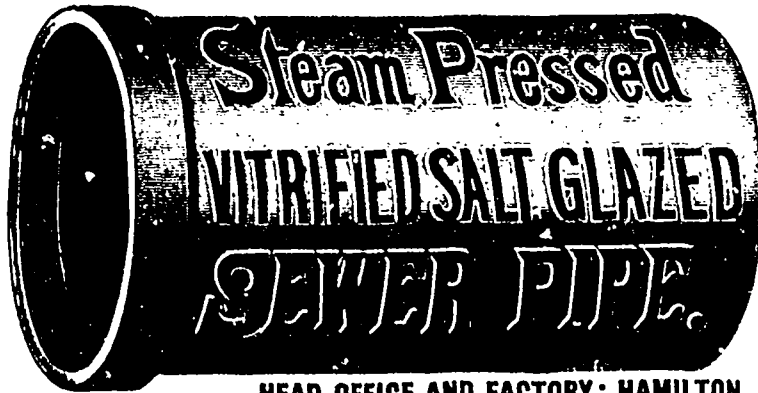
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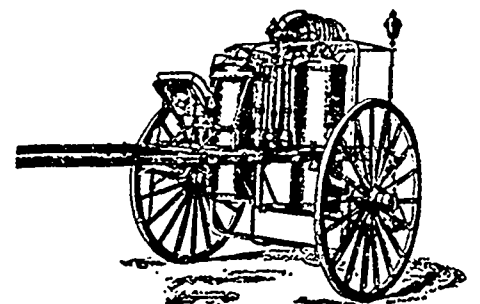
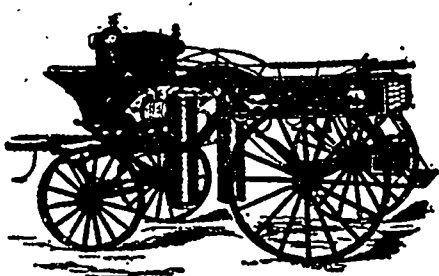
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# MUNICIPAL DEPARTMENT

## HOUSE SANITATION.

In an elaborate paper on "Origins of Sanitation," by Dr. J. Spottiswoode Cameron, medical officer of health to the city of Leeds, &c., delivered at the recent Congress of the British Institute of Public Health at Hull, the author goes back to the earlier conditions of sanitation and the prevention of disease. Remedial measures were at one time regarded as the main source. Even pathology was looked upon mainly as morbid anatomy—the classification of disease; but after a time medicine began to look "rather to the causing than to the resulting factors as the basis of classification." Dr. Cameron shows that, though the countryman might have an immense advantage over the denizen of the town, he was not free from various complaints, such as ague from his undrained land, outbreaks of fever from polluted water, and many other things. It was in the towns that the necessity of sanitation was first recognised. A class of maladies, such as relapsing fever, typhus fever and small-pox, flourished best in crowded neighborhoods. Overcrowding and foul air, polluted drinking water, were conditions favourable to disease other than zymotic. Speaking more particularly of accumulations of spent matters and house drainage, the author referred to the old fashioned cesspool as a source of danger. "Nor was the danger greatly, if at all, lessened when the idea was suggested of placing traps in the course of drains to intercept effluvia generated in the sewer. These traps, it was soon found, were themselves effluvia producers close at hand, and a system of relieving all pressure in our drains, and disconnecting all house wastes from them, as well as of rapidly removing all solid accumulations, came to be regarded as essential to the well-being of a community." The separation of the sick in properly equipped hospitals and the notification of the existence of communicable diseases soon followed. After sketching the progress in sanitary legislation, the mapping out of the country into districts for health purposes, the obstruction offered by members of local boards, the employment of inspectors, and the desirability of a systematic examination of districts imposed by the Local Government Board, Dr. Cameron speaks of the importance of the Notification Act, which enables medical officers to give notice to the authorities in case of any communicable disease. This Act has enabled many serious sanitary defects to be discovered, and the author mentions that in one town every house is systematically examined, the number of occupants, of rooms, means of ventilating them, the water supply, drainage, &c., are all inquired into and tabulated, and he asserts that, without

claiming the whole or chief part of the health improvement to be due to such examination, the yearly death-rate, which had averaged for the five years preceding this house-to-house visitation 22.3, has averaged during the last five years only 18.6, an improvement of more than 10 per cent. He also dwells on the fact that many new houses built under by-laws and inspected are yet faulty. In some cases, houses are found which still have connection with the sewer, even when every waste-pipe is supposed to be cut off from the sewer. A strong-smelling chemical introduced into the sewer penetrated one house of a row of new houses built under modern by-laws and inspected. But thousands of our houses have wastes which are not disconnected with the sewer. In a recent examination in the outskirts of a large town, of recent erections, two-thirds had their wastes cut off and the other third not, and he found that the smell of a chemical entered the house through the drains in 18 per cent. of the former and in 60 per cent. of the latter. These facts all indicate—as he pointed out—that even modern by-laws, carefully carried out under able inspectors, will not necessarily guarantee, a few years later, the healthiness of a house.

