

CANADIAN Contract Record

*A Weekly Journal of 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, Purchasers of Municipal Debentures and Leading Contractors in All Lines Throughout Canada

VOL. 16.

TORONTO, MONTREAL — JANUARY 3, 1906 — WINNIPEG, VANCOUVER

No. 44

THE CANADIAN CONTRACT RECORD

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Architect and Builder.

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in advance.

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should give prompt notice of same. In doing so
give both old and new address. Notify the pub-
lishers of any irregularity in delivery of papers.

CARD

The undersigned, having a certain amount of
time at his disposal, invites employment.

W. FRASER, Quantity Surveyor,
143 Grace Street, Toronto.

TENDERS WANTED

for the building of a stone Tower and Spire for
St. Michael's Church, Belleville, Ont. Plans and
specifications may be seen at the residence of
Rev. Father Twomey, Belleville. Tenders re-
ceived up to JANUARY 15TH, 1906.

Tenders For Bridge

Tenders, addressed to James Coxford, Esq.,
Chairman of Committee, Pembroke, Ont., and
marked Tenders for Bridge, will be received up
to two o'clock in the afternoon of MONDAY,
22ND DAY OF JANUARY, 1906, for the con-
struction of a Steel Bridge with Stone founda-
tions across the Madawaska River in the Town-
ship of McNab (near Arnprior), in the County
of Renfrew.

Plans and specifications may be seen at the
offices of James H. Smith, County Engineer,
Pembroke, and John Brennen, Esq., Councillor,
Sand Point.

FOR SALE

The Corporation of the Town of Parry Sound,
Ontario, will receive sealed tenders at the office
of R. E. Armstrong, Town Clerk, up to and in-
cluding the 13TH DAY OF JANUARY, 1906, for
the following Electrical Apparatus: One direct
connected 40 K. W. 60 cycle 2080 v. 3 phase revolving
field Alternator, also one direct connected
Exciter suitable for the above machine, together
with switchboard all complete, f.o.b. power
house, Parry Sound.

Bids will also be received for water wheels
suitable to drive the above machine, either con-
nected to the present wheels or not, as may be
most suitable. For information re. water wheels,
address

G. GROVES, Box 427,
Parry Sound, Ont.

Specification of Electrical Apparatus may be
seen at the office of the Town Clerk.

BRIDGE TENDERS WANTED

Sealed tenders will be received by the under-
signed on behalf of the County of Huron, at
Wingham P. O., Ont., until 4 o'clock p. m. on
SATURDAY, THE 20TH DAY OF JANUARY,
1906, for the erection of the Superstructure of
the following Steel Bridges in the said county,
viz.:

(1) A Steel Bridge to be erected over the
Maitland River, at Jamestown, on the boundary
between Morris and Grey Townships, about 3
miles from G.T.R. station at Brussels. The
Bridge is to be of one span 110 ft. clear between
abutments, Pratt truss, 19 ft. high, of 7 panels,
roadway 16 ft. wide, steel joints, at 2 ft. centres,
floor 3 in. Rock Elm or Tamarack; wheel
guards, 5' x 5' of Pine or Cedar; railing, 4 ft.
high of 4 tiers of 1 1/2 in. gas pipe. Required
strength, 125 lbs. per square foot of floor sur-
face, with large safety factor, to be strong
enough for concrete floor. About 14 ft. from
bed of stream to floor, hard bottom, little water,
good place to erect. The bridge is to be com-
pleted on or before the 25th day of July, next,
1906.

(2) A Steel Bridge to be erected over the
Maitland River about 1/2 mile west of the Village of
Wroxeter, on the C. P. R., on the boundary be-
tween Howick and Turnberry Townships. The
bridge is to be of one span 120 ft. clear between
abutments, Pratt truss, 19 ft. high, of 8 panels;
roadway 16 ft. wide, steel joints, at 2 ft. centres,
floor 3 in. Rock Elm or Tamarack; wheel
guards, 5' x 5' of Pine or Cedar; railing, 4 ft.
high of 4 tiers of 1 1/2 in. gas pipe. Required
strength, 125 lbs. per square foot of floor sur-
face, with large safety factor to be strong enough
for concrete floor. About 13 ft. from bed of
stream to floor, hard bottom, little water, and
good place to erect. The bridge is to be com-
pleted on or before the 15th day of August, next,
1906.

