

CANADIAN CONTRACT RECORD

*A Weekly Journal of Engineering, Public Works,
Tenders, Advance Information and Municipal Progress*

This Paper Reaches Every Week the Town and City Clerks, Town and City Engineers, County Clerks and County Engineers, Leading Civil Engineers and Contractors throughout Canada, and Purchasers of Municipal Debentures.

VOL. 17.

TORONTO, MONTREAL — NOVEMBER 7, 1906 — WINNIPEG, VANCOUVER

No. 35

THE CANADIAN CONTRACT RECORD PUBLISHED EVERY WEDNESDAY

As an intermediate Edition of the Canadian Architect and Builder.

THE C. H. MORTIMER PUBLISHING COMPANY of Toronto, Limited,

Subscription Price, \$2 per annum, payable in advance.

CONFEDERATION LIFE BUILDING, TORONTO
Telephone Main 2962.

Branch Offices:

Room B34, Board of Trade Building, Montreal,
Telephone Main 2999.

750-751 Union Bank Building, Winnipeg.

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Wants to eight tons about 16 lb. rails and switches. About 20 in. gauge.

COMMERCIAL CEMENT CO., LTD.,
220 McDermott Ave., Winnipeg.

City of Prince Albert, Sask.

ENGINEER WANTED

Applications for the position of City Engineer for the City of Prince Albert, Sask., will be received by the undersigned up to FRIDAY, NOVEMBER THE 30TH, 1906. Applicants are requested to furnish references, state qualifications and salary expected.

C. O. DAVIDSON,
Secretary-Treasurer.

Town of Selkirk MANITOBA

Separate or bulk tenders will be received by the undersigned up till noon of the 12TH OF NOVEMBER NEXT, for the following works:

1. The supply of Vitrified Sewer Pipe f.o.b. Selkirk in carload lots, of sizes running from 9 inches to 24 inches in diameter. Tenders to state prices of Y junctions for various sized pipes and slants for connections to concrete sewers.

2. The excavation and refilling of sewer trenches, providing material, constructing concrete sewers, manholes and catch basins, the town supplying the ironwork and tile slants, the delivery and laying of vitrified sewer pipe.

Plans, profiles and specifications can be seen at the office C. A. Millican, C. E., 433 Main Street, Winnipeg, and at this office on and after 1st November.

A marked cheque for 5 per cent. of the amount to accompany each tender. The lowest or any tender not necessarily accepted.

By order,

(Signed) THOS. PARTINGTON,
Secretary-Treasurer.

Town Hall, Selkirk, October, 1906.

\$40 MONTHLY — LARGE YARD AND Office; suitable for contractor; next door west of Wilson Publishing Company's premises. S. FRANK WILSON,
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PARTNERSHIP

and excellent opportunity offered young Engineer and Surveyor to join another with wide experience and large connections in best part of Ontario province. Moderate capital needed. Address, 'Radius,' CONTRACT RECORD, Toronto.

TOWN OF PRESTON WATERWORKS

Tenders will be received by the undersigned up to 6 p. m. NOVEMBER 13TH, for the construction of a

STEEL WATER TOWER

Plans and specifications may be obtained from the Engineers, Davis & Johnston, Berlin and Galt. The lowest or any tender not necessarily accepted.

C. R. HANNING,
Town Clerk.

TO CONTRACTORS

Separate or bulk tenders addressed to the undersigned (and marked "Tenders") will be received up to 12 o'clock noon 12TH NOVEMBER, 1906, for the several trades work required in the erection and completion of a Collegiate Institute Building in the town of Picton, Ontario. Plans and specifications may be seen at the office of William Newlands, Esq., architect, Kingston, and at the office of the Secretary of High School Board, Picton. Lowest or any tender not necessarily accepted.

T. BOG,
Secretary.

Picton, October 17, 1906.

City of Prince Albert, Sask.

DEBENTURES FOR SALE

Sealed bids will be received by the undersigned up to FRIDAY, NOVEMBER 30TH, 1906, for the purchase of \$62,000 City of Prince Albert 4 1/2 per cent. Debentures. These debentures are repayable in thirty equal consecutive annual instalments of Principal and interest and are issued in denominations of \$1000, with coupons attached.

Tenders must include accrued interest from date of issue (July 14th, 1906) to date of delivery to purchaser.

C. O. DAVIDSON,
Secretary-Treasurer.

Refuse disposal by incineration is to be used at Paris, France, and three large destructors are being installed in different parts of the city, each of a normal capacity of 100 tons of refuse per 24 hr. Each station will be fitted with three regenerative Meldrum furnaces, and large Babcock & Wilcox boilers for steam generation.

CONTRACTS OPEN.

MACLEOD, ALTA. — The Town Council have decided to install an electric light service.

MONCTON, ONT. — The Presbyterian congregation intend erecting a new church.

PARRSBORO, N. S. — The Town Council are discussing the extension of their waterworks system.

MOOSE JAW, SASK. — Neil McMillan has purchased a site on River street for a large business block.

DALMENY, SASK. — Plans are being prepared for a large hotel building which will soon be erected.

QUEBEC, QUE. — J. Cherie will erect a building, corner Berthelot and Artillery streets, costs \$5,000.

PORT HOPE, ONT. — G. Garbutt has purchased a site, corner Ward and Princess streets for a residence.

STETLER, ALTA. — A site has been selected for a new Roman Catholic church which will be built at once.

CRESTON, B.C. — T. M. Edmonson is receiving tenders for erection of a church for the Methodist congregation.

SYDNEY MINES, N. S. — The Nova Scotia Steel & Coal Company are planning for extensive additions to their plant.

VIRDEN, MAN. — Virden Farmers Elevator Co., will receive tenders up to November 12th for rebuilding the elevator.

RIDGETOWN, ONT. — The Business Men's Association are discussing plans for the new proposed waterworks system.

LONDON, ONT. — Bethune & Fuchs, architects, Buffalo, have stated that a seven story hotel is to be built here, cost \$130,000.

LACOMBE, ALTA. — C. West is taking tenders for excavation of the new three story hotel, corner Railway & Dollmage streets.

OTTAWA, ONT. — Tenders will soon be called for the erection of the additions and alterations to the Parliament buildings, cost \$250,000.

BELLEVILLE, ONT. — David Price, chairman Harbor Committee, is receiving tenders for the purchase of \$12,000 5 per cent. debentures.

PORTAGE LA PRAIRIE, MAN. — The Midland Railway intend erecting a temporary station this fall — The Bank of Montreal have purchased a site for a new building.

SASKATOON, SASK. — H. B. Proudfoot, C. E., has a scheme for sup-

plying water power from the Saskatchewan river, cost \$250,000.

SYDNEY, N.S.—C. Wetmore and F. A. Crowell are considering the establishment of a large rolling mill for the manufacture of bar steel, pit rails, etc.

CALGARY, ALTA.—The R. C. Separate School board are taking steps to establish a new separate school in the Lacombe Separate School District.

