

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/
Couverture de couleur

Covers damaged/
Couverture endommagée

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Cover title missing/
Le titre de couverture manque

Coloured maps/
Cartes géographiques en couleur

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Bound with other material/
Relié avec d'autres documents

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Additional comments:/
Commentaires supplémentaires:

Coloured pages/
Pages de couleur

Pages damaged/
Pages endommagées

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Pages detached/
Pages détachées

Showthrough/
Transparence

Quality of print varies/
Qualité inégale de l'impression

Continuous pagination/
Pagination continue

Includes index(es)/
Comprend un (des) index

Title on header taken from:/
Le titre de l'en-tête provient:

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL OF
PUBLIC WORKS • TENDERS • ADVANCE INFORMATION • AND MUNICIPAL PROGRESS

EVERY THURSDAY

This paper reaches every week the Town and City Clerks, Town and City Engineers, County Clerks and County Engineers Purchasers of Municipal Debentures and leading Contractors in all lines throughout Canada.

Vol. 8.

JANUARY 13, 1898

No. 50.

THE CANADIAN CONTRACT RECORD, PUBLISHED EVERY THURSDAY

As an Intermediate Edition of the "Canadian Architect and Builder,"

Subscription price of "Canadian Architect and Builder" (including "Canadian Contract Record"), \$2 per annum, payable in advance.

C. H. MORTIMER, Publisher,
CONFEDERATION LIFE BUILDING, TORONTO
Telephone 2362.

New York Life Insurance Building, Montreal.
Bell Telephone 2299.

Information solicited from any part of the Dominion regarding contracts open to tender.

Advertising Rates on application.

Subscribers who may change their address should give prompt notice of same. In doing so, give both old and new address. Notify the publisher of any irregularity in delivery of papers.

CANADIAN CONTRACTOR'S HAND-BOOK

(SECOND EDITION)

Contains 150 pages of the most valuable information, substantially bound in cloth. Price, \$1.50; to subscribers of the "Canadian Architect and Builder," \$1.00.

C. H. MORTIMER, Publisher
Confederation Life Building,
TORONTO.

Branch Office:
New York Life Building, Montreal.

MOUNT FOREST WATERWORKS

Sealed tenders will be received by the undersigned up to 8:30 p.m. of

Monday, the 17th January, 1898

Plans and specifications can be seen at Mount Forest, or at the office of the Consulting Chief Engineer, John Galt, Esq., C.E. and M.E., Canada Life Building, Toronto.

Tenders must be accompanied by bank marked cheque for 8 per cent. of tender, and made payable to the Corporation.

The Corporation reserves the right to reject any or all tenders.

J. P. NOONAN,
Chairman Waterworks Committee,
Mount Forest, Ont

Notice to Architects

Plans and specifications will be received by the County Clerk until noon on WEDNESDAY, JANUARY 19TH, 1898, for a House of Refuge for the County of Kent.

Information as to the size of the building, cost, etc., will be furnished by the County Clerk.

J. C. FLEMING,
Clerk County Kent.

Chatham, January 3rd, 1898.

SEALED TENDERS

Addressed to John H. Teall, Tilsonburg, will be received up to noon of THURSDAY, THE 20TH JANUARY, for the work and material required in the erection of the

SUBSTRUCTURE OF A BRIDGE

for the Tilsonburg, Lake Erie & Pacific Railway, over Otter Creek, in Tilsonburg.

A marked cheque for \$200, payable to the railway company, must accompany each tender as a guarantee of good faith. All cheques will be returned as soon as the successful tenderer has executed a satisfactory agreement to complete the work.

Plans, specifications and form of tender may be obtained from either of the undersigned.

The lowest or any tender not necessarily accepted.

JAMES A. BELL, C.E., JOHN H. TEALL,
St. Thomas, Tilsonburg.

CONTRACTS OPEN.

GOODERHAM, ONT.—Mr. Thornton has made a proposition to erect a stave factory.

EASTMAN, QUE.—Thos. Armstrong and E. Schilgon will erect a sash and door factory.

CARBERRY, MAN.—A syndicate is being formed to erect a flour mill here next summer.

NANAIMO, B. C.—The Nanaimo Light, Heat & Power Co. are seeking an extension of their powers.

TAPLEVTOWN, ONT.—Charles DeWitt has purchased property here, and will build thereon in the spring.

BRANTFORD, ONT.—It is believed the Verity Plow Works Company will erect new premises on the Wilkes property.

MAGOG, QUE.—The council is enforcing a by-law which stipulates that all buildings must be covered with iron and brick.

PORT STANLEY, ONT.—Hingston & Woods, of Detroit, expect to complete a dredging contract here next summer.

THREE RIVERS, QUE.—The Three Rivers Iron Works Co. are building an iron foundry, brass foundry and machine shop.

SIMCOE, ONT.—The county has been authorized by the Legislature to issue \$50,000 of debentures for the purpose of erecting a House of Refuge.

VICTORIA, B. C.—A reply has been received from the Minister of Agriculture refusing to assist in building the Darcey Island station for lepers.

GODERICH, ONT.—The Ontario Legis-

lature has authorized the town to issue \$50,000 of debentures for the purpose of aiding in the erection of a grain elevator.

TORONTO JUNCTION, ONT.—It is rumored that the Canadian Pacific Railway Company will extend their shops here for the purpose of repairing locomotives.

SHERBROOKE, QUE.—The permanent construction of the burned portions of St. Charles Seminary will not be commenced until spring. A temporary roof will be put on this winter.

CHATHAM, ONT.—The bill respecting the Chatham City & Suburban Electric Railway Co. has received its second reading in the Private Bills Committee of the Ontario Legislature.

BONFIELD, ONT.—Bishop Lorrain has accepted the plans of architect J. Alcide Chausse, of Montreal, for the R.C. church to be erected by Rev. H. Martel at Tete du Lac Nosbonsing.

KASLO, B. C.—J. W. H. Holmes, C. E., has been engaged by the municipal council to make an inspection of a creek below the town to ascertain its adaptability as a source of water supply.

ROSSLAND, B. C.—A petition will be presented to the Dominion and provincial governments asking that subsidies be given to F. A. Heinze to build a railway to the Boundary Creek.