(3) A Steel Bridge to be erected about 1/2 mile
north of the Village of Belgrave, on the G.T.R.
It is to be of one span 25 ft. clear between abut-
ments, Warren truss, roadway 16 ft. wide, steel
joints, at 2 ft. centres, concrete floor. Required
strength, 125 lbs. per square foot of floor sur-
face, with good safety factor. About 8 ft. from
bed of stream to floor, hard bottom, little water,
good place to erect. The bridge is to be com-
pleted on or before the 15th day of July, next,
1906.

(4) A Steel Beam Bridge to be erected on the
boundary between Grey and Huron Townships,
about 3 miles from Brussels, on the G.T.R. It
is to be of one span 20 ft. clear between abut-
ments; roadway, 16 ft. wide, steel joints, at 2 ft.
centres, concrete floor. Railing, 4 ft. high
of 4 tiers of 1 1/2 in. gas pipe. Required strength,
125 lbs. per square foot of floor surface. About
8 ft. from bed of stream to floor, little water,
good place to erect. The bridge is to be com-
pleted on or before the 1st day of August, next,
1906.

Tenders must be accompanied by marked
cheque equal to 10 per cent. of the contract
price and payable to the County Treasurer.
Should any party fail to execute the necessary
contract and bonds or to give satisfactory
security for due fulfilment of the contract, the
deposit accompanying the tender will then be
forfeited to the County of Huron.

The deposits of unsuccessful tenders will be
returned.

The lowest or any tender not necessarily
accepted.

JOHN ANSLERY,

County Commissioner for Huron County,
Wingham, Ont., December, 28, 1905.

H. & W. Gamache, plumbers, Montreal,
have registered.

A meeting of the creditors of James
Dwyer, contractor, Chelmsford, Ont., will
be held on the 5th inst.

TENDERS For Supply of Turbine Pump

Mailed tenders addressed to Aid. J. C. Gibson,
Chairman Fire, Water and Light Committee, for
supply of one turbine pump with electric motor,
for the city waterworks, will be received at the
office of the undersigned up to 3.30 p. m. on

MONDAY, JANUARY 22, 1906.

Specifications and forms of tender may be ob-
tained at the office of Col. H. N. Rutan, City
Engineer, Winnipeg, Manitoba.

Each tender must be accompanied by an ac-
cepted cheque or draft payable to the order of
the city treasurer, or cash deposit for the sum
called for in the form of tender supplied, which
will be subject to forfeiture in case of failure on
the part of the contractor to enter into a written
contract with approved sureties if called upon to
do so.

The city reserves the right to reject any or all
tenders, or to accept any bid which appears ad-
vantageous to the City of Winnipeg.

C. J. BROWN,
City Clerk.

City Clerk's Office,
Winnipeg, Dec. 27, 1905.

CONTRACTS OPEN.

PRESCOTT, ONT.—The sewerage
extension by-law was defeated.

BERLIN, ONT.—The \$8,000 market
extension by-law was defeated.

TREHERNE, MAN.—A drainage
system for this place is wanted.

AURORA, ONT.—The \$10,000 by-
law for waterworks improvements was
carried.

HARROW, ONT.—Additions to the
electric light plant are under considera-
tion.

BRANTFORD, ONT.—The by-law
to raise \$45,000 for school improvements
was carried.

MEDICINE HAT, N.W.T.—The
Salvation Army propose building a
barracks here.

KINNEAR'S MILLS, QUE.—Dr.
Kellock's congregation intend erecting a
new parsonage.

CLINTON, ONT.—The ratepayers
rejected the by-law to raise \$20,000 for
a waterworks system.

PICTON, ONT.—The ratepayers
carried the by-law to raise \$15,000 for
new street lighting system.

SELKIRK, MAN.—The by-law to
raise \$9,000 for building a new school
was carried here last week.

MEAFORD, ONT.—Debentures will
be issued for \$4,561.61 and \$4,
514.40 for granolithic sidewalks.

STRATFORD, ONT.—The by-law
to raise funds for a storm sewerage sys-
tem was defeated on Monday last.

EAST TORONTO, ONT.—New
plans are being prepared for the new
High school, estimated to cost \$15,000.

QUEBEC, QUE.—Faguy, Lepinay &
Frier, merchants, John street, have pur-
chased the building adjoining their

and intend making extensive alterations, which will be commenced in the early spring.

WOLSELEY, ASSA.—The German Lutherans will erect a large seminary here for the education of home missionaries.

FERNIE, B.C.—The Town Clerk has been authorized to advertise sewer and fire improvement debentures for sale.

MCADAM, N.B.—The C.P.R. will expend about \$30,000 on yard accommodation and building a freight warehouse here.