PARIS, ONT.—Thos. McCosh, town clerk, will receive tenders up to November 12th for purchase of \$3,500 4½ per cent local improvement debentures.

PINCHER CREEK, ALTA.—Lawson & O'Gara, architects, Calgary, have taken tenders for the erection of a stone bank building here for the Union Bank of Canada.

HEADINGLY, MAN.—A petition will be presented to the Minister of Public Works asking for aid towards building a traffic bridge over the Assiniboine river here.

CHATHAM, ONT.—The Water Commissioners and Property Committee have instructed City Engineer Jones to prepare plans and estimates for a new water works station.

HALIFAX, N.S.—The City Council have granted a permit to the Nova Scotia Fertilizers Co., to erect works here.—F. W. Bowes is considering the enlarging of the Bicham-Bloomington Hotel.

FERNIE, B. C.—The Fort Steele Brewing Co. will receive tenders up to December 18th for erection of a fireproof brewery with capacity of 30,000 barrels per year. Plans at office of company.

GODERICH, ONT.—By-laws will be voted on November 10th to loan \$50,000 to the Goderich Wheel Rigs Company and to furnish electric power and tax exemption to the Jackson Mfg. Co., to locate here.

BRANTFORD, ONT.—Building permits have been issued as follows: Massey Harris Company, brick extension to shops, cost \$15,000; Brantford Cordage Company, brick addition to machine shop, cost \$1,200.

HAMILTON, ONT.—The Bank of British North America are preparing for the erection of a building, corner Barton and Westinghouse streets.—New tenders will be called for the construction of the theatre at the terminal station.

SUMMERSIDE, P. E. I.—Subscriptions are being received for rebuilding the Christian church, destroyed in the recent fire.—It has been decided to establish a system of water works, also to restore electric light plant at an early date.

NIAGARA FALLS, ONT.—The Auto Car Equipment Co., of Buffalo, are considering the erection of a factory here.—It is the intention of the Town Council to install a plant for the generation of electricity for lighting and waterworks pumping.

PRINCE ALBERT, SASK.—A by-law has been passed granting \$25,000 to the C.N.R. to establish divisional headquarters here.—C. O. Davidson will receive tenders up to November 30th for purchase of \$62,000 4½ per cent. city debentures.

TEMPERANCE VALE, N. B.—C. H. La Billois, Department Public Works, Fredericton, will receive tenders up to November 10th for building McElwain bridge, York county. Plans at the Department, and at Geo. Bartlett's store, this place.

EAST TORONTO, ONT.—W. H. Clay, town clerk, will receive tenders up to November 12th for supplying and laying water mains on Queen street, from Beech avenue, eastward 300 feet; and on Lyonde crescent, connecting with main

on Balsam avenue and extending to Hughes avenue.

ST. GEORGE, N. B.—C. H. La Billois, Department Public Works, Fredericton, will receive tenders up to November 10th for building Young's bridge over Miramiquid river, Charlotte county. Plans at the Department and at H. V. Dewar's store, this town.

BRANDON, MAN.—It is understood that the site, corner Rosser avenue and Eleventh street has been purchased by the Union Bank for a new building.—S. & H. Borbridge will receive tenders up to November 15th for heating system of their block on Eleventh street.

SACKVILLE, N. B.—D. Pottinger, general manager I. C. R., will receive tenders up to November 9th for construction of a standard 50,000 gallon water tank, excavation of trenches and laying water pipes and fittings. Plans at the Chief Engineer's office, Moncton, N. B., and with Station Master here.

VANCOUVER, B. C.—The Vancouver Engineering Works have taken tenders for erection of a foundry building on Sixth avenue.—Building permits have been issued as follows: A Burmeister, dwelling, Third avenue, \$1,000; G. H. Crane, dwelling, First avenue, \$1,900; Mr. Dempster, dwelling, Boundary avenue, \$1,700; J. I. Kyle, dwelling, Comox street, \$3,650; T. H. Best, dwelling, Tenth avenue, \$1,500.

STRATFORD, ONT.—Building permits have been issued as follows: D. McGregor, Shakespeare street, four frame residences; J. J. O'Brien, Downie street, brick store; Michael O'Brien, Ontario street, brick store; A. Knechtel, Dufferin street, two frame residences; Henry Yost, Brunswick street addition to shop; D. Kruspe, Dufferin streets, two frame residences; Fred. Hansen, Railway ave., brick residence; A. Waldie, Erie street, frame stable.

MONTREAL, QUE.—L. O. David, City Clerk, will receive tenders up to November 7th for erection of a weigh-house on Atwater avenue. Plans with M. L. R. Montbriant, architect.—The citizens of Westmount will petition the Government to build a new post office.—The arrangements have been completed for enlarging the cement mill of Thomas Morgan at Longue Pointe.—Plans have been prepared by J. J. Browne & Son, architects, for a ten-story building, corner St. Catherine and Drummond streets for Willis & Co., piano dealers.

WINNIPEG, MAN.—The Committee on Works has this week taken tenders for construction of granolithic walks on Olivia, Maple, Alexander, Sargent and Furby streets; sewer construction in Mountain, Notre Dame, St. John's and Anderson Avenues and Charles street; asphalt pavements on Salter, Monkman, Rorie and Maple streets, Selkirk, Sargent and Sutherland avenues.—The City Engineer and Health Officer have recommended sewers to be constructed in Alfred avenue.—The City Council gives notice of its intention to construct granolithic walks on Hargrave and Fountain streets.—A site has been chosen in Block F, St. Boniface, for the new shops of the C. N. R.

EDMONTON, ALTA.—F. Gelinax, Department of Public Works, Ottawa, will receive tenders up to November 28th for construction of a public building here. Plans at the Department, with R. J. Manson, Clerk of Works, this city, and J. Greenfield, Superintendent of Public Works, Winnipeg.—Building permits have been issued as follows: Dr. Sproule, dwelling, Sixth street, \$3,000; R. W. R. Armstrong, printing office, \$5,000; Y.M.C.A. building, \$50,000; W. A. Fife, dwelling, Twelfth street, \$2,700; D. A. McClelland, dwelling,

Sutherland street, \$2,100; Robt. J. Anderson, dwelling, Sutherland street, \$2,100; Campbell Furniture Company, frame warehouse, Second street, \$3,700; E. Flexman, dwelling, Thirteenth street, \$1,800; M. Stillman, dwelling, Edmiston street, \$1,200; E. Bayless, dwelling, Ross street, \$2,400; T. H. Mason, store, Namayo street, \$1,200; A. C. Carrathura, store, First street, \$1,500; A. R. Chisholm, frame dwelling, corner Jasper and Fourth streets, \$3,500.

