

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. 15.

TORONTO, MONTREAL AND WINNIPEG, JANUARY 4, 1905

No. 47

THE CANADIAN CONTRACT RECORD

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in advance.

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lishers of any irregularity in delivery of papers.

TENDERS WANTED

Tenders will be received up till 5 o'clock, 14th
OF JANUARY, 1905, for all Trades required in
the erection of Brick Town Hall in the Village
of Ailsa Craig.
Plans and specifications may be seen on and
after MONDAY, THE 17th, at the office of E.
B. Smith, Ailsa Craig, or J. A. Humphris, St.
Mary's.
The lowest or any tender not necessarily ac-
cepted.

E. B. SMITH,
Village Clerk, Ailsa Craig.

TENDERS

will be received by the undersigned up to
SATURDAY, JANUARY 7th, 1905, for the re-
pair of the Waddell Creek drain in the Town-
ship of Sarnia, a distance of about 1 1/2 rods.
Plans and specifications can be seen at the
Clerk's office.
The lowest or any tender not necessarily ac-
cepted.

MAGGIE LOWRIE, Township Clerk,
Box 245, Sarnia.

PLANS WANTED

The Board of Trustees of the Moose Jaw Pub-
lic School District No. 1 are prepared to receive
up to 15th JANUARY, 1905, plans, specifications,
and itemized estimate of cost, for an eight-
roomed School Building with an Assembly Room
above the second floor; the building to be steam
heated and to have all modern sanitary conven-
iences. The sum of \$100 will be paid to the
architect whose plans are adopted.

Address, H. JAGGER,
Secretary-Treasurer,
Moose Jaw Public School District No. 1,
Moose Jaw, N.W.T.

A demand of assignment is reported to
have been made upon Ernest David, con-
tractor, Longueuil, Que.

U. Pausz & Fils, sash and door manu-
facturers, Montreal, have been incorporat-
ed as a joint stock company.

CONTRACTS OPEN.

THOROLD, ONT.—The waterworks
by-law was carried here on Monday last.

PETROLIA, ONT.—The citizens de-
feated the by-law to establish a gas plant.

LETHBRIDGE, N.W.T.—The sum
of \$11,000 has been voted to build a new
school.

GALT, ONT.—The ratepayers defeat-
ed a by-law to loan \$5,000 for a new
industry.

LINDSAY, ONT.—A by-law to spend
\$20,000 on a water filtering plant was
voted down.

KINGSTON, ONT.—The by-law to
raise \$2,800 for a new sewer was prob-
ably defeated.

NEWCASTLE, N.B.—The Rosebank
Lumber Co. will next summer build a
large saw mill here.

TILSONBURG, ONT.—The by-law
to assist the Wind Motor Co. was carried
by a large majority.

PERTH, ONT.—The waterworks by-
law was carried, while the Carnegie
library by-law was defeated.

KINCARDINE, ONT.—The pro-
posed extension of the High School has
been sanctioned by the electors.

ORILLIA, ONT.—The Town Coun-
cil have just passed a by-law authorizing
the issue of debentures for \$41,000.

CALEDONIA, ONT.—J. Hamm
wants a loan of \$6,000 to assist him in
establishing a canning factory here.

PORT ARTHUR, ONT.—Frank
Marriaggi proposes building another addi-
tion to the Northern Hotel.

OSHAWA, ONT.—It is understood
that a movement is on foot to build a
combined club house and curling rink
here.

WETASKAWIN, N.W.T.—J. Stacey
Orr will receive bids up to January 20th
for the purchase of \$35,000 public school
bonds.

BERLIN, ONT.—The ratepayers on
Monday last carried a by-law to raise
\$6,000 for extending the sewerage dis-
posal plant.

BROCKVILLE, ONT.—B. Dillon,
architect, is preparing plans for a double
brick house to be built on William street
by W. J. Splan.

WOODSTOCK, ONT.—A by-law to
grant a loan of \$12,000 to the Eureka
Co., of Windsor, failed to get the neces-
sary two-thirds vote.

ST. MARY'S, ONT.—The electors
have voted against guaranteeing the
bonds of the St. Mary's Quarry Co. to
the extent of \$30,000.

CORNWALL, ONT.—By-laws to
raise \$8,000 for enlargement of the

High school and \$5,000 to extend the
waterworks system have been sanctioned
by the ratepayers.

INGERSOLL, ONT.—The ratepayers
voted down the by-law to grant a loan to
Bradbury & Waterhouse, woollen manu-
facturers, to make improvements to their
plant.

EGANVILLE, ONT.—It is proposed
to make improvements to the electric
light plant here. — Reinke & Bolan pur-
pose installing new machinery in their
woodworking factory.

LUNENBURG, N. S. — George H.
Love, Town Clerk, will receive tenders
up to Wednesday, February 15, for the
construction of a complete sewerage sys-
tem for this town.

BELLEVILLE, ONT.—A by-law to
raise \$10,000 to improve the waterworks
system was carried by the ratepayers on
Monday. The by-law granting a loan to
the Deacon Shirt Co. was defeated.

CALGARY, N. W. T.—Although the
Council have voted \$60,000 for a munici-
pal lighting system, it has not yet been
decided whether to purchase the existing
plant or install a new one.

NORTH SYDNEY, N. S. — The
question of securing a dry dock here was
considered by the Board of Trade last
week, a proposition in that connection
having been submitted by Capt. Farquhar.

PORTAGE LA PRAIRIE, MAN.—
A large eastern implement firm have pur-
chased the R. P. Campbell property on
Saskatchewan ave. with the intention of
building a brick block thereon in the
spring.

ST. CATHARINES, ONT. — The
Niagara, St. Catharines and Toronto
Railway Co. will apply to the Dominion
Government for an extension of the time
for the commencement and completion
of their road.

