

# 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. 18

TORONTO, MONTREAL - AUGUST 7, 1907 - WINNIPEG, VANCOUVER

No. 23

## THE CANADIAN CONTRACT RECORD PUBLISHED EVERY WEDNESDAY

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Architect and Builder.

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

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in advance.

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lishers of any irregularity in delivery of papers.

**Classified Index  
of Advertisers,  
Page 15.**



**Temiskaming and North-  
ern Ontario Railway  
Commission**

**TENDERS FOR OFFICE,  
MINING ENGINEER**

Sealed tenders, addressed to the undersigned and  
endorsed "Tender for Office, Mining Engineer," will  
be received up to 5 p. m. on the 28TH DAY OF  
AUGUST, 1907, for the erection of an office for Min-  
ing Engineer at Cobalt.

Plans and specifications may be seen at the office  
of the Commission, 25 Toronto Street, Toronto, and  
at the office of the Chief Engineer, North Bay.

A certified cheque for \$500.00 must accompany  
each tender.

The successful tenderer must enter promptly into  
a contract and furnish security for the amount of  
\$1,000.00 for the due completion of same.

Cheques of unsuccessful tenders will be returned  
to them.

The lowest or any tender not necessarily accepted.

A. J. MCGEE,  
Secretary-Treasurer.

Toronto, July 22nd, 1907.

Papers inserting this advertisement without  
authority will not be paid for same.

## POSITION WANTED

Smart hustling salesman, with excellent creden-  
tials, experienced in the sale of cement, lime, bricks,  
pipes, etc., is open to represent any good firm in  
the Toronto district, either on salary or commission.  
AMOS,  
143 Mutual Street, Toronto.

## Tenders For Railroad Grading

The undersigned is prepared to let, in sections,  
good earth work, between St. Mary's and Embro,  
Ontario.

JOHN E. WEBB, Contractor,  
Union Bank Building,  
Toronto, Ont.

## Debentures for Sale

Sealed tenders will be received up till MONDAY,  
AUGUST 12TH, 1907, for the purchase of \$26,500.00  
Public School Debentures of the Town of Oshawa,  
dated September 1st, 1907, bearing interest at 5 per  
cent. per annum, and repayable at the office of the  
Treasurer, Oshawa, in 30 equal annual installments  
of Principal and Interest.

The highest or any tender not necessarily accepted.  
THOS. MORRIS,  
Town Clerk.

## The Royal Institute of British Architects, London.

## Examination for Admission as Associate.

An examination for admission as Associate of  
the Royal Institute of British Architects, Lon-  
don, will be held in Toronto, from the 14TH to  
21ST of NOVEMBER, 1907.

Full particulars and all information regarding  
this examination can be had by applying to F.  
S. BAKER, Honorary Secretary for Canada,  
Traders Bank Building, Toronto.

## EXTENSION OF TIME

Town of Campbellford

## POWER DEVELOPMENT

At Middle Falls  
ON THE TRENT RIVER

Sealed tenders are required for Rock Cutting, Con-  
crete Work, Turbine Wheels, Generators and about  
2 1/2 miles of Transmission Line. Plans and speci-  
fications may be seen after August 12th, at the office  
of the Engineer, JOHN S. FIELDING, C.E.,  
CONSULTING ENGINEER, 15 Toronto Street,  
Room 15, Toronto. Tenders to be in by 12 o'clock  
noon, SEPTEMBER 5TH, addressed to W. J.  
Doxsee, Esq., Mayor of Campbellford.

The lowest or any tender not necessarily accepted.

E. C. WEST,  
Clerk of the Corporation of the  
Town of Campbellford.

## SCHOOL DEBENTURES FOR SALE

TOWN OF NORTH BATTLEFORD

Seven Debentures of \$5,000 each, repayable in 30  
years, in 30 equal aggregate amounts of principal  
and interest at 5% per annum. Payable at the  
Canadian Bank of Commerce, North Battleford.

For further particulars apply  
E. W. DREW,  
Secretary-Treasurer North Battleford.

## CITY OF FREDERICTON DEBENTURES

Sealed tenders, marked "Tender for Fredericton  
Debentures," will be received by the undersigned  
until AUGUST 25TH, 1907, for City of Fredericton  
Water Debentures, running for forty years from  
August 1st, 1907, issued in sums of \$500.00 each,  
bearing interest at 4 per cent. payable half yearly.

Tenders to state the price and amount each applicant  
will take.

The City reserves the right to reject any or all  
bids or to accept any bid.

For further particulars apply to  
I. R. GOLDING, City Treasurer,  
Fredericton, N. B.

## CONTRACTS OPEN.

SUSSEX, N.B. - H. H. Dryden,  
Ltd., will shortly erect a large tinware  
factory here.

HANOVER, ONT. - A town hall and  
public library will be erected here at a  
cost of \$23,000.

WELLAND, ONT. - A by-law to  
raise \$11,940 for waterworks extension  
has been passed.

LEMBERG, SASK. - Dr. Knoke in-  
vites tenders up to August 12th for the  
erection of a school house.

YORKTON, SASK. - Tenders have  
been received by Mr. Pachal Ebenezer  
for the erection of a brick schoolhouse.

SARNIA, ONT. - The fire and water  
committee have recommended the  
purchase of 50 lengths of 4-inch water pipe.

MILDEN, ONT. - Ernest Duff in-  
vites tenders up to August 20th for the  
purchase of \$1,500 school district debentures.

STIRLING, ALTA. - The Town  
Council have adopted a scheme to  
provide new municipal buildings at cost of  
\$12,000.

INDIAN HEAD, SASK. - A new  
residence on Buxton street will shortly  
be built for the manager of the Bank of  
Montreal.

QUEBEC, QUE. - A by-law is to be  
submitted to the ratepayers in connection  
with the proposed new water-works at  
Notre Dame.

KINGSTON, ONT. - New tenders  
will probably be taken by the Dominion  
Government for the Tete de Pont Bar-  
rack works.

WALKERVILLE, ONT. - A \$30,000  
church will be built on the site of the

[FOR ADDITIONAL ADVERTISEMENTS FOR TENDERS SEE NEXT PAGE]

church of Our Lady of the Lake, recently destroyed by fire.

**WOODBIDGE, ONT.**—George A. Begy & Co. will sublet contracts for earth excavation on the C.P.R. between Emery and Bolton.

**NEW WESTMINSTER, B. C.**—The committee of St. Alban's Church have accepted plans for a new building which will shortly be commenced.

**AYLMER, ONT.**—Mr. St. Clair will at once rebuild the main building of his pork factory, a great portion of which was recently destroyed by fire.

**HALIFAX, N. S.**—The Mayor will receive tenders up to August 13th for supplying 2000, ½-inch water meters, and 100, ⅜-inch water meters.

**WELLINGTON, ONT.**—A vote of the ratepayers will be taken on August 20th on a by-law for raising \$1,000 for sidewalk construction and repair.

**DUBLIN, ONT.**—The Hibbert Council will submit to the ratepayers a by-law for the issue of \$2,000 debentures for sidewalk construction and lighting.

**MANNVILLE, ALTA.**—The Department of Public Works have issued instructions for the grading of the approaches to the Stony Creek bridge.

**GALT, ONT.**—The Town Council have extended the time for receiving tenders for 40,000 square feet of cement sidewalk construction until August 10th.

**YUKON.**—The new Valdez-Yukon Railway Company contemplate building a railroad from Valdez to Eagle City. The company will also build docks and wharves.

**FINCH, ONT.**—Tenders have been received by D. G. MacKinnon, Chairman of Building Committee, for the erection of a new Presbyterian church in the village.

**SHERBROOKE, QUE.**—By-laws have been passed giving a bonus to the Fairbanks Company, of Johnsbury, and a franchise to a public steam heating company.

**FORT WILLIAM, ONT.**—By-laws have recently been passed by the Council for the issue of debentures to the total amount of nearly \$40,000 for sewer construction.

**TRENTON, ONT.**—George Collins, manager Central Ontario Railway, is asking for tenders up to August 15th for building a concrete station and platform at Maynooth.

**WESTVILLE, N. S.**—Tenders will be taken by Fred Gelinax, Department of Public Works, Ottawa, for the erection of a public building. Plans with the Mayor, or at the above Department.