TORONTO, ONT.—A. G. Strathy & Co., real estate dealers, have sold the property, 136-138 Adelaide street west, to L. T. John & Vaughan, who will erect a building there for their use. They have also sold the property, 84 and 86 Duke street, to D. Kennedy for a factory building, and a lot on Shaw street to E. W. Watkins for a residence; a lot, corner Bloor and Brunswick avenue for a residence, and block of land on Yonge street, near Davisville, on which eight residences will be erected. The same dealers have sold the following dwellings, which will be remodelled and improved: Nos. 234 to 238 Sackville street, 60 to 64 Nelson street, 20 and 22 Duncan street, 123 Manning avenue, 41 to 47 Peter street.—Tenders will be taken at 107 Lippincott street for lathing, plastering, plumbing and carpenter work of four houses at Toronto Junction.—The Board of Control have decided to readvertise for tenders for roofing St. Lawrence market.—The plans for the new Royal Bank building King street east are being prepared by Carrere & Hastings and E. G. Bird, architects and it is expected that work of building will soon commence.—Tenders are wanted at 388 Spadina avenue for building three brick houses.—A by-law will be submitted to the ratepayers, January 1st, providing for the construction of Yonge street bridge, and in the meantime tenders will be called.—The Board of Control have decided to lease a site at Ashbridge's Bay to the Sherwin-Cooper Company for a factory for gasolene launches.—C. W. Morrison, New York, has purchased the Banks farm on Yonge street, near Davisville, on which he intends building a number of houses to cost from \$2,500 to \$5,000.—A lot has been sold on St. George street, south of Bloor, on which a family residence will be erected.—City Engineer has recommended the construction of the following: Vitrified block pavement on Jarvis street, from Front to Queen, cost \$22,168. Cement concrete sidewalks on Ossington avenue, from Dundas to College, \$2,166; Lippincott, from College to Bloor, \$3,152; Esther, from Queen to Grange, \$1,201; Belmont, from Yonge to Davenport, \$1,210; Macpherson, from Avenue road to 685 feet west of Yonge, \$2,034; King, from John to 66 feet west of Widmer, \$1,481; King, from Spadina to 66 feet west of Widmer, \$1,219; Dupont, from Bathurst to Christie, \$2,206; Clinton, from Bloor to Barton, \$1,797; Queen, from Pape to Leslie, \$2,643; Hampton, from Danforth to Hogarth, \$1,871; Huron, from Grange to College, \$2,576; Chestnut, from Agnes to Queen, \$1,762, and many others.—The City Engineer has been instructed to report on a high level bridge extending eastward from Bloor street.—The officers of the Home for Incurable Children intend soon to build an addition to their present building, at 138 Avenue road, cost \$15,000.—Building permits have been issued as follows: J. W. Fowler, three 2-story and attic brick dwellings, Bathurst street, near Barton avenue, cost \$7,500; M. Healy, 2-story and attic brick dwelling, 659 Huron street, cost \$6,000; W. Tucker, 2-story brick dwelling, Lynd avenue, cost \$2,500; Henry G. Kerby, 2-story and attic brick and stone dwelling, Roxboro avenue, near Clumy, cost \$6,500; R. Johnson, 2½-story brick dwelling, Pearson avenue,

Robt. J. An-land street, re Company, reet, \$3,700; tenth street, ling, Edmis-ss, dwe l ng, Mason, store, C. Carrathura, ; A. R. Chis-er Jasper and

G. Strathy & ave sold the : street west, who will erect se. They have and 86 Duke a factory buld- o E. W. Wat- corner Bloor a residence, e street, near residences will ders have sold hich will be re- Nos. 234 to 238 Nelson street, 123 Manning reet.—Tenders ncot street for ing and carpen- Toronto Junc- ol have decided for roofing St. plans for the g King street by Carrere & , architects and f building will s are wanted at building three r will be sub- s, January 1st, ction of Yonge meantime tend- Board of Control te at Ashbridge's er Company for unches.—C. W. is purchased the reet, near Davis- ends building a t from \$2,500 to n sold on St. Bloor, on which e erected.—City ended the con- g: Vitrified block et, from Front to Cement concrete n avenue, from 166; Lippincott, \$3,152; Esther, \$1,201; Belmont, ort, \$1,210; Mac- road to 685 feet King, from John er, \$1,481; King, west of Widmer, thurst to Christie, Bloor to Barton, Pape to Leslie, Danforth to Ho- from Grange to nut, from Agnes to many others.— s been instructed el bridge extending reet.—The officers rable Children in- addition to their 138 Avenue road, ling permits have s: J. W. Fowler, c brick dwellings, Barton avenue, cost 2-story and attic Huron street, cost 2-story brick dwell- ost \$2,500; Henry nd attic brick and boro avenue, near R. Johnson, 2¼- , Pearson avenue,

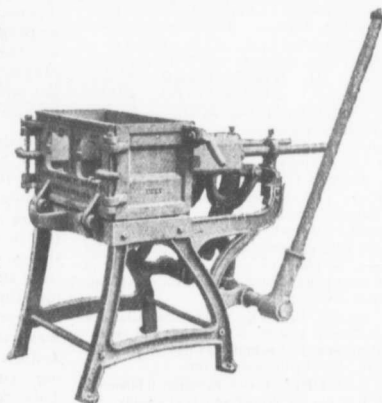


THE IDEAL HOLLOW CONCRETE BLOCK MACHINE

The Favorite of the Block Yard, Contractor, Builder and Farmer

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MONTREAL

cost \$3,200; G. A. Fleming, 2-story brick dwelling, Boustead avenue, cost \$2,500; Whaley & Carter, pair 2½-story brick dwellings, Simpson avenue, cost \$6,200; C. W. Chadwick, pair 2-story brick dwellings, 635-637 Shaw street, cost \$5,000; J. & W. H. Avison, pair 2-story and attic brick dwellings 164-6 Margueretta street, cost \$5,000; Eureka Refrigerator Company, 1-story dry house and dry kiln, 52 Noble street, cost \$1,700; J. T. V. May, six 2-story and attic brick veneer dwellings, Brock avenue, near College street, cost \$10,000; R. J. Robson, 2-story and attic brick dwelling, Gladstone avenue, near College street, cost \$1,800; J. M. Smith, three 2½-story brick dwellings, 1062 Bathurst street, cost \$7,400; John M. Scott, 2½-story brick dwelling, 223 Grace street, cost \$3,400; A. T. Graham, pair brick stores 805-8 College street, cost \$4,500; W. J. Sanderson, 2-story brick dwelling, Shaw street, near Bloor, cost \$2,500; Mr. Morley, 2-story and attic brick dwelling, Pearson avenue, cost \$2,500; J. Coulter Co., 3-story brick factory, Lombard street, near church, cost \$8,000; F. S. Duff, pair 2-story and attic brick dwellings, 46-8 Beatrice street, cost \$5,000.

CONTRACTS AWARDED.

ARNPRIOR, ONT.—\$35,000 41/2 per cent debentures: W. C. Brent, Toronto, purchaser.

WELLAND, ONT.—Plumbing in Goodwin & Ross' store: Griffiths & Grass, contractors.

PORT ARTHUR, ONT.—\$274,000 town debentures: Dominion Securities Corporation, purchaser for \$276,823.