ST. THOMAS, ONT.—It is announc-
ed that the Pere Marquette Railway
will spend upwards of \$2,000,000 on im-
provements. A new dock will be built
at Walkerville and heavier rails laid on
different sections.

WESTMOUNT, QUE. — The
Heather Curling Club have purchased
land on Kensington ave. on which to
build a rink and club house, to cost
about \$20,000. The building will have a
steel frame.

CHIGNECTO, N.S.—David Mitchell,
manager of the Chignecto Coal & Rail-
way Co., states that the surveys for the
line of railway to be built from Chignecto
to a point on the Straits of Northumber-
land have been completed.

ESSEX, ONT. — The Lieutenant-
Governor has granted an order-in-council

permitting the town to issue \$1,500 of debentures for improvements to the waterworks system without submitting the question to the ratepayers.

SEAFORTH, ONT.—The Canada Furniture Manufacturers will now proceed with the erection of their factory, the ratepayers having agreed to a loan of \$20,000.

GUELPH, ONT.—By-laws were carried to raise \$30,000 to extend and improve the street railway and buy a park, and \$7,000 for waterworks improvements, including a new filter. The by-law for \$23,000 to enlarge the Collegiate Institute was defeated.

TILBURY, ONT.—W. C. Crawford has purchased the mill site of H. Sloan and will at once install saw, heading and planing mill machinery. — The Village Council have petitioned the Minister of Public Works, Ottawa, to build a dock at the mouth of Baptiste Creek.

HAMILTON, ONT.—The deal for the property on which the new armory is to be erected was closed last week. It is expected that work will be commenced in spring.—By-laws were carried here on Monday to raise \$50,000 for an addition to the hospital and \$15,000 for market improvements.

CHATHAM, ONT.—J. L. Wilson & Son, architects, are preparing plans for remodelling the store occupied by Mrs. Kelly, King street, and the Tilt store.—By-laws were carried here on Monday last to aid the Defiance Iron Works in establishing a factory and to raise \$41,000 or a new market building.

MONTREAL, QUE.—The Protestant Board of School Commissioners have not yet secured a site on which to erect the proposed Senior school. — The Government will probably be petitioned to build a branch post office on St. Catherine street at some central point in St. James' Division.

VICTORIA, B. C.—W. W. Butler, of his city, is forming a company to establish cement works at some point along Puget Sound. — Moore & Wittington, contractors, have made application to the Dominion Government for water-front privileges at the end of Pleasant street, the intention being to erect a saw mill.

STRATFORD, ONT.—The joint committees of the City Council and Board of Trade have decided upon the terms upon which the C. P. R. may enter this city. The road is to be built within a year and the construction will probably commence next spring.—The ratepayers approved of by-laws to raise \$50,000 for extension and improvement of the waterworks system, \$7,000 to complete the sewage disposal plant, and \$3,000 for the erection of a morgue.

EDMONTON, N.W.T.—It is understood that a local architect is preparing plans for a new opera house to be built here.—D. R. Fraser & Co. propose to construct dams, booms and other improvements on the Saskatchewan river above this town. — A meeting of the Board of Trade and Town Council was held last week to consider the question of constructing a union railway and traffic bridge between Edmonton and Strathcona. The project was favored.

OTTAWA, ONT.—Mr. Ewart, chief architect of the Public Works Department, and John McDougall, Commissioner of Customs, have visited several United States cities inspecting customs examining warehouses with the object of obtaining ideas to be embodied in the new warehouses to be built in Toronto and other cities.—The Temiskaming and Mechiskam Dam Co. has been incorporated, with a capital of \$100,000, to build a dam across the southern outlet of Lake Temiskaming near the terminus of the

C.P.R. E. B. Eddy and W. H. Rowley are among the incorporators.

BRANTFORD, ONT.—It is said that the Bell Telephone Co. are considering the erection of a new building here.—Stewart, Witton & Taylor, architects, have prepared plans for extensive additions to the works of the Wm. Buck Stove Co., including an enlargement of the moulding shop to accommodate 250 additional moulders, an enlargement of the mounting and nickle-plating shops, and the erection of an entirely new building to be used as a pattern vault.—It is understood that plans are progressing favorably for the erection of a new hotel in this city.—The ratepayers approved of the proposal to grant the Water Commissioners \$50,000 to improve the water supply but voted down the by-law to provide \$62,000 for a drainage system.

VANCOUVER, B. C.—The Council of North Vancouver will award contracts at once for a waterworks system.—Tenders will be received by the City up to January 26th for a supply of rock. The City Engineer estimates that 10,000 yards will be required.—S. Jones, proprietor of the Dominion Hotel, Victoria, has purchased property on the corner of Hastings and Homer streets on which he intends to erect a store and office building.—A. G. Thynne, manager of Pilkington Bros., has been instructed by the head office in England to build an addition to their glass warehouse in this city, to be 65 x 120 feet and one storey high. Construction will be commenced at once.—Robertson & Robertson are applying for the incorporation of a company to construct a railway from Vancouver to Lillooet Lake.—Mr. Blackmore, architect, has made preliminary plans for an athletic building to be built on the corner of Dunsmuir and Beatty streets, at an estimated cost of \$26,000. A. Larwell is secretary of the committee having the matter in hand.