GODERICH, ONT.—A by-law to guarantee debentures of the Goderich Elevator and Transit Company was defeated.

ST. CATHARINES, ONT.—The by-laws to build new schools and extend the waterworks and sewerage systems were all defeated.

BARRIE, ONT.—By-laws to raise \$8,500 for streets and sidewalks and \$1,500 for an electric fire alarm system were carried.

TRURO, N.S.—The Truro Knitting Mills Company have purchased twenty-seven acres of land and purpose extending their plant.

LOUISBURG, N.S.—The Cape Breton Coal, Iron and Railway Company are surveying a site at Slatery's Head for a coal pier.

TORONTO JUNCTION, ONT.—It is probable that the new Council will take steps to improve and extend the waterworks system.

KINGSTON, ONT.—Mrs. Connell, 25 West street, will receive tenders up to January 8th for plumbing and cement work in General Hospital.

GRAND FOLKS, B.C.—F. M. Kirby, P. L. S., has been making a survey of the location for the proposed Government bridge at Fourth street.

FORT FRANCIS, ONT.—The Catholics propose building a new church, 32 x 70 feet, brick veneer, stone foundation. Contracts will be let this winter.

BOBCAYGEON, ONT.—The ratepayers unanimously approved of the by-law to raise \$25,000 to purchase a water power and establish an electric light plant.

BATTLEFORD, SASK.—A local company is being formed to build a \$40,000 hotel on corner of 22nd street and 2nd avenue. A Champagne is interested.

CALGARY, N.W.T.—The tenders received for building a four roomed school were considered too high and none were accepted. — The city will likely build a crematory.

SOUTHAMPTON, ONT.—The by-law fixing the assessment of the Grand Trunk Railway, in consideration of the building of an \$8,000 depot, was carried by over 30: majority.

PRINCE ALBERT, SASK.—Willis Chipman, C.E., Toronto, is preparing plans for the development of a water power about twelve miles from this place, for municipal purposes.

METZ, ONT.—D. Smith is this week taking tenders on the erection of a stone or brick Presbyterian church, from plans by F. Washburn, architect, Arthur. The building is to be erected in the spring.

WINGHAM, ONT.—By-laws were carried here on Monday fixing the assessment of a door factory, to issue \$1,500 of debentures for building a bridge and a third to establish a High school.

REGINA, ASSA.—W. W. LaChance, architect, is preparing plans for a new hotel building to be erected by lo-

cal capitalists. Same architect is taking tenders on a residence for Lewis J. Block.

EDMONTON, ALTA.—George E. Handley, said to be acting for Minneapolis capitalists, has purchased property at the corner of Fraser and Rice street, the intention being to erect an office building thereon.

VERNON, B.C.—St. Louis and Cleveland capitalists, headed by Mr. Horsling, of the latter city, have purchased extensive iron deposits near Crawford Bay and propose to establish a plant for the manufacture of steel rails.

QUEBEC, QUE.—The Quebec Railway, Power & Navigation Company, of this city and New York, are in the market for 12,000 barrels of cement for their extensive works at Seven Islands. Mr. Hardy, of New York, is their engineer.

LONDON, ONT.—It is understood that the Grand Trunk Railway propose to proceed with the widening of the Wortley road bridge. — The by-law authorizing the council to construct a second waterworks main was defeated by a large majority.

OWEN SOUND, ONT.—Efforts are being made to form a joint stock company to build a modern skating rink to cost between \$12,000 and \$14,000.—The by-law to grant a loan of \$25,000 to Keenan Bros. to assist them in extending their woodenware factory was carried by a large majority.

PETERBORO, ONT.—J. F. Howard, of Montreal, is forming a company to establish in this city a plant for the manufacture of stoves and radiators. It is to be known as the Dominion Stove & Heater Company and will have a capital of \$500,000.—A by-law to provide \$25,000 for fire protection has been sanctioned by the ratepayers.

WELLANDPORT, ONT.—James A. Ross, of this place, will apply to Parliament for the incorporation of a company to build an electric railway from Port Maitland, on Lake Erie, to Beamsville, on Lake Ontario. Others interested are S. D. Lake, of St. Catharines, and George Arnold, of Ridgeville.

OTTAWA, ONT.—John Henderson, City Clerk, will receive tenders up to Wednesday, January 10th, for the foundation and cement block work and carpenter and joiner work, also alternate tenders for brick work with cement block trimming, for the erection of a Fat Stock Show building. Plans at office of Northwood & Nofke, architects, 26 Central Chambers.