NEW WESTMINSTER, B. C.—Erection of Mosque at Millside for Hindoo colony: Parker & White, contractors.

SYDNEY, N. S.—Erection of St. James church: Chappell Bros., contractors, cost \$14,500. B. Whitten, architect.

ST. BONIFACE, MAN.—Erection of new Public school for the Norwood division: J. H. Tremblay, contractor, cost \$55,880.

FREDERICTON, N. B.—\$60,000 water improvement and sewerage debentures have been sold at par through the City's Brokers.

DUNNVILLE, ONT.—Erection of Knox Presbyterian church: Edgar Neville, London, contractor. F. Shepard, architect.

SASKATOON, SASK.—Erection of new building for the Canadian Bank of Commerce: Canadian White Co., Montreal, contractors.

GLEN PAYNE, ONT.—Installations of Kelsey system of warming and ventilating in public school: James Smart Mfg. Co., Brockville, contractors.

VICTORIA, B. C.—Erection of business block, corner Wharf and Fort streets, for Pither & Leiser: Gribble, Skene & Co., contractors, cost about \$50,000.

UXBRIDGE, ONT.—Installation of Kelsey system of warming and ventilating in the Methodist church: James Smart Mfg. Co., Brockville, contractors.

HAMILTON, ONT.—Construction of terminal station for the Cataract Power Co.: Canadian White Company, Montreal, contractors, cost about \$250,000.

SARNIA, ONT.—Erection of residence on Christina street for W. C. Dillon: Masonry, Corrick & Sons; carpentry, James McIlhagga; painting, Simpson & Carter.

LETHBRIDGE, ALTA.—Erection of three story brick factory for Lethbridge Woollen Mills Co.: Rex Virtue, contractor, cost about \$25,000. J. A. Macdonald, architect.

WINNIPEG, MAN.—The tender of Kelly Bros., Kenora, Ont., for construction of cement piers for the Redwood

bridge has been recommended for acceptance.—The contract for supply of 1,000,000 ties, 6,000,000 feet of logs and 300,000 feet of piling for the C. N. R. has been awarded to James Cowan.

BRAMPTON, ONT.—Erection of Public Library building: Masonry, carpenter work and plastering: Mason & Hill; painting and glazing, James Harmsworth; plumbing, Higgins & Large roofing and tinsmithing, Forbes Roofing Company, Toronto; electric wiring, Benet & Wright, Toronto.

FIRES.

Factory of Silker & Co., Amherst, N. S., damage \$3,000.—Saw and grist mill, etc., Treffis Roberts, Brigham, Que., totally destroyed, loss \$9,000.—Residence of C. A. Case, Duke street, St. Catharines, badly damaged.—Rossner & Brownstone's stable and contents, loss heavy.—Boiler room of the Rossin House, Toronto, damage \$2,500.—Old Folks Home, Bowmanville, Ont., completely destroyed.—Evaporating factory of F. Blasdall at Delaware, Ont., loss \$5,000.—Farm buildings of D. McKinnon, Oak Lake, Man., loss \$4,000.—T. H. & B. car shops, Hamilton, Ont., damage \$10,000.

NOTES.

Walker & Moore, painters, etc., Lindsay, Ont., have assigned to I. E. Weldon.

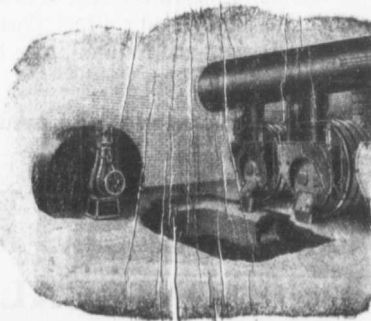
Hydraulic air compression by the system of entraining free air in flowing water and then conducting the water down a shaft until it is under sufficient head to give the desired pressure, at which point the air is intercepted and piped to the surface, is to be tried at South Thomaston, Me. The principle employed is substantially that used at the well-known stations at Magog, P. Q., and Norwich, Conn., but modified so that the head will be furnished by tidal action.

Deep trench excavation in wet sand has proved more economical than tunneling on sewer work at Sydney, N. S. W. The test was made where the sewer was 22 ft. below the surface. On the first section the excavated material was thrown from stage to stage, being handled four times. To save this handling an overhead cable was supported by masts over the line of the trench and the sand was lifted by a hoisting engine and travelling block. This device reduced the cost of excavation from \$1.86 per cubic yard, the figure when casting was

employed, to \$1.62; the sand carried more water where the cable was used, which made the reduction in cost an incomplete measure of the actual gain. The cable was 350 feet long and the masts were 34 feet high. This method of excavation was more economical than tunneling, and the expense of laying concrete and brick in the trench was nearly 50 per cent. less than in tunnel.

Waste gases from rotary cement kilns are been utilized to raise steam in boilers in a cement plant in southern Germany. The boilers are placed in settings built at the ends of the kilns, eight boilers having been placed in this manner, seven of which are in constant service. The boilers supply steam at 110 lb. pressure to a 450-h.-p. engine which drives the twelve rotary kilns in the plant and a coal grinding plant. The large amount of ash and fine raw materials which are driven off from the kilns is said to occasion the one great difficulty in the utilization of the waste gases, in that the ash and fine material threaten to clog the tubes of the boilers, but this could doubtless be largely overcome if water-tube boilers were used.

In Eastern Canada the extent of the trade in wooden pipe in British Columbia is hardly realized, and the enormous business being done in this direction within the short time from the organization gives some idea of the scope for future business. The Pacific Pipe Co., of Vancouver, have just completed the manufacture of 10,000 feet of 18-inch pipe for Fort William, Ont., as well as ten miles of 8-inch pipe for the same municipality. The company are now engaged on an order of 10½ miles of pipe to stand a pressure of from 300 to 500 feet head for the Canadian Pacific Railway in Alberta. This is the biggest pipe contract ever given in Canada. They are also working on an order of 6,500,000 of 24-inch pipe for the White Valley Irrigation & Power Co., at Vernon, B. C., as well as an order of about two miles of 6-inch pipe for Port Arthur. Besides these the firm have just completed installing waterworks systems for Cardston and Claresholm.



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Positive Draft
Saves Fuel
Burns Cheap Coal
Constant Steam
Pressure
Independent of Weather

Catalogue ?

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FORGE COMPANY, LTD.
MONTREAL, QUE.

NOTES.

Joseph Forget, roofer, Montreal, has assigned for the benefit of his creditors.

The firm of F. A. Grothe & Co., contractors, etc., Montreal, has been dissolved.

The Oliver Motor Car Company, recently formed to manufacture the Oliver trackless car, have located in Sarnia, Ont.

Alphonse Lafond and Thomas Bouchard, general contractors, Montreal, have registered under the firm name of Lafond & Bouchard.

The Meisel Manufacturing Company and the Port Huron Engine & Thresher Company are about to erect factories in Port Arthur, Ont.