WINDSOR, N. S.—Tenders are invited by W. K. Dimock until Saturday, the 15th inst., for the completion of the courthouse here.—Chappele Bros. are erecting a wood-working factory here.

ST. JOHNS, QUE.—Bonuses for \$25,000 in favor of the Parent boot and shoe factory, of Terrebonne, and \$10,000 in favor of the Swain cigar factory, of Montreal, were carried here on Monday last.

SANDON, B. C.—Indications point to the extension of the Sandon branch of the C. P. R. at an early date. The objective point is Whitewater, which will be reached by the construction of 14 miles of new road.

ST. HENRI, QUE.—A company has been formed, known as the Tonhyll Upholstering & Frame Manufacturing Co., with a capital stock of \$75,000. It is the intention of the company to build in the spring.

KINGSTON, ONT.—Government engineers have been taking soundings in the harbor with a view to dredging it at various points. It is also proposed to build a breakwater in the interest of the Kingston Transit & Elevator Co.

HAWKESBURY, ONT.—A deputation from Prescott County has requested a supplemental subsidy from the Ontario government towards the construction of the Central Counties Railway, which proposes to connect South Indian, Rockland, Hawkesbury and Glen Robertson.

HAMILTON, ONT.—The promoters of the Hamilton, Chedoke & Ancaster Elec-

tric Railway recently collected \$6,000 towards the enterprise in three days.—The City Engineer in his annual report will recommend that the Board of Works construct a piece of brick pavement as an experiment.

QUEBEC, QUE.—The Quebec Exhibition Committee, of which R. T. Legare is secretary, offer two prizes, one of \$100 and another of \$50, for the best two plans of buildings to be erected on the Gowen farm for the holding of the Provincial Exhibition. The buildings to be erected this year are not to cost over \$30,000.

SUSSEX, N.B.—The Roman Catholic congregation will erect a new church.—Mr. Mills is preparing plans for a residence to be built for Mr. George D. Moore, manager of the Bank of Nova Scotia.—The Free Baptists are about to erect a parsonage, a committee having been appointed to arrange for the work.

HALIFAX, N. S.—Notification has been received from the War office to the effect that the construction of two quick firing gun batteries is to be commenced in the coming spring, for the better defence of the harbor. One battery will be located at George's Island, and the other at a point half way between the two forts on McNab's Island.

NEW WESTMINSTER, B. C.—Improvements will be made to the Royal City mills, at a cost of \$20,000.—Mayor Owens, in his inaugural address, referred to the necessity of constructing a bridge across the Fraser river, and of increasing the electric light plant. It was also apparent, he said, that a second reservoir in connection with the waterworks system was required.

BURK'S FALLS, ONT.—A deputation from this vicinity waited upon the Ontario government on Tuesday and asked for aid to construct a railway one mile long to connect the town with the Magnetawan river. It was suggested that the bonus of \$7,500 already granted should be increased to \$12,000. The deputation also asked for an appropriation to defray the cost of dredging Ahmic Lake, so as to extend navigation into Negheick Lake.

WINNIPEG, MAN.—Among the buildings to be erected this year will be an extension of the Grain Exchange block on Princess street. The building will include a warehouse for F. F. Fairchild.—During the present year the city council will be called upon to decide upon the following questions: The construction of a civic waterworks plant, the erection of a new central fire-hall, and the purchase of an electric light plant for street lighting. The contract under which the city is now lighted expires in April next, and tenders have been invited for an electric plant.

GUELPH, ONT.—The Mayor, in his inaugural address, stated that the following questions would be considered during the year: The buying of a steam roller and stone crusher; the making of good roads; the improvement of the fire protection, including the building of an addition to the present fire-hall, as per plan of George Bruce, at a cost of \$1,800; and the construction of a sewerage system. Regarding the latter he said: "The most pressing question that is before our citizens today is that of sewerage. I would suggest that a special committee be appointed to consult with our city engineer, and prepare a plan or submit some scheme whereby some headway could be made in this very important matter."

ST. JOHN, N. B.—At a meeting of the city council held last week, it was decided to grant a site to the New Brunswick Cold Storage Co. on which to erect a warehouse. Regarding the proposition made by Messrs. Hilyard & Spire to erect a pulp mill at Navy Island, the matter was referred to a special committee.—Mr. H. H. Mott, architect, representing a syndicate of local capitalists, has purchased the Crookshank property on Chip-

man's Hill. It is the intention of the syndicate to erect a large brick block, to contain apartments for from seventeen to twenty families, the entire building to be heated from one central heating apparatus and to be ready for occupancy May 1, 1899.

MONTREAL, QUE.—Hon. Mr. Stephens has given notice in the Quebec Legislature that he will move that the item of \$75,000 for a main sewer on St. Denis street be struck out.—It is learned that an English syndicate, for whom Mr. R. G. McGibbon, of this city, is solicitor, purposes erecting a number of hotels at various points in Canada. The first buildings will be erected at Halifax, Montreal, Ottawa, Toronto and Niagara Falls. The plans therefor have been prepared by Mr. Bruce Price, architect, of New York. Regarding the hotel to be erected in this city, Mr. McGibbon stated that a site for the building had been secured, and that it would contain a first-class café and restaurant.—W. E. Doran, architect, is calling for tenders for an extension to a store, corner of St. Catherine & Montcalm streets, for F. J. Hart.—The G. T. R. are still negotiating with the City Council for the erection of a central depot. As yet no decision as to a site has been made.