AROOSTOOK JUNCTION, N.B.—The stock of the Maine & New Brunswick Electric Power Company is meeting with satisfactory sale, and the promoters expect to be in a position to commence operations at an early date. E. H. Mather, of the Portland Lighting & Power Company, Portland, Maine, is one of the promoters.

ST. CATHARINES, ONT.—The Niagara, St. Catharines & Toronto Railway Company are seeking authority to make the following extensions: From Thorold to Port Colborne, Fort Erie to Niagara Falls, from Niagara Falls to Niagara-on-the-Lake, from Niagara Falls, Thorold, or Welland to Brantford, from St. Catharines to Niagara-on-the-Lake.

MONTREAL, QUE.—W. L. Chipchase has purchased the property at 655-659 Craig street, near Bleury, and intends erecting a new building thereon in the spring of 1907. Plans for same are now being prepared by John James Browne & Sons.—Johnson & Copping have purchased No. 2494 St. Catherine

street and intends making alterations to the premises.

HAMILTON, ONT.—The Eagle Spinning Mills Company will erect a large plant in this city.—Charles Mills, architect, has prepared plans for a one-storey addition, 76 x 230 feet, to the Hamilton Cotton Company's mills.—Geo. Hill intends erecting a five-storey storage building on Vine street, near James.—By-law was carried here on Monday to raise \$20,000 to build a storm water sewerage system and \$35,000 to complete the hospital improvements.

AMHERST, N.S.—The Maritime Coal Company, of which David Mitchell is manager, have under consideration the construction of an electric power plant at their mines with a view to transmitting electric energy to this town. The details are now being worked out by an electrical engineer and the carrying out of the project will depend upon the extent to which the manufacturers will contract for power.

ST. BONIFACE, MAN.—Bernier & Bernier, solicitors, acting for the town, are applying to the legislature for permission to issue debentures to the amount of \$100,000.—Marchand & Haskell, architects, Montreal and Winnipeg, are asking for tenders up to January 15th for the erection of new Roman Catholic cathedral here. It will be of buff Tyn-dall limestone, 300 x 100 feet, with high towers, seating capacity 2,400. The organ and altars are not included in the specifications.

FREDERICTON, N.B.—The City Council will immediately invite tenders for sewer pipe and supplies for the proposed sewerage system.—C. H. LaBil-lois, Commissioner of Public Works, will receive tenders up to Monday, 8th inst., for repairing the Balmore bridge in parish of Canning, and up to Monday, 15th inst., for repairing Goodwell bridge at Dawsonville, Restigouche county, and building a new bridge at Palmer's Mill pond, parish of Dorchester.—Interior alterations are to be made to the post office here.—The Roman Catholics intend erecting a new church in the near future.

ST. JOHN, N.B.—D. R. Jack is having plans prepared for a large brick structure to be erected on Union street, between the London House and No. 3 engine house. For the present it is intended to build only one storey, but the walls will be made of sufficient strength to carry additional stories when required.—The sum of \$17,000 has been subscribed, in addition to the site, for the new Y.M.C.A. building, and it is proposed to commence operations in the spring. L. P. D. Tilley and W. H. Truman are members of the committee.—Among the improvements to be undertaken by the C.P.R. the coming year will be the building of several bridges in this province and the enlargement of roundhouses.

WINNIPEG, MAN.—The plans for the Canadian Northern Railway station in this city have been received at the offices here from Toronto. They call for a combined station and hotel, to be built on the site of the present C.N.R. depot.—The Railway Commissioners at Ottawa have authorized the C.P.R. to construct a subway at Rachel street.—W. Muscovich, 77 Martha street, wants tenders for construction of baker's oven.—C. J. Brown, City Clerk, will receive tenders up to January 22nd for supply of one turbine pump, with electric motor, for the city waterworks.—A movement is on foot in civic circles to build an additional crematory.

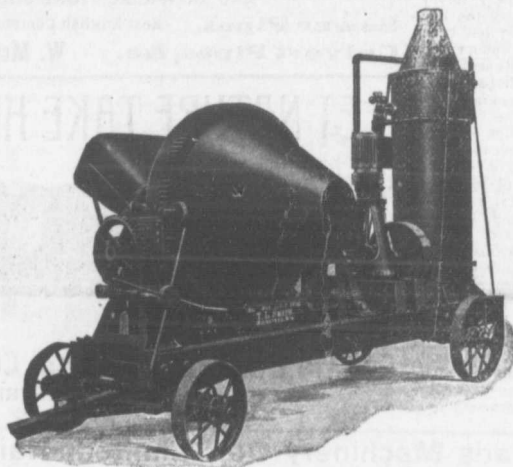
VANCOUVER, B.C.—Parr & Fee, architects, are asking for tenders by noon of January 6th for a three-storey