W. A. Telfer and W. J. Baker, carpenters, Moose Jaw, Sask., have given notice that the partnership existing between them has been dissolved.

The Canadian Pipe Co., of Vancouver, have supplied half a million feet of wooden pipe to different points in Canada. The City of Vancouver is installing 3 miles of 36-inch continuous stave pipe built by this

company. The pressure from a head of 195 feet is 80 lbs. per square inch. This is for the intake of the city water supply. It was decided to go three miles further up the mountains to get a better pressure.

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forged from one piece of High Carbon Bar Steel without weld or rivet, solid neck and blade, tempered in oil, straight chucked handle can be replaced when broken.

CANADIAN SHOVEL & TOOL CO.
WRITE FOR CATALOGUE LIMITED HAMILTON, CANADA



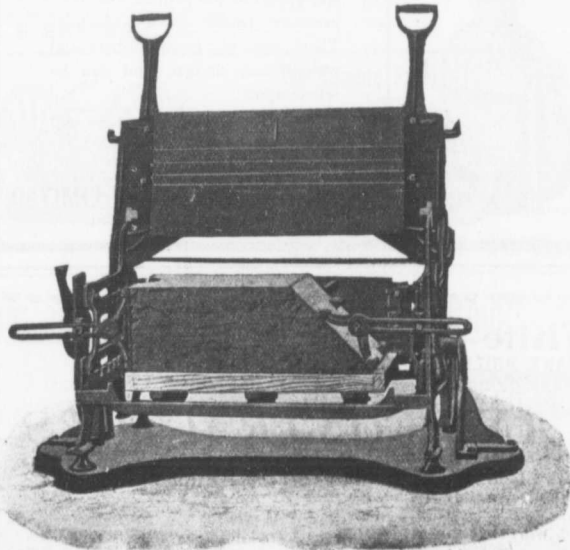
Sectional View of finished One-piece Shovel, showing gauge or thickness of steel at different points

Note Solid Shank

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Water Table, Gable, Circle, Angle, Chimney, Cornice, Pier Blocks, etc.
Catalogues and Information Cheerfully Furnished.



This Machine makes all blocks face down—"the only practical way"—allowing of a richer and finer facing, producing blocks that are perfect in appearance and impervious to moisture.

Let us tell you how the "Miles" will pay for itself over any other machine in three month's operation.

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Niagara Falls, - Can.

and cable reduction assure of was 350 e 34 feet cavation tunnel ing con- nch was than in

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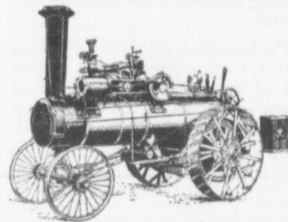
Messrs. W. H. C. Mussen & Company, railway contractors' and municipal supplies, Montreal, are always to the front. Their 1907 calendar has already reached us. It is quite attractive and contains a splendid map of the Dominion of Canada.

It is stated on good authority that the price of brick in Hamilton will soon be raised from \$8.50 to \$10 per thousand. In Toronto prices range from \$10 to \$18 according to quality.

Painting roads with tar to prevent dust has been tried in several places by Mr. Frank G. Howell, county engineer of Surrey, England. The surface is thoroughly swept when perfectly dry until the road metal is exposed. Hot tar is then poured on the road and brushed well into it, after which the surface is sprinkled with sand. The initial expense is said to be small and a considerable amount of dust is prevented. On wind-swept open roads the sur-

face is preserved by the tar, and the cost of the tarring is practically saved. On roads made of crushed granite, near towns, the cost is not saved by the decreased wear, but the dust is lessened. The tarring

can only be properly done during perfectly fine weather, and, unfortunately, however carefully the work is executed, the surface is liable to churn up during the heavy rains of the early winter.



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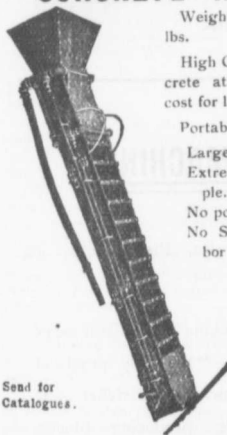
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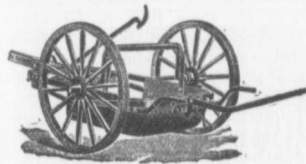
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THE SETTING AND CARE OF FIRE HYDRANTS.

With the approach of winter, which the weather prophets say will be a severe one, the superintendents of waterworks are necessarily engaged in putting fire hydrants in good condition for resisting freezing. It is accordingly timely to call attention to the recommendations on this subject made by the National Fire Protection Association. They read as follows:

In setting hydrants where the soil is not porous enough to ensure ready drainage, place around the base gravel, small fragments of stone or broken bricks to provide a stratum which will absorb water issuing from the hydrant drain in the normal operation. This drainage space should be kept low so as not to contribute to the easy penetration of frost around the hydrant. (Note.—Hydrants in cities are sometimes piped to drain to a sewer. The other means herein recommended are more applicable and simpler.)

Branch pipes to hydrants are more susceptible to freezing than the main line. Hydrants must therefore be of such length as to afford safe cover. (Note—There is a temptation for men who lay pipe to raise the branch lines when they will not raise the main lines, because they buy hydrants of a specified length for the job, and many times it is comparatively easy and always advisable to put the main pipe low, but rock or some other obstruction makes it equally convenient to put the hydrant high, the result being that the branch pipe at the hydrant, where, naturally, there will not be any circulation, and where, therefore, freezing is more apt to occur, is the least protected of any point in the system.)

In the fall, just before the ground begins to freeze, try every hydrant by running water through it. After it is shut off, examine carefully to see that it is draining properly and that it is in good condition, noting any necessary repairs immediately. (Note.—Be careful that the hydrant valve does not leak, because even if there is good drainage for a reasonable amount of water, continued leakage is apt to fill up the space and cause water to back up into the hydrant. The hissing of a small leak can be heard by placing the ear firmly against the iron casting.)

After two weeks examine the hydrants again without water running through. Small leaks will then have had a chance to fill up the hydrant and show at the hose outlets. Having thus made sure the condition is good, do not use the hydrants again during the winter except in case of absolute necessity, making visual inspection at least once a month meantime.

Hydrants set where ground water stands higher than the hydrant drain

should have the drip openings plugged and be pumped out by hand with a pump having a suction pipe suited to be inserted to the bottom of the hydrant barrel, as should any hydrant concerning which the drainage is in doubt.

In using hydrants having independent valves on the hose outlets, the hose gates should be shut last to insure drainage and to prevent leaving the inlet gate open and water in the hydrant. (Note.—A small hole has been drilled in the bottom of the hose valve when this is applied outside the hydrant, through which air may enter and water will issue. The procedure of rule will apply to all types of hydrant in use.)

The practice of putting foreign materials into a hydrant to prevent freezing, notably mixtures containing salt, is not recommended. The presence of salt is apt to induce galvanic action between the dissimilar metals of the hydrant, resulting in injury. Of course, such action takes place right at the valve, the most important part of the device.