OTTAWA, ONT.—F. W. Slack, contractor, has purchased a lot on Tackaberry avenue.—Mr. T. G. Shaughnessy, vice-president of the C. P. R., states that the company expect to be running into Ottawa in the spring, and that the station will be erected near the Russell House.—Chief Provost, of the Fire Department, will request the Fire and Light Committee to purchase 1,000 feet of new fire hose.—Elgin street will be paved from Wellington to Albert street. Property owners on Wellington street will petition that the pavement be continued as far as the foundry.—The Ontario Elevator Co. is seeking incorporation, to build elevators, telegraph and telephone lines and steamboats; capital, \$100,000; applicants, J. R. Booth, A. W. Fleck and others.—The Tobique Gypsum Co. is seeking incorporation, to manufacture calcined plaster, lumber, etc. Hon. John Contigan and John Heney, of this city, are interested.—H. J. Wickham is asking incorporation of a company to construct a railway from Cowichan Harbor, Vancouver Island, B. C., to the mouth of the Franklin river.—Mr. H. J. Beemer states that plans of the new interprovincial bridge will be brought to the city at once, arrangements having been made to commence work at an early date.—The company formed a short time ago to construct a bridge across the Ottawa from the end of Bank street has all preparations completed to commence the work as soon as the bill of incorporation passes Parliament. Tenders for the bridge have been decided on, and it will be rushed to completion next summer. It is said that Mr. William Gibson, M.P., will get the contract for the masonry, and the Hamilton Bridge Company for the superstructure.

TORONTO, ONT.—In his inaugural speech on Monday last, Mayor Shaw stated that the proposed remodelling of St. Lawrence market, the question of sewage disposal and water supply, and the scheme for the extension of the cribbing in front of Harbor square, would be considered during the year. The cost of the latter work is estimated at \$35,000. He further alluded to the necessity of some better means of conveying the water from the intake in the lake across the harbor to the main pumping station.—The Georgian Bay Ship Canal and Power Aqueduct Co. have submitted a new proposition to the council for the supply of electric energy.—Mr. H. J. P. Good is agitating a scheme for the erection of a large building in which to hold public exhibitions. Mr. Good estimates that the building would cost about \$125,000.—18

Mayor has commenced negotiations which may result in the establishment of large smelting works in Toronto. Mr. R. J. Tough, who has extensive nickel interests in the vicinity of Sudbury, is the principal mover in the proposal.—Strickland, Symons & Rae, architects, have been chosen to prepare plans for the new House of Refuge for the County of Peel, to be erected in Brampton, and to have accommodation for 40 inmates. This firm are architects of the new warehouse now being erected on Wellington street west for Park Bros. They are also engaged in making extensive repairs to the St. Charles restaurant on Yonge street.—Building permits have been granted as follows: J. McIvor, second story addition to store, 1,458 Queen street west, cost \$900; A. J. H. Eckhardt, two-story brick dry kiln, north side of Esplanade, west of Bay street, cost \$2,000; Park Bros. & Company, brick warehouse, 83 to 87 Wellington street west, cost \$3,500; Bickell & Wickett, two-story galvanized iron addition to tannery, corner Front and Cypress streets, cost \$1,000.—St. Paul's Presbyterian church has been removed to the corner of Bathurst street and Barton ave. It is the intention of the trustees to build a new church on this site as soon as the necessary funds can be secured.—At the Council meeting on Monday last, notices of motion were given as follows: By Ald. Davies, that a foot-bridge be constructed over the river Don about midway between Queen and Gerrard streets, and that St. Lawrence market be enlarged and improved, with railway, wharfage and cold storage facilities. By Ald. Hubbard, that the City Engineer be requested to interview the managers of the Grand Trunk and Canadian Pacific railways, with a view of having gates placed at the foot of Brock street. By Ald. Burns, that the Board of Works be requested to confer with the Harbor Commissioners with a view of discussing the question of the filling in of the eastern portion of Toronto bay, caused by spring freshets down the river Don, and if possible devise some means of preventing the same; also that the City Engineer be requested to prepare estimates of the cost of the different classes of pavements. By Ald. Woods, that a special committee be appointed to consider and report on the cost of an electric plant for lighting the streets and public buildings of the city, and also for the purpose of supplying electric energy to manufacturers.—The Canadian Pacific Railway Company have taken tenders for about forty steel bridges, to be built in different parts of Canada. Contracts are expected to be awarded in a couple of weeks.

FIRES.

The residence of William Daly, contractor, of Faren's Point, Ont., was totally destroyed by fire recently.—W. E. Hall's furniture factory at Galt, Ont., was last week damaged by fire to the extent of \$2,500; partially covered by insurance.—The east wing of the Ottawa College was badly damaged by fire on the 5th inst. The entire roof was destroyed and part of the centre building injured. The damage is estimated at \$50,000, fully covered by insurance.

CONTRACTS AWARDED.

HAMILTON, ONT.—Hoodless & Son, of this city, have been awarded the contract for interior fittings of the Royal Hotel. The work is now in progress.

PETERBORO', ONT.—The Dominion Bridge Co., of Montreal, have been given the contract for the erection of a bridge over the Ouse river, in the township of Asphodel, at the price of \$650. Other tenderers were: Central Bridge Co., Peterboro', \$765; Weddell Bridge Co., Trenton, \$760; Hamilton Bridge Co., \$740.

TORONTO, ONT.—Messrs. John Hillock

the Standard Insurance Company's building in Montreal.—The Brockville Navigation Company have awarded a contract to the Polson Iron Works Company to build a large passenger steamer, to cost \$10,000.

QUEBEC, QUE.—Cote & Lamonde will build a beer vat, 83 x 32 feet, for the Anyot & Gauvin brewery. The masonry will be of stone, and the building will cost \$4,000.—The woodwork contract of the Frontenac annex has been awarded to J. H. Gignac.—Harry Staveley has prepared plans for a mill to be built at Etchemin for Mr. Edson Fitch, to be two stories and 63 x 33 feet. Contracts have been let as follows: Masonry, Joseph Conture; carpenter and joiner's work, Olivier Michand; estimated cost, \$12,400.

MONTREAL, QUE.—Robert Findlay, architect, has let contracts as follows for seven semi-detached residences, corner of Prince Arthur avenue and Chesterfield street. Masonry, W. Owan; bricklaying, P. Wand; other trades not let.—Gamelin & Huot, architects, have accepted the following tenders for two three story houses on Park avenue. St. Henri, for Jos. Lemoine. Masonry, Alp. Charest; carpenter and joiner's work, E. H. Marsan; plumbing and heating, Jos. Deslauriers; bricklaying, Jos. Laniet; plastering, S. Gosselin; painting and glazing not let.

