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|------------------------------------------------------|---------|--------|
| 1 1/2 and thicker clear picks, Am. Ins. | \$30 00 | 32 00 |
| 1 1/2 and thicker, three upper Am Ins. | | 27 00 |
| 1 x 10 and 12 dressing and better. | 20 00 | 22 00 |
| 1 x 10 and 12 mill run | 15 00 | 16 00 |
| 1 x 10 and 12 dressing | 15 00 | 13 00 |
| 1 x 10 and 12 common | 18 00 | 13 00 |
| 1 x 10 and 12 spruce culls | 10 00 | 11 00 |
| 1 x 10 and 12 maple culls | 8 00 | 9 00 |
| 1 inch clear and picks | 23 00 | 20 00 |
| 1 inch dressing and better | 18 00 | 20 00 |
| 1 inch siding, mill run | 13 00 | 15 00 |
| 1 inch siding, common | 10 00 | 13 00 |
| 1 inch siding, ship culls | 10 00 | 11 1/2 |
| 1 inch siding, mill culls | 8 00 | 9 00 |
| Cull scantling | 8 00 | 9 00 |
| 1/2 and thicker cutting up, plan | 22 00 | 25 00 |
| 1 inch strips, 4 in. to 8 in. mill run | 14 00 | 16 00 |
| 1 inch strips, common | 10 00 | 12 00 |
| 1/2 inch flooring | 11 00 | 12 00 |
| 1/2 inch flooring | 11 00 | 12 00 |
| XX shingles, sawn | \$1 40 | 2 50 |
| XX shingles, sawn | 1 30 | 5 50 |
| Eastlake painted tin shingles, per square, (50 feet) | | 4 50 |
| Eastlake painted tin shingles, per square | | 4 50 |
| Eastlake genuine galvanized tin shingles, per square | | 7 00 |
| Imitation brick siding, per square | | 3 50 |
| 1 inch siding, per square | | 3 50 |
| Lath, sawn | | 1 50 |

YARD QUOTATIONS.

| | |
|------------------------------------------|-------|
| Mill cull boards and scantling | 10 00 |
| Shipping cull boards, promiscuous widths | 14 00 |
| Shipping cull boards, stocks | 13 00 |
| Scantling and joist, up to 16 ft. | 14 00 |
| " " " 18 ft. | 15 00 |
| " " " 20 ft. | 16 00 |
| " " " 22 ft. | 17 00 |
| " " " 24 ft. | 19 00 |
| " " " 26 ft. | 20 00 |
| " " " 28 ft. | 21 00 |
| " " " 30 ft. | 24 00 |
| " " " 32 ft. | 26 00 |
| " " " 34 ft. | 28 00 |
| " " " 36 ft. | 30 00 |
| " " " 38 ft. | 32 00 |
| " " " 40 to 44 ft. | 35 00 |
| Cutting up planks, 1/2 and thicker, dry | 25 00 |
| Dressing stocks | 16 00 |
| Picks, American inspection | 40 00 |
| Three uppers, American inspection | 50 00 |
| Cedar for block paving, per cord | 5 00 |
| Cedar for Kerbing, 4 x 14, per M | 12 00 |

D. M.

| | | |
|------------------------------|-------|-------|
| 1 1/2 inch flooring, dressed | 25 09 | 30 00 |
| 1 1/2 inch flooring, rough | 23 00 | 25 00 |
| " " " dressed | 23 00 | 25 00 |
| " " " undressed | 16 00 | 14 00 |
| " " " dressed | 16 00 | 20 00 |
| " " " undressed | 12 00 | 14 00 |
| Beaded sheathing, dressed | 18 00 | 20 00 |
| Clapboarding, dressed | 18 00 | 21 00 |
| White pine shingles, per M | 75 | 3 00 |
| Sawn lath | 1 25 | 1 25 |
| Red oak | 20 00 | 25 00 |
| White | 18 00 | 20 00 |
| Black | 18 00 | 20 00 |
| Cherry, No. 1 and 2 | 50 00 | 60 00 |
| White ash, No. 1 and 2 | 25 00 | 25 00 |
| Black ash, No. 1 and 2 | 20 00 | 20 00 |

BRICK—V M.

| | |
|----------------|--------|
| Common Walling | \$7 50 |
| Good Facing | 10 00 |
| Sewer | 9 50 |

Stone:

| | |
|------------------------------------|-------|
| Lommon Rubble, Per Tois, delivered | 14 00 |
| Farge #2 | 18 00 |
| Foundation Blocks, " Cubic Foot. | 35 |

Slate:

| | | |
|-----------------------|------|------|
| Roofing (3 square) | 5 00 | 6 00 |
| " green | 5 00 | 6 00 |
| " " unslating | 5 00 | 6 00 |
| " purple | 5 00 | 6 00 |
| " white | 5 00 | 6 00 |
| " black, Lehigh | 3 50 | 4 00 |
| " " Chapmans | 5 00 | 8 00 |
| " " unslating, Monson | 5 50 | 8 00 |
| " black slate | 5 50 | 7 50 |

Paint:

| | |
|-------------------------------|------|
| Per Load of 1 1/2 Cubic Yards | 1 25 |
|-------------------------------|------|

PAINTS. (In oil, 1/2 lb.)

| | |
|-----------------------------|---------|
| White lead, Can | 6 7 50 |
| " zinc, Can | 6 6 50 |
| Red lead, Eng | 5 5 50 |
| " " " " " | 5 5 50 |
| " vermilion | 90 1 00 |
| " Indian, Eng | 10 1 00 |
| Yellow ochre | 6 5 12 |
| Yellow chrome | 15 15 |
| Green chrome | 7 15 |
| " Paris | 30 40 |
| Black, Japan | 17 25 |
| Blue, ultramarine | 15 25 |
| Oil, haced, raw (Imp. gal.) | 35 50 |
| " " " " " | 30 00 |
| " " " " " | 30 00 |
| Turpentine | 50 |
| Sand, coach | 50 |
| Shellac | 50 |
| Putty | 3 3 00 |
| Whiting, dry | 75 1 00 |
| Paris white, Eng | 1 25 |
| Litharge, Am. | 6 5 8 |
| Sienna, burnt | 15 20 |
| Umber, " | 8 20 |

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Machines for ripping, cross-cutting, scroll-sawing, mortising and tenoning, forming edges, grooving, gaining, rabbeting, cutting joggles, and turning. Builders use our Band Circular Rip Saw for the greater portion of their ripping in preference to carrying their lumber to a mill five minute's drive from their shops. The same is true in regard to scroll-sawing, mortising, tenoning, cutting stuff for drawers boxes, etc. Builders using these machines can bid lower and save more money from their contracts than by any other means.

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CLARENCE F. LEZ, carpenter and builder, Morrislow, N. J., says: "I have had one of your Band Circular Rip-Saws for about three months, and am much pleased with it. Have done the ripping for 16 houses in that time, which is over forty miles through inch boards. Have ripped as high as 3-inch planks. This is also good for rabbeting; having rabbeted all jambs and sawed all drips for 200 windows."

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| | |
|------------------------------------------|------|
| Lime, Per Barrel of 2 bushels, Grey..... | 40 |
| " " " " " " White..... | 60 |
| Plaster, Calcined, New Brunswick..... | 2 20 |
| " " " " " " Nova Scotia..... | 2 10 |
| Hair, Plasterers', per bag..... | 1 00 |
| Cement, Portland, per bag..... | 3 50 |
| " " Thorold, "..... | 1 50 |
| " " Queenston, "..... | 1 50 |

HARDWARE.

Cut Nails:

| | |
|--------------------------------------------|----------|
| American Pattern, 1 1/2 inch, per keg..... | 4 35 |
| " " " " " " 1 3/4 inch, per keg..... | 3 60 |
| Canadian Pattern, 1 1/2 inch, per keg..... | 3 85 |
| " " " " " " 1 3/4 inch, per keg..... | 3 25 |
| " " " " " " 2 to 2 1/2 inch, "..... | 3 25 |
| " " " " " " 2 1/2 to 3 inch, "..... | 3 10 |
| " " " " " " 3 inch and larger..... | 2 85 |
| Steel nails 100. per keg extra..... | 00 06 10 |
| Finishing nails, 1 inch, per keg..... | 5 80 |
| " " " " " " 1 1/2 inch..... | 5 10 |
| " " " " " " 1 3/4 inch..... | 4 65 |
| " " " " " " 2 " and larger..... | 4 10 |

MONTREAL PRICES.