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dwelling, Sheridan avenue, near Dundas st., cost \$1,800; B. H. Moorehouse, two-storey and attic brick dwelling, First avenue, cost \$2,400; A. A. Mitchell, pair 2½-storey brick dwellings, Woodlawn avenue, cost \$5,600; Mrs. I. Williams, two-storey stone and brick dwelling, 305 Hamburg avenue, cost \$2,000; Reid & Brown, two-storey frame and iron clad carpenter shop, No. 63 Esplanade st. east, cost \$2,000; Knox church, two-storey brick Sunday school building and brick and stone church, Spadina avenue, near Harbord st., cost \$170,000; T. Gingras, pair 2½-storey roughcast dwellings, brick foundation, 71 73 Euclid avenue, cost \$2,500; Consumers' Gas Co., 1-storey and basement brick and steel purifying house, corner of Booth and Eastern avenue, cost \$50,000; Dunnet & Young, 2-storey brick, stone and roughcast dwelling, No. 416 St. Clarens avenue, cost \$1,200; J. E. Hambley, 2-storey brick and roughcast dwelling, Montrose avenue, near Bloor st., cost \$1,500.

CONTRACTS AWARDED.

WINNIPEG, MAN.—George W. Murray has secured the contract for the interior hardwood finish for new C. P. R. hotel.

OTTAWA, ONT.—Thomas P. Charleson of this city, has been awarded the contract to build a wharf at Shippegan, N.B., at a cost of \$16,000.

EDMONTON, ALTA. — Smith & Sharpe, of Winnipeg, have secured the contract for erection of Canadian Northern Railway freight sheds here.

PORTAGELA PRAIRIE, MAN.—The Council have disposed of \$25,000 of 20-year 5 per cent. debentures to the Canadian Securities Company, at 104½.

CALGARY, N. W. T.—Three tenders were received for erection of the South Ward school building, as follows: J. C. McNeill, \$72,975; British Columbia Contract Company, \$66,200; D. J. McLaughlin, Wetaskiwin, \$60,650 (accepted).

BROCKVILLE, ONT.—The James

Smart Manufacturing Company, this place, have been awarded the contract of heating and ventilating the R. C. church at St. Pie de Guire, Que., using three "Kelsey" generators.

FREDERICTON, N.B.—The following bids were received for construction of sewerage system: J. B. McManus, Ltd., Memramcook, N. B., \$42,013; George Bryne, Boston, \$52,400; Bruno & McKenzie, Boston, \$53,327; Gow & Palmer, Boston, \$53,822; Williard Kitchen, Fredericton, \$58,012; Brown Bros., Fredericton, \$58,708; Mooney & Sons, St. John, \$60,995; Reid McManus, Memramcook, \$74,165. The contract has been awarded to J. B. McManus, Ltd., of Memramcook, N.B. F. A. Barbour, of Snow & Barbour, Boston, has been appointed engineer in charge.

FIRES.

Commercial Hotel and Massey-Harris warehouse at Whitewood, Sask., totally destroyed; loss \$8,000.—Woodworking establishment of Hicks & Company, Bridgetown, N. S.—W. R. Knowles' mill for manufacturing grindstones at Clifton, N. B.; loss \$5,000.—Coal sheds of the International Portland Cement Company, Hull, Que.; loss \$8,000, covered by insurance.—Building on Richmond street west, Toronto, occupied by the Oxford University Press; loss \$30,000.—Crystal Block at Buckingham, Que., owned by F. M. Gor-

man, totally destroyed; loss \$9,000. Pickering College at Pickering, Ont., totally destroyed; loss \$30,000.—No. 2 cottage at Mimico Asylum, Mimico, Ont.; loss \$15,000.

NEW COMPANIES.

New Liskeard Rink Company, Limited, New Liskeard, Ont., incorporated, capital \$10,000, to build and operate skating, hockey and curling rinks, Directors, W. A. Taylor, Charles A. Binkley and others.

Silver Bar Mining Company, Limited, Ottawa, Ont., incorporated, capital \$500,000. Directors, W. D. Gregory, H. F. Gooderham, of Toronto, and others.