**HUMBOLDT, SASK.**—The trustees of the Humboldt Catholic School have just taken tenders for the erection of a commodious school building which will be so constructed that it can be raised from one to two storeys.

**VICTORIA, B. C.**—Wm. W. Northcott will receive tenders until September 3rd for supplying 5,000 ft. of 6-inch and 15,000 ft. of 4-inch cast iron water pipes. Specifications may be obtained at Mr. Northcott's office, City Hall.

**HAILEYBURY, ONT.**—Tenders for an eight-room school here will be received by Harry Walsh, Secretary of the Board, up to 5 p.m. on Monday, August 12th. Plans at office of A. D. Pi lar, architect, this place.

**COLPOY'S BAY, ONT.**—W. T. Park wants tenders up to August 10th for a two-storey brick veneer dwelling. Specifications at the office of Forster & Clark, Owen Sound, and at C. E. Whicher's store, Colpoys Bay.

**ST. CATHARINES, ONT.**—Alex. Milne, Superintendent, will take tenders

up to August 17th for the construction of earth embankments and canals at the waterworks reservoir, DeCew Falls. Plans at waterworks office, city buildings.

**MEDICINE HAT, ALTA.**—The ratepayers have carried by-laws for voting \$10,000 for building an isolation hospital and a grant of \$5,000 to the new wing of the general hospital, also for subscribing \$20,000 of 10 per cent. preference stock.

**WINNIPEG, MAN.**—Plans have been prepared for a new Grand Union depot, and it is expected that the work will shortly be put in hand.—The Sanitarium Committee will shortly visit Ninette and will probably make a permanent selection for a site for a sanitarium.

**PORTAGE LA PRAIRIE, MAN.**—Tenders have been taken for building the G. T. P.—Midland union depot. The work is to be completed this fall and will cost about \$40,000.—The C. N. R. are putting in additional round-house accommodation here and at Dauphin.

**ST. THOMAS, ONT.**—T. S. Poole, grocer, has taken tenders for the erection of a brick store.—The Ontario Railway and Municipal Board have approved a by-law providing for the issue of \$7,000 worth of debentures for the extension of the gas and electric light works here.

**WOODSTOCK, ONT.**—It is reported that the St. Charles Condensing Company will establish a factory here.—If the ratepayers sanction the by-law it is altogether likely that the Borden Condensed Milk Company, of New York City will establish in this city a factory for the manufacture of condensed milk.

**ORILLIA, ONT.**—A. P. Ardagh, M.D., Chairman Building Committee, invites tenders up to August 10th for alterations and additions required in connection with transforming the John Dunn residence into a general hospital. The building is to be steam heated. Plans and specifications at office of the architect, W. H. Crocker, Orillia.

**WOLSELEY, SASK.**—The Fire, Water and Light, and Public Improvement Committees have recommended the Council to submit a by-law to the ratepayers for providing a fire engine, 1,000 ft. of hose, fire ladders and truck and the erection of a stable, also for the completion of the town hall; estimated expenditure \$18,000.

**BRANTFORD, ONT.**—Samuel Suddaby, Chairman of Board of Works, will receive tenders up to August 8th for the construction of about 45,000 square feet of cement concrete sidewalks and 15,000 lineal feet of concrete curb. Specifications at office of City Engineer.—A permit has been obtained by the Ham & Nott Company for the erection of additions to their factory amounting to \$12,000.

**BRANDON, MAN.**—W. H. Shillinglaw, City Engineer, has been instructed by the Board of Works to prepare estimates for a bridge across the C.P.R. and Assiniboine river opposite First street. Two sets of figures will be given, one for steel and the other for re-inforced concrete construction. Approximate cost, \$50,000.—The C.N.R. will shortly commence the erection of a 10-stall round-house costing from \$40,000 to \$50,000 and a \$35,000 depot.

**MONTREAL, QUE.**—The authorities have selected Messrs. Brown and Vallance's design for a new medical building at McGill University, and are undertaking to raise the necessary funds, estimated at \$500,000, for building same.—Specifications have been submitted for the building of a new covered aqueduct to Lachine. The undertaking will cost

about \$2,000,000 and will be done by contract.

**MONCTON, N. B.**—A considerable boom is being experienced, 48 permits having been issued for new buildings, and 20 for extensive renovations.—Tenders have been taken by J. Edington, City Engineer, for the construction of about 1,550 feet of pipe sewers on Dominion, St. George and Austen streets.

**VANCOUVER, B. C.**—The Anti-Tuberculosis Society have decided to erect their Home for Consumptives at Tranquille, about nine miles from Kamloops.—A permit has been taken out by the Tacoma Construction Co., for a 16-storey steel structure hotel on Hastings Street that will cost \$260,000.—Other recent building permits include:—W. C. Franklin, frame dwelling, Tenth street, \$1600; John Menzies, Seventh street, \$2,000; T. Sakai, rice mill, Alexander street, \$1,500; and C. A. Lillisburg, Barnard street, \$1,600.

**OTTAWA, ONT.**—F. Gourdeau, Deputy Minister of Marine and Fisheries, wants tenders up to 24th August, for supplying two sets of triple expansion engines for steamers 21 and 22. Specifications at the Department of Fisheries, Ottawa; from G. J. Desbarats, Director of Government shipyard, Sorel; and from the Department Agent, Montreal.—Mr. Gourdeau also wants tenders up to Aug. 26th for 300 tons of Carbide of Calcium. Specifications and details at the Department.—Fred Gelinax, Department of Public Works, wants tenders up to August 16th for the construction of a public building at Simcoe. Plans and specifications at the office of the Department here.

**PETERBOROUGH, ONT.**—Alex. J. Grant will take tenders until August 7th, for canal construction work, specifications of which may be seen at the office of the Chief Engineer of the Department of Railways and Canals, Ottawa; at the office of the Superintending Engineer, Trent Canal, Peterborough; and at the office of Mr. Bell, Division Engineer, Campbellford.—Tenders for the construction of a new gallery at Knox church will shortly be taken.—The following building permits have been granted: J. J. Devlin, dwelling on Cricket Place, \$1,200; Wallace Evans, dwelling on Pearl avenue, \$1,700; T. McDonough, dwelling on Water street, \$2,300. T. F. Houlihan, contractor.—F. Adams, City Treasurer, will take tenders up to August 10th for the following City debentures: \$29,999.84, 4½ per cent., 20 years; and \$63,043.95, 4 per cent., 30 years, interest payable half yearly.

**TORONTO, ONT.**—The City Engineer has been authorized to advertise for tenders for the sheet piling required to protect the north side of the channel leading to Ashbridge's Bay.—Allen B. Strand, 124 Yonge street, invites tenders up to August 7th for all trades on two pair solid brick houses.—Tenders will be received up to August 13th, by Mayor Coatsworth, for the installation of hot water heating at Fire Hall No. 3, Yonge street, and Fire Hall No. 12, Bolton avenue. Plans and specifications at Property Department office, City Hall.—The City Architect will advertise for fresh tenders for the plumbing in the new morgue.—The licenses of Ed. Jackson, at Brunswick and Bloor streets, and Catherine Proctor, King and Sumach, were extended on the understanding that they build new hotels.—George W. Gouinlock is this week taking tenders for all trades in the erection of an office building for the Canadian Birkbeck Investment & Savings Co. Specifications at the offices of the architect, 1108 Temple Building.—The Mayor will shortly proceed to Ottawa for the purpose

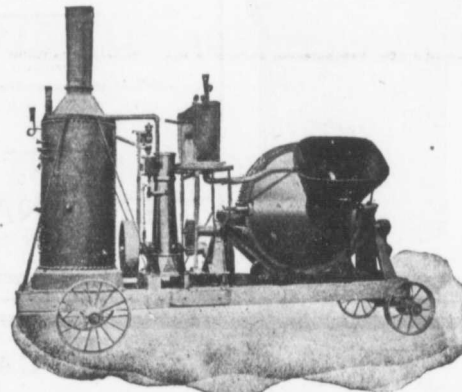
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to turn out a batch of concrete  
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All Kinds  
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Concrete Work**