WINNIPEG, MAN.—The French Catholic population have purchased a block of land situated between McDermott, Bannatyne, Lydia and Marguerite streets on which it is the intention to build a fine church to cost upwards of \$100,000. Rev. Father X. Portelance, formerly of the Church of the Sacred Heart, Ottawa, has been appointed parish priest.—The Winnipeg, Selkirk and Lake Winnipeg Railway Co. are applying to the Legislature for permission to build a line into this city. — C. J. Brown, City Clerk, is asking for tenders up to Friday, 6th inst., for metallic fittings for the vault in the City Treasurer's office. He is also taking tenders this week for construction of an asphalt pavement on Sunderland ave., from Aikens to King st., and a cedar block pavement on lane east of Main st. —The Riverside Park Railway desire an extension of time for the construction of their road between Winnipeg and St. Agathe. — The City Council propose to construct an asphalt pavement on Broadway, from Maryland street to Lendrum street, cost \$9,148.75; on Lendrum street, from Portage to Preston ave., cost \$5,588; on Kate street, from Notre Dame to McDermott ave., cost \$4,172, and on St. James place, cost \$1,378.—It is understood that the C.P.R. will shortly let contracts for the construction of a number of bridges between Winnipeg and Fort William.—Incorporation has been asked for the Independent Telephone Co. of Canada, the promoters of which are residents of Minneapolis and the State of Iowa. It is their purpose to establish in towns throughout the province the dial system of telephones. The capital stock is fixed at \$10,000,000.

TORONTO, ONT.—H. W. Love, of First avenue, has decided to build a pair of 8-roomed dwellings and one single dwelling on Smith street, at a cost of

\$7,000, also three pairs of dwellings on Bain street, near Broadview, to cost \$8,500.—J. B. LeRoy & Company are about to erect a ten-roomed residence at the corner of Bain and Broadview aves., at a cost of about \$5,000. The same firm have just disposed of 600 feet of land on Pape ave., upon which a block of small houses will be erected in the near future.—The Department of Public Works, Ottawa, are asking for tenders up to Thursday, January 26th, for the construction of an extension to the breakwater on south side of Toronto Island. Plans may be seen at the office of H. A. Gray, C. E., Confederation Life Building.—Plans are being prepared for the new distributing post office to be built by the Dominion Government at the corner of Front and Bay streets.—It is proposed to erect a new Sunday School building in connection with Wesley Methodist church on Bloor street, at a probable cost of \$25,000. About \$13,000 has already been promised and it is likely that the work will be commenced in the spring.—By-laws to provide for the issue of debentures for \$300,000 for new buildings at the Industrial Exhibition and for \$700,000 for an improved system of fire protection were both carried by large majorities on Monday last.

FIRES.

Residence of Samuel Blair at Stanley, N.B.; loss \$3,000, insurance \$1,000.—General store of W. R. Carnrite at Robin's Mills, Ont., totally destroyed; loss \$8,000.—Brewery of the Cosgrave Brewing Co., corner Queen and Niagara streets, Toronto, damaged to extent of \$50,000.—St. Andrew's Presbyterian church, Winnipeg, damaged to extent of \$15,000.—Grist mill of Mr. Light at Notre Dame du Lac, Que.; loss \$4,000.

CONTRACTS AWARDED.

BRANTFORD, ONT.—Heating the new armory: Charles Taylor, successful tenderer.

VICTORIA, B. C.—J. A. Sayward has secured the contract for building the cabin work on the steamer Venture.

ESSEX, ONT.—Mr. McKay, of Toronto, has purchased \$3,900 5 per cent. town debentures, at a premium of \$175.

WINDSOR, N.S.—The contract for heating and plumbing for the new hospital has been let to T. T. Murphy, at \$2,844.

OTTAWA, ONT.—George Goodwin has signed the contract for the construction of the Royal Victoria museum. The price is about \$990,000.

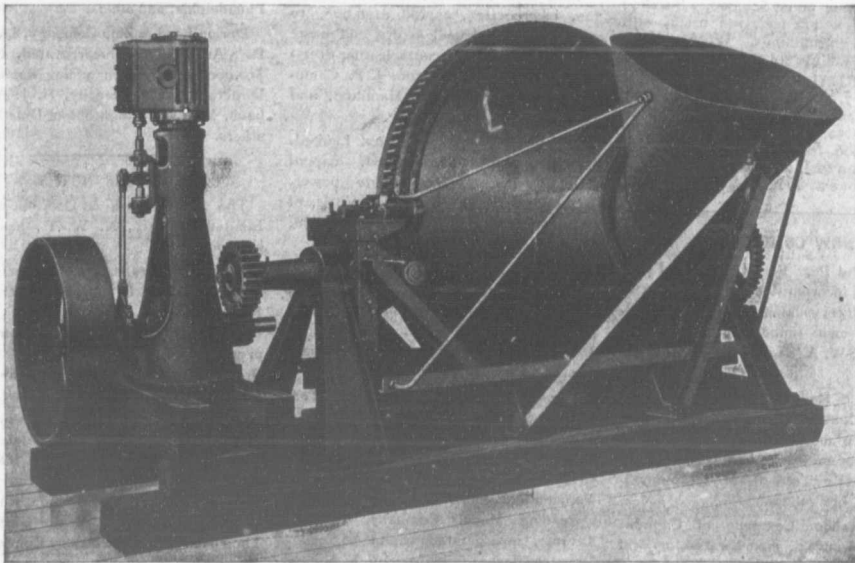
WINNIPEG, MAN.—Foley, Larson & Stewart are reported to have secured the contract to double track the C.P.R. between Winnipeg and Fort William.

BRACEBRIDGE, ONT.—The J. D. Shier Lumber Co. have secured the contract for building stations on the Temiskaming and Northern Ontario Railway.

NEW GLASGOW, N.S.—H. James McDonald, of this place, has secured the contract to double track the Intercolonial Railway from New Glasgow to Stellarton.