To thaw we recommend the application of dry steam. Municipalities usually have a portable boiler which can be obtained. Repeated internal applications of hot water may be used. Only in extreme cases where other means are not available should the heat of a fire be applied to a hydrant, as valves are liable to be injured and it takes time and trouble to repair lead joints.

OCTOBER BUILDING T TALS.

The number of building permits issued in Toronto during the past month was 570, valued at \$1,536,575, and making a total for the ten months of this year of \$11,102,903. When compared with last year these figures show a large increase. The building permits for October, 1905, numbered 271 and were valued at \$1,009,005, while the totals to the end of October were \$8,954,789.

In Winnipeg the October building values totalled about \$1,080,000, making \$11,675,000 for the past ten months of this year. In October, 1905, the building values were only \$445,800.

NEW CRUSHING PLANTS.

Among recent sales of crushing plants by Allis-Chalmers-Bullock, Limited, of Montreal, were a No. 6 Gates "K" breaker complete with a 40 h.p. engine to Wallace & Sturtevant, Bancroft, Ont.; a "D" breaker, set of "B" rolls, "Gates" tube mill, "Reynolds" Reliance Corliss engine, boiler, elevators, etc., to the Commercial Cement Company, of Rose Isle, Man.; and a "Dodge" crusher with "Gates" elevators, etc., to the Western Canada Cement & Coal Company, Limited, Exshaw, Alta.

Cowan & Company, of Galt, Ont., are making extensive additions and improvements to their shops.

NEW COMPANIES.

J. A. Robertson Company, Limited, Toronto, incorporated, capital \$500,000, to manufacture and deal in bricks, tiles, lumber, etc. Promoters, J. S. Lovell, W. Bain, E. W. McNeill and W. F. Ralph.

Canadian Refining Company, Limited, Ottawa, incorporated, capital \$2,000,000. Promoters, H. Roy, Ottawa; F. W. Rolt, Rossland, B.C.; E. Hoffman, New York, and others.

British American Oil Company, Limited, Toronto, incorporated, capital \$200,000. Directors, H. Babel, W. A. Manion, A. L. Ellsworth.

Canada and United States Oil & Gas Company, Limited, Chatham, Ont., incorporated, capital \$30,000. Directors, E. I. Barnard and J. W. Shay, Pittsburgh, Pa.; P. W. Roth and F. B. Barnard, Buffalo; and others.

Erie Natural Gas Company, Limited, Dunnville, Ont., incorporated, capital \$40,000. Directors, W. W. Krick, F. M. Waines, A. Hoover, A. A. Root, and others.

Silver Lion Mining & Development Company, Limited, Cobalt, Ont., incorporated, capital \$500,000. Directors, F. Watt, Toronto; J. Black, Cobalt; A. G. F. Ross, Montreal; and others.

Harley Kay Knitting Machine Company, Limited, Georgetown, Ont., incorporated, capital \$40,000. Directors, F. A. Harley, A. F. Hatch and J. L. Counsell, all of Hamilton.

Watts Mines, Limited, Toronto, incorporated, capital \$1,000,000. Directors, W. R. P. Parker, G. M. Clark, J. M. McEvoy, G. Russell, and E. M. Lindsay.

NEW IDEA IN PAVING BLOCKS.

A new idea in granite paving blocks which has been tried successfully in England, are being manufactured in a wedge shape, and are particularly appropriate for roads over which pass heavy vehicles. This form of granite block has been used for some time in Germany, giving highest satisfaction. These blocks are four inches and wedge shaped, instead of the ordinary six-inch square block, in general use. In placing these new shaped blocks on the roadway, they are set uppermost with the greater end or base uppermost, in the form of a segment of a circle.

When placed in the above manner, the blocks are rammed down to a level and covered over with a dressing of fine sand. The greater weight that is placed on these blocks forces them closer together, so that they gradually become more compact, thereby giving strength and solidity to the thoroughfare. The cost is said to be only slightly in excess of the ordinary paving block, and the manufacturers of granite blocks for paving purposes will no doubt see in them a profitable source of revenue.

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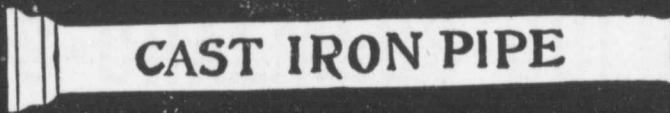
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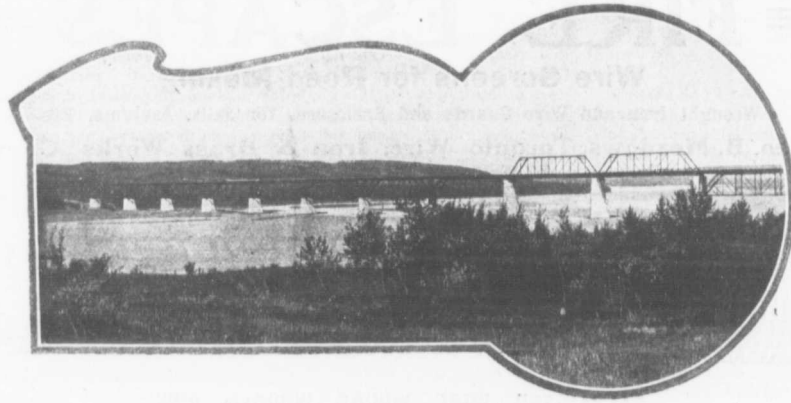
The following extract from an article on "The Bacterial Purification of Sewage," in a recent issue of the *Scientific American*, contains information of considerable interest to municipalities.

In 1895 Donald Cameron, of Exeter, England, brought the septic tank into prominence. This consists of a large tank, in which sew-

certain amount of decomposition takes place in the sludge at the bottom. When the tanks are large, sludge accumulates very slowly at the bottom. At a septic tank at Mansfield, Ohio, only a few inches of deposit were drawn off after it had been in use for a year and a half.

The septic tank has proved a most useful factor in sewage purification. It is used extensively as preliminary treatment for contact

of sewage disposal is the combination of the septic tank and the contact bed. The contact bed system was devised by W. J. Dibdin, who installed the famous bed at the town of Sutton, England. In this system sewage is first passed through a screen, to prevent the floating particles from blocking the interstices of the bed. It is then passed over a coarse-grained bac-



CANADIAN NORTHERN RAILWAY BRIDGE AT NORTH BATTLEFORD, SASK.
It has eleven 170 ft. spans. Total length of steel, all made in Canada, 1,870 ft. Built on concrete piers. Height from low water 70 ft.

age is allowed to remain, where it is acted upon by anaerobic bacteria—micro-organisms that live without the presence of air. Sewage contains a considerable portion of solid matter in suspension. By means of anaerobic action part of it becomes liquified and goes into solution, part rises to the top as

beds and percolating filters. It cannot, however, be considered by itself as a system of purification; it can be used successfully only as part of one.