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of urging the Government to proceed at once with the construction of the Island breakwater, and to obtain permission to begin work on the sea wall.—The following building permits have been issued:—E. J. Charles, 2 detached 2-storey brick dwellings, Perth avenue, \$4,200; Fred Ingram, 2 pair semi-detached 2½-storey rough cast dwellings, Gerrard street, \$7,000; Peter Watson, pair semi-detached 2-storey brick houses, Emerson avenue, \$5,000; J. W. Small, 3 attached 2 storey frame and brick veneer dwellings, Osler avenue; Robert Seal, 2½-storey brick and stone detached dwelling, Victor avenue, \$3,500; M. McTaggart & Son, pair semi-detached 2-storey and attic brick dwellings, Grace street, \$5,000; W. A. McTaggart, 3 attached 2-storey brick and stone stores, Bloor street, \$12,000; E. Beer, 2½-storey brick dwelling, Broadview avenue, \$4,000; E. Taylor, 2 pair 2-storey brick and stone dwellings, Hepburne street, \$11,000; W. H. Mitchell, pair semi-detached 2-storey and attic brick dwellings, Howland avenue, \$6,000; Walter Braybon, pair 2-storey brick and stone dwellings, Olive avenue, \$4,000; J. Turner, pair semi-detached 2-storey brick stores and dwellings, Danforth avenue, \$4,000; City Corporation, 1-storey stone and brick morgue, Lombard street, \$30,000; City Corporation, stone and brick police station, Pape avenue, \$25,000; M. S.

Eva Eaton, 1½-storey brick dwelling, Ridout street, \$4,000; E. G. Smitzer, pair semi-detached 2-storey brick and stone dwelling, Grace street, \$4,000; A. A. Kennedy, nine 2½-storey brick and stone dwellings, Ulster street, \$22,000; J. Bennie, pair semi-detached 2-storey brick dwellings, Olive avenue, \$4,500; N. H. Brady, 2 detached 2-storey and basement brick dwellings, Galby avenue \$6,000; Wm. Moss, two 2-storey brick stores and dwellings, Col lege street, \$7,500; S. A. Weismiller, 10 pair 2-storey brick dwellings, Fern avenue, \$30,000; Trustees University Residence, three 3-storey brick and stone terra cotta residences, Devonshire Place, \$150,000; Walter Nash, 2½-storey detached brick and stone dwelling, McPherson avenue, \$3,100.—The Church of the Redeemer, corner Avenue Road and Bloor street, will probably be enlarged, at a cost of \$14,000.—William Shaylor, 474 Yonge street, wants tenders for erection of two brick houses on Manning avenue. Tenders for sheet piling on north side of Keating's Channel will be received by the Board of Control up to August 13 h.—The Board of Control will receive tenders up to August 13th for the construction of the following works: Asphalt Pavements, Toronto street, from 64 feet 7 inches north of King to Adelaide. Czar street, from Yonge to North street. Richmond

street, from Bay to York streets. Shanly street, from Delaware to Salem avenue. Wooden Block (treated pavement.) Court street, from Church to Toronto streets. Bituminous Pavements. Oakland avenue, from Cottingham to 415 feet north. Poplar Plains road, from Edmund street to St. Clair avenue. Warren road, from Schiller to St. Clair avenue. Gwynne avenue, from King to Queen streets. Vitrified Block Pavement. Anderson street, from McCaul to University avenue. Sewer. Grandview avenue, from Logan avenue to west end; also for the construction of a number of concrete sidewalks.

#### CONTRACTS AWARDED.

SARNIA, ONT.—Construction of Fleming street sewer: Wm. Kemsley, contractor.

MEDICINE HAT, ALTA.—New abattoir of Malcolms' Western Canneries Ltd.: A. P. Burns, \$24,000.

WELLAND, ONT.—Building sewers on Ann, Buckley and Centre streets: T. E. Ferris, successful tenderer, at \$1,599.

PONOKA, ALTA.—The heating and

#### BLUE LIME STONE RUBBLE FOR SALE

The Hagersville Contracting Co. HAGERSVILLE, ONT. Limited



## You Cannot Afford to Take Chance

Poor Sewer Pipe is a menace to health and very expensive to replace.

Purchase the best and get it when you want it. Ask for full information at the nearest of our three factories.

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HAMILTON, ONT. TORONTO, ONT. ST. JOHN'S QUE.



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203 BOARD OF TRADE BUILDING  
MONTREAL

We manufacture and carry in stock at all times complete lines of

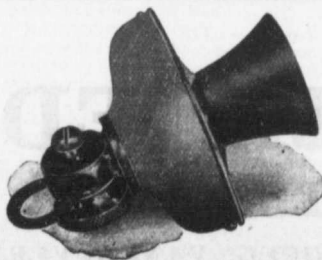
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WINNIPEG

MONTREAL





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Iron Pipe 1-8 in. to 12 in. carried in stock  
 Malleable Fittings Cast Iron Fittings  
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TORONTO 59 Richmond St. East

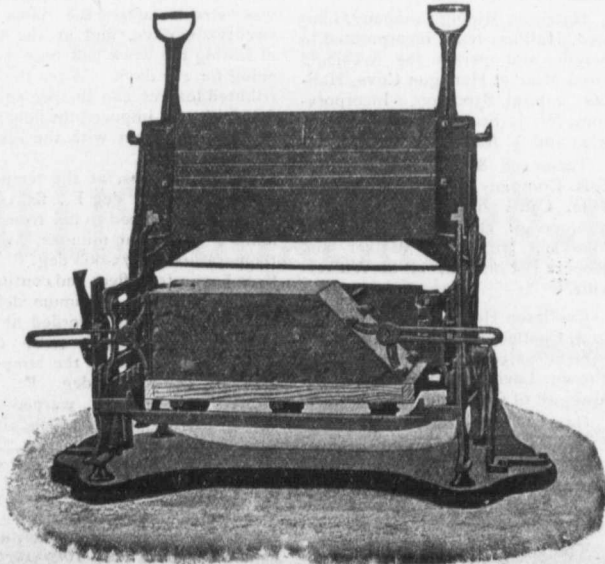
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MONTREAL.

ventilating of the public school is to be effected by the "Kelsey" system, manufactured by the Jas. Smart Manufacturing Co., Brockville, Ont.

**BATTLEFORD, SASK.**—The contract for the land titles office has been awarded to the Saskatchewan Construction Company at \$31,000.

**NEW WESTMINSTER, B.C.**—J. B. Bright has been awarded the contract for the tram line from Eburne to New Westminster. The work is to be hurried to completion as soon as possible.

**VANCOUVER, B. C.**—In connection with the establishment of their new paper pulp works at Swanson Bay, the Canadian Pacific Sulphite Paper Company have awarded the following contracts: excavation and concrete work.—B. C. General Contract Company; construction of power dam, pipe line, and electric lighting plant.—Elliott & McCallum, Vancouver.

**WINNIPEG, MAN.**—The C.P.R. have let the contract for an extension of the line running north-west from Moose Jaw on the way to Lacombe and Edmonton. The line will be immediately extended northward to the South Saskatchewan river, crossing it a short distance south-west of Hanley. The contractor is J. D. McArthur. For the seventy-three miles it is estimated that the cost will be in the neighborhood of \$300,000.

**REGINA, SASK.**—Extension to electric light power house: Murphy & Martin, contractors, price \$7,375. Walter J. Colman, architect.—The City has ordered two new boilers of 550 horse power from the Babcock Wilcox Co. for installation in the power house.—The following tenders have been accepted by the City Engineer:—Dunn Bros. for supplying 20 inch sewer pipe at \$1.65 per foot and junctions at \$5.50 each; W. F. Lee for 15 inch sewer pipe at 75 cents per ft. and junctions at \$3.10; and 18 inch sewer pipe at \$1.05, junctions \$4.20.

**LONDON, ONT.**—The committee have awarded the contract for the Dundas street pavement to the Barber Asphalt Company, whose tender was the only one received. Their contract called for an expenditure of \$26,201, divided as follows: Section "A", \$6,849; section "B", \$6,814; section "C", \$3,119; section "D", \$2,278; section "E", \$3,627; section "F", \$3,514. A trifle over 12,000 yards of pavement will be laid, costing about \$2.19 a yard. The same company were awarded the contract for the curbs and sewers, although the Forest City Company's tender was \$44,711 cheaper. Total expenditure will be \$29,155.41.