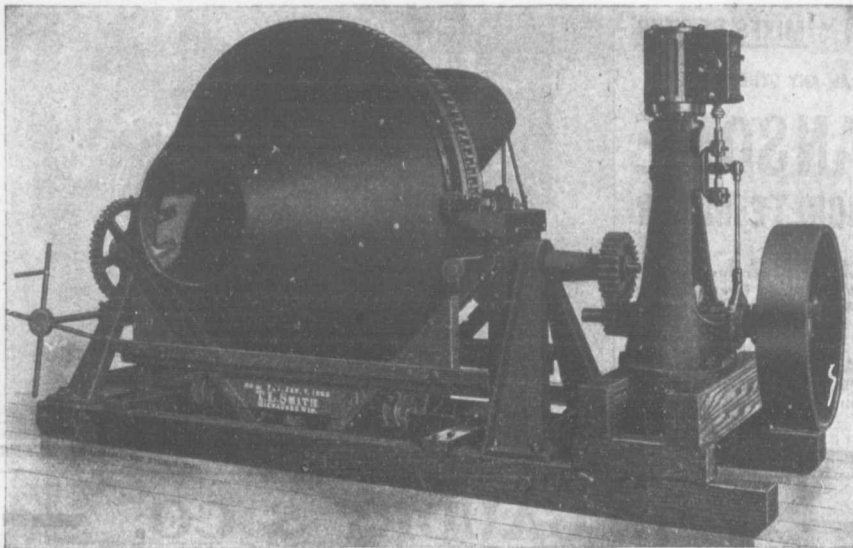
EDMONTON, N.W.T.—J. W. Huff and C. J. Carter, of this city, have secured the contract to supply 100,000 railway ties for the Canadian Northern Railway. The ties are to be delivered at Battleford during the coming summer.

HAMILTON, ONT.—The directors of the Hamilton, Ancaster and Brantford Railway Co. have let the contract for the building of the road to Haines Bros., of New York. The road will cost about \$500,000 and is to be completed by December 1st, 1905.



VIEW FROM CHARGING SIDE.

THE **SMITH** 1905 **SMITH**
MIXER - **MODEL** - **MIXER**



VIEW FROM DISCHARGING SIDE.

W. H. C. Mussen & Co.

RAILWAY, MINING AND CONTRACTORS' SUPPLIES.

MONTREAL

STRATFORD, ONT.—The contract for new Catholic church here has been awarded to Blondé Bros. & Co., of Chatham, Ont., at about \$20,000. Building will be 52 x 112 feet, red brick, with brown stone trimmings. Work will be commenced in the spring.

MONTREAL, QUE.—The contract to supply 7,500 yards of granite blocks has been awarded to the Sicily Asphalt Co., at \$1.52 per yard. J. Rock will supply 1,800 feet of straight curbstone at 39 cents a foot, and 2,000 feet of corner curbstone at 49 cents a foot.

NEW COMPANIES.

Condensed Peat Fuel Company, Peterboro, Ont., incorporated, capital \$40,000. Vivian Moore, mining engineer, D. H. Moore, Crown timber agent, both of Peterboro; W. A. Sadler, of Toronto, and others.

Automatic Railway Signal Company, Limited, Montreal, incorporated, capital \$500,000, to manufacture railway signaling devices, etc. Joseph Lemire, mechanic, Rev. Frederic Tetreau, of Drummondville, Que., and others.

Hood Rubber Company of Canada, Limited, Montreal, incorporated, capital \$5,000, to manufacture rubber boots and shoes, etc. R. D. McGibbon, barrister, Stephen J. LeHurar, accountant, and others.

The Alza Company, Limited, Montreal, incorporated, capital \$100,000, to manufacture window sashes, window blinds,

doors, etc. J. C. Moore, J. S. Teasdale, John M. Power, and others.

Pure Color Company, Limited, Hamilton, incorporated, capital \$100,000, to manufacture and deal in dry and paste colors for paints, lubricants, leather dressings, etc. E. R. Clarkson, J. P. Campbell, H. E. Ralston, of Hamilton, and others.

Wahnapiatae Power Company, Limited, Sudbury, Ont., incorporated, capital \$250,000, to develop electric power. Frank Cochran and William McVittie, of Sudbury; J. R. L. Starr and J. H. Spence, of Toronto, and others.

B. and T. Roller Bearing Window Company, Limited, Toronto, incorporated, capital \$40,000, to manufacture roller bearings, window sashes, etc. Directors, A. J. Jackson, James H. Pauley, William Bentley, Toronto, and others.

Brooks-Smith Hardware, Limited, Toronto, incorporated, capital \$75,000, to manufacture and sell hardware, mantels, grates, tiles, etc. Directors, E. J. Creeper, John Brooks, W. M. Smith, of Toronto, and others.

Reading Mining Company, Limited, Toronto, incorporated, capital \$250,000. Directors, Isaac Hollenbach, T. E. Seidle, Henry Kramer, Toronto, and others.

Cook-Fitzgerald Company, Limited, London, Ont., incorporated, capital \$50,000, to manufacture boots and shoes. J. D. Cook, E. J. Cook, London, and others.

Henry Disston & Sons, Limited, Tor-

onto, incorporated, capital \$100,000, to manufacture saws and other tools. Directors, Henry Disston, William Disston, of Philadelphia, and others.

Dorion Lead & Zinc Company, Limited, Port Arthur, Ont., incorporated, capital \$50,000, to carry on mining operations. Directors, Michael Jacoby, H. J. Achenbach, M. A. McNaughton, of Duluth, and others.

BUSINESS NOTES.

The Alberta Sash & Door Company, Limited, Calgary, N. W. T., has been incorporated.

A new industry for the manufacture of cement blocks will shortly be started at Prince Albert, N. W. T.

Mrs. C. E. Brodeur has registered as proprietress of the business of C. E. Brodeur & Company, plumbers, St. Hyacinthe, Que.