SHERBROOKE, QUE.—Tenders for the construction of a new iron bridge over the St. Francois river to replace the Aylmer bridge were received as follows: Pittsburgh Bridge Co., \$12,174, weight 268,000 pounds; Edge Moore Bridge Co., \$12,746, weight 310,000 pounds; King Bridge Co., \$14,400, weight 340,000 pounds; Vermont Construction Co., \$12,000; weight 290,000 pounds; Dominion Bridge Co., \$8,386, weight 284,000 pounds. The contract will likely be given to the Dominion Bridge Company.

BUSINESS NOTES.

George E. Welsh, painter, has commenced business at Kamloops, B. C.

R. Donaldson & Son, iron works, Montreal, have been succeeded by the Phoenix Bridge & Iron Works.

David King & Co., plumbers and sanitary engineers, Halifax, N. S., have changed the firm name to Crump & Perrier.

The assets of the estate of Kline, Mayor & Keith, granite and marble works, Hamilton, Ont., are being offered for sale by the assignee, Mr. W. F. McGivern. Tenders close January 17th.

PILE TRESTLE BUILDING.

A rapid method of building a pile trestle on the Iowa and Dakota division of the Chicago, Milwaukee & St. Paul Railroad was thus described by Mr. A. J. Hart at the late convention of employees of the bridge and building departments of that road:

The floor was laid in four lines of 32-foot stringers, breaking joints at each of the pile bents, 16 feet apart. Thus two of the stringers projected over the last bent 16 feet, and we would run the driver over the cap on these stringers far enough to reach ahead 16 feet. We handled all of the material with the pile-driver. From two to four men were kept on the ground all the time to shift the staging and raft, when we had to use one. Our arrangements for staging were very convenient, consisting of four large staples or dogs 16 inches long, which were driven into the outside pile, and a 3 x 12-inch plank, which we would slide from one bent to the other

as required. By the time the last pile was driven in the bent the others had been sawed off to the proper grade, and while the driver was gone for the cap the pile was sawed ready for it, and the driver would drop the cap in place and go back for the stringers. We would then make a hitch a little past the centre of a stringer, letting it hang perpendicular in the leaders, and when in place one man would take hold of the lower end and carry it back to the next bent as it was being lowered to its place. When the stringers were in place the driver would go back for the ties, taking 10 or 12 at a time. In 11 days of 24 hours each, or 264 hours, with two pile-drivers, four foremen and 64 men, there were driven 196 pile bents, 92 bents blocked, 32 bents framed, and floor put on 298 spans, making 4,768 lineal feet of bridge constructed.

PAINTS AND THEIR VAGARIES.

Every paint user knows that for a painted surface to be successfully accomplished, great care and attention have to be exercised in the selection of one of the materials used. It is pretty generally acknowledged that when a man has failed at any other trade he can wield the brush as a painter. This wielding of the brush is a very simple matter of manual labor only—one which requires but little skill, and capable of being performed by any one of average ability. But it is not everybody who wields a brush that can or does understand the nature or vagaries of the paint he is using. The conditions of

use are so diverse that it is only the skilled craftsman—the man who has been a painter by trade all his life—who can give a rational explanation of any defects in a painted surface. What causes blisters in paint? What causes the colors to sink in? What causes paint to remain soft underneath while the exterior surface is bone dry and fairly hard? What, in fact, causes any and all of the "deviltree" a painted surface exhibits six months after the paint has been laid on? The jobbing hand, the nondescript sort of fellow, who has tried every trade and failed at all, cannot tell his employer why the paint he has laid on exhibits the above mentioned, or any other defect. It is only the "old hand," the skilled workman, who can offer an explanation. But even with him the explanation offered is not always the correct one. It requires the aid of the chemist as well as the craftsman to interpret all the reactive changes that a coat of paint undergoes. It is the writer's purpose, therefore, to explain the nature, qualities, reactive changes that occur in the paint-pot and the coat of paint laid on the surface of any material. In the present paper the question of the sinking in of colors will be considered. Before doing so, however, it will be best to explain the actual composition of this complaint called "paint."

Essentially, a paint is composed of linseed oil, pigment, driers, and turps. The oil used is generally boiled oil—that is, the raw linseed oil has been subjected to

(Continued on page 4)

"ASBESTIC"

—The King of Wall Plasters

FIREPROOF, being purely Asbestos, which is incombustible.
NON-CONDUCTOR OF HEAT - NO CRUMBLING OR CRACKING
WEIGHS LESS and is **INTRINSICALLY CHEAPER**
than any other Plaster.

A few of the principal Buildings **PLASTERED WITH ASBESTIC**—

THE McDONALD BUILDING, Victoria Square, Montreal.

THE YOUNG WOMEN'S CHRISTIAN ASSOCIATION BUILDING, Montreal.

THE ROYAL VICTORIA COLLEGE, Montreal.

THE PROTESTANT INSANE ASYLUM, Verdun, near Montreal.

THE GRAND HOTEL, St. Hyacinthe, Que.

THE NEW CUSTOMS-APPRAISERS STORES, NEW YORK, now building, which will consume 5,000 tons.

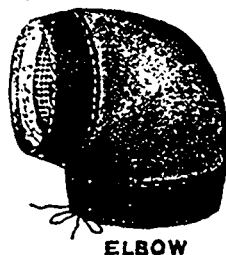
THE PARLIAMENT BUILDINGS, OTTAWA, portion of which was recently destroyed by fire and rebuilt.

Write for
Pamphlet and
full information.

The American Asbestic Co.

100 William Street - NEW YORK

SOLE PROPRIETORS OF "ASBESTIC" for United States and Canada.



ELBOW

MICA BOILER AND STEAM PIPE COVERINGS

The Highest Non-Conductor and the Cheapest Covering on the Market.