**TORONTO, ONT.**—Electric wiring at Toronto University: Philip Lahee, Montreal, contractor, at \$7,000.—The following contracts for pavements have been awarded by the Board of Control: Asphalt pavements, Ontario street, Queen to Wilton avenue, Godson Contracting Company, \$6,827; Boustead avenue, Dundas to 650 west, Godson Contracting Company, \$2,787; Dupont street, Bathurst to Kendal, Barber Asphalt Company, \$6,888; Dupont street, Walmer to Kendal, \$1,269; Wood street, Yonge to Church, Gudson Contracting Company, \$3,949; Clinton street, Barton to Yarmouth, Construction & Paving Company, \$5,759.—The City Engineer secured the contract for an asphalt block pavement on Strachan avenue from the G.T.R. tracks to 612 feet south, at \$6,614, and for a vitrified block pavement on Peter street, from Front to Wellington, at \$2,781.

### FIRES.

Buildings of Joseph Bourk, Napoleon Herbert, Three Rivers Seminary, E. Garon, Petrus Bergeron, Albert Duguay and Albert Boliveau, at Doucet's Landing, Que. Total loss about \$55,000.—Residence of Thomas Black, Huli, Que.; loss \$4,500.—Three buildings belonging to W. E. Earle, St. John, N.B., destroyed; loss \$12,500.—Factory of the Superior Mattress Manufacturing Co., Montreal; loss

\$6,000.—Pulp mills of the North River Lumber Company, Murray, C.B., totally destroyed.—Factory of Dominion Furniture Co., St. Therese Junction, Que., totally destroyed; loss \$100,000.—Dominion Elevator Company, Hamiota, Man.; loss \$20,000.

### NEW COMPANIES.

The Dauphin Creamery and Produce Company, Limited, Dauphin, Man., incorporated, capital \$10,000. Incorporators, Thomas Shaw, Samuel Code, Robert Lily, G. E. Goodhand, J. G. Harvey, W. Blackadar and H. Nicholson, all of Dauphin.

The M. G. Walker Company, Limited, Winnipeg, Man., incorporated, to deal in safes, vault doors and general office supplies, capital \$40,000. Incorporators, H. Teint, M. G. Walker, J. R. Davidson, H. H. Saunderson and Clara E. Walker, all of Winnipeg.

The Peter Jansen Company, Limited, Winnipeg, Man., incorporated, to act as general agents and commission merchants, capital \$20,000. Incorporators, Hon. Peter Jansen, of Jansen, Nebraska, and J. G. Jansen, Thomas L. Metcalfe, Lorne J. Elliott, and James Ellis Steele, all of Winnipeg.

McDonald & Wilson Lighting Company, Limited, Winnipeg, Man., incorporated, capital \$60,000. Incorporators, Dunbar H. Hudson, of Winnipeg, and Chas. S. McDonald, Chas. H. Wilson, Barbara Ann McDonald and May Winfield Wilson, all of Toronto, Ont.

Elmwood Development Company, Limited, Winnipeg, Man., incorporated, capital \$40,000. Incorporators, John Coltart, R.L. Greene, W. Smith, S. Staples and A. H. S. Murray, all of Winnipeg.

Orlando Vickery, Limited, Toronto, incorporated, capital \$40,000. Directors, Orlando Vickery, Victoria M. Vickery, Arthur J. Jackson, and others, all of Toronto.

Hartigan Mining Company, Limited, Halifax, N.S., incorporated, to acquire and operate the Archibald Gold Mine at Harrigan Cove, Halifax, capital \$500,000. Incorporators, W. J. Stairs, W. E. Leverman and A. A. McKay.

Tecumseh & Walkerville Oil & Gas Company, Limited, Walkerville, Ont., incorporated, capital \$40,000. Directors, Hiram A. Walker, Hiram C. Walker and Robert J. Colloton, all of Walkerville.

Castleton Hotel Company, Limited, Castleton, Ont., incorporated, capital \$2,500. Directors, Henry Brown, Levi B. Welton and W. R. May, all of Castleton.

General Industries Construction Company, Limited, Toronto, Ont., incorporated, capital \$100,000. Directors, John A. Patterson, G. F. McFarland, A. McKenzie, and others, all of Toronto.

The Martin Corrugated Paper &

Box Company, Limited, Toronto, incorporated, capital \$30,000. Directors, S. Martin, H. Martin and James A. Martin, and others, all of Toronto.

E. Harvey, Limited, Guelph, Ont., incorporated, to carry on the business of builders' supplies, capital \$300,000. Directors, Edmund Harvey, Joanna L. Harvey and Harriett Harvey, all of Guelph.

### FIRE TEST OF REINFORCED BRICK FLOOR.

Brickwork requires no recommendation as a fire-resisting material, for its qualifications in this respect are beyond dispute. But without the aid of steel in some form bricks cannot be conveniently applied to floor construction of the kind required in ordinary buildings.

A report issued last week by the British Fire Prevention Committee gives the results of fire and load tests upon a floor built of stock bricks and concrete, both reinforced by longitudinal bars of steel. The bricks were laid on edge in one course, the rows being 1 in. apart. The spaces were filled with Portland cement mortar in the proportions of 1:3, and in three out of every four spaces steel bars  $\frac{3}{8}$  in. square were laid at the distance of  $1\frac{1}{2}$  in. above the under surface of the floor. The bars were bent upwards near each support, and their ends formed into hooks of about 6 in. diameter projecting above the upper surface of the bricks. The floor was completed by a layer of concrete  $5\frac{3}{8}$  in. thick, composed of one part Portland cement, one part of sharp sand, one part granite chippings  $\frac{1}{4}$ -in. gauge and one part granite chippings 1-in. gauge. Three hooked bars were applied as transverse reinforcement in the concrete immediately above the bricks.

The floor thus built had the total thickness of  $9\frac{3}{8}$  in., the centering was struck after the lapse of twenty-six days, and at the time of testing the work had been hardening for 112 days. When the distributed load of 280 lb. per square foot had been imposed the floor was subjected to heat with the results stated below.

In ten minutes, at the temperature of 850-900 deg. F., flakes of mortar commenced to fall from the joints; in fifteen minutes, at the temperature of 875-900 deg. F., the floor began to deflect and continued to do so until the maximum deflection of 3 in. was recorded at the temperature of 1,900-2,000 deg. F.; in 20 minutes, at the temperature of 900-1,000 deg. F., the corners of the floor warped upwards, leaving spaces which ultim-

### JOHN S. FIELDING

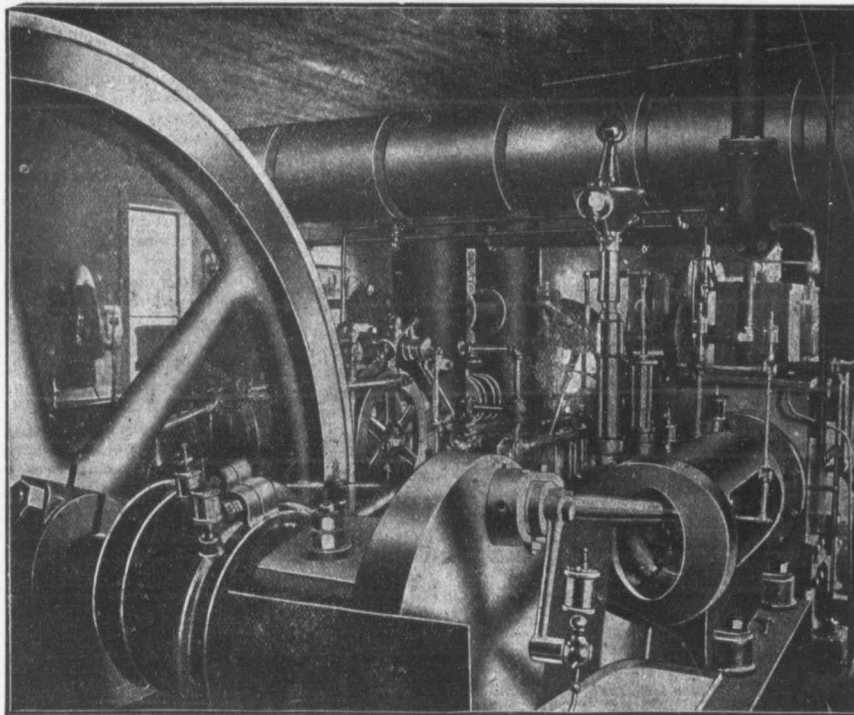
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Mem. Engineer's Club, Toronto

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Horizontal double acting crank and flywheel plunger pump built by us for Glace Bay, N. S.