A. L. Gartshore, who has resided in Vancouver, B. C., for some time past, was presented by his friends in that city with a case of solid silver prior to his recent departure for Hamilton, where he will become manager of the Gartshore-Thompson Pipe and Foundry Company.

The Climax Road Machine Company, of which Mr. John Robinson is general manager, has recently commenced business in Hamilton as manufacturers and dealers in high-class road-making machinery and municipal and contractors' supplies. The advertisement of the new company will be found in this paper.

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MIXES BETTER**

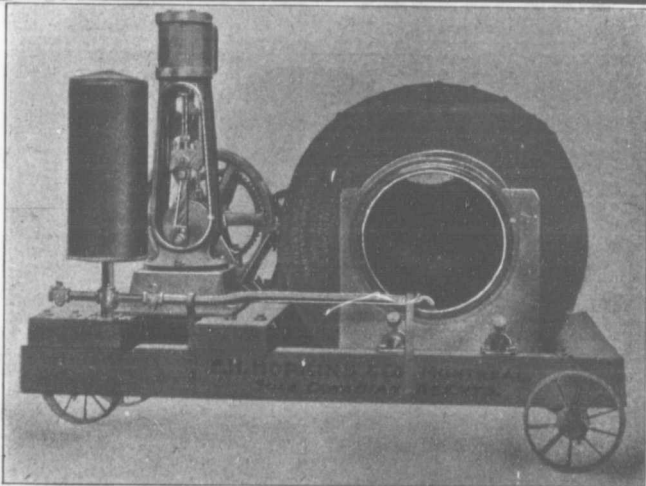
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BUILDING OPERATIONS IN MONTREAL.

With two exceptions, the year 1904 witnessed the greatest building period in the history of the city of Montreal, the value of the operations representing \$3,643,181, and the number of permits issued being 1,329. So far as the number of permits is concerned, the past year is far ahead of any other.

The two years which exceeded the past year were 1887 and 1903. The amount of building done in 1887 was \$3,793,178, and the number of permits issued 1076; in 1903 the value of building done was \$3,948,733, and the number of permits issued 1,010.

The comparison between 1903 and 1904 is, according to the department books, as follows, the figures not including the amount spent by the city on the erection and repair of public buildings:—

	1904.	1903.
New Buildings.....	795	581
Permits for alterations.....	534	449
Total permits	1,329	1,010

Value of new build-ings.....	1904.	1903.
.....	\$3,004,901	\$3,397,741
Value of alterations.....	598,280	559,992

Total value....\$3,643,181 \$3,948,733
Decrease for 1904—\$305,552.

The extent of building operations during the present year may be gathered from the following new edifices erected: Dwellings, 1,147; stores, 42; warehouses, 15; factories, 13; churches, 2; schools, 2; hospitals, 5; office buildings, 3; stables, 22 and sheds, 126. In dwellings alone there is an increase of 460 over the number erected last year, but in stores there is a decrease, the number being 42, as against 94 in 1903.

Experiments are being made by the government at the Sault Ste. Marie ship canal looking to the substitution of concrete for wood superstructure for the piers. There are altogether about three miles of these piers, but the government is rebuilding only a short section at this time. The increasing cost of lumber and the fact that the timber decays quickly is the principal factor in impressing upon the authorities the necessity of making a change in the material heretofore used in such work. In the long run concrete will prove a much cheaper material, as it will never have to be replaced, and will be incomparably

JOHN S. FIELDING
Mem. Soc. C. E. West Penn. '87.

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Montreal Office: 185 St. James Street.

more attractive in appearance. The concrete work begins about two feet below the water line. The government is always slow in taking such departures from established usage, but it is inevitable that as a rule all work of this class in the future will be made of concrete.

SAND !
The Water Washed Variety
GRAVEL
Slag for foundations and fire-proof work.
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What is Bitulithic ?

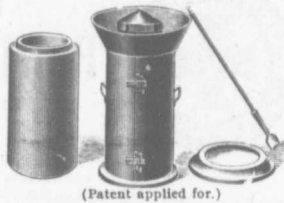
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Canadian Contractor's Hand-Book AND ESTIMATOR

The third edition of the Canadian Contractor's Hand-Book is now on sale. The book has been revised and enlarged to upwards of two hundred pages, and the title changed to the Canadian Contractor's Hand-Book and Estimator, considerable matter bearing on the cost of performing various kinds of work having been added.

The price of the third edition, mailed free, is \$1.00 to subscribers of the CANADIAN ARCHITECT AND BUILDER, \$1.50 to non-subscribers. Order from the publishers,

The C. H. Morimer Publishing Co., of Toronto, Limited
Confederation Life Bldg., Toronto.

Branch: Imperial Building, Montreal.

THE BEST SIZE FOR HOLLOW CONCRETE BLOCKS?

There has been considerable discussion among concrete block manufacturers and concrete block machinery manufacturers as to what is the most desirable size in which to make hollow concrete blocks, and there seems to be a great deal of diversity of opinion as to what is best. This is perfectly natural, because different uses will demand different sizes for the best results, also the best size will depend upon the point of view or object for which such a decision should be made. For instance, the size desired may be a matter of taste only, or a matter of convenience perhaps, a matter of convenience in placing perhaps, or the size adopted may be purely a matter of economy in manufacture and in handling.

It is evident that for buildings of markedly different class, blocks of different size and design would be desirable. It is also evident that the same size would not be so desirable for porch and veranda work as would be required for buildings or foundations. It is also evident that retaining walls for the best results will require much larger blocks than would be required for most other work. The size of blocks for culverts will depend on the size of the culvert, the span and the load to be carried. The same will obtain for the construction of chimneys.