Lumber, Etc.

| | |
|-----------------------------|---------------|
| Ash, 1 to 4 in, M..... | \$13 00@25 00 |
| Birch, 1 to 4 inch, M..... | 16 00 25 00 |
| Basewood..... | 13 00 18 00 |
| Walnut, per M..... | 55 00 95 00 |
| Butternut, per M..... | 35 00 40 00 |
| Cedar, fine..... | 00 06 10 10 |
| Cherry, per M..... | 05 00 00 00 |
| Elm, Soft, 1st..... | 15 00 17 00 |
| Elm, Rock..... | 25 00 30 00 |
| Maple, hard, M..... | 22 00 20 00 |
| Maple, Soft..... | 16 00 18 00 |
| Oak, M..... | 40 00 90 00 |
| Pine, select, M..... | 35 00 40 00 |
| Pine, and quality, M..... | 21 00 13 00 |
| Shipping Culls..... | 13 00 15 00 |
| Mill Culls..... | 8 00 10 00 |
| Lath, M..... | 10 00 11 00 |
| Spruce, 1 to 2 inch, M..... | 10 00 11 00 |
| Spruce Culls..... | 4 50 6 00 |
| Shingles, 1st quality..... | 2 00 3 00 |
| " " " " " " 2nd..... | 1 25 2 00 |

Cement, etc.

| | |
|----------------------------------|---------------|
| Portland Cement, per barrel..... | \$ 2 75@ 3 00 |
| Roman..... | 2 75 3 00 |
| Fire Bricks, per M..... | 22 00 30 00 |

Out Nails:

| | |
|------------------------------------------------------------|-----------|
| Hot-cut Am. or Can. pattern, 3 inch and above..... | \$2 65 |
| Hot-cut Am. or Can. pattern, 2 1/2 inch and above..... | 2 95 |
| Hot-cut Am. or Can. pattern, 2 1/4 and 2 inch..... | 3 15 |
| Am. pattern, 1 1/2 and 1 3/4 inch hot-cut..... | 3 45 |
| " " " " " " 1 1/2 inch..... | 4 15 |
| Can. Pattern, cold-cut, 1 1/2 and 1 3/4 inch..... | 3 15 |
| " " " " " " 1 1/2 inch..... | 3 45 |
| Finishing Nails, per 100 lb. keg, 1 1/2 to 1 3/4 inch..... | 6 60 4 50 |
| Finishing Nails, per 100 lb. keg 1 1/2 to 1 3/4 inch..... | 4 25 4 00 |
| and 1 1/2 inch..... | 5 25 4 70 |
| Finishing Nails, per 100 lb. keg, 2 inch and up..... | 3 65 3 50 |

Paints, etc.

| | |
|-------------------------------------------|-----------|
| White Lead, pure, 25 to 100 lb. kegs..... | 6 00 0 00 |
| " " No. 1..... | 5 25 5 50 |
| " " No. 2..... | 4 75 5 00 |
| " " No. 3..... | 4 50 4 75 |
| " " dry..... | 5 25 5 75 |
| Venetian Red, English..... | 1 50 1 75 |
| Yellow Ochre, French..... | 1 25 3 00 |
| Whiting, London, washed..... | 0 50 0 00 |
| " " Paris..... | 1 15 1 25 |

Oils:

| | |
|-------------------------------|-----------|
| Linseed, raw..... | 0 56 0 58 |
| " " boiled..... | 0 60 0 61 |
| Olive, pure..... | 0 90 0 00 |
| " " machinery..... | 0 95 1 00 |
| " " extra, qt., per case..... | 3 00 3 25 |
| " " pts..... | 4 40 2 60 |
| " " 1/2 pts..... | 2 70 3 00 |
| Spirits turpentine..... | 0 71 0 73 |

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The Council of the County of Oxford invite competi-
tion in the preparation of Plans and Specifica-
tions for a new

COURT HOUSE,

Proposed to be erected in the Town of Woodstock,
Ont. at a cost not to exceed \$30,000, complete and fur-
nished. The following prizes are offered: For the best,
\$250; for the second best, \$150; for the third, if more
than three are submitted, \$100. Written instructions
prepared by the Committee may be seen at the County
Clerk's Office, at Woodstock, or will be forwarded on
application to any person wishing to compete.

JAMES WHITE
County Clerk, County of Oxford.

Woodstock, 28th January, 1889.



Cape Breton Railway.

Tenders for a Bridge at the Grand
Narrows, C. B.

SEALED TENDERS addressed to the under-
signed, and marked on the outside, "Tender
for Bridge," will be received until noon on Wed-
nesday, the 6th March, 1889.

Plans and specifications can be seen at the
office of the Chief Engineer of Government Rail-
ways, Ottawa, where forms of tender may be
obtained on and after Wednesday, 20th February
instant.

Each tender must be accompanied by a deposit
equal to 10.5 per centum of the amount of the tender.
This deposit may consist of cash or of an accepted
bank check made payable to the Minister of
Railways and Canals, and it will be forfeited if
the person tendering neglects or refuses to enter
into contract when called upon to do so, or if
after entering into a contract he fails to complete
the work satisfactorily according to the plan, specifi-
cation and contract.

If the tender is not accepted the deposit will
be returned.
Tenders must be made on the printed forms
supplied.

The department will not be bound to accept the
lowest or any tender.

A. P. BRADLEY,
Secretary.

Department of Railways and Canals,
Ottawa, 7th February, 1889.



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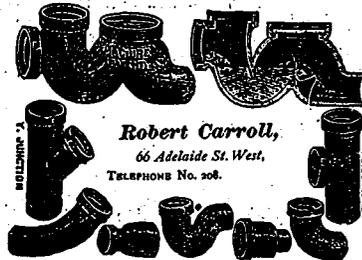
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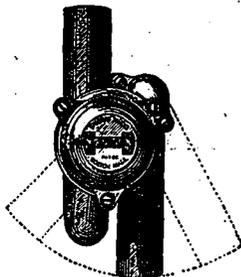
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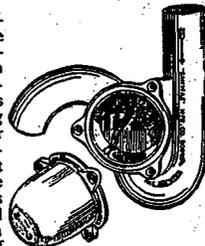
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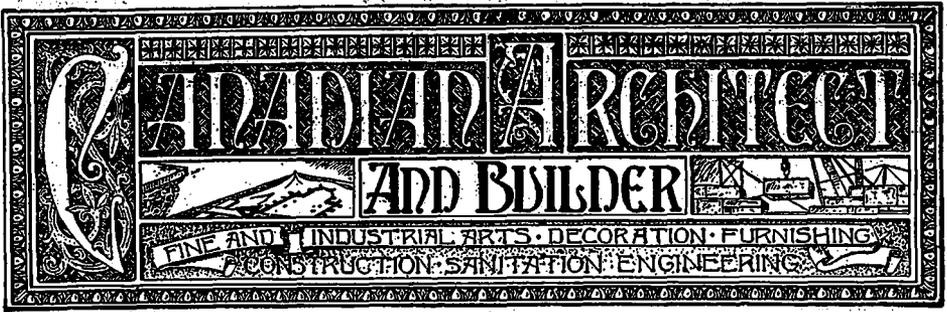
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TORONTO, CANADA, FEBRUARY, 1889.

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—THE—
Canadian Architect and Builder,

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MATERIALS AND APPLIANCES.

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The CANADIAN ARCHITECT AND BUILDER will be mailed to any address in Canada or the United States for \$2.00 per year. The price to subscribers in foreign countries, is \$2.50. Subscriptions are payable in advance. The paper will be discontinued at expiration of term paid for, if so stipulated by the subscriber; but where no such understanding exists, it will be continued until instructions to discontinue are received and all arrearages are paid.

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ADVERTISEMENTS.

Prices for advertising sent promptly on application. Orders for advertising should reach the office of publication not later than the 15th day of the month, and changes of advertisements not later than the 5th day of the month.

EDITOR'S ANNOUNCEMENTS.

Contributions of technical value to the persons in whose interests this journal is published, are cordially invited. Subscribers are also requested to forward newspaper clippings or written items of interest from their respective localities.

THE "CANADIAN CONTRACTOR'S HAND-BOOK" NOW READY.

WE are pleased to be able to announce that the "Canadian Contractor's Hand-Book," compiled and published as a premium to new subscribers to the CANADIAN ARCHITECT AND BUILDER, is now ready for distribution to those entitled to receive it. Following is the table of contents:

| | PAGE. |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Preface | 5 |
| Contents | 8 |
| Mechanics' Lien Act | 9-18 |
| Velocity of Wind and its Effect upon Towers, Spires, &c. | 17 |
| Strength and Weight of Materials | 19-29 |
| Wear and Tear of Building Materials | 30 |
| Sash Weights required for Windows of Various Sizes | 31 |
| Tables Showing Amount of a Workman's Wages for any Number of Hours, from 1 to 120 (a fortnight) at any Number of Cents or Half Cents per Hour | 32-73 |
| Practical Hints for Builders | 74-93 |
| Hints for Plasterers | 94-96 |
| Hints for Painters and Decorators | 97-99 |
| Useful Information | 99 |
| Hints for Plumbers | 100-1 |
| List of Canadian Architects | 102-3 |
| List of Manufacturers and Dealers in Materials required by Contractors and Builders | 104-111 |

The "Canadian Contractor's Hand-Book" is handsomely bound in leather, is of convenient size for carrying in the pocket, and contains receptacle for money or memoranda. It is generally admitted by those who have seen the book that it is in itself well worth \$2 to any contractor. In fact the "wages tables" alone are worth many times that amount to a contractor employing a number of workmen. Contractors and

builders are invited to send us \$2 and receive a copy of the "Canadian Contractor's Hand-Book" and the CANADIAN ARCHITECT AND BUILDER for one year.

WE regret that by a transposition of figures an error occurred in Mr. Knox's article on "Factory Chimney Construction" in our last number: In the fifth paragraph, read: "for a chimney 100 feet high, multiply by 12; for a chimney 120 feet high, multiply by 11."

THE *American Architect* publishes a protest against unfair architectural competitions, which bears the signatures of architects from various parts of the United States and Canada. In view of recent events in this country, Canadian architects have the best of reasons for joining in such a protest.

THE courts have imposed a fine of \$1,000 upon the city of London, Ont., for allowing its sewage to empty into the river. This decision should serve as a warning to Toronto and other Canadian cities which have been dallying for years with the question of sewage disposal, and apparently are as far as ever from a satisfactory conclusion.

THE Minister of Public Works for Ontario, stated in the Legislature the other day, that the amount expended on the new Parliament Buildings, up to the close of last year, was \$308,646, made up as follows: masonry, \$244,353; carpentry and iron work, \$8,531; brick, \$12,037; St. Lawrence Foundry Co., \$10,019; Mr. Waite, architect, \$12,500; drainage, \$21,265.

WE have received from a well-known New York architect a request for a copy of an illustration of Mr. Waite's design for the new Ontario Parliament Buildings. Our correspondent adds to his request the following: "I want to compare it with Darling & Curry's beautiful design, which you published." We regret that we were compelled to reply that we had unsuccessfully endeavored to obtain from Mr. Waite the privilege of illustrating his design.