Important factors in the selection of this type of pumping engine are simple construction, relatively small initial cost and low expense for maintenance and repairs. This and other similar pumps described in Bulletin 400.

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ately increased to the maximum of  $3\frac{1}{8}$  in. at the end of the tests and through which the interior of the building could be seen; in thirty-six minutes, at the temperature of 975-1,050 deg. F., the four sides of the floor commenced to rise; in fifty minutes, at the temperature of 1,075-1,175 deg. F., the warping of the floor began to loosen the upper courses of the brickwork of the testing chamber; and after the expiration of sixty minutes, at the temperature of 1,420-1,520 deg. F., vertical cracks appeared on the under side of the floor.

On the removal of the load four transverse cracks were found in the upper surface, and two of these extended to the lower surface of the floor, the permanent deflection of which was  $1\frac{1}{2}$  in. Neither fire nor water passed through the construction, which was awarded the classification of "Full Protection."

Our readers will find it interesting to compare the results with those contained in previous reports of the Fire Prevention Committee on concrete-steel and other types of fire-resisting floor construction.

#### RATES FOR WATER SERVICE.

By DABNEY H. MAURY, M. Am. Soc. C.E.

The proper fundamental basis for all rates for water service is that the rates, when established, should be fair. In what follows an effort will be made to outline the principles which should govern the determination of the fair rate. As these principles are the same for municipally-owned plants as for private ones, no distinction will hereinafter be made between the two.

Before rates may be termed fair, these two conditions must obtain:

(1) The total yearly receipts from all sources must be just sufficient to provide: (a) Reasonable interest on the investment. (b) Annual contribution to sinking fund to retire investment within a reasonable time. (c) Proper annual contribution to sinking fund for depreciation. (d) Legitimate operating expenses, including repairs.

(2) Each consumer must pay yearly, for the particular class of service that he receives, his just proportion of the above annual costs. To fulfil the second condition, no service of any sort whatever should be furnished free.

It may be said that, in practice, neither of these two conditions can ever be realized with absolute exactness, and obviously the second is far more difficult to approximate than the first; but these considerations can in no way affect the fundamental principles involved.

A water-works plant is almost always designed to supply fire protection as well as the water required for ordinary consumption. Manifestly, the first cost and operating expenses of a plant built only to

supply water for ordinary consumption are very much less than those of a plant which also furnishes fire protection. An average of available estimates made by eminent authorities shows that the annual cost of furnishing fire protection under average conditions is about 50% of the interest and other fixed charges due to cost of construction of the works, and about 20% of the annual operating expenses. Fair rates would therefore make the receipts from fire protection service sufficient to cover 50% of the fixed charges and 20% of the operating expenses, the balance of 50% of fixed charges and 80% of operating expenses being provided by the rates for water supplied for ordinary consumption.

Fire protection service may properly be divided into two classes: Public Fire Protection, or that provided by the public fire hydrants on the streets; and Private Fire Protection, which is afforded to the owners of factories, stores, warehouses, or the like, by means of special service pipes of large size connected with the water department's distribution mains.

Pursuant to the second essential condition of a fair rate, neither class of fire protection should be furnished free; and the sum of all receipts from both classes should equal the annual expense properly chargeable to the fire protection feature of the works.

In practice, payments for public fire protection may best take the form of hydrant rentals; and whether the plant is municipally or privately owned is wholly immaterial in this connection. In either case the water department is presumably a business concern, operated on a purely business basis; and it should receive the proper rates for public fire protection, paid out of the public funds.

There are abundant reasons why rates should be paid for private fire protection. The owner of the factory or other establishment so protected receives not only a yearly cash benefit measured by the reduction of his insurance premiums, but also a further substantial benefit in the form of protection against loss of business or other fire loss not covered by insurance. This latter benefit, while not so easy to

measure in dollars and cents, is often of greater value than the actual reduction in premiums.

The factory owner may argue that the same service connection which lessens his individual fire hazard also lessens to some extent the conflagration hazard of the community; but when all the facts are considered, this cannot well be said to be the case. The openings on his fire protection service are on his premises, and most of them are inside his buildings. They are not accessible for use by other parties. Should he happen to be dishonest enough to do so, he could draw, without detection, large quantities of water for uses other than fire protection. Should a fire once gather headway on his premises, enormous amounts of water might be drawn from thousands of sprinkler heads, or as a result of the breaking of his large service pipes by falling walls, or in other ways; and the quantity of water so drawn might readily be enough to seriously hamper the city fire department in its efforts to check a conflagration. To sum up, the factory owner may be said, in effect, to benefit exclusively, and to a substantial extent, by reason of a special service which the water department is at expense to provide and for which he should therefore pay. It is possible to meter his fire service satisfactorily; and if it were to base his rate on the value of the water actually consumed to extinguish fires would be as unreasonable as it would be to say that the value of a navy is nothing more than that of the ammunition which it expends in actual warfare.

(To be concluded next week.)

It is announced that J. William Guimond, contractor, Montreal, has assigned upon the demand of Merrinneau & Labelle.

The Best Steel Casting Company, Limited, with head office at Verdun, Que., has been incorporated, with a capital of \$299,000.

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**TO HOLD IRON HOOKS IN STONE.**

This is best effected by means of cement and not with plaster of paris, which under some circumstances exercises a very deleterious influence on iron articles, especially when both are exposed to the damp, or are placed in a room where the atmosphere is inclined to be humid. The truth of this statement may be demonstrated by the following case cited in a foreign paper. The swinging gate of a hotel had been hung to a red sandstone post. There were three hinges used, the upper and lower ones being cemented and the middle one fastened with plaster of paris (probably after the gate had already been hung). After the gate had been in use for some time a shell shaped piece of masonry broke off from the inside of one of the posts, although no outward deterioration was visible. This laid bare that part of the supporting hinge which had been fastened with plaster of paris and proved that the work of destruction was already pretty well advanced, as about one-eighth of an inch of rust scales could be easily picked off. The mass of plaster of paris also showed the characteristic rusty reddish-brown color. As the gate had not in any way injured the middle hinge, the only explanation is that the rusting of the clamp itself caused the in-

crease in volume and subsequent decomposition of the otherwise sound stone. Pure cement, on the contrary, has a most favorable influence on any article as a preventive of rust; in fact, iron embedded in pure cement can be even kept in water without rusting. A thin coating of cement has also proved efficacious in the same way, and its comparative cheapness should recommend it as a substitute for rad lead.

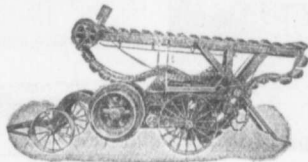
**INSOLUBLE GLUE.**

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is used throughout the world. Will do more work with less labor, at a less first cost than any Excavator at present in use in Canada. For particulars write

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per cent. of bichromate of potash it becomes insoluble after it has been exposed to the action of light. This renders it valuable for cementing porcelain, glass and other transparent articles, but for joints where the light cannot act upon the cement on account of the opacity of the cemented article the process does not work so well. But some effect is usually obtained, and in the case of such substances as paper, etc., the application of the principle often gives valuable results.

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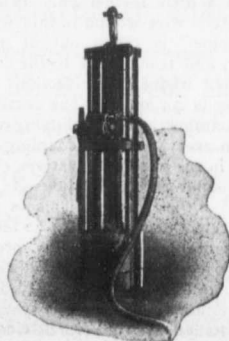
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**Reasons!**

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- They can drive pile when the drop hammer cannot.
- They are no wearing out of hoisting lines.
- They drive more piles in a day.
- They usually leave the pile so that it need not be cut off.
- They make sharpening of piles ordinarily unnecessary.
- Our catalog tells a whole lot more. A postal card will bring one.