## BRICK-DUST MORTAR.

The use of brick-dust mortar as a substitute for hydraulic cement, where the latter cannot be obtained, is now recommended on the best engineering authority; experiments made with mixtures of brick dust and quicklime showing that blocks of  $\frac{1}{2}$  in. in thickness, after immersion in water for four months, bore without crushing, crumbling or splitting, a pressure of 1,500 lbs. per square inch. It is considered, too, that the addition of even as small a proportion as one-tenth as much brick-dust as sand to ordinary mortar is preventive of the disintegration so often characterizing mortars used in the masonry of public works. The use of brick-dust mixed with lime and sand is said to be generally and successfully practiced in the Spanish dominions, and is stated to be in all respects superior to the best Rosendale hydraulic cement in the construction of culverts, drains, tanks or cisterns, and even roofs, whether for setting flat tiles or for making the usual tropical flat roof. The proportions used there in the manufacture are, approximately, one of brick-dust, one of lime, and two of sand, mixed together dry and tempered with water in the usual way.—Southern Architect.

## MANUFACTURE OF PAVING BLOCKS.

A new industry has recently been started in Norfolk, Va., says the *Manufacturers' Record*. It is a plant for the manufacture of paving blocks out of fibers of grass growing on salt water marshes. The grass is subjected to a heavy pressure, and large square blocks come out of the press, when the three circular saws take hold of the blocks and cut them into smaller blocks of about  $5\frac{1}{2}$  inches thick, provided lengthwise with strong wire.

These blocks are then subjected to a bath in three different tanks of different kinds of oil, which makes the fibre supple. These blocks have been tested for paving purposes in Philadelphia for over a year on one of the busiest streets near the stock yards, and have, it is said, stood the test remarkably well. They make a smooth, noiseless pavement on which it is claimed horses cannot slip. Large contracts for these paving blocks have been secured in Pittsburg and New York. This plant, as now established, turns out about four hundred or five hundred yards per day of this paving, and the owners expect to soon enlarge it considerably.

## LEGAL DECISIONS AFFECTING MUNICIPALITIES.

**BRYCE v. TOWN OF WOODSTOCK.**—Judgment in action for damages, tried at Woodstock, without a jury, brought by plaintiff against the Town of Woodstock, and defendant Hicks, who owns and drives an omnibus there. The plaintiff was thrown out of the bus by reason of its running against boulders, at corner of Main and Finkle streets. The learned Judge finds that there was reasonable excuse for want of notice to the corporation, required to be given by the Ontario municipal act, 1894. He visited the place where the accident occurred, the better to understand the evidence, and is of opinion that the stones in question were an obstruction amounting to non-repair of the highway. He finds that there was no negligence on part of defendant Hicks, and knows of no principle by which the town can be ordered to pay their co-defendant's costs. Action dismissed, as against defendant Hicks, with costs to be paid by plaintiff. Judgment in favor of plaintiff against the town for \$375 and full costs of action.

In the village of Huntsville, Ont., a local merchant has been fined for selling a paper of pins after the hour fixed in the early closing by-law of the municipality, and the case will be brought before the higher courts to test the legality of the proceeding. Even with all the uncertainties of the law it is fairly certain, says the *Montreal Gazette*, that the by-law will be declared in restraint of trade and out of the power of the municipality to enforce. The early closing by-laws are based on a mistake.

It is stated that Waukegan, Ill., is about to try the experiment of a fire protective system without the use of water. A company has been organized and the plan is to construct underground pipe lines to distribute carbon dioxide to warehouses, and to buildings of every description. In case of fire the action of the apparatus is automatic, and it is claimed that the gas, while extinguishing the fire in its incipency, will not harm the most delicate of fabrics. This would have the tendency to eliminate water damage, which in most cases is much greater than that by fire, and lessen the cost of fire insurance very materially—if it works as well as its promoters evidently think it will.