HAVING been requested by several of our subscribers to open a column of "Queries and Answers" on subjects connected with the building trades, we beg to inform our readers that we have made the necessary arrangements, and that in future we will publish each month, under this heading, such questions and answers on these subjects as we may receive. We leave it to our subscribers themselves to make this column a success. We feel sure that those who know will gladly assist those who want to know.

THE Toronto Board of Trade has accepted the amended designs of Messrs. James & James, of New York City, for its new building. These amended designs are published in the present number. We very much regret that Messrs. James & James have declined to allow us to illustrate their original competition design. We must allow them to be the judges of the

merits of their original design, and if they do not think that it is worthy of illustration, we can only sympathize with them, while making the best of our disappointment at not being able to present to our readers all the competitive drawings as we were desirous of doing. In future numbers we shall publish the pre-miated Canadian designs by Messrs. Darling & Curry and Gordon & Helliwell, of Toronto.

JUDGING from letters which we have recently received from builders in different parts of Ontario, there seems to be an earnest desire on the part of many of our readers for the formation of a Canadian Builders' and Contractors' Association. We are pleased to observe that such a feeling exists, as we believe the time has come when such an organization is necessary for the protection of the rights of master builders and the advancement of their interests. It is time that a standard form of contract applicable to Canada and for use throughout the Dominion, was agreed upon and put in operation. The relations of the builder to the architect require to be more clearly defined and better understood. The relations of master builder and workmen employed in the building trades have in recent years been anything but satisfactory. In connection with all these matters, as well as in the influence it could bring to bear on the shaping of legislation, whether municipal or provincial, a strong organization of Canadian master builders might work with very great advantage for the interests of its members. We hope that, as suggested by one of our correspondents last month, a meeting will be called at an early day for organization. We shall be pleased to do anything we can to aid the object, and as a preliminary step would like to receive for publication the opinions of any builder who has anything to say for or against the project.

THE Ontario Legislature has been asked to amend the Mechanics' Lien Act in such a manner as to afford greater protection to mechanics. We notice that in Minnesota it is the mortgagee who is alleged to be suffering from the combination against him of "rascally owners and builders." An article in one of our contemporaries goes to show, however, that the owners have as good cause to complain of the provisions of the law as the other parties affected by it. The writer says:—"It may surprise a good many people to know that when once you have bargained to have a job done about a building you occupy, and may have paid for, the mechanic who makes the bargain with you has the right to go at once and put a lien on the building, and that before he has done a single stroke of work. His contract may be for a few hundred dollars only, and your building may be worth fifty thousand, but he can so far destroy the value of that building to you, for selling or other purposes, until his claim has been satisfied, which may not be for months. He may send you in what seems to you an extortionate bill, making charges away beyond the contract figures, and which you don't feel inclined to pay without showing fight. Until the matter is settled, however, that mechanics' lien clings like a nightmare to the value of your building, and you might very easily be paralyzed in your efforts to sell it, should you think it desirable or necessary at any time to do so, for months or even years. Ask any reputable lawyer of your acquaintance, and if he does not tell you what infinite botheration may be caused by Mechanics' Liens, we shall be surprised."

IN view of the many accidents which have occurred on account of insecure scaffolding, the City Council of Toronto is considering the appointment of an official whose duty it shall be to see that all scaffolding is constructed in a manner to ensure the safety of the workmen who may be employed upon it. No doubt the proposed new inspector will find enough to do, if he determines to faithfully fulfil the objects for which he is to be appointed. We trust if the appointment is made, the inspection of scaffolding will be done in a more satisfactory manner than the present inspection of new buildings. The number of examples of faulty and even dangerous construction to be seen on the streets of Toronto, is truly alarming. We could point out

to the Building Inspector as one such example a pretentious store building in course of erection on Queen street, in which the weight of intermediate brick piers of the upper stories are carried on wood beams which plainly indicated their inadequacy by the graceful curves they assumed on the lower surface. Another instance may be seen on Dundas street, where turned hard wood columns about 5 inches diameter, painted to look like iron, carry the wood beams which carry the brick walls above. We do not know whether the blame for the existence of such a state of things should rest upon the Building Inspector or upon the City Council. It is not improbable that the Building Inspector has too much to attend to. If this be so, he should either be relieved of some of the duties which do not properly belong to his office, or the Council should appoint an additional inspector. There is need for the prompt inauguration of a more thorough system of inspection of new buildings, which if not entered upon and carried out, will result some day in disastrous consequences similar to those which have occurred in New York and other cities owing to ignorance and criminal carelessness on the part of those engaged in building construction.

WE believe the Board of Works of the city of Toronto has taken an unwise and retrograde step in deciding that in future no pipe sewers shall be laid, but that all sewers shall be brick. This opinion is shared by every engineer to whom we have spoken on the subject. It may be that brick is to be preferred to pipe for sewers of 18 inches diameter and upwards. For sewers of smaller diameter, there can be no doubt that pipe of good quality serves the purpose better, and is much less costly. The recent investigation as to the condition of the pipe sewers of the city tends to bear out this statement. We quote from the City Engineer's report as to the character and result of this investigation:—"At the last meeting of the Committee on Works I was ordered to stop work on all the pipe sewers now under construction, on account of statements having been made that a certain class of pipe now being used by the city was defective; and in order to test the matter, I was ordered to open a number of sewers built at different dates throughout the city. For this purpose trenches were sunk at several places throughout the city, 24 openings being made in the streets. On Tuesday and Wednesday the Committee on Works examined these sewers. As far as the examination goes the testing was confined to two qualities of pipe—one manufactured in England, and known as the Scotch pipe, and the other manufactured in the United States, by different manufacturers. Altogether we uncovered for the inspection of the Committee on Works 140 pipes, and of these, three Scotch pipes were found defective and fifteen American. This is not however, a fair test of the quality of the pipe—the openings for the American pipe being more numerous than those for the Scotch pipe; and further, it is a most imperfect test as to the quality of either pipe. The total number of openings made was 24; the greater number of these openings being made at such places where it was known the defective pipes would be found. As to the cause of the defects, it is difficult to decide; but I am inclined to think that the defects found in the sewers were caused by the removal of the shoring; as by its removal pipes were broken by having no support at the haunches, and with a sufficient load would be very liable to give way. The shoring at the present time is done by short lengths of timber. The lower portion can now be removed and the sewer properly strengthened by filling in at the haunches, thereby securing the pipe from any unreasonable strain." It will be seen that the inspection revealed very few defective pipes, and in many instances the defects discovered were not due to the quality of the pipe, but rather to the unfair strain to which they were subjected owing to the want of proper support. There was nothing revealed by the investigation tending to show the inferiority of pipe sewers. On the contrary, the evidence is strongly in favor of their continued use, and we are at a loss to understand on what grounds the Board of Works based their decision, especially in view of the Engineer's statement, that it was "a most imperfect test as to the quality of either pipe."

There are several reasons why pipe is preferable to brick for sewers of moderate diameter. Being salt-glazed, it is smoother than a brick sewer, and, unlike the latter, offers no obstruction to the flow of the sewage. It is not, like a brick sewer, porous, and consequently is less liable to leak. It will compare favorably in point of durability with brick. In conjunction with the various points of superiority mentioned, is the important consideration that a pipe sewer which can be laid for \$4 per yard, will cost \$6 per yard if laid with bricks. In other words, it will cost the citizens of Toronto about \$25,000 more to construct the same number of miles of brick sewers as were constructed with pipes last year, and with no better results so far as the quality of the work is concerned. It remains to be seen with what grace the tax-payers will submit to such unwise expenditure.

This would seem to be a fitting place to remark that the time has come when the opinion of the City Engineer in matters of this kind should be supreme. If the City Engineer is a competent man, his opinion on such subjects should decide the course to be pursued. If he is not a competent man, and his opinion is of less value than that of the aldermen whose adviser he is supposed to be, then the city might as well dispense with such a useless official and save the amount of his salary. We do not wish to be understood as casting any reflection upon the abilities of the present City Engineer. We simply contend that as the head of the most important department of the city's affairs, his opinions should prevail, and not be subject to revision at the hands of the aldermen. Then, if it is found that the Engineer's opinions do not work out satisfactorily in practice, it is an easy matter to place the responsibility for mistakes where it properly belongs.

PUBLICATIONS.

OUR New York contemporary, the *Manufacturer and Builder*, has donned a new cover, pleasing in design and color, and in many other ways is showing evidences of enterprise and prosperity.

With the new year, *Grip* enters upon its thirty-second half-yearly volume, a fact which speaks eloquently for the merits of this unique and favorite Canadian journal. It stands to-day alongside of the very best productions of its class in the world, and enjoys a fame far beyond the bounds of Canada. To Canadians it ought to be more and more an object of patriotic pride. It is only two dollars a year, although the paper contains sixteen pages filled with bright original humor of pen and pencil, and always gives, without stint, political cartoons on passing events. *Grip* is now giving the Manhattan Art Company's superbly engraved copy of Rosa Bonheur's celebrated picture, "The Horse Fair," to all new subscribers.

A DOMINION ARCHITECTURAL ASSOCIATION,

QUEBEC, Jan. 29, 1889.

Editor CANADIAN ARCHITECT AND BUILDER.

DEAR SIR,—Reading in your valuable journal of the Architect's Guild of Toronto, and of a proposal to form a Provincial Society of Architects, suggests a wider application of so excellent an idea in the formation of a Dominion Society, which might be made a most useful organization in advancing the interests of architects, and those of the profession as well. It is to be regretted that so far no Society exists for the bringing together of Canadian architects, or for the securing of any uniformity in practice, fees, etc., nor for the systematic training of young architects. I hope the Toronto Guild may take hold of this matter. With the energy characterizing your citizens generally applied in the direction I have hinted at, success I am sure would be certain.