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MIDLAND, ONT.

### THE MANUFACTURE OF WOODEN PIPE FOR WATERWORKS SYSTEMS.

Among the many and varied industries of the Pacific coast, none perhaps is more interesting than the manufacture of wooden pipes for water-works systems. Being cheaper, both in the initial cost and in the transportation charges, and yet equally as strong and serviceable as iron or tile pipes, they are rapidly coming to the forefront in the favor of the leading engineers of the continent.

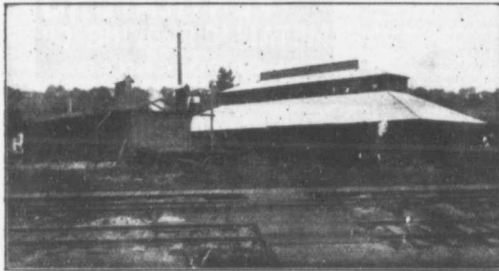
The wood pipe industry has been in existence for the past twenty years in the United States, and for the past four years in Canada, the

ground in the city of New Westminster and consists of five buildings at present, the factory, the powerhouse, the dry kiln, the warehouse and the office. The factory building is 68 feet by 138 feet. It contains a Berlin planer and moulder; a winder, for putting the wire around the pipes; a header, for trimming the ends of the pipes suitable for and adjusting the head or coupling; a band re-saw, and a horizontal band cut-off saw. This latter machine is of special construction and its purpose is to trim the ends of the pipe; also to cut couplings. Before they are cut apart, a series of couplings have the appearance of one solid pipe, with

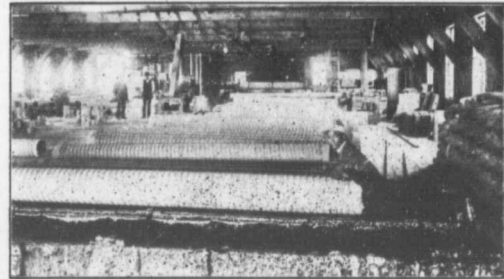
feature of the Dominion Company's equipment, and they are thus assured always of having perfectly dry lumber for use. The storage shed is 36 x 68 feet, with a railway spur line immediately alongside. The Company can manufacture pipe of all sizes from 2-in. up to 24-in. The daily capacity of the plant is about 2000 feet of 6-in. pipe and 750 couplings, about 20 men being employed.

### POROUS DRAIN PIPES.

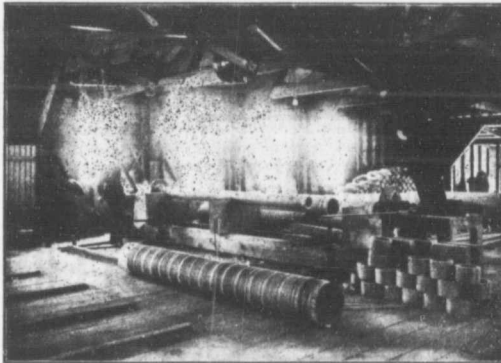
One of the most serious difficulties of the drainpipe maker of recent years has been the pressure test which has been applied in order to



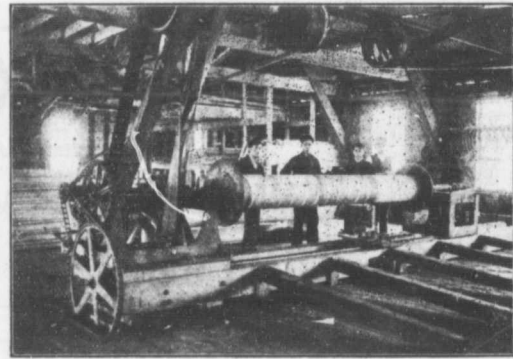
MAIN FACTORY BUILDING AND DRY KILN.



BATCH OF PIPE READY FOR DIPPING; VAT IN FOREGROUND, WINDER IN REAR.



INTERIOR VIEW OF FACTORY, SHOWING HEADING MACHINE.



SHOWING METHOD OF WIRE WINDING. THEY ARE MAKING COUPLINGS.

### VIEWS OF THE DOMINION WOOD PIPE COMPANY'S WORKS, NEW WESTMINSTER, B. C.

first Canadian factory being located in Vancouver, British Columbia. There are now three wood pipe manufacturing companies on the Canadian coast, two in Vancouver and one—The Dominion Wood Pipe Company, Limited, in New Westminster. The Dominion Wood Pipe Company is a comparatively new concern, having come into existence about one year ago. This company controls a new patented process of winding the wire, their method being to use two independent strands of wire instead of one. This is said to give an added strength to the pipe, as, in the event of one of the wires breaking, the other wire will hold fast.

The plant of the Dominion Pipe Company occupies an acre of

the wire wound around for a short distance and then cut off and re-started a little further on. When completely wire-wound in this way the "pipe" is taken out of the winder, and transferred to the cut-off saw, where each section or coupling is cut apart. The factory also contains a large dipping-vat wherein every pipe and coupling is dipped in tar as a preservative.

The boiler and engine house is at one end of the factory. This is an iron sheeted structure, 28 x 32 feet. A horizontal boiler of 120 lbs. pressure is used. The dry kiln is 24 x 70 feet, and has a capacity of 10,000 feet of lumber per day. The system was installed by the North Coast Dry Kiln Company of Seattle, Wash. The dry kiln is a special

prove that the pipes were capable of withstanding the action of water under a considerable head of pressure.

This test has usually been carried out by closing both ends of the pipe and forcing in water by means of a pump until a definite pressure (different in the case of different makers) has been reached. If no loss of pressure is experienced at the end of a certain time the pipe is considered to be satisfactory, but if any water oozes to the surface of the pipe (owing to its being "porous") the pipe is condemned as useless.

The term "porous" is used in a somewhat misleading manner, as it includes not only the natural air spaces or pores of the clayware



itself, but it also—and as a matter of experience much more frequently—covers the defects of structure and the small but real cracks and fissures which exist in the material.

These tiny cracks and fissures are extremely difficult to locate, and with certain clays are almost impossible of prevention unless the process of working up the clay is so prolonged that the cost of manufacture becomes excessive, and no profit results.

Laminating clays, and those in which there is a strong tendency to "flake," are particularly liable to this defect, and as the amount of lamination or flaking varies greatly from time to time, it not infrequently happens that a long run of good pipes may suddenly be ended by a run in which quite useless pipes are made, owing to the increased laminating power of the clay, though the method of working has been in no other respect altered.

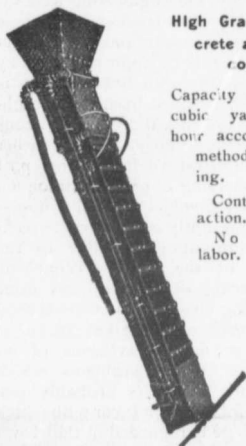
Whilst such lamination and failures in structure may often be attributed to faults in the machinery or method of working the clay, it is by no means seldom the case that it is the composition of the clay itself which is at fault.

Thus, the flakey clays are highly plastic, this very plasticity being the cause, amongst others, of the production of the flakes. Hence a reduction of this plasticity by the addition of a non-plastic material will frequently remove much of the trouble, and if the added materials are carefully chosen and added in the correct quantities—no more and no less than is necessary to obtain

the best results—the difficulty may be entirely removed.

The most suitable material for thus reducing the plasticity of a drainpipe clay is a fairly coarse sand which at the same time contains a sufficient proportion of grains of less sizes to properly mix with the clay and form a mixture of

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Capacity 10 to 60 cubic yards per hour according to method of feeding.

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No skilled labor.