This matter is one worth consideration and we would be glad to have the opinion of our readers and advertisers on this subject, each one giving his opinion and what it is based on as to the best sizes for: first, buildings; second, porch and veranda work; third, foundations; fourth, retaining walls; fifth, culverts, 10 foot span and 20 foot span; sixth, chimneys, and any other purposes with which you may be familiar.—Rock Products.

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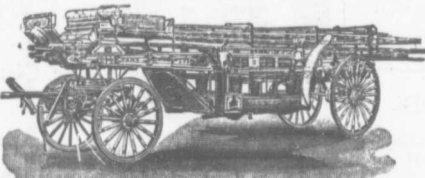
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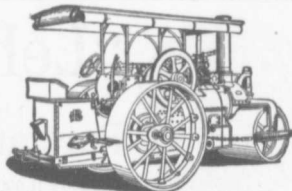
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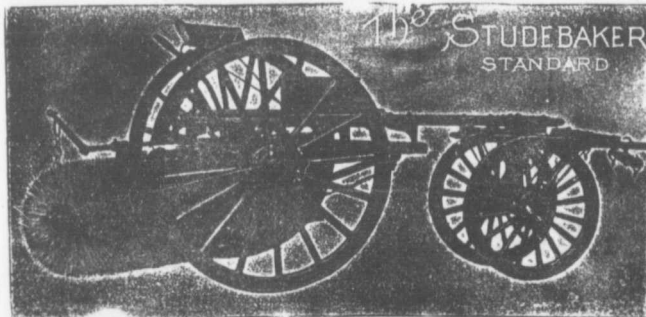
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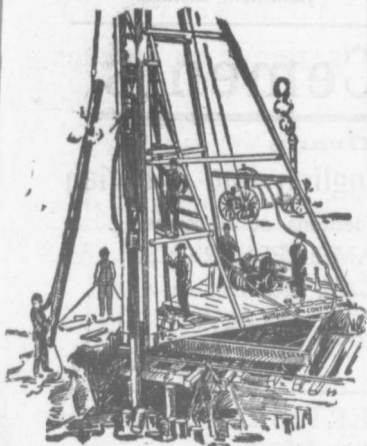
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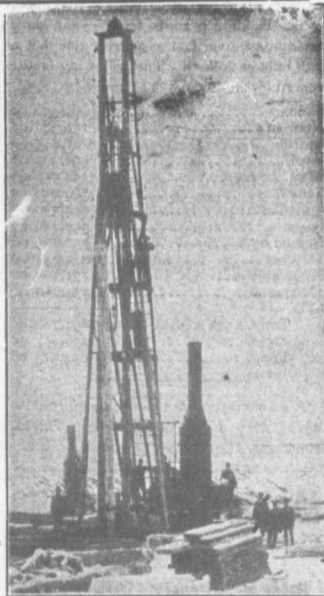
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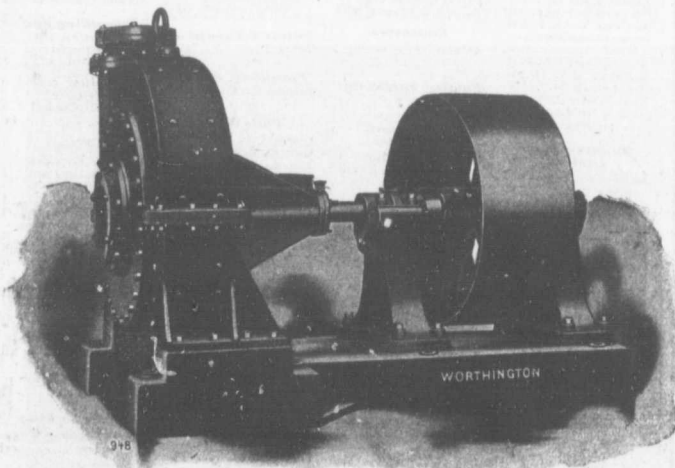
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The building permits for the year show an increase over last year over one and a half million dollars. The following is the record by months:

January	\$ 61,450 00
February	154,380 00
March	261,845 00
April	492,432 00
May	554,936 00
June	1,100,820 00
July	844,550 00
August	549,180 00
September	552,875 00
October	605,032 00
November	471,590 00
December	254,610 00
Total, 1904	\$5,894,720 00
Total, 1903	4,359,457 00
Total, 1902	3,854,923 00

A demand of assignment is reported to have been made upon Ernest David, contractor, Longueuil, Que.

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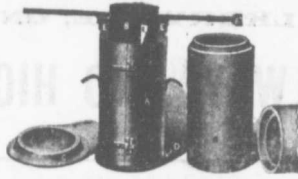
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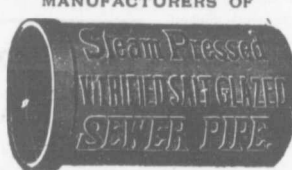
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An interesting report lately issued by the Ohio State Board of Health contains descriptions of a number of sewage purification plants in Ohio.

Among the various systems employed for the disposal of sewage, the septic tank has acquired quite a prominent place, and for the last five or six years the practice in this state has largely been to construct septic tanks supplemented by coke, cinder or sand filters.

In connection with this, a description of the sewage disposal of the city of Kenton may not prove uninteresting.

The city of Kenton, O., north district, having a population of about 8,000, lies principally in the watershed of the Scioto river; but the northern district, having an area of about 150 acres, drains northward into a county ditch leading into a tributary of the Maumee river.

A public water supply was introduced in 1883. The average daily consumption is now 700,000 gallons or 175 gallons per consumer.

Nearly one-half the total population are connected with the combined sewers which discharge directly into the Scioto river.