Yours truly,

H. STAVELEY.

Bruce & Thompson, of Glasgow, have been making some experiments on the pressure necessary to be acquired before lead pipes burst. Their results show dissimilar conditions for different sized pipes. The pipes used by the Glasgow water works are not selected by their strength or quality, but according to their weight per lineal yard. One-half inch pipe runs 7 lbs. per yard, and 1 1/4-inch pipes 24 lbs. per yard. In a 1/2-inch pipe the bursting pressure per square inch was found to be 1,820 lbs. In a 1 1/4-inch pipe the bursting pressure was 812 lbs. per square inch.

A WINNIPEG COMPETITION.

WINNIPEG, Feb. 7th, 1889.

Editor CANADIAN ARCHITECT AND BUILDER.

You will see by the enclosed cutting from the *Call*, how the architectural profession is treated in this city:

"A meeting of the market, license and health committee was held on Wednesday afternoon, Ald. Currie presiding. The time of the committee was wholly devoted to a discussion on the new city market building, and the aldermen expressed their opinions pretty freely. The principal point of contention was regarding the advisability of having a public hall in the building. The chairman strongly favored the public hall scheme, and expressed the opinion that it would pay the city at least ten per cent. on the investment. It was pointed out that if there was to be a public hall, the brick portion of the old market building saved from the fire could not be utilized, as had been proposed, but would have to be torn down. The cost of the new market if this was done, it was stated, would not be less than \$25,000, while if the public hall scheme was abandoned and the building now standing utilized, the cost would not be more than \$13,000. Finally it was decided to advertise for separate competitive plans and specifications with and without a public hall. The dimensions of the building with the hall would be 164 x 63, and without it 117 x 63. The architects submitting plans must furnish a statement of the cost, including excavations. For the plan adopted, if it be for a building with a public hall, \$100 will be paid, and if without it, \$50, in either case the plans to become the city's property."

I should be very much obliged if you would write an article on this subject.

Yours truly,

WINNIPEG ARCHITECT.

[Here is another competition which is even worse than those referred to last month. The committee is in doubt, and is unwilling to decide a point without more information. But instead of gaining the information in a legitimate way and paying for it, it proposes to obtain what it so much desires by trying to induce a number of men to send in drawings for two schemes, either or neither of which may be adopted. The inducement is not even the carrying out of the work whichever scheme may be adopted; but the magnificent sum of \$150 in two prizes. This committee must have a very poor opinion of the architects they come in contact with, or have no knowledge of the quantity of work which must be done to prepare the design for which they offer the great prizes of \$100 and \$50. The value of the buildings is placed at \$25,000 and \$13,000, which equals \$38,000, and if five designs are sent in \$1,900 worth of work is done for \$150. The man winning first place only receives a sum a little over one fourth of what he is entitled to, and even then he is relieved of his plans. The way to stop these competitions is for architects to refuse to enter them, and to do all in their power to prevent others entering them. Of course in the present condition of the profession, any man who can draw a little is an architect in the opinion of the ignorant, and consequently there will be designs sent in, by men called architects no matter how absurd the conditions may be. The public is to blame for the fact that it is unable to judge in architectural matters, and will persist in deciding matters artistic, without the aid of competent advice. We should very much like to have the names of any men who may send in designs in response to such conditions as above. We should imagine that they must be very anxious to work for nothing or are extremely thankful for small mercies.—THE EDITOR.]

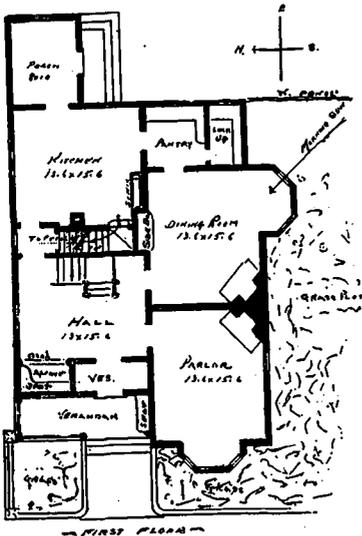
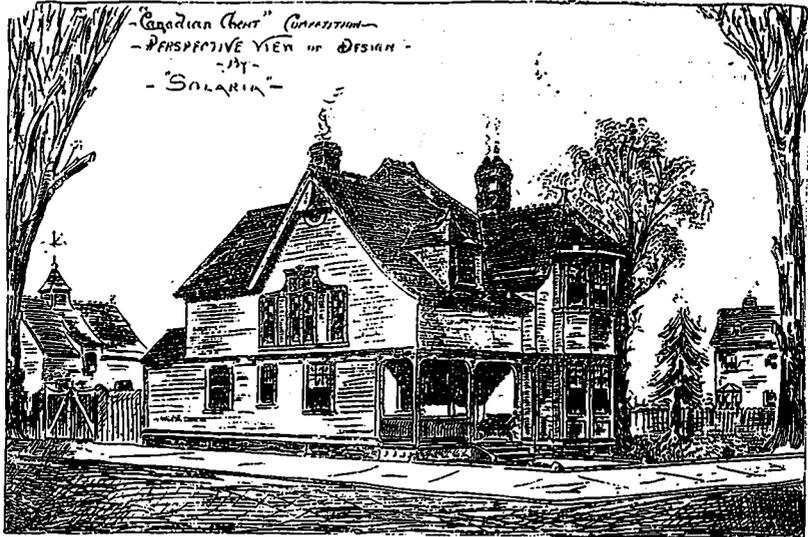
To make size for wall paper, break some glue up small, put it into a pail and cover the glue with water, and allow it to soak for ten or twelve hours; then add more water and boil until dissolved. Strain it through a muslin cloth, and try the size on a piece of paper. If it glisters it is too thick; then add water. If it soaks into the paper it is too thin. Be careful, especially in the first coat, to bear very lightly upon the brush, and have plenty of size to flow freely from it, otherwise you may damage the paper. Give two coats of this, and when dry varnish with pale varnish, which should be applied very briskly, and leave off at the flow.

OUR ILLUSTRATIONS.

"CANADIAN ARCHITECT AND BUILDER" COMPETITION FOR A \$2,500 TOWN HOUSE—DESIGN BY "SOLARIA."

THIS plan has been prepared for a northeast corner instead of a northwest one, and is consequently not to be judged from the same standpoint as the other designs. For a northeast corner the house has been properly designed. The dining room is

mental way. The vestibule should have been six or twelve inches wider and two feet shorter; the alcove would also have been improved by this change. The hall is very roomy and convenient, but has been completely spoiled in appearance by there turn flight of the main stair. The method of making one of the main stairs for a portion of the servant stair is bad. The servants in passing across the landing would have a view of the main hall. The kitchen, serving pantry, etc., are well



very well planned, although it would not have the benefit of the early morning sun; the bay window, however, would catch the rays of the sun as soon as the sun arrived on a direct line with the north side of the house. The recess for the sideboard is too short, and if one were built for the position, it would be out of scale. We should have planned the bay window in the parlor on the north side, and not given it a western exposure, which in summer is very warm, and in winter equally cold. The vestibule is very bad, being too long and too narrow, and the alcove has not been made of much benefit either in a utilitarian or orna-

arranged, and the large porch would be very useful for many purposes.

The first floor plan is bad, in fact it could hardly be worse. There are only two good bed rooms, each with a closet. What we said of the bay window in the parlor applies to the one in the front bed room. It was also possible to have gained access to this room without ruining the other front room, by slightly changing the position of, and making the closets wider and shorter, so as to have given a lobby from which the front room could have been reached. The bath-room could not have been worse arranged. If a door had been placed where a curtain is marked, and an arch put in where the present door is shown, a wardrobe or chest could have been gained. But even if the best that could be done with this floor had been done, it would still have been far from what a bedroom floor should be. The elevations are very good—that is, if they were put in the hands of an experienced man and improved in the detail, the result would be good. The plan and elevation shows an hand inexperienced hand, and one whom we should judge had never been in an architect's office. The drawing is very bad; it cannot be called drawing, it has been so carelessly done. However, we have no doubt that the design was not prepared by one who has had a fair opportunity of learning drawing, and it is very possible that the author deserves praise for his perseverance rather than censure for his shortcomings.

ACCEPTED AMENDED DESIGN FOR TORONTO BOARD OF TRADE BUILDING—JAMES & JAMES, ARCHITECTS, NEW YORK.

SUGGESTED SKETCH FOR MANTEL—J. A. RADFORD, ARCHITECT.

A lump of soda laid upon the drain-pipe down which waste water passes will prevent the clogging of the pipe with grease, especially if the pipe is flooded every week with boiling water.

Mr. E. W. Keating, City Engineer of Halifax, N. S., has patented a device for cleaning water pipes. The cost of cleaning the twenty-four-inch and fifteen-inch mains of that city last year is said to have been only \$27.68.

RESPONSIBILITIES OF STUDENTS.

ABSTRACT OF LECTURE DELIVERED BY R. W. GAMBIER-BOUSFIELD, ASSOC. R. L. B. A., TO THE STUDENTS AND DRAUGHTSMEN'S ASSOCIATION OF TORONTO.

"FOOLS build houses for wise men to live in" is an old saying, and as very many people translate it, it is a bad thing for the livelihoods of you and me. It certainly is a fact that fools build houses—fools do a great many sensible things—but it does not at all follow that everyone is a fool who builds a house, whether he is the proprietor or the architect. But, let me tell you, proprietors and architects too, are all liable to the opprobrious epithet if they do not take care, and it is to be feared there are more fools than wise in this world—certainly there are enough of them without adding to them from the ranks of this profession.