Full Particulars from
The Mica Boiler Covering Co. - 9 Jordan St., Toronto
MONTREAL WINNIPEG

a particular treatment whereby it loses its raw or native qualities, and becomes converted into a different body in many of its characteristics. The boiling process consists in heating the raw oil to a temperature of over 500° Fahr., whereby a lot of water that is inherently present in the oil is expelled. The oil is then either oxidized by passing steam or air through it, or it is boiled with some sort of a mineral such as litharge (an oxide of lead), borate of manganese, calcium sulphate of zinc, or some other body which will react on the fatty acids of the oil to oxidize them and thereby change the fluid from a limpid oil to a viscous varnish. (To illustrate the difference between an oil and varnish, drop a drop of each fluid on a piece of glass or porcelain, and note the difference in the drying power; the oil, if in the raw state, will remain fluid a very long time before it shows any signs of drying or hardening, and then it is only on its exterior surface that the drying occurs, forming a skin thereon; whereas, with the spot of varnish, that begins to dry and harden immediately it is exposed to the air.) Now, the object of boiling the oil has been to render it of a more drying nature—raw oil takes three months to dry when exposed to the air, but boiled oil does not take as many weeks. The pigment of a paint consists of a dry powder color which imparts the tint to the paint; this is ground up in the oil vehicle, whereby each dry particle of paint becomes coated with a layer of drying oil, whence such mixtures, when spread out thinly on a surface, will dry to form a thin layer or coat of paint. If the mixture of pigment and oil is not sufficiently siccativ, the painter mixes in some "driers," which enables the compound to dry at a quicker rate. The addition of turpentine to a paint is made so as to render the paint of a thinner or more fluid consistence, whereby the paint can be easily spread by means of a brush. These details are of necessity known to most painters; but this explanation is needed here, so as to render perfectly comprehensible what is to follow.

Now, apart from the chemical nature of the pigment used—whether it be a sulphide, oxide, chromate, silicate, carbonate, etc., of a metal—it will be noted from the above that the nature of the "driers" mixed with the paint has also to be reckoned with, and, lastly, the mixture of the turpentine. Consequently a "pot of paint," or "coat" of ditto, is not a simple compound. Quite the opposite, in fact; for, although the oil of turpentine used is always of the same nature, putting out of consideration for the moment the idea of adulteration or substitutes, the chemical composition of the pigment is not always the same; neither is the drier always the same. We shall have occasion to consider these points in other articles. At present we will confine attention to the loss of brightness, or "sinking in," as it is called, of colors.

Let us consider the nature of a coat of paint. It consists of pigment, an oil-varnish (i.e., the boiled oil), drier and turps. When this layer is exposed to the air (that is, when the painter has ceased spreading it with his brush, the oil vehicle begins to become decomposed, whereby it is separated with its

components, oleic, palmate, etc., acids, and at the same time the base of glycerine, to which these components are attached in the undecomposed oil, is eliminated. As these chemical changes occur, the atmospheric oxygen seizes on the olein and converts it into linolein, which is a solid, tough, elastic transparent body. The other fatty parts of the oil are more or less absorbed by the pigments, or else they are pushed to the surface of the coat of paint (as will be explained infra). The glycerine, however, does not become absorbed.

As the exterior surface of the coat of paint becomes oxidized as above explained, the particles of solid linolein sink to the undermost parts of the coat of paint, and thus a fresh layer of the oil vehicle is pushed up to the exterior surface of the coat of paint, to be similarly converted by the atmospheric oxygen into solid linolein. When all the oil has become thus converted, we can conceive that as each particle of solid linolein sank down, the particle of pigment was left denuded of a pellicle, or covering of oil. Also, we can conceive that the interstices between the particles of solid linolein and those of the pigment become filled with air, and also with the glycerine that has been eliminated from the oil by the decomposition it has undergone.

Now, glycerine is a greedy absorber of moisture, and, as a consequence, side by side with the transparent shining particles of solid linolein there are particles of water or moisture. We can now conceive the coat of paint to be in this condition. First, there is most of the oil next to the surface on which the paint is laid; above this we can conceive its pigmentary particles almost uncovered with oil, and side by side, or permeating the mass, is a quantity of aqueous particles. Now, the color of the pigment is, of course, dull, or bereft of sparkling brilliancy, and it is the object, or should be, of the oil vehicles to clothe each particle of pigment with a layer of shining oil. This, however, is not the case for the conception above foreshadowed. Now, when all the oil has become converted into solid transparent linolein, this linolein will rise to the surface if it has not become too hard and solid (that is, if it has been quickly formed); but as it rises above the pigment particles

they sink down, and becoming mixed with the glycerine and the water it has imbibed, we have a layer of transparent linolein above a layer of pigment, glycerine and water. Now, the oxidation of this linolein still proceeds, and will proceed until it is of a uniform tough skin. To enable it to do so its absorption of oxygen proceeds, and as this oxygen unites the layer of glycerine and water that is imprisoned by the superimposed skin of linolein, the glycerine becomes oxidized to a glycerate, and which more or less permeates the skin of linolein, and thereby causes the latter to lose its transparency and become opaque; consequently the surface of the coat of paint is bereft of brilliancy, and exhibits a dull appearance.

It will naturally occur to the thoughtful reader that what is wanted to prevent this sinking in of the pigment is either the incorporation of some solid transparent body that will not allow the solid pigment to sink through the oil, or else some process or material that will quickly convert the oil vehicle into solid transparent linolein, for if the oil be converted into this substance before the pigment has had time to settle away from it, the linolein as it dries will inclose the particles of pigment in it, and slowly form a transparent layer of linolein around each particle of pigment (the glycerine that has been eliminated would in this case be driven to beneath the pigment and linolein, with what effect we shall see in a future article). Now, if a resin be incorporated with the oil, or a varnish be used as the binding vehicle for grinding up the pigment in, then the colors will not sink in, because side by side with each particle of solid opaque pigment there would be a particle of solid transparent resin which would reflect the light, and consequently cause the coat of paint to exhibit a brilliant appearance. Paint grinders, therefore, should grind up their pigment in an oleo-resinous vehicle. There is an additional reason why such a vehicle should be used, because a resin will absorb glycerine, and thus, instead of fluid glycerine and water being beneath a coat of paint, which is often the cause of blistering and peeling off of paint, the coat of paint would be one solid homogeneous mass from exterior to the undermost surface.—H. Standage, in the Building News.

CHARLES HUGHES - Milton West, Ont.

All Kinds of Municipal Work

CURBING, CROSSING, CHANNELLING, FLAGGING, ETC.