There are some small towns in this country, however, where septic tanks alone have been used. The results in these places have invari-

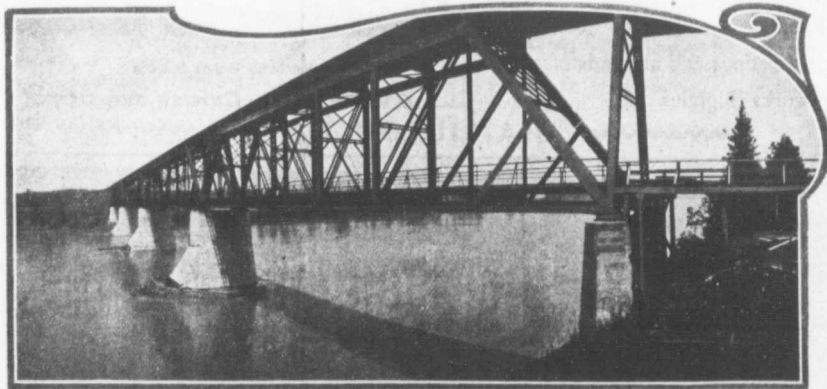
ably been very poor. The septic tank by itself is regarded by sanitarians as little better than an apology for a sewage disposal plant. In some cases, when only a low degree of purification is needed, such as when sewage is put into the ocean, septic tanks have proved useful.

Perhaps the most practical method

stone, coke, burnt ballast, or other suitable material not more than three inches in diameter. It is supplied with under-drains, so that it can be easily emptied. The sewage is allowed to enter the bed until the level of the filtering material is reached. This consists of a tank bed. The inlet is then closed, and

the sewage is allowed to remain standing "in contact" for a certain length of time. During this period the aerobic bacteria do their work. They oxidize the organic matter in solution, and in their search for food they decompose a considerable portion of the impurities. Further-

(Continued on Page 14.)



CANADIAN NORTHERN RAILWAY BRIDGE AT FORT SASKATCHEWAN, ALBERTA.
Consists of four 190 ft. spans and two 65 ft. girders. Total length of steel, 890 ft. Built on concrete piers. Height from low water, 82 ft.

scum, while part descends to the bottom as sludge. The inlet and outlet of the tank are placed below the surface, so that the sewage may pass quietly through with as little commotion as possible. The scum which rises to the top becomes oxidized after a time, and passes off into the air as harmless gas. A

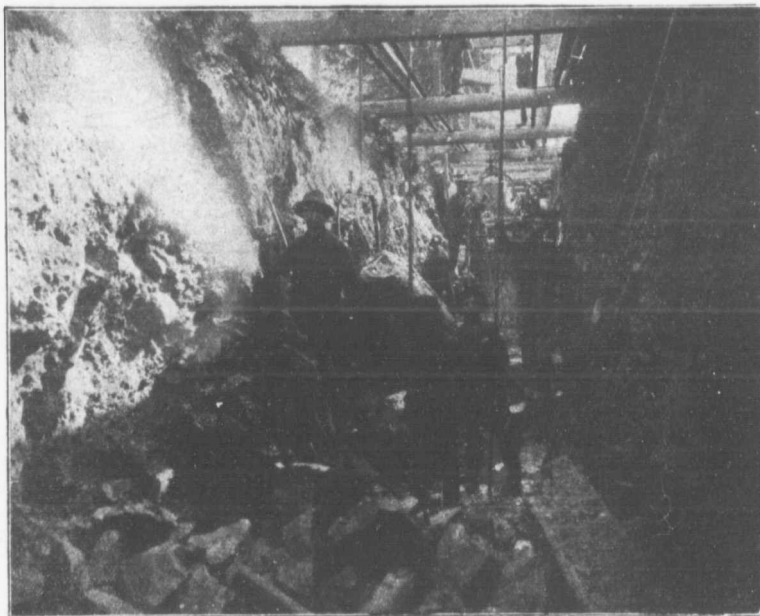
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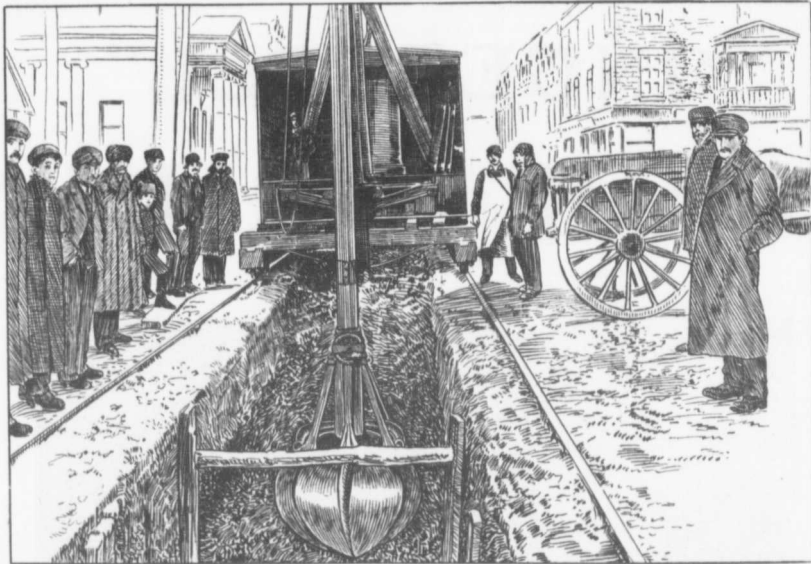
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more, certain ferments known as enzymes aid in the work of decomposition, while the solid particles adhere to the filtering material. The sewage is then allowed to flow slowly out of the bed, leaving many impurities upon the filter material. It flows into another similar bed, where further similar action takes place. Now that the bed is empty, aerobic action goes on among the particles of sewage left in the interstices of the material. Before the next flush comes, most of the spongy matter in the bed has been converted into gases. When the bed fills again, the gas is driven out of the bed into the air above.

Such is the method in use at Sutton. It is simple and effective, and has been widely used in systems laid out more recently. After the sewage has been treated in a septic tank, it generally need only be treated in one contact bed to secure the necessary purification.

Most septic tank contact bed systems contain several bacteria beds, so that while one bed is filling, another may be in contact, another emptying, and another resting empty. Four is a favorite number of beds for a small town plant, while six are often used.

The contact bed system involves only a small fall, so that it can be applied in almost any district. It has been in successful operation in many towns both in this country and in England. The secret of its success is the regularity of the time of contact and aeration. Experience has shown that unless such regularity is maintained the bacteria will not remain in healthy condition.

At Manchester, England, is the largest septic tank-contact bed system in the world. The beds are opened and closed at regular intervals by hand. In the more recent contact bed systems installed in this country, the invention of automatic airlock apparatus has made it possible to have the beds fill and empty at regular intervals automatically.