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# BRICK

*When we ascertained the elements contained in the Shale from which our brick was made we felt sure that success was bound to come.*

*Modern treatment of that shale together with the most up-to-date Down-Draft Kilns and expert burners produced results that justified our most sanguine expectations — we were satisfied.*

*More than this, we have satisfied every customer—satisfied them with the quality of our brick, with carrying out our promises as to shipment and our treatment of them generally.*

*The consequence is that we continue to receive an increasing number of repeat orders and enquiries from many not previously customers.*

*This is very pleasing to us, but the demand has been so steady that we cannot guarantee immediate shipment to new customers—WE WILL SHIP WHEN WE SAY, but would advise orders to be placed as early as possible in order to avoid disappointment, for we can't ship all at once.*

*We are largely increasing our facilities for making and shipping and hope to satisfy all patrons who send early orders for MIMICO RED PRESSED BRICK.*

### Toronto Fire Brick Co.

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suitable adhesiveness and strength. The disadvantage of such a sand is that it is apt to produce a rough, somewhat unpleasant surface, owing to the different action of the salt on the sand and on the clay.

When the appearance of the surface is of importance, ground burnt clay of the same composition as the pipes may be substituted for the sand, with excellent effects if the clay be properly ground. It must not be too fine nor too coarse, but must contain both coarse, medium, and fine particles in suitable proportions. On this account it is best crushed in a crusher, followed by crushing rolls, as by setting these latter at a suitable distance from each other the correct proportions of the different-sized particles of material can be fairly easily obtained. The disintegrator and edge-runner mill are more adapted for fine grinding, and are less suitable for the reduction of burnt clay for use in preventing lamination.

When the porosity of drain pipes is not due to any structural failure, such as cracks and fissures, but is entirely owing to the large number of pores in the clayware, the best remedy will usually be found in the addition of a more easily sintering clay to that generally used, so that the more fusible clay may, by its fusion, fill up some of the pores, and bind the remaining particles closer together.

The use of such expensive materials as felspar, Cornish stone and other easily fusible substances of a similar nature, is seldom necessary, as their cost is often prohibitive, but surface clays can usually be obtained which are sufficiently rich in fusible materials to produce the effect desired.

The use of salt or other alkaline material is also to be deprecated, as being too intense in their action, and incapable of sufficient fine division to distribute them evenly through the clay. When these alkali-holding materials form part of a more complex substance (as in the case of felspar) this difficulty of distribution does not occur, as it has already been effected by natural agencies to a degree far more perfect than can be accomplished by the hand of man. Hence the reason for using natural clays of lower melting point in relatively large quantities in preference to such smaller quantities of alkali fluxes.

Where materials are added artificially to increase the porosity of the clay (sawdust, coke dust and finely powdered coal being commonly used for this purpose), and the pipes are incapable of standing the pressure test, the omission of part or all of these combustible materials will probably be the easiest way out of the difficulty, except in the case of those clays which cannot be burned without some non-clayey material. Such clays are not suitable for manufacturing drain pipes

of the highest quality, and their employment for this purpose cannot be attended with satisfactory results.—British Clayworker.

#### TESTS OF CONCRETE BUILDING BLOCKS.

So much has been said about the need of more complete information regarding the physical properties of concrete building blocks that it is gratifying to observe the attention paid to this subject for a long time by the engineering department of Iowa State College, at Ames. This school, says the Engineering Record, is one of the leading American engineering institutions and is supported largely by appropriations by the legislature of a State which is generally believed to show the highest average education of its citizens of all in the country. It has a rather remarkable record for taking part in the molding of public opinion on engineering subjects and for supplying as promptly as practicable technical information of value to the people of the State. What its engineering department has done regarding concrete blocks is typical of its methods in other technical directions, and the evidence of interest in current problems which this work shows is probably one reason for the high favor with which the college is regarded in the Iowa legislature.

When the manufacture of concrete blocks was first established on a business basis in the State the engineering department of the college recognized that until the new building material had been subjected to thorough tests it would be regarded with suspicion by architects and engineers. The publicity given to such blocks came almost exclusively from builders of machines rather than the makers and users of the blocks and their properties were largely unknown. The dry mixtures employed in the molding of the blocks were not in accord with the general trend of engineering progress, while the conflicting claims made by advocates of different types of machines tended to raise some suspicion that none of them was good for much. On the other hand, there was manifestly an excellent opening for the new material in the State provided it could be shown to be reliable and not too expensive. The cost of it was not a subject of special interest to the college, but the determination of the characteristics of the blocks was a proper field for investigation. Nearly three years ago tests were accordingly begun for the purpose of determining just what these blocks, as made in Iowa, could be relied upon to do, and this investigation has been continued ever since, thus affording the public just the data which are lacking in most parts of the country.

When the first tests were made it was evident that some of the blocks

showed abundant opportunity for improvement. There was a skimping of cement in some cases, a poor quality of cement in others, poor aggregate in others, bad curing in others and a pretty general failure to appreciate the importance of producing impermeable blocks. Some blocks crushed under a load of 28.5 tons per square foot and others were not crushed until a load of 48.8 tons was applied; some of them disintegrated after three alternate periods of freezing and thawing while others lasted for twelve alternations. In short, the early tests showed that the manufacture of such blocks demanded good materials and skilled supervision and was not a business that could be safely started by anybody with enough money to buy a machine and a supply of materials. The results of these tests were made public by Messrs. Marston and Reinhart, of the college, and unquestionably this publicity acted as a spur towards better work on the part of the manufacturers in the State. Tests made during the present year show that the minimum crushing strength of seasoned Iowa blocks is now about 45 tons per square foot, which was about the best figure reached two years ago. The most important advance has been in the direction of impermeability, however, for more than fifty alternations of freezing and thawing have been necessary to produce any marked disintegration of the blocks. Tests are also being made with an apparatus which subjects the face of blocks to a spray of water for periods of several hours in order to determine the length of time it will take a driving rain to produce moisture on the inside of a wall. While these tests are a novelty and it may be found that their practical value will be somewhat less than now seems likely, the experiments will furnish useful data regarding a property of concrete blocks which is of vital importance to the designer of buildings in which they are used.

Attention is called to this work which Dean Marston has been conducting because it suggests a field of usefulness for the laboratories of other colleges. In most institutions of this character there are testing facilities for determining all the essential properties of the concrete blocks made in their districts. The work is not so difficult that it cannot be conducted by students under the direction of the laboratory instructors, and if it is kept up continuously, as is done at Ames, it will afford information of much value to those people engaged in the block industry who are endeavoring to turn out a good product, as well as to engineers and architects. The difference in climate and materials in various parts of the country makes it desirable to have such tests carried out in all sections where concrete blocks are used, and the

(Continued on page 14.)



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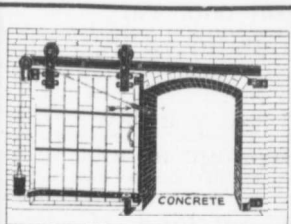
National Cement Users' Association affords an admirable opportunity for discussing the reasons for the variations shown by the product of different sections. It is safe to say that an advance in the industry toward uniformly better blocks will surely follow a general adoption in college testing laboratories of the work that has been going on for some time in the Iowa State College.

#### SOAP AND ALUM AS WATER-PROOF.

The cement reservoir of the new water system at Uxbridge, Mass., which leaked water at the rate of 25,000 gallons a day when tested, has been treated with an inside coat of a composition of soap and alum. The composition is made by heating soap, alum and water in a kettle until the mixture is the thickness of a paste, when it is applied, while hot, with brushes. It is believed that this will fill the pores in the cement and prevent the water from leaking through. This process has long been known to engineers, and in spite of the theory of some that it will not last, has given entire satisfaction on more than one occasion.

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(Continued on page 18.)