You have had, as I understand, a good many papers and discussions on practical subjects, and you have all had more or less insight into the practical part of the profession. But the practical is only one side—the scientific part; there is also the other side—the artistic, of no less importance for us as architects, if we would escape classification with the fools. And it is for you students and draughtsmen to look very carefully into this matter. If you ever mean to be anything or do anything in the profession you have chosen to follow for your livelihood, you must study both sides—the art as well as the science of architecture. Architecture is not complete as an art only, neither is a knowledge of the practical part alone sufficient to warrant a man calling himself an architect. How can a man call himself an architect if he is only a builder? or how can he practice in the profession if he is only an artist? But there are many men who try to do so, and these most certainly are the fools of the proverb.

A builder, whose work is entirely practical, has no time to go into the study—his work is to execute in stone, brick or wood, the forms given him by the architect. It is not for him, even if he cared about it, to say this or that form is incorrect, and to request the architect to alter his drawing accordingly; but he is to have the work done in stone, and therefore to memorialize, every one who shall look at the stone for years to come, that this architect who ordered him to do it, either did or did not know what he was about. If he did know then the form is correct, and if he did not, it is incorrect, and he has handed down to posterity a sign and mark of his inability. If it rested with a stone here or a stone there, it would not matter so much, but a whole building often and often exhibits to those who are educated at all, the fact that the man who designed it was not educated, and the public generally are becoming more educated every day.

So with an artist. He may design something to be executed in stone that can not be done in any other material than iron, or he may design brickwork that could not be carried out, and wood must be substituted. The artist, to be an architect, must know the capabilities of the materials he would employ. A striking example is to be seen in the work of stained glass artists all over the world. They are artists, and have studied their art, but they have not studied architecture, and one usually sees saints and angels backed up by impossible buildings, or standing under canopies of most impracticable design.

Besides being an artist and a builder, an architect must be a good business man, of regular and orderly habits. The work of his business is of such a varied character, that if he has any business at all it behooves him to have his wits about him, and have everything in order to his hands. His day's work and appointments must be carefully mapped out, that he does not have to go over the ground twice and thereby waste precious time.

An architect must be a man of probity and honor. Sad to say we have many men in the profession who are not so. How often we have instances of underhand dealing, conniving with one or other party to the disadvantage of the other. An architect fills a position with regard to proprietors and contractors such as is occupied by no other professional man. He is the sole medium between the proprietor and the contractor. He has the interests of both in his keeping, he has to act fairly and squarely on behalf of both. If the architect sides with either the one or the other to the prejudice of the other, he is failing in

his duty. Students and draughtsmen have not of course in their positions these responsibilities to the same extent as architects, but in so far as they are assistants to their employers, it is well for them to bear these things in mind, and when dealing with clients or builders to act accordingly. But your responsibilities do not rest here. You have been endowed with a talent by your Maker to be cultivated and improved by you, and you will one day have to answer to Him, not only for the use to which you have put it, but to the extent to which you have improved it. There is nothing in all creation, from the highest to the lowest forms of all three kingdoms, in which there is not some beauty. How is it then that the works of so many men, brought up in a world in which there is so much that is beautiful, harmonize so badly, or rather do not harmonize at all, with the beautiful things of Nature? To confine ourselves to works included in our profession, how is it that there are so few good buildings, beautiful buildings, on our streets? The beauty of a building does not depend entirely on the color of its materials, and certainly it does not depend upon the amount of money expended upon it. Then, when there are buildings of all sorts going up around us, how is it that so few are beautiful? Take a walk here in town along one of our streets devoted to private residences, and you will see on either side of you houses of various types—some that attract attention on account of this or that particular detail strikingly noticeable, and others, that you cannot say, at the moment why you do not like them, but you are sure you do not, and begin to ask yourself the reason why. Then you come to a house perhaps not a brick larger than the majority of the houses you have noticed, and perhaps costing less money rather than more, and it strikes you at once as being beautiful. You cannot point to any particular detail and say, it is that that makes it so, and you cannot find a feature that seems out of place that attracts particular attention to itself; it is the general appearance of the whole building that you like; each part is well proportioned; there is a harmony and a sense of repose pervading the whole design which you cannot fail to admire, if you have a spark of the artist about you. There are buildings in England and elsewhere, recently erected, every bit as beautiful in their way, as the cathedrals of centuries ago, in their way—buildings that one can stand and look at as one would at a picture. These are buildings that have been built by architects—properly so-called—artists as well as builders—men who in designing, know what they are about; why they put this detail here and that feature there, who proportion one part to another with a natural talent, trained to perfection, so that to design a thing in beauty is as much a pastime as a labor to them. But this perfection in design has not been attained without great labor and study; there is no royal road to that end. Be the genius of a higher or lower order, the result will in one way be identical. Some may have a greater genius and their works may be wonders of the world, others with less genius may still produce works of equal beauty, though perhaps, of lesser dimensions and for less important purposes. It is to this that all *bona fide* students desire to attain. These exquisite buildings inflame their desire to know how to do likewise. It is only because the cathedral builders of the middle ages were so intimately acquainted with the science of construction that they were able to dispose their materials to produce such glorious effects, and it is only because the architect of the day has mastered both the art and the science, that he is an architect; therefore, if you aspire to be architects you must have architecture at your fingers' ends. We have only to use our eyes to ascertain what architecture is, but it requires a good use of the brain as well to know how it is produced.

On this continent students have the very great misfortune of not having old buildings to examine, and they have to get the greater part of their information second hand, by means of books and drawings. Some few have the advantage of being in the offices of men who have themselves studied the old buildings, and from them and their work they can learn a great deal more. But to keep pace with students in the old world, you must work much harder, and never lose a single opportunity. We are fortunate in having a good public library, and it would be well for you

during the present winter to organize an interchange of the architectural books among yourselves. Get up a scheme of reading, and make copious notes while you read. As an example for reading, take Egypt to begin with. As the mother of all nations and of all the arts and sciences, read all you can get hold of upon the customs and habits of the people; then go to Assyria, Chaldea, Persia, and so on, and get up all the information you can upon the methods of construction and art used in the different countries. If you set steadily to work you will soon awaken an interest you never felt before. It was not until the more enlightened days of the Christian era that the real genuine science of construction began to be learnt, that is to say, the use of the least material consistent with security, so disposed that every part and fragment was of use and could not be done without. All the earlier work upon which I shall touch to-night was rude, and without any proportion between the actual work required to be done and the material for doing it. The ancient nations had no difficulty in securing labour; every ruler was an absolute autocrat, and his subjects generally submitted with good grace. Prisoners of war were always plentiful, and were always used as labourers. They had to work hard, take kicks, blows and worse for payment, and live on what they could get. The indomitable persistency of the Egyptian monarchs has left us vast and magnificent monuments of their ruler art. Immense as they are, yet no trouble was spared and time seems not to have been taken into account; the stones fitted with such fine joints that they are hardly visible; huge stones made to slide in grooves, fitting so closely yet moving easily so that a pin can hardly be inserted in the space between. There is no better work on the pyramids than that of Piazzi Smith's, entitled, "Our Inheritance in the Great Pyramid," and which is in the Public Library. He minutely describes the particulars of every part, and the wonderful accuracy with which the work was done, giving all measurements taken by different surveyors and explorers from the earliest time.

There was an example recently in one of the daily papers, of the carelessness with which men will read, and then go and put an entirely different construction on the words than is meant by the author. "A little knowledge is a dangerous thing" is a very true saying, but the only danger to this reader was that he made such a fool of himself, and attempting to teach others, was apt to lead them astray. From his letters it was easy to see what books he had read even without his mentioning them. In some places he would quote but twist the meaning round completely, and he knew nothing further than he read. The subject was, "Assyrian History." He read Mr. Smith's work edited by Prof. Sayce and, without reading any others for corroboration, he constituted himself an authority and wrote to the papers vehemently denouncing any one who differed from him. Then he was silent a while; he was reading Rawlinson's "Five Ancient Monarchies." Presently he burst out again; he had just got to the end of first volume apparently and began to spring upon the public his marvellous knowledge. You must read and study this subject outside office hours, or you will never get on.

I shall not be able to-night to do more than take a very cursory glance at the History. The subject is such a vast one, covers so many thousands of miles and so many thousand years, that in one evening it will be impossible to go into it more in detail; that must be left to a future occasion. I can only give you an insight into the complexity of the subject. I will get on as far as possible and leave time for discussion presently, outlining the course you should pursue.

The wonderful excavations for the tombs of the earliest kings of Egypt give us examples of the earliest mural decorations. In the rock-cemeteries with the architectural façades cut in the face of the rock, we have the beginning of architecture proper, and we trace its various progressive steps from tomb to monument and temple. An important matter to observe here is the variety of influences at work on the formation of any style of architecture—not only the materials to be found at hand and unity of purpose on the part of the people, but their manners and customs according to their warlike or peaceful dispositions, the origins of the different nations, the localities and surroundings of the forefathers of the

race, the religions, traditions and superstitions of the tribe, and particularly the influences of climate."