Rough Heavy Lime-stone for Breakwater Cribbing, Etc.)

Credit Valley Grey Dimension, any size, Sills, Steps, Coursing, Bridge Blocks, Engine Beds.

— Estimates Given for All Kinds of Cut Work —

BELLHOUSE, DILLON & CO., 30 St. Francois Xavier St., Montreal

Sole Agents for the Compagnie Generale des Asphaltes de France (Rock Asphalt).

PORTLAND CEMENT NORTH'S CONDOR

Paving and Fire Brick a Specialty

SITTING LION and WHITE CROSS Brands

NORTH'S "CONDOR" BRAND AWARDED FIRST PRIZE AND GOLD MEDAL AT THE ANTWERP EXHIBITION

JOSSON CEMENT .. Manufactured at.. NIEL ON RUPELL

Is the Highest Grade Artificial Portland Cement and the Best for High Class Work. Has been used largely for Government and Municipal Works.

TO BE HAD FROM ALL CANADIAN DEALERS

C. I. de Sola, Manager in Canada .. 180 St. James Street, MONTREAL

MUNICIPAL DEBENTURES

wanted for foreign clients. We can place Debentures direct with foreign clients without charge to municipalities.

: : : Commission allowed to persons introducing new business : : :

ÆMILIUS JARVIS & CO. (Member Toronto Stock Exchange) — Stock and Bond Brokers, Investment Agents. 23 King St. West, TORONTO

ELECTRIC RAILWAY BONDS PURCHASED.

STOCK EXCHANGE ORDERS PROMPTLY EXECUTED

MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

DEBENTURES BOUGHT

Municipalities saved all possible trouble.

G. A. STIMSON & CO.

Investment Dealers

24 and 26 King St. W. TORONTO

ARTIFICIAL STONE PAVEMENTS

SIDEWALKS A SPECIALTY

CORPORATIONS Will do well to consider our work and prices before letting contracts

The Silica Barytic Stone Company of Ontario, Limited.

WALTER MILLS, General Manager. Head office: INGERSOLL, ONT.

EVERY ENGINEER AND CONTRACTOR

Should possess a copy of the Second Edition of the Canadian Contractors' Hand-Book, a compendium of useful information for persons engaged on works of construction, containing upwards of 150 pages. Price \$1.50; to subscribers of the CANADIAN ARCHITECT AND BUILDER, \$1.00.

C. H. MORTIMER, Publisher, Confederation Life Building, TORONTO.

Branch Office. New York Life Building, MONTREAL.

SEE THAT Your Specifications Call For

ST. LAWRENCE VALVES, HYDRANTS, STOP COCK BOXES, VALVE BOXES AND PIPE

Valves from 2" Upwards. Manholes, Covers, etc. Pipe from 3" Upwards. Architectural Iron and Steel Work.

ST. LAWRENCE FOUNDRY CO. of TORONTO, Limited TORONTO, CANADA

THE HAMILTON AND TORONTO SEWER PIPE CO. (LIMITED.)

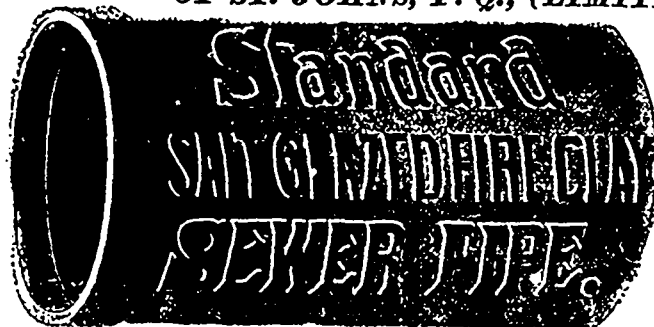


- FOR - SEWERS, CULVERTS AND WATER PIPES. INVERTS For Brick Sewers

Write for Discounts

HEAD OFFICE AND FACTORY: HAMILTON, CANADA

THE STANDARD DRAIN PIPE CO. OF ST. JOHNS, P. Q., (LIMITED)



Manufacturers of Salt-Glazed Vitrified SEWER PIPES

Double Strength Railway Culvert Pipes, Inverts, Vents,

AND ALL KINDS OF FIRE CLAY GOODS

STEAM AND POWER

FOR ALL DUTIES



NORTHEY CO. LIMITED

TORONTO, ONT.

THE LAURIE ENGINE CO., MONTREAL Sole Agents for Province of Quebec.

ALEX. GARTSHORE, President. J. G. ALLAN, Secretary and Treasurer. JAS. THOMSON, Vice-President and General Manager.

THE GARTSHORE-THOMSON PIPE & FOUNDRY CO. LIMITED.

Manufacturers of:::



Flexible and Flange Pipe. Special Castings and all kinds of Waterworks Supplies.

3 inches to 60 inches diameter.

For Water, Gas, Culvert and Sewer

HAMILTON, ONT.

MUNICIPAL DEPARTMENT

HAMILTON SEWAGE DISPOSAL WORKS.

These works, which have just been completed, are situated at the outlet of the Ferguson avenue trunk sewer, and are the second constructed in the city, the first ones being built at the east end, and already described in the CONTRACT RECORD. The tanks in these new works are made longer and narrower, and there are six in place of three at the east end works, on account of there being so much more sewage to be treated.

The sewage, passing through a screen in the receiving well, is pumped into the channel by centrifugal pumps, and is mixed with lime and alum in the proper proportions in passing through the building. At the outside of the building the channel is enlarged and deepened six inches to collect any sand which may have been pumped up, and which was found in the east end works to collect under the well in the first tank. Passing along the channel, the sewage is conducted through the tanks, where precipitation takes place, and the effluent then flows by a second channel at the other end of the tanks either to filter beds, should any necessity for such ever occur, or to Burlington Bay, as is at present intended. The works at the east end have been so successful that it is thought the effluent can be discharged into the bay with perfect safety without further treatment. The sludge is drawn off by pipes into the sludge well, and from there is pumped either into the sludge presses, or else into an elevated wooden tank, to be drawn off later into waggons and carted away.