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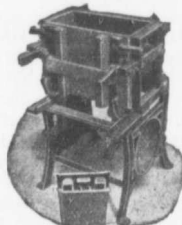
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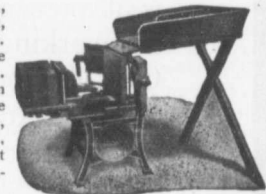
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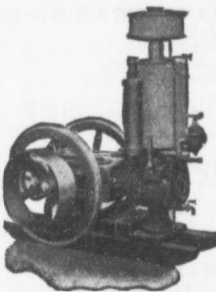
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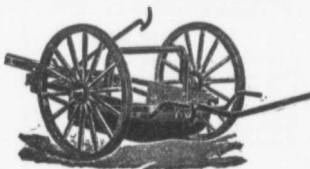
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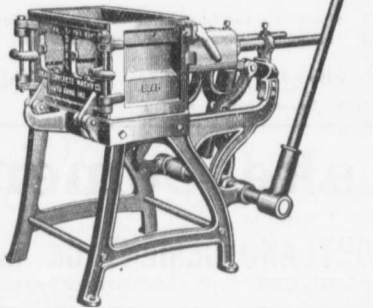
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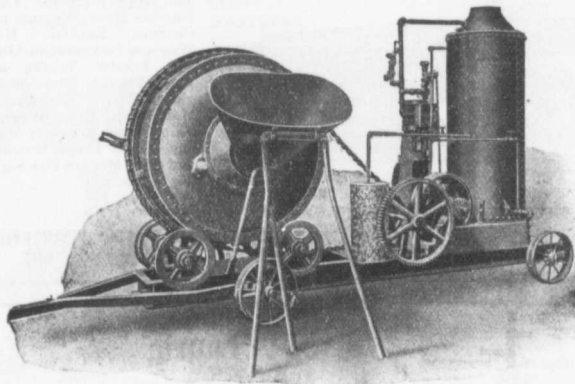
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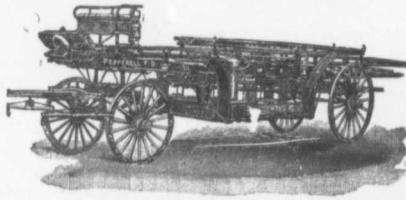
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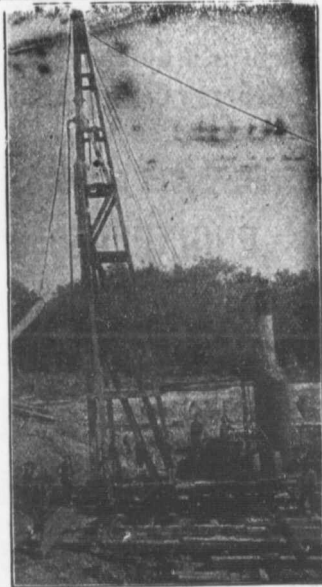
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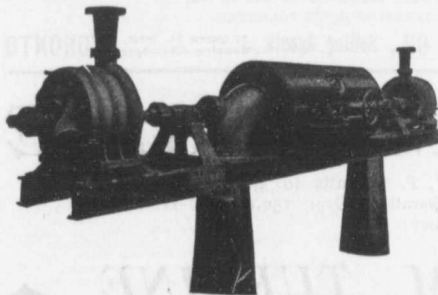
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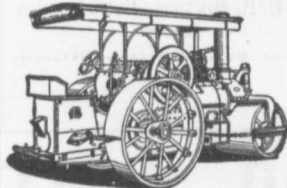
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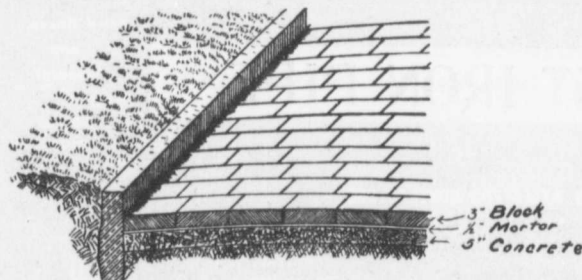
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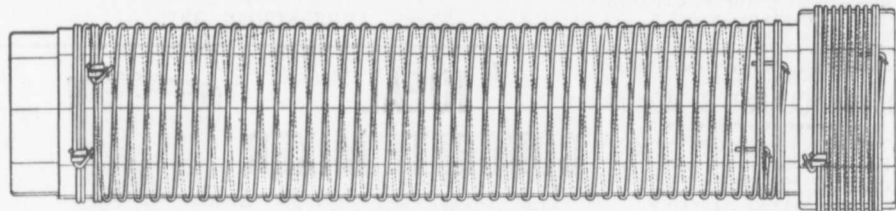
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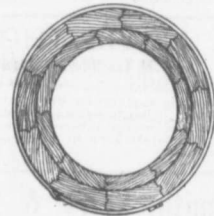
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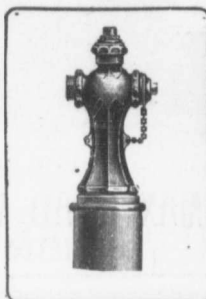
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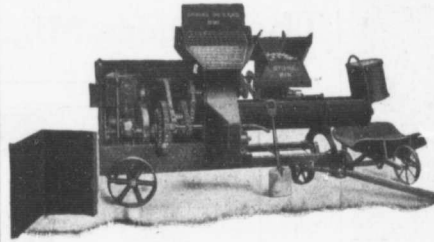
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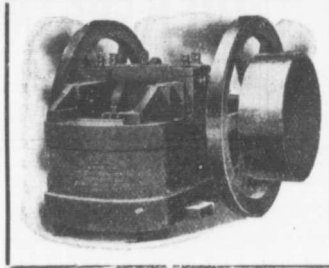
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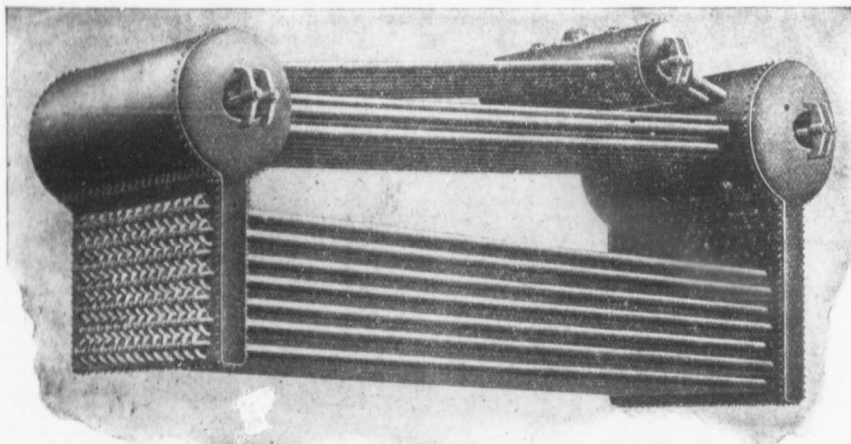
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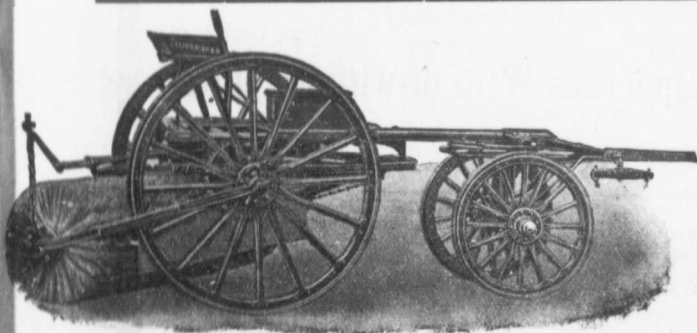
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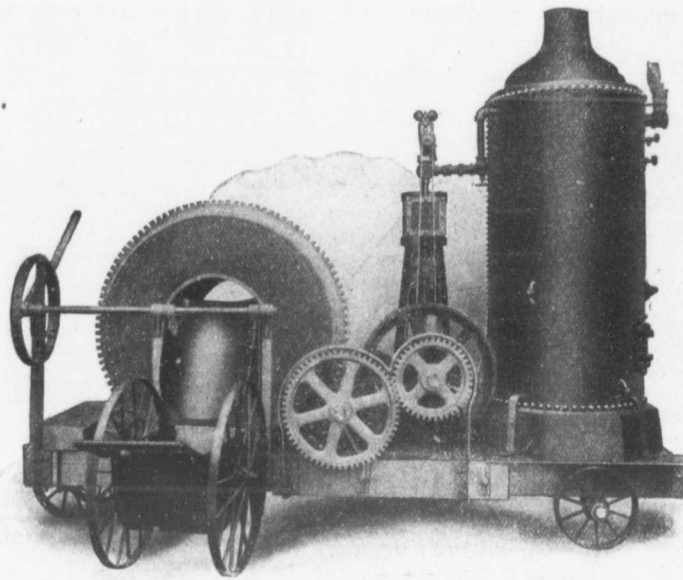
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