A more recently devised system of filtration, and one that is gaining favor in England, is known as intermittent downward filtration, percolating, or trickling filters. These filters are many feet in depth. The sewage is distributed in intermittent doses—often by means of a large revolving sprinkler. They are filled with material similar to that used in contact beds. At the bottom there is an open space for the circulation of air.

In order that percolating filters work successfully, great care must be taken in their construction. It is essential that air should always be present in all parts of the filter, scum must not be allowed to accumulate; there must be a thorough draining at the base, so that the filtrate may come from the filter easily and force air to come in by

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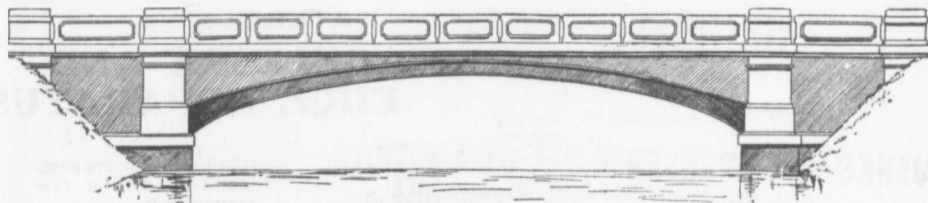
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induction. During the fall of the sewage through the bed, the aerobic bacteria get a splendid opportunity to oxidize organic matter, provided they have a sufficient supply of air. The effectiveness of a percolating filter increases with its depth, so that the filters are made as deep as possible.

They are generally used with septic tanks. This system is in use at Birmingham and Hanley, England, but it has practically never been applied in this country. The objections to its use are first the great fall required and secondly the danger of stoppage through frost, unless artificial heat is used. At an experimental plant at Leeds a purification of over 80 per cent. was secured in three minutes by this method.

The method of intermittent downward filtration is largely used in New England. It is, however, merely an adaptation of the old system of land treatment. It consists of passing sewage over soil intermittently, so that the land after receiving one charge of sewage is allowed to rest for a certain space of time before receiving the next. Underneath are generally placed under drains so that the effluent can easily escape. Although areas averaging as much as from ten to twenty acres per million gallons are necessary for these beds, the results obtained have been satisfactory. It is frequently necessary to pump the sewage to the filters. The best known examples of intermittent downward filtration through sand are those at Brockton and Framingham, Massachusetts. In both cases pumping stations are required. This system has one or two drawbacks besides its expense. Unless great care is taken, the sewage goes

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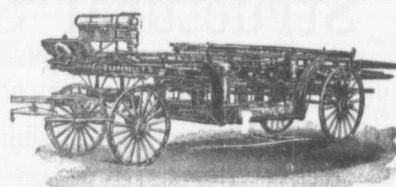
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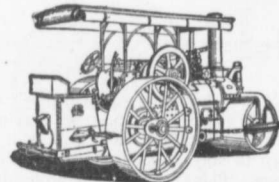
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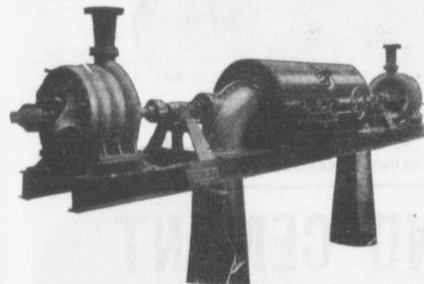


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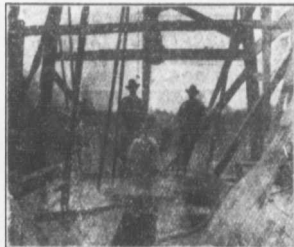
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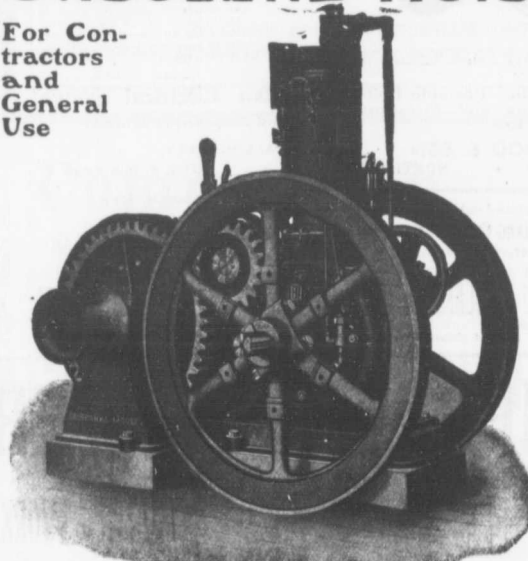
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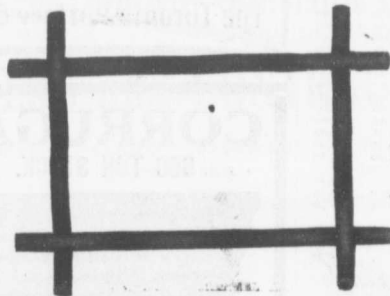
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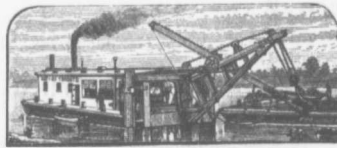
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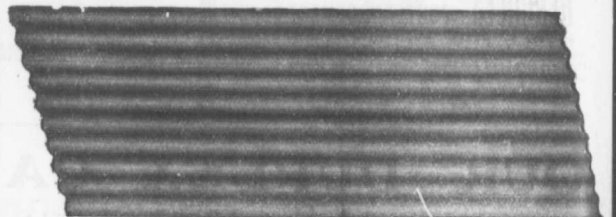
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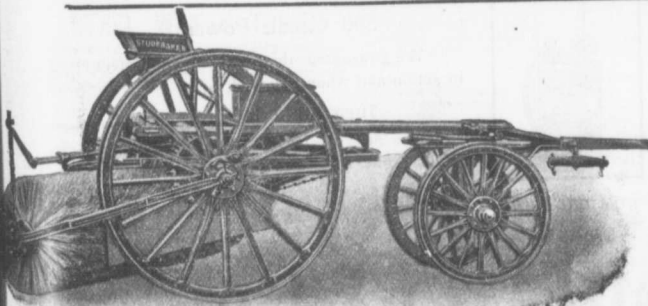
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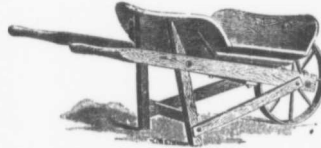
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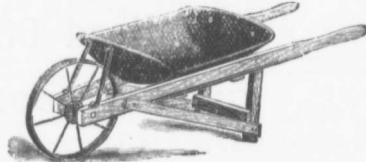
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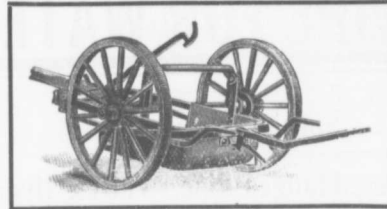
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