The works have been constructed from the plans and under the supervision of the City Engineer, Ernest G. Barrow, M. Can. Soc. C.E., M. San. Inst. (Eng.), and are perfected with all the latest improvements.

From experience gained in the building of the east end works, the architects, Messrs. Wm. & Walter Stewart, have been able to introduce many improvements into the buildings connected with these works, the whole making a most complete plant.

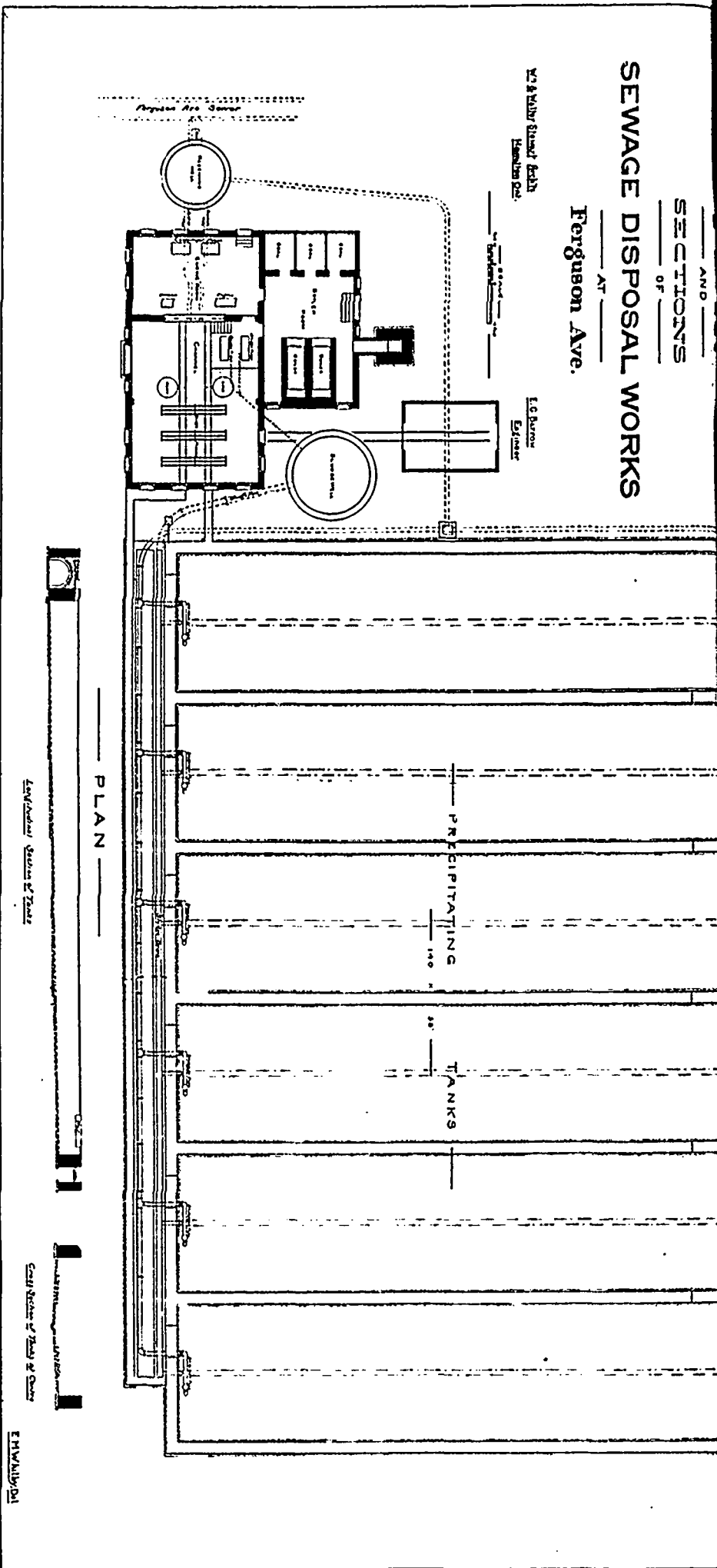
AN ACT RESPECTING TOWN COUNCILS.

Mr. Caven has introduced in the Ontario Legislature an act respecting town councils, which reads as follows :

1. The council of every town having a population of not more than 5,000 by the last Canadian census shall consist of a mayor, who shall be the head thereof, and of six councillors to be elected by a general vote of the municipal electors in the town.

2. The council of every incorporated village shall consist of a reeve, who shall be the head thereof, and four councillors to be elected by the general vote of the municipal electors of the village.

3. The council of every township shall consist of a reeve, who shall be the head thereof, and four councillors, who shall, where the township is not divided into wards, be elected by general vote, and where the township is divided into wards, the reeve shall be elected by general vote, and one councillor shall be elected for each ward.



SEWAGE DISPOSAL WORKS

AND SECTIONS OF

Ferguson Ave.

MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

ENGINEERS

WILLIS CHIPMAN

B. A. So. (McGill),
Mem. Can. Soc. C. E.

Mem. Am. Soc. C. E.; M. Am. W. W. Ass'n.

Civil and Sanitary Engineer
TORONTO

WM. NEWMAN, C. E.

A. M. Can. Soc. C. E., M. Am. W. Wks. Assn.

CITY ENGINEER OF WINDSOR.

Civil and Sanitary Engineer

Waterworks, Sewerage, Drainage, Pavements, &c.
Fleming Block - WINDSOR, ONT.

VAUGHAN M. ROBERTS

Civil and Sanitary Engineer

Waterworks, Sewers, Electric Light,
Electric Railways.

Plans and Specifications prepared.—Work
Superintended. 18 Ontario Street,
ST. CATHARINES

Municipal Officers, Town Clerks, and
others, are requested to mention the
CANADIAN CONTRACT RECORD when
corresponding with advertisers.

SCORIA PAVING BLOCKS are the Best
All-Round
Paving Material yet discovered.

W. H. KNOWLTON & CO.,

Dealers in Contractors' Supplies, 36 King St. E., Toronto

E. A. WALLBERG, C.E.

BRIDGE ENGINEER

111 Telephone Building, MONTREAL

Bridges, Buildings, Foundations, Plans,
Specifications, Superintendence and Expert
Reports on existing structures . . .