After outlining the beginnings and leading characteristics of architecture in Egypt, Assyria, Chaldea, and Persia—the temples, tombs, palaces, modes of construction and decoration, with the successive steps of development—the lecturer in conclusion, said:

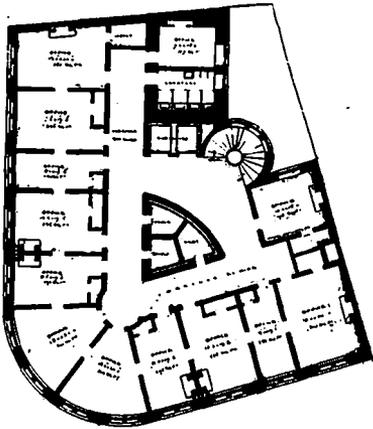
"I have not ventured this evening to touch upon the matter of detail, either artistic, constructional or decorative; it has taken me all our time for this evening to outline roughly the principal features of the architecture of the first 3000 years of its existence, and there is still another matter to look into of no less importance; I allude to chronology. An architect must be sure of his dates; he must clearly understand to what century such and such details belong, and this is a point which very soon distinguishes between the educated architect and the "fraud" practising as an architect. The very form of the mouldings of the more delicate styles of architecture are indicative of their dates, and it is excruciating to see how men will jumble up mouldings and details of different dates, without regard to fitness, in a hodge-podge of unmeaning rubbish, which they fondly believe is a triumph of their art. Let us consider the dates of four or five kingdoms I have taken you through to-night. It is only through recent research, that is to say, during the course of the last fifty or sixty years, that the indefatigable efforts of explorers have enabled us to arrive at anything clear and substantial. The wildest notions have been promulgated, and every year adds to our knowledge, and you are fortunate in living at a time and beginning your studies when the doubts and dissensions are being rapidly cleared away. So in after years you, at any rate, will have no excuse if you muddle your details. A building of different dates mixed up together like currants in a pudding is as incongruous and ridiculous as a person who would appear in the streets with say, a slashed mantle of silk and velvet of the 16th century and a chimney pot hat of the day on his head, a perfect guy of costume! but that is what a good many houses and churches are now-a-days.

It is no longer reasonable to speak of such in definite terms as 6000 and 7000 years B. C. in reference to architecture. We are unable to go back further than B. C. 3500 as the very earliest date. There we begin with the tomb excavations. A little later, 2000 years B. C., we have the Pyramid Builders. Ferguson, according to Manetho, starts with the Pyramid Builders at 3906 B. C., but Manetho is now found to have gone back too far. The Temple Builders we put down as in the 19th century B. C., not earlier than 1819 B. C., and from thence onward. The exodus of the Jews took place about 1312 B. C. Then in point of date come the Chaldeans, but of their very earliest history we have no architectural remains. Chaldean history opens at 2400 or 2500 B. C. in Lower Babylonia. They flourished for 1100 years, till B. C. 1300, when they were subdued by the Assyrians, who for six and a half centuries dominated the land, and lived, flourished and died. Then the Chaldeans that we have to do with come before us. They reasserted themselves as a nation and existed for the short period of little more than 100 years, to B. C. 530. The Kingdom of Persia existed between B. C. 558 and B. C. 336. It was at the height of its greatness during the years between B. C. 506 and B. C. 479, hardly 30 years.

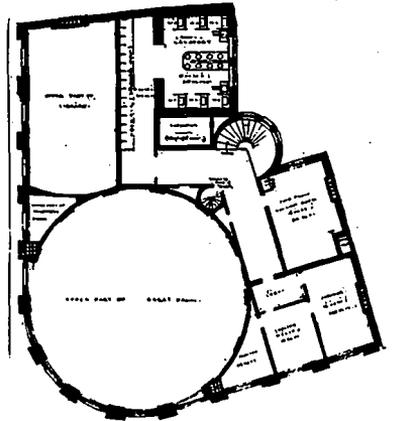
Our sketch has brought us down to within 350 years of the Christian era, and we are confronted by two roads, one going west, the other east. If we follow the easterly course, we must trace the Art in Asia, but the westerly or European route is the one which just now interests us most. Bearing in mind the extent of the Kingdom of Persia, it is easy to see how closely even China is connected by manners and customs, by polity and civilization, with Egypt, and easier still to see how in the progress of the Art westward, the glorious Gothic was developed. But we have come to a good break, and probably you have heard enough for one night, and it would be well to recapitulate by means of discussion. You see how vast a subject it is, but at any rate if I have succeeded in arousing a keener interest in this important branch of your professional knowledge, I shall have attained the object of my visit to you to-night.



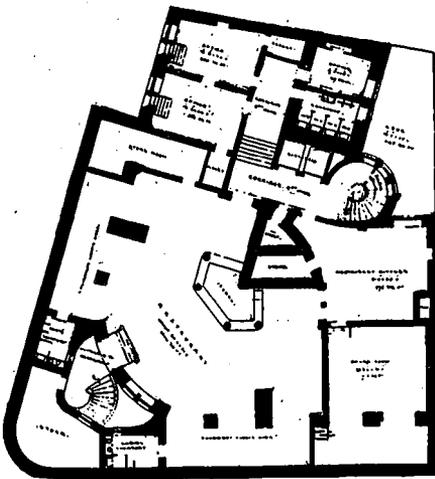
ACCEPTED AMENDED DESIGN FOR TOWER
MESSRS. JAMES & JAMES, ARCHT.



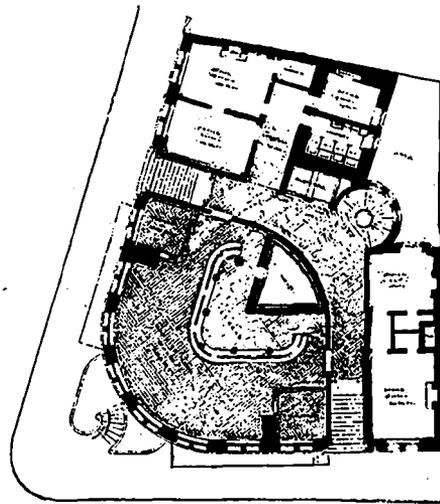
SECOND FLOOR.



THIRD FLOOR.



GROUND FLOOR.



FIRST FLOOR.

WOODSTOCK COMPETITION.

In our last issue we referred to the proposed competition for a new court-house for the county of Oxford to be erected in the town of Woodstock. We then spoke in strong terms of the conditions of the competition, and although they have been modified to the extent that the successful competitor is promised the carrying out of the work under certain conditions, we must still protest against the unfairness of the competition, and advise all architects who have any respect for their profession to refrain from submitting designs.

There is a large quantity of chance, even in a competition where every care has been taken to ensure that the best design shall win. In a competition where no care has been taken to guard against unfairness, it results in a lottery, with the chances in favor of the least deserving. Architects as a body should do all in their power to reduce the number of unnecessary competitions. There are times when a properly conducted competition results in good to the public and to the profession, but it is only in cases where the work is of a public and very important character. No man worthy of the name of architect should enter a competition where all the conditions are framed to protect but one party, and that party the one who will derive almost all the benefit.

We will state our objections to the conditions in the order in which they are placed in the advertisement of Dec. 26th. We will not refer to the amount of the premiums, for although they are not large, they do not much affect the fairness or unfairness of the competition. But the next clause we would not allow to be placed in any set of conditions. For the paltry sum of \$150 or \$200, the County Council of Oxford desire to appropriate that which is worth to them very much more, or nothing whatever. The preparation of a set of preliminary drawings for a building to cost \$68,000, is worth \$680, and yet the Council proposes to appropriate two or it may be three sets for a sum very much less. Architects are averse to having their plans appropriated, and this clause will prevent many entering the competition.

The next serious objection is, that there is no mention of any professional adviser. Those designs sent in are apparently to have their merits and demerits weighed by a special committee of the County Council who will decide as to the winner of the competition. What architect of any experience will submit a design to such incompetent judges? One might as well hope that a committee of architects would be able to judge correctly the good and bad points of a horse, or the respective qualities of different grains, as that such a committee will be able to choose the best three designs in their respective order of merit out of a number of others. An expert's decision is not infallible and may err grievously, but the possibilities are that he will give as nearly fair a decision as a fallible man is capable of doing, provided that the expert is both honorable and competent. That a committee entirely ignorant of all the points in the problem can give a just decision, is almost as probable as that the moon is made of green cheese.

All instructions should be printed and forwarded to applicants without any trouble or cost to them. The number and sizes of the rooms should be stated, with all possible information as to the uses to which they will be put.

There is no necessity of carefully worked out plans and specifications, as seems to be required by the advertisement. All that is necessary is that each competitor should show his method of giving the desired accommodation, with such elevations as are sufficient to explain the design, together with explanations of the plan, and a description of the material proposed to be used.

In the last clause we have a most wonderful condition, viz.: that no awards will be paid until the building has been tendered on, and that may not be until the 1st of July, 1890. Just think of it! a man to surrender his plan for a paltry sum, and even then the payment of that small sum to be conditional on whether the accepted design can be built within the appropriated amount. We suppose that in case no awards should be paid the plans would be handed back to their owners. It would, however, be impossible for the Council of the County of Oxford to surrender the

information which it acquired through these plans, and then it would be appropriating that for which it never gave value.

In the "Supplemental Circular" it is stated, that "The architect who is the ultimately successful competitor shall * * * be awarded the superintendency of the works at a price * * * not to exceed 4 per cent. of the contract price." Any architect who faithfully fulfils all the work devolving on him in the erection of a building of the above character and costliness, is well worthy of the full commission of 5%. How much more is he entitled to it when he has had to go through all the worry and expense of a competition!

That men can be found who are prepared to enter a competition such as the above, is surprising. That many will enter there is no doubt, nor is there any question that they will not be those who are capable of doing the best of work. When competitions were first introduced, it was with the object of getting the best design obtainable from among those most competent; now it would appear to be with the object of getting a design of some sort or other from among those who are most incompetent.

We strongly advise all architects to refuse to submit designs under the terms of this competition, and would be pleased to receive the names of those whom the conditions would debar from entering the competition.

QUERIES AND ANSWERS.

SIZE OF WOOD BEAMS.

(No. 1).—Will some one state a simple formulæ for finding the strength of wood beams?—ENQUIRER.

STOPPING CRACKS IN IRON TANKS.

(No. 2).—I have a rivetted iron tank which is either cracked along the rivets or wants packing. Is there any way to stop the leaks otherwise than by getting a new tank?—"LUX."

(No. 3).—How can I take the glass out of old sashes without breaking it or cutting the wood?—"J. F. C."

PROPOSED CANADIAN ARCHITECTURAL ASSOCIATION.