Cormack Cobalt-Silver Mining Company, of Toronto, Limited, incorporated, capital \$500,000. Directors, R. L. McCormick,

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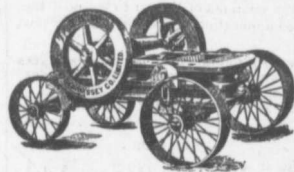
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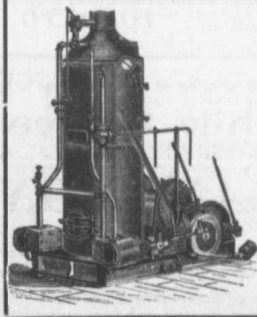
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Steel Skips, Coal and Concrete Tubs,
and other Contractors' Machinery.

and F. E. Hodgins, Toronto, S.S. Sharpe, Uxbridge, and others.

Mac Mining Company, Limited, Toronto, incorporated, capital \$350,000. Directors, Alexander McPherson, George Chapman, and W. E. Buckingham.

Meakins Brush Company, Limited, Montreal, incorporated, capital \$60,000, to manufacture brushes, woodenware, etc. Promoters, C. W. Meakins, J. J. Robson, and others.

The Linton Apartments, Limited, Montreal, incorporated, capital \$600,000, to build or acquire apartment buildings, etc. Promoters, S. A. Finley, architect, J. A. Linton, manufacturer, and others.

J. Eveleigh & Company, Limited, Montreal, incorporated, capital \$275,000, to manufacture trunks, leather goods, etc. Promoters, F. J. Eveleigh and W. E. Boon, of Montreal, and others.

Dominion Steel Car Company, Limited, Montreal, incorporated, capital \$500,000, to manufacture cars and rolling stock of all kinds. Promoters, E. F. Surveyor, A. C. Castrain, C. M. Cotton, J. W. Welden and S. J. LeHuray.

Southern Electric Company, Montreal, incorporated, to develop and distribute electric power in the counties of Nicolet, Yamaska, Drummond, Arthabaska, St. Hyacinthe, Bagot, Megantic, Wolfe, Beauce, Richmond and Sherbrooke. Robert Mackay, Julian C. Smith, and others, of Montreal, are interested.

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By H. B. R. CRAIG, A. M. Can. Soc. C.E.
 In dealing with this subject, the writer proposes to describe an asphalt plant operated by the city of Kingston for the past twelve years.

This plant occupies a space of half an acre in one of the corporation yards, but at the same time, should much asphalt work be done in any district of the city far away from the said yard, the entire plant may be advantageously moved to a convenient place in that locality. A covered shed, 30 by 20 feet, serves as a protection to the plant proper, and the remaining space is used for storing the stock of asphalt, tar, and fuel, and for tarring the broken stone.

The plant consists of an asphalt boiler of 40 gallons capacity, a sand-heater with a surface of 100 square feet, and a mixing board of about the same size. The sand-heater is simply a sheet iron-plate, half an inch thick, resting on four brick walls two feet high and one foot wide enclosing an oven. The fuel is fed to the oven through a hole in one of the walls. The initial cost of the plant was \$105.00.

In operating this plant the daily pay roll amounts to \$12.74, and itemized is as follows:—

* Read before the Canadian Society of Civil Engineers, Montreal.
 (Continued on page 10.)

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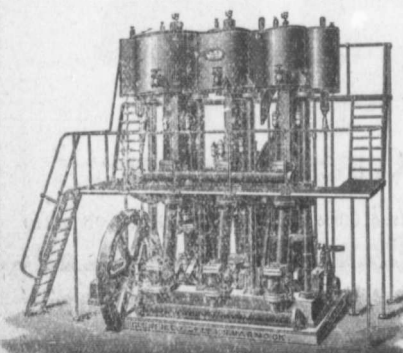
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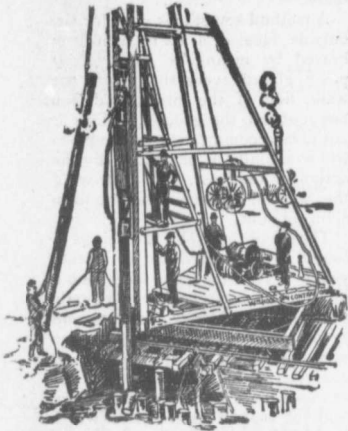
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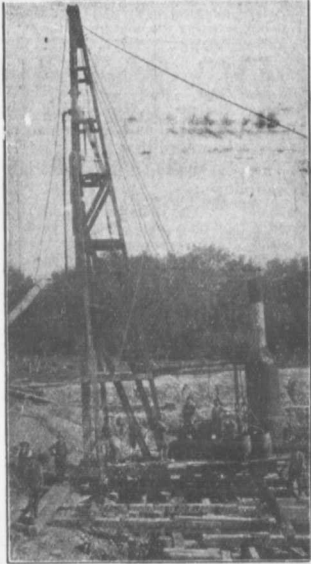
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		<u>\$12.74</u>

There is no charge made for superintendence, as the foreman of streets attends to that.