J. McDOUGALL, C. E.,

ENGINEER OF THE COUNTY OF YORK

GENERAL MUNICIPAL ENGINEER

Consulting Engineer for Municipalities in regard to
Electric Railway and other Franchises.
Specialties: Bridges, Foundations, Electric Railways,
and Roads. Surveys made; Plans, Specifications and
Agreements prepared, and work superintended.

COURT HOUSE, - TORONTO.

DAVIS & VAN BUSKIRK

Graduates Royal Military College of Canada.

CIVIL ENGINEERS

SPECIALTY: Municipal Engineering, including
Drainage, Sewerage, Sewage Disposal, Water-
works, Roadways and Bridges.
W. F. Van Buskirk, A. M. Can. Soc. C. E., Stratford
Wm. Mahlon Davis, M. Can. Soc. C. E., Woodstock

Paving Granite

Granite Sets for Street Paving. — CURBING cut
to any shape ordered. — Fine Rich Colors for
Building and Monumental Purposes.
Quarries, St. Philippe d'Argenteuil, P. Q.

Address all communications to

JOS. BRUNET - COTE DES NEIGES, MONTREAL

MONTREAL PIPE FOUNDRY CO., Limited

Successors to

DRUMMOND McCALL PIPE FOUNDRY CO., LTD.

Manufacturers of

CAST IRON WATER and GAS PIPES

and General Water and Gas Special Castings.

Prices on Application.

Offices, Canada Life Building, MONTREAL.

THE JENCKES MACHINE CO.

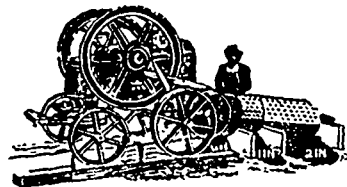
80 Lansdowne Street, SHERBROOKE, QUE.

Builders of

STONE AND ORE CRUSHERS
and Macadamizing Machinery.

Complete Plants Planned and Erected.

Write us for Catalogue No. 5, relating to Crushing Machinery



THE THREE RIVERS IRONWORKS CO.

Montreal Office: IMPERIAL BUILDING.

THREE RIVERS, P. Q.

MANUFACTURERS OF

Cast Iron Water and Gas Pipes

of best quality, from 2 inches in diameter.

HYDRANTS, VALVES and GENERAL CASTINGS.

CAST IRON WATER PIPES

From 4 in. to 42 in. Diameter.

BELL AND SPIGOT • FLANGED, TURNED AND BORED.

AND EVERYTHING NECESSARY FOR

A Complete Water or Gas System

SUPPLIED BY

The LONDONDERRY IRON CO., Limited

LONDONDERRY, NOVA SCOTIA

THE MOST COMPLETE IRON WORKS IN CANADA (ESTABLISHED 1852.)

Send for Drawings and Estimates of our work.

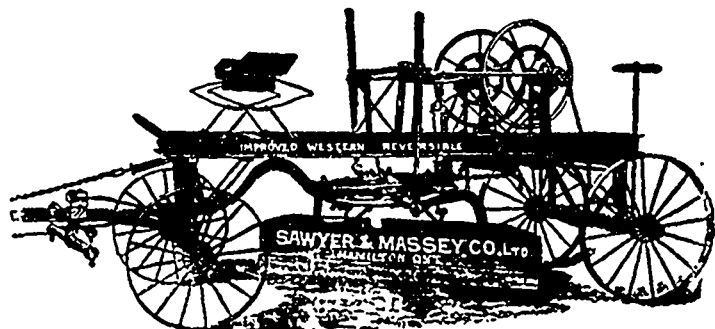
ALL PIPES CAST VERTICALLY

--- BRAND "SIEMENS" ---

WE MAKE

- PIG IRON
- WATER PIPES
- BAR IRON
- PUDDLED BAR
- HYDRANTS, VALVES
- PIPE SPECIALS
- HEAVY CASTINGS
- IRON RAILS
- STRUCTURAL WORK
- MACHINE WORK
- CORPORATION SERVICE
and VALVE BOXES

ROAD MAKING MACHINERY



We are prepared to supply Municipalities, Contract
ors, etc., with the Latest Improved

ROAD MAKING MACHINERY

Catalogues on Application.

Correspondence Solicited.

Sawyer & Massey Co., Limited

HAMILTON, ONT.

Prices of Building Materials.

LUMBER.

YARD QUOTATIONS.

Toronto, Montreal.

Table listing lumber prices for various items like Mill cull boards, Shipping cull boards, Hemlock scantling, etc. with columns for Toronto and Montreal prices.

BRICK

Table listing brick prices for items like Common Walling, Good Facing, Sewer, etc.

SAND.

Table listing sand prices for Per Load of 1/2 Cubic Yards.

STONE.

Table listing stone prices for items like Common Rubble, Large flat Rubble, Foundation Blocks, etc.

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

Table listing Ohio freestone prices for various dimensions and types.

CREDIT VALLEY STONE.

Table listing Credit Valley stone prices for items like Rubble, Ashlar, etc.

LONGFORD STONE.

Table listing Longford stone prices for Rubble and Ashlar.

INDEX TO ADVERTISEMENTS

In the "Canadian Architect and Builder."

Large index table listing various services and companies such as Architects, Cements, Interior Decoration, Roofing Materials, etc.

Toronto, Montreal.

Table listing prices for Dimension, Kent Freestone, River John, etc.

SLATE.

Table listing slate prices for Roofing and Ornamental Black Slate.

PAINTS.

Table listing paint prices for White lead, Red lead, Vermillion, etc.

CEMENT, LIME, etc.

Table listing cement and lime prices for Portland Cements and Roman Cements.

Toronto, Montreal.

Table listing prices for Hydraulic Cements, Fire Bricks, Lime, etc.

IRON PIPE.

Table listing iron pipe prices for various diameters and lengths.

IRON PIPE.

Table listing iron pipe prices for Lead Pipe and Waste Pipe.

Galvanized Iron.

Table listing galvanized iron prices for various gauges and types.

Structural Iron.

Table listing structural iron prices for Steel Beams, Channels, etc.