The north district is at present but partly sewered, there being about 400 people connected. Measurements showed that the day flow was at the rate of 35,000 gallons per day, which probably means an average actual dry weather flow of about 25,000 gallons per twenty-four hours. The sewers are principally on the separate system, but receive the surface water from one or two catch basins. The quantity used for flushing is estimated at 1,500 to 2,000 gallons per day. As the charge of sewage from the northerly district into the county ditch would have created a nuisance, disposal works were constructed in 1901 at a distance of about one-half mile north of the corporation line.

The plant consists of:

1st. A septic tank 28 feet long, 16 feet wide and 6 feet deep, holding 21,000 gallons, or about one day's flow in dry weather.

2d. Three dosing filters or "contact filters," which are flush tanks filled with coarse filtering material.

3d. Three beds of pea coke, onto which the sewage is discharged intermittently from the dosing filters.

The septic tank is divided longitudinally by a brick wall and is so arranged that the sewage enters each half at one end and is drawn off at the other end at a point 2 feet below the surface, through small openings into a wooden channel or trough from which it enters the flushing filter by means of inverted siphons.

These flushing filters are 5 feet by 10 feet by 2 feet deep and are filled with a mixture of charcoal, coke and pieces of limestone ranging from one-half inch to three inches in diameter, to a point above the ends of the inlet pipe, which are protected by screens. By raising the end of the outlet pipe any of the three filters may be put out of service.

The principal filters or "wave beds" consist of three long brick and concrete

tanks, each 10 feet by 100 feet, the bottoms of which have a decided slope away from the septic tank, and which are filled with a layer of pea coke 18 inches deep at the upper end and 4 inches at the lower; the coke is covered with a layer of broken stone.

The sewage from the flushing filter discharges against the upper end of the filtering material, and flows through the inclined layer over the whole distance of 100 feet, when it is collected in an effluent channel and conveyed to the county ditch.

The septic tank is no doubt very efficient as a sludge destroyer. After nearly one and one-half years' operation it contains a foot of sludge at the bottom and no scum at the surface. It is said, however, that when surface water enters the tank a scum quickly forms, but disappears when the flow of surface water ceases.

The dosing filters have given some trouble in clogging around the air pipe of the siphon and thus causing continuous discharge on to the main filters.

Very little care is given to the plant; one man visits it three or four times a month, inspects the working of the siphons, and loosens the filtering material at the upper end of the filters.

Analyses of samples of sewage and effluent collected on November 29, 1902, showed a high percentage of removal of organic matter and a well nitrified effluent, but samples collected on September 18, 1903, showed less organic matter was then being removed and that the effluent was not being nitrified.

The cost of the plant was about \$4,000 and the annual cost of maintenance is estimated at \$50.00.—Engineering Review.

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Buff No. 1.....	18 50	18 50
" 2.....	18 50	18 50
Brown.....	25 50	25 50
Roman Red.....	30 50	30 50
" Buff.....	35 50	35 50
" Brown.....	40 50	40 50
Hard Building.....	13 00	13 00
" Sewers.....	13 00	13 00
" Backing.....	11 50	11 50

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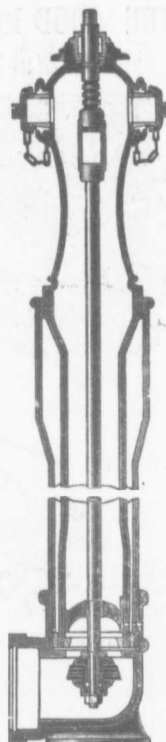


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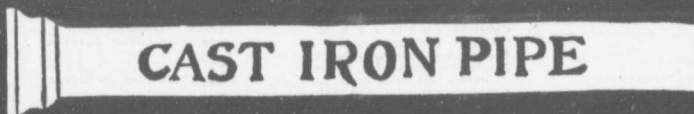
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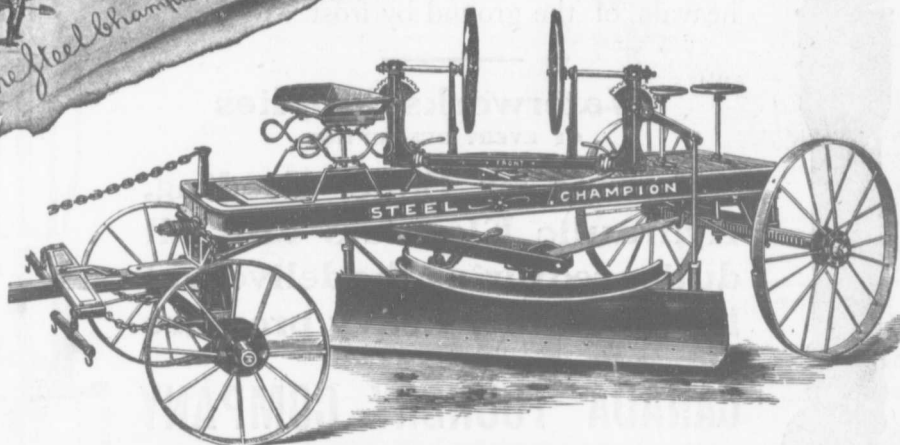
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" 2	10 50	16 00
" 3	8 50	14 00
Buff No. 1	15 00	20 00
" 2	13 00	18 50
Brown	20 00	25 50
Roman Red	30 00	30 50
" Buff	30 00	33 50
" Brown	35 00	40 50
Hard Building	6 50	19 00
" Sewers	6 50	19 00
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	F. O. B. Beamsville, Ont.	F. O. B. Montreal.
Red Peerless Facing	\$15 00	\$20 50
" No. 1	13 00	18 50
" No. 2	11 00	16 50
" No. 3	8 50	14 00
Brown Peerless Facing	20 00	25 50
" No. 1	18 00	23 50
Buff Peerless	20 00	25 50
" No. 1	18 00	23 50
" No. 2	15 00	20 50
Moulded and Ornamental Brick from \$3 to \$10 per C.		
Roman Red (Size 12 x 4 x 1 1/4 in.)	28 00	33 50
" Buff	28 00	33 50
" Brown	34 00	39 50
Vitrified Paving Brick No. 1	18 00	23 50
" No. 2	15 00	20 50
Sewer	6 00	12 00
Roofing Tile	21 00	26 00

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Boyd	20 00 M.	25 00 M.
W. V. Co.	22 50 M.	27 50 M.
Savage Crown	28 50 M.	33 00 M.
Ramsay		30 00 M.