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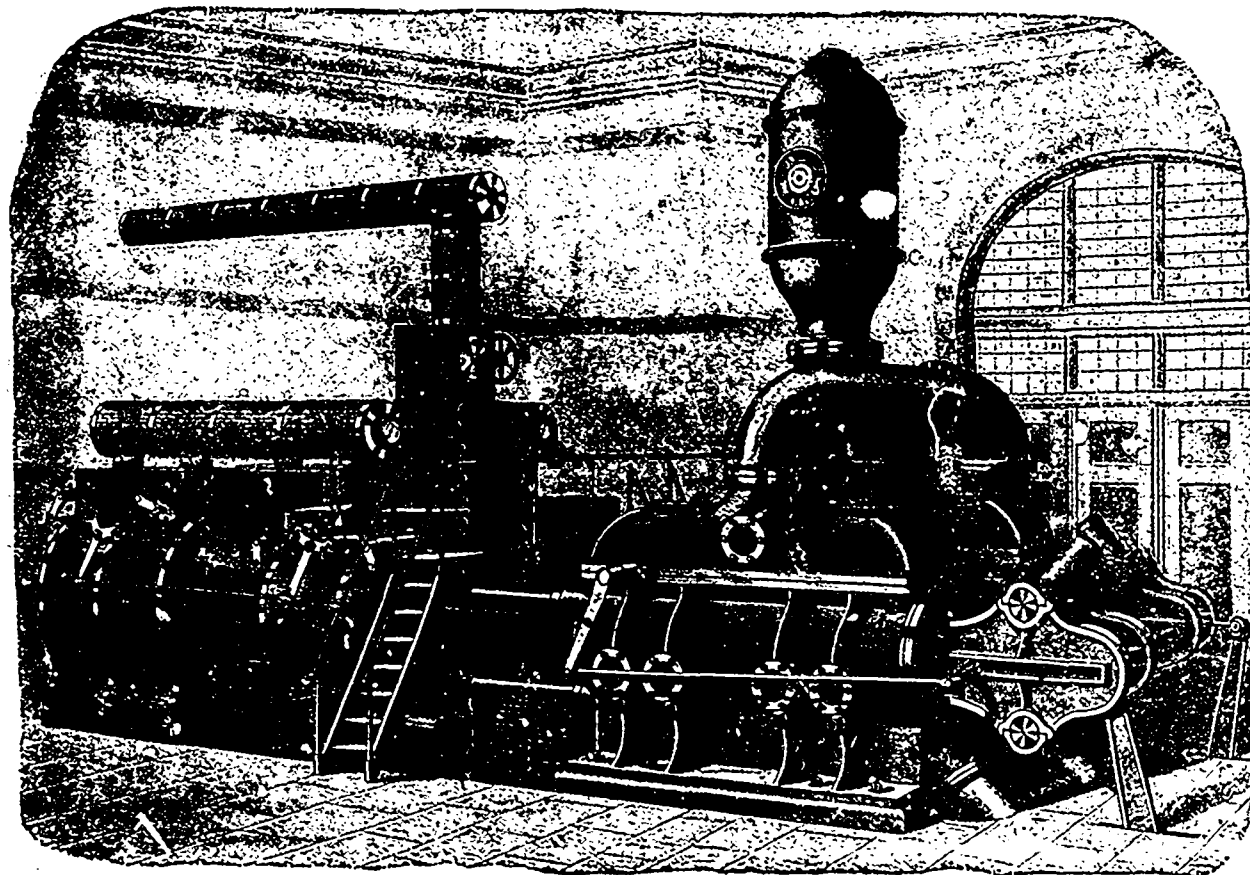
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CONDITION OF THE MARKET.

TORONTO: The market remains much the same as last week, with no change in quotations to note. The trade in plumbers supplies continues good, while glass and paint and oils are moving freely. Cement is firm.

MONTREAL: A good volume of trade is reported, the feature of the week being an advance of 5c. per barrel on English and Belgian cement. The receipts of last week were 1,600 casks English and 5,500 Belgian, the demand being chiefly for small lots. The receipts of firebricks were 52,000. The heavy metal trade remains firm.

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Table listing lumber prices for various types of wood, including clear picks, mill run, spruce culls, and shingles, with prices in dollars and cents for both Toronto and Montreal.

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Table listing mill cull boards and scantling prices for various sizes and types, including shipping cull boards and hemlock scantling.

B. M.

Table listing prices for various types of flooring, including dressed and undressed F.M., cherry, white ash, and beaded sheeting.

BRICK—M

Table listing prices for common walling, good facing, sewer, and pressed bricks in various colors and sizes.

Toronto. Montreal.

Table listing prices for roof tiles, ridge tiles, and various types of building bricks and ornamental tiles.

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

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Table listing prices for various types of stone, including common rubble, large flat rubble, foundation blocks, and granite.

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

Table listing prices for Ohio freestone in various dimensions and types, including buff promiscuous and blue promiscuous.

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Table listing prices for roofing slate in various colors and types, including red, purple, and black.

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Table listing prices for various types of paint, including white lead, red lead, yellow ochre, and black lamp.

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Table listing prices for various types of cement, including German, London, Newcastle, and Belgian.

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Table listing prices for various types of Portland cements, including Belgian, Canadian, Roman, and Superfine.

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Table listing prices for Keene's coarse whites, fire bricks, lime, and plaster.

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Table listing prices for cut nails and steel.

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Table listing prices for various sizes of cut nails and spikes, including hot cut and cold cut.

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Table listing prices for fine blued nails in various sizes.

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Table listing prices for casing and box nails, flooring nails, and shook and tobacco box nails.

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Table listing prices for finishing nails in various sizes.

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Table listing prices for slating nails in various sizes.

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Table listing prices for common barrel nails in various sizes.

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Table listing prices for clinch nails in various sizes.

SHARP AND FLAT PRESSED NAILS.

Table listing prices for sharp and flat pressed nails in various sizes.

STEEL WIRE NAILS.

Table listing prices for steel wire nails in various sizes.

Iron Pipe:

Table listing prices for iron pipe in various sizes and types.

Lead Pipe:

Table listing prices for lead pipe in various sizes.

Galvanized Iron:

Table listing prices for galvanized iron in various sizes and types.

Structural Iron:

Table listing prices for structural iron, including steel beams, channels, angles, tees, plates, and sheared steel bridge plate.