The cost of the various materials is as follows:—

Asphalt.....	1.57 cents per pound.
Sand.....	90.0 cents per cubic yard.
Cement.....	170.0 cents per 350-lb. barrel.
Gravel.....	75.0 cents per cubic yard.
Tar.....	1.0 cent per pound.

The daily output of the above force is about 300 square feet of finished crossing or walk.

The following statement shows in detail the cost of laying 5,000 square feet of asphalt crossings during the year 1905.

Material.	Cost in cts. per sq. ft.
Stone.....	0.267
Asphalt.....	3.600
Cement.....	0.080
Fuel.....	0.110
Hardware.....	0.015
Tarred Gravel.....	0.510
	<u>5.302</u>

Labour	Cost in cts. per sq. ft.
Boiling asphalt and heating sand..	1.25
Carting.....	1.088
Laying and finishing surface.....	0.917
Preparing foundation.....	1.020
	<u>4.275</u>

Total cost per sq. foot of crossing.. 9.577

It will be noticed that the charge for fuel is very small. That is due to the fact that the fuel is obtained from the old plank walks which were torn up when being replaced by new walks. The only charge, therefore, is that of cartage. The cost of crossings is less than that of walks, as the expense of preparing the foundation is a little more with the latter than with the former, and more tarred gravel is required in the case of the walks to give the surface mixture a firm base.

The manner of construction of the asphalt crossings is as follows:—

SURFACE MIXTURE.

(a) 270 pounds of Acme asphalt are heated to 300 degrees Fahrenheit and kept at that temperature for about two hours, being constantly stirred.

(b) 20 bushels of medium coarse sand, screened of all material $\frac{3}{8}$ of an inch and over, are then heated to drive off the moisture.

(c) The asphalt and sand are then thoroughly mixed by hand on the mixing board.

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A furrow is picked up along the

edge of the crossing so as to produce the desired camber and to prevent the wheels of vehicles from cutting into the asphalt. A load or two of tarred gravel in addition to this may be required along the length of the crossing.

The asphalt surface mixture is then laid on the foundation as prepared to a depth of two inches. It is then well tamped and pounded along the edges and thoroughly rolled with a two-man roller. The surface of the roller and pounder are first well oiled so as to prevent the mixture from adhering to them. A thin coat of cement is then sprinkled over the wearing surface and wetted down, about one pound of cement being required for every ten square feet of crossing.

Asphalt walks are constructed in a similar manner, with the exception of the foundation course. The ground is cleared of all loose material and graded to a firm even base, cinders well sprinkled and tamped being used to bring the walk to the required elevation. On the cinders is placed a 4-inch layer of tarred gravel. This course is then pounded to give a firm even bearing for the surface mixture, which is then laid as before.

On a heavily travelled street with the roadway abutting the walk, a concrete curb of the usual design is built in place along the outer edge of the walk. Wherever feasible, how-

ever, the usual custom is to arch the outside edge of the walk and tamp it well into a small furrow. In this way an almost vertical face may be produced. Limestone screenings may then be placed along this edge for backing. A 1 x 10 inch form properly braced is placed along the inside edge of the walk before construction and is usually left there.

A method sometimes used for the outside face is a 2 x 10 inch form braced by means of 4-inch cedar posts placed every six feet on the walk side of the form and driven one foot into the ground. This is not to be recommended, as the posts will eventually be heaved up by the action of the frost, thus destroying the wearing surface, and the form soon rots out.

The life of the asphalt crossings is found to vary from ten to twenty years. This together with such a low initial cost renders them vastly preferable to plank crossings and even to many of the more expensive crossings, such as those built of concrete, brick, or stone. For example there are several crossings built of asphalt in Kingston which have outlasted the surfaces of heavy concrete crossings of the same age and two or three times the initial cost. Another point in favor of asphalt for both crossings and walks is its elasticity, which when not too great is very desirable.