STONE

	Toronto	Montreal
Common Rubble, per b. tie, delivered at building	13 50	17 00
Large flat Rubble, per ton, delivered	14 00	18 00
Foundation Blocks, per c. ft.	4 1	5 0
Granite (Stanstead) Ashlar, 6 in. to 12 in., rise 6 in., per ft.		25
Amherst Red Sandstone Amherst, N.S., per cub. ft. at quarry		40
Beckville, N.B., brown or red stone f. o. b. Quarries	45	45
Masilion	30	41
Mvers-Northport Red or River		45
Philip Grey Sandstones f. o. b. per cubic foot	75	65

Statstead granite paving blocks, 8 in. to 12 in. x 6 in. x 4 1/4 in. per M.

Granite curbing stone, 6x 10 in. per lineal foot	85
Buctouche Olive Freestone Olive Sandstone (Indian-town, N. B.)	80
Brown Sandstone (Beckville, N. B.)	80
Moat red sandstone, per cu. ft.	60
Black Pasture buff stone per cu. ft.	50
Nova Scotia blue grey, per cu. ft.	65
Coursers, 6 to 8 in. f. o. b. St. Mary's, per cord	7 00
Footing, 6 to 10 in. per cubic ft.	15
Dimension Stone, f. o. b. St. Mary's, per cubic foot	35
Granite (Laurentian Pink) Ashlar, 6 to 2 in. rise 3 in., per c. ft.	25
Dimension Stock Granite, (Laurentian Pink) for building purposes, per c. ft., f. o. b. quarries	40
Do., for polishing purposes, up to 2 tons weight, per cubic foot	70

Dimension stock granite for building purposes, per cu. ft. Do., for polishing purposes, up to 2 tons weight, per cubic ft. Paving sets, per thousand block

CREDIT VALLEY STONE

Rubble, per ton	65
Brown Coursing, up to 10 per sup. yard	85
Brown dimension, per cub.	70
Grey coursing, per sup. yard	1 25
Grey dimension, per cub. ft.	50

ROMAN STONE F. O. B. Factory.

Sills, tooled scated and throated 35c. per lineal foot.	
Hollow Block, 12-inch wall, per superficial foot	40
Window Heads and Ashlar, per superficial foot, 4-inch bed	40
String Courses, Molded and Ornamental, per lineal foot, 50c. to	3 00
Chimney Caps, \$3 to	5 00

SLATE

	Toronto	Montreal
Roofing (W square)		
red	20 00	20 00
purple	9 00	9 00
unfading green	10 00	11 00
oak	9 00	9 00
Terra Cotta Tile, per sq.	23 00	25 00
Ornamental Black Slate Roofing	77 50	

Toronto, Montreal.

	50 00
	50
	85
	80
	80
	60
	50
	65
	7 00
	15
	35
	25
	40
	70
	50
	1 00
	60 00

F. O. B. Halifax

	50
	60 00

F. O. B. Quarries

	65
	85
	70
	1 25
	50

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(CARLOADS.)

	Toronto	Montreal
Canadian (Packages, 350 lbs. net.)		
Rathbun's Star	1 70 2 00	2 10 2 30
Trowel		1 85 1 95
Samson	1 75 1 85	
Magnet	1 55 1 65	
Monarch	1 80 1 90	1 80 1 90
Hercules	1 65 1 75	
Imperial		1 75
Crescent 375 lbs. gross	2 30 2 40	1 95 2 05
Diamond 350	2 30 2 30	1 85 1 95
" Giant" Branford	1 75 2 09	2 00 2 30
American (in Bags):		
"Helderberg"		1 80 1 95
Alsen		2 25
Lehigh, in bbls., 375 lbs. cotton sacks, 350 net	2 35	2 10 2 30
" paper bags	2 00	2 00
" rapeseed bags	2 10	1 85
"Iron Clad" in bags 350 lbs.		1 80 1 90
"Invicta"		1 65 1 70
"Adirondack"		1 50 1 65
Vulcanite (The Toronto Pottery Co., Limited. Toronto) 350 lbs. per bbl.		
in paper bags	1 80	
" wooden bbls.	2 00	
" cotton bags	2 10	
English (in Barrels):		
Brook's Shoobridge Ant hor	2 35 2 40	2 00 2 10
Belgian (in Barrels):		
" Josson"	2 60 2 70	2 20 2 30
"North's Condor	2 05 2 10	2 25 2 30
"White Cross"	1 90 2 00	1 75 1 80
Hammer		1 80 1 90
White Star	2 15 2 25	1 90 2 00
German (in Barrels):		
Alsen	2 65 2 95	2 40
Dyckerhoff	2 65 2 75	2 40
Hercules	2 25 2 35	2 15
Keene's Superfine "Whites"	10 00 12 00	8 50 9 00
Keene's Coarse "Whites"	6 50 7 00	4 50 5 00
Fire Bricks, Newcastle, per M	27 00 28 00	13 00 20 00
" Scotch "	20 00 25 00	15 00 22 00
Plaster Calcined, N.B.	1 70	1 60