THE committee which was appointed by the Architectural Guild of Toronto to make arrangements for the formation of an Architectural Society for the Province of Ontario, has prepared a draft of a constitution for the proposed Society. It will also report that copies of this constitution be sent to all architects of good standing in this province, that they may be able to make any suggestions towards its improvement. A general meeting of all practising architects in the province will be called at an early date for the formation of a Society, the adoption of a constitution and the election of officers.

It is hoped that an active interest will be taken in this movement by all architects who desire the good of their profession. Local meetings should be called, and every side of the question discussed, that intelligent action may be taken for the advancement of architecture in the country.

United action on the part of architects will not only benefit themselves and do much for architecture in this province, but also cause the work of an architect to be better understood, and consequently better appreciated by the masses.

The Architectural Guild of Toronto has only been in active existence eighteen months, yet it has achieved much. There have been material gains of a positive character, but the greatest benefit has been through bringing the members together in a sociable manner. They have become acquainted one with the other, and are thus better able to make allowances for each other's weaknesses. They are commencing to understand that in pulling others to pieces there is such a thing as assisting in the act of pulling oneself to pieces at the same time. No architect can do work so perfect that it is not open to criticism, though some men can do work so bad that it is not worth criticizing. When one architect examines another man's work with the sole object of discovering what is bad, refusing to see the good, and then proceeds immediately to inform the general public of the discoveries he has made, he does himself as much harm as he

does his opponent. The public seem to be better able to remember the faults in a piece of architecture than the good points, more especially when the faults have been paraded before them by an architect of a jealous disposition. Why should architects draw attention to the faults in work executed by their professional brethren, and neglect to point out the good that is in it? Would it not be much better to go to their professional confreres and point out his mistakes, that in his next work he may be able to avoid them?

It is to be hoped that this movement inaugurated by the Architectural Guild of Toronto will meet with the hearty co-operation of the members of the profession throughout the province.

There is every hope for the rapid advancement of architecture in this province. There is talent of the highest grade among our architects, and when the Department of Architecture has been established in connection with the Engineering School much valuable assistance will be rendered the profession in the education of the masses to a proper appreciation of good work. For the past three or four years it has been the impression that any work of prominence must be done by outsiders if it is to be executed in a creditable manner. That such is not the case has been proven more than once, and yet it will have to be proven again. That in the end talent and perseverance will win, there is no doubt, but nevertheless the fight is a hard and most discouraging one.

It is hoped that every architect who is a *man*, will do all in his power to assist in the formation of the proposed Society, and afterwards make it a living, energetic power for good.

There is a certain faction in this city who take special delight in slandering the resident architects. Statements are made and reiterated which are false, contemptible and cowardly. If they were made openly, they could be met, but being made in a confidential underhand manner, there is no way of contradicting such statements. There is one statement made by friends of a non-resident architect, that the Toronto men are unable to have their work pushed through to completion in a thorough and businesslike manner, and that their "ideal architect" always carries out his work with dispatch, and can always be depended upon to fulfill any arrangement he may have made. We should like those parties to explain how it comes that there is a bulletin-board of a Toronto architect on a building on Wellington Street, which is not being erected under the supervision, with the information that "these premises will be occupied early in January by Mr. —" etc. It is now the middle of February, and the building is not enclosed, and when it will be ready for occupation the future only can determine.

SUGGESTIONS FOR BUILDERS.

BY OWEN B. MAGINNIS.

BUILDERS who are sometimes hurriedly obliged to make their own plans, will work to much greater advantage, by drawing them to a scale of $\frac{1}{4}$ -inch to the foot, which is two-thirds larger, than the usual architectural scale of $\frac{1}{2}$ -inch to the foot, provided the building be of ordinary limited dimensions. Should it be large, however, a smaller scale will have to be resorted to, in order to bring the drawing within the area of the paper. Using the increased scale, simplifies measuring from drawings, as a two-foot rule is all that is necessary in taking off: each 1-32 inch representing $\frac{1}{4}$ inches; each 1-16 inch, 1 inch; each $\frac{1}{8}$ inch, 4 inches, and $\frac{3}{4}$ inch, 6 inches. For the same reason, it is always judicious in making details and working drawings, to lay them down to a scale either of $1\frac{1}{2}$ inches equal to 1 foot or 3 inches equal to 1 foot. These scales are very comprehensive to mechanics, for $1\frac{1}{2}$ inches on the rule is equal to 1 foot, actually constructed, $\frac{3}{4}$ inch equal to 6 inches, $\frac{3}{8}$ inch equal to 3 inches, each $\frac{1}{4}$ inch equals 1 inch, and each 1-16 inch equals $\frac{1}{2}$ an inch. Similarly with the 3 inch scale. Details of cornices or other simple parts, can be easily shown half size, full size or in section and elevation, for men, on a wide piece of board, and the scale can be used should the board not be of available width.

Has any Canadian builder ever tried or adopted the rod system for laying out the frame of a house? If not, I would suggest the following, which is one of the best in existence, though not generally known: Supposing the foundation to be laid and ready for the frame, measure the plan, and find the longest measurement, whether it is one of the sills or a corner post, and make a rod about 4 inches wide of $\frac{1}{4}$ -inch pine staff, and hinc it off in pencil, in margins from $\frac{1}{2}$ -inch to $\frac{3}{4}$ -inch in width, 6 inches longer than the longest measurement. Now find from the drawing, the exact height of each

sill, and lay out one on each margin, marking the halving at the corners, and the mortises for posts. Lay out for each sill all the wall studs, window and door openings, writing "window" where a window comes, and "door" for a door. When there are breaks in the plan and small sills, they can be laid out on the reverse side of the rod. This rod can be easily laid out with a ten-foot rod and a rule in the shop beforehand from the plans while the foundation is being put in, so that the timbers can be sorted, marked and cut at once, without any delay. The superiority of this system over the old one of laying out each stick separately, is obvious, for everything is laid down on the rod, and errors are not so likely to occur. Another rod can be laid out for posts, showing the tenons top and bottom, for plate and sill, mortises for girts, etc., and the reverse side laid out for girts and wall plates. Sill dimensions should be carefully figured on the rod, so that each timber or number of timbers could be picked out as called for, and be marked from the rod.

The efficiency of the above will commend itself to builders, who are on the lookout for system, and consequently saving of time.

The Queen Anne roof of tin causes much trouble to those who have not got sufficient details, including a roof-plan from the architect, owing to the owner having bought the plans outright, and when this is the case all he obtains is the cellar and floor plans, one or two elevations and a section of the stories. I have known more than one builder to become hopelessly stuck on a roof of this kind, and only proceed with the framing when he had attained a roof plan from the architect, which cost the owner \$50. The best way to do in a difficulty like the above, is to follow his example, and go to the architect, that is if he is willing to furnish a plan, for some architects are very conservative, and will not supply any details unless they have the superintendence during construction. If he will not furnish it, or the owner is unwilling to pay the extra expense, it would be advisable to lay down a plan of the wall-plates to a large scale on a drawing board, and raising up each pitch to frame the roof in sections, proceeding carefully, so as not to spoil any of the timbers. A sectional drawing showing the pitches, headers for dormers and chimneys, and different levels of wall plates, will be of material assistance in framing and rasing.

MONTREAL.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

THE number of new buildings erected in Montreal last year was 933, including 1533 tenements, 68 stores, 1 warehouse, 18 manufactories, 120 shops, and 2 churches, at an estimate cost of \$3,477,895. Ten years ago the number of new buildings erected was only 241.

WINNIPEG.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

WE are rapidly approaching the building season of 1889, and although a great many people are talking of building, as yet there is not a single job actually decided upon. This is not as it should be. If plans were prepared and contracts let now, the contractors would get material hauled and joiners' work ready much cheaper, so many men being out of work. In the spring, if there are not any contracts let, men go elsewhere to get work, and up go wages, besides rushing the architects. Improvements are being made to Grace Church, to cost about \$3,000. Mr. C. O. Wickendon, architect, has removed to Victoria, B. C.

QUEBEC.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

A NEW retail store is now under construction on the corner of Crown and St. Joseph streets, which has been leased to Messrs. Robitaille and Bernio, dry goods merchants. The site was formerly occupied by the late Theo. Hudon, the foundation of whose store will be used for the new building. The latter will cover the whole lot, being 11 ft from the two streets above named, having a frontage on St. Joseph St. of 52 feet, and a depth of 80 feet. The estimated cost is in the neighborhood of \$30,000. All the work is being done by the day under the superintendence of Mr. Raymond, who also prepared the plans.

All the details respecting the widening of St. John St. (alluded to in November number) have been completed, and the long-talked-of improvement has been brought within appreciable distance. Out of about thirty proprietors, twenty-six have been settled with, and of this number several have taken the preliminary steps towards rebuilding. Nothing will however be done until May, as leases have to run out, and in some cases new lines have to run between neighbors to square lots, etc. A disposition prevails to build with some regard to uniformity in height and material. If this prevails, the result will be more pleasing than is generally the case where every proprietor follows his own sweet will in the choice of material, and one builds high and another low, and so on. Harmonious action between our architects may work a change for the better in this special case.

Another long-talked-of project—the new hotel—is again on the tapis. A magnificent site has been secured from the Federal Government on very reasonable terms, viz. \$1500 per annum. A meeting has been held, stock lists opened and canvassers set to work. Your correspondent has not heard the exact amount subscribed, but prospects are considered good. Hopes are expressed that an early commencement will be made. The site above alluded to is that formerly occupied by the old Parliament Buildings at the

head of Mountain Hill. It commands a splendid view of the Harbor, and Lewis Heights, with the Island of Orleans and Cote Braupre in the distance, with a glimpse of the famous Montmorenci Falls; and is in close proximity to the Post Office, Cardinal's Palace, &c.