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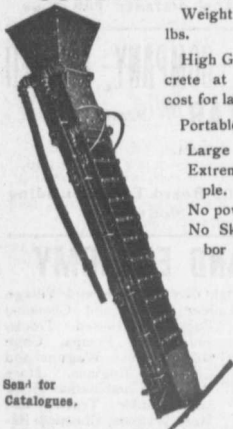
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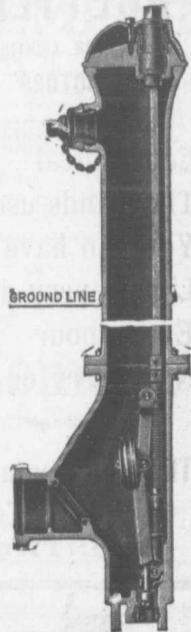
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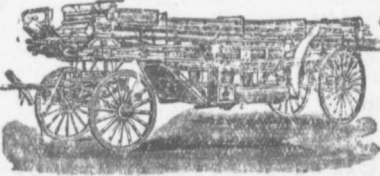
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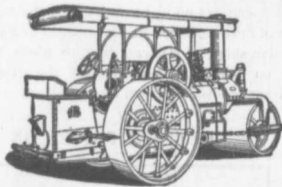


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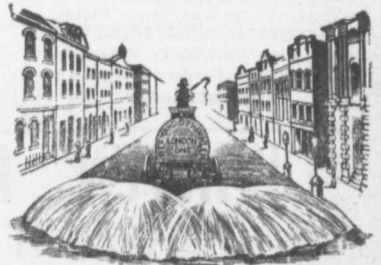
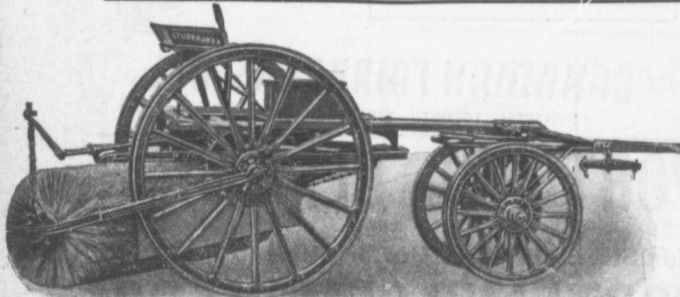
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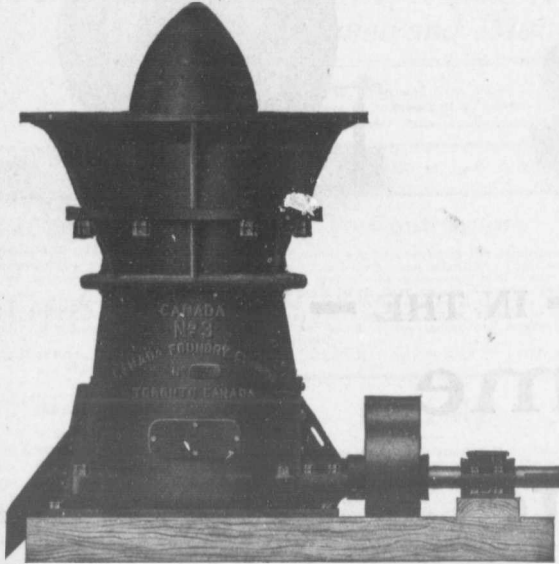
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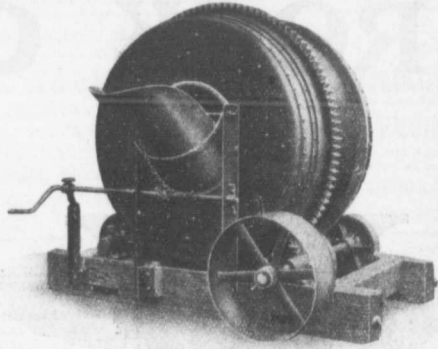
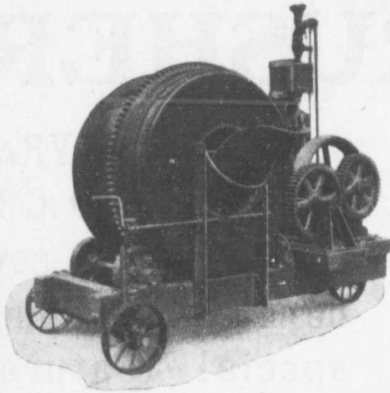


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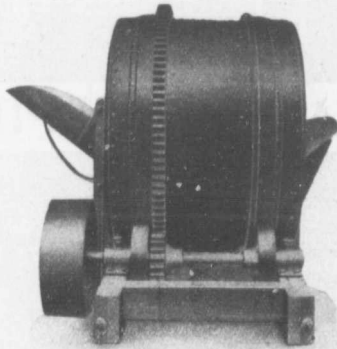
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