CANADIAN SOCIETY OF CIVIL ENGINEERS.

THE second annual meeting held in Montreal on the 17th ult., was well attended. The proceedings were enlivened by the presence of the Governor General, who, with Sir W. Dawson, are the first hon. members of the Society. The increase in membership, deducting resignations, is 84, and the list now stands at

| | |
|-------------------------|-----|
| Hon. Members | 2 |
| Members | 258 |
| Associate Members | 87 |
| Associates | 47 |
| Students | 145 |
| | 549 |

The report says, "It is encouraging to find that eminent engineers both in England and the United States are enrolling themselves as members of our Society. It is a mark of its growing importance and surely a presage of its future success."

There were six ordinary meetings for the reading of papers; three special ones for students. One paper by a student has been deemed of sufficient merit to be printed in the transactions.

The library makes satisfactory progress. A number of valuable contributions in books and photographs have been made by members of the Society. Arrangements will shortly be completed whereby members will be able to borrow books from the library.

The sum of \$3,281 has been promised for the building fund. Of this \$1,809 have been paid in. The students have responded liberally to the fund.

The income for the year ending 31st December, 1888, amounted to \$2,777.64, the general expenditure \$1,789.64, leaving a balance of \$988, which, together with the balance of \$960.92 brought forward from 1887, gives a total balance to the credit of the Society of \$1,948.92.

CANADIAN BUILDERS' AND CONTRACTORS' ASSOCIATION.

HAMILTON, Ont., Feb. 10, 1889.

Editor CANADIAN ARCHITECT AND BUILDER.

DEAR SIR,—I noticed in the January number of the CANADIAN ARCHITECT AND BUILDER a reference made to the formation of a Central or Provincial Association of Builders. The idea is I think a good one, and I wonder that such an Association has not been established long since.

Judging from the number of local Builders' Associations that have been formed in this Province, it would seem to be a recognized fact amongst the contractors that organization has to them become an essential to success. If this be so, it would be well that such Associations should be regulated and governed by certain general laws and principles which should be well considered and adopted by representative building contractors convened from all parts of the Province. I think this is necessary to insure uniformity of action in case of any threatened trouble among operatives.

With a Central Association formed, and a working Executive appointed to receive and transmit reports from and to local Associations, the contractors generally would be placed in a better position in estimating for work. I believe further, that the knowledge that the building contractors were united throughout the Province, would have a deterring effect upon the advancement of so many unjust demands by the various labor organizations.

Again, there are a number of questions of great importance to the building trade which ought to be considered very carefully by a Provincial Association, such as the Lien Law, the Employer's Liability Compensation Act, and the establishing of Trade Schools in different parts of the Province. These are matters which affect the building trade more than any other, and which should be discussed, and the consensus of opinion thereon submitted to our legislators for their guidance in the framing of laws bearing upon these matters.

Other reasons could be urged for the formation of a Provincial or Central Association of Building Contractors, but as I have already trespassed too much on your valuable space, I must leave them to abler pens than mine to set forth. Hoping that this subject will receive the attention from your contributors which its importance demands,

I remain,
AN INTERESTED OBSERVER.

A bill has been introduced in the Dominion Parliament, which provides that any company or individual owning a building in which there is a hoist or elevator, must provide on each floor an automatic guard or gate to the hoist. Penalties are to be imposed in the event of the law not being carried out.

The Nova Scotia Glass Works, New Glasgow, N. S., have sold in the seven years over \$300,000 worth of goods and paid in wages, \$260,000, about four-fifths of the goods have been sold in the Dominion. The company contemplate enlarging their business and expect within the next year to double their output.



MISTAKES IN BRICKMAKING.

H. H. M'CLURE, before the National Association of Brickmakers, at the meeting held at Memphis, Tenn., Nov. 16, 1888, said: I shall take this opportunity of stating that I am not a practical brickmaker, but having been for the past two years serving the Rome Brick Company in the capacity of secretary and treasurer, I base my remarks on observation rather than practical experience.

During this time I have noted some of the mistakes we have made, and it is a reasonable hypothesis to presume that our mistakes would be yours were the positions reversed.

In a shorter space than one year after we began operations, our 40-horse power engine was replaced by a Harris-Cortiss of 125-horse power; our 12 power hoist was set aside, and one of twenty-five put in its stead; our two-inch water main, 500 yards in length, has been taken up, and one four inches in diameter, or four times the capacity of the old, now gives us ample supply of water. This called for additional pumps much larger than at first used, and, had we known at the beginning what we learned later, this additional expense could have easily been avoided.

The first few months of our brickmaking we kept our team constantly on the road to and from the machine shops and foundries, hauling new and repaired machinery to us, and old iron to the more fortunate foundry-man.

Experience is the best teacher, and it applies with more potency to the manufacture of brick than any other business enterprise. After our first reverses we learned to prepare our clay properly, and more, that we could not profitably make dry clay brick in a semi-dry clay machine.

The mistake of putting clay into a machine without proper moistening and thorough preparation is a blunder.

Let me suggest just here to prepare your clay in a common sense way before it gets into the machine, and I will (by way of parenthesis) also suggest the less you "throw in for good measure," in the shape of rocks, iron scraps, bolts, spikes, and hammers, the shorter will be that awful "bill of particulars" from the machine shop and foundry.

Another mistake I might mention in this connection is negligence or carelessness in looking after the machinery.

Don't allow the machine to run with bolts loose, shafting out of line and boxes worn to the quick. In an incredibly short time you will have the leaning Tower of Pisa in miniature, and your machine will afford the material for the simile.

When any part of your machinery breaks frequently, have the weak places made stronger. By a close observance of this rule we may overcome one source of annoyance and expense.

The old maxim, "what is worth doing at all is worth doing well," holds perhaps with stronger emphasis in brickmaking than anything else.

When a brick manufacturer purchases an engine or machine he would do well to select a competent machinist to put them in position. Incompetency in this all-important and essential feature too frequently proves the "liard of our woes."

The same rule applies to a dryer or kiln. If you build a dryer, of whatever kind, know that it is constructed on the most approved plan and properly managed after it is put in operation. The same is true of kilns. Determine which is the best for your purpose, then have it constructed by men familiar with every detail and point of the work, and when they are built have them operated by men whom you know are competent and trustworthy, so you can derive all the benefits from their use.

With the very best machines, dryers and kilns, success is impossible without intelligent management.

It is not enough that everything is put up properly at the start; they must be kept by constant care and attention in good order, for no engine, machine, dryer or kiln, however perfect and effective it may be in its construction and working, will continue to perform its functions unless properly cared for.

This means not only repairing breaks, but using every precaution to protect them from injury. Do not make the mistake of leaving your engine exposed to rain or dust. Don't use cheap oil on the bearings; don't have a careless man in charge of the machines.

We sometimes make mistakes in counting brick. Our patrons insist that it takes 1,000 brick to make 1,000, and that Salmon brick are not hard. It is best to humor their whims, however unreasonable they may appear to us. For, perhaps, the most of us depend upon our patrons for the "slinews of war" in the ever-increasing pay-rolls and fuel bills. I have mentioned only a few of the mistakes in brickmaking, but I trust these random remarks may answer as a text from which some of our practical friends may proceed to enlighten us on their personal mistakes in this line. Perhaps we learn more from others' mistakes than from their successes in this life.

We are pleased to notice that Messrs J. H. Farr & Co., of this city, who commenced about a year ago the manufacture of roofing pitch and asphalt-paving pitch, have succeeded in producing a native article which has shown itself to be superior to that hitherto imported from other countries.

RECREATION AND ADVENTURE

HOW TO DECORATE AND FURNISH A HOME.

A THOUSAND dollars seems a great deal of money to many people, says a writer in the *Builder and Decorator*, yet it is a very moderate amount for the furnishing of a city house, and much good management is required to make it cover all that is needed "up-stairs and down-stairs and in my lady's chamber." The money vanishes most unaccountably, and strict adherence to a "carefully," arranged list of must-haves and may-haves is the only way to avoid coming to grief.

Others again go to the opposite extreme, and appear to be hopeless of achieving anything pretty or tasteful on a limited sum—declaring that they cannot afford anything but the strictly practical. Pretty belongings, however, may be had even when a thousand dollars is to be stretched over a three-storey house, and taking our time or ten rooms as they come, we shall see how it can be done.

The hall, unfortunately, is not square—it never is in these moderate city houses—but such as it is, we may make the best of it. The wood-work and a foot of the floor on either side are stained in cherry, the wall-paper is a peculiar shade of dull-blue with a glint of silver, and has a rich and expensive look, but it did not cost over sixty cents a roll. The stair-carpet, which is continued through the hall, is a Moquette of dull, soft blues darker than the paper, and at the foot of the stairs, there is a white goatskin rug.

The hat-stand takes up as little room as possible—not more in fact than a picture, save for the projecting pins or hooks. These are of brass, and the square mirror, which is a particularly good one, is framed in cherry. An umbrella-stand of hammered brass, stands behind the door, and on either side of the parlor portiere, there is a plain cherry bracket of graceful shape that holds a pot of trailing vines. A small open cabinet,

and of cherry, faces the mirror and holds a few pieces of richly tinted, but inexpensive pottery.

The old-red of the parlor portiere adds a fresh element of beauty to the coloring, and the hall as a whole is a great improvement upon that usually found in houses of this character.

A very pretty brass lantern with panels of tinted glass lends its full share of decoration, and diffuses a soft and charming light at night, and, lantern included, with the stair-carpet as far as the second story, seventy dollars pays for this really handsome hall.

The parlor is very attractive in soft grey and old-red, carpet and wall-paper of the former hue with a pink tinge in it. Here again, floors and wood-work are of cherry, and the carpet, another soft Moquette of an exquisite shade, has daisy-shaped flowers in old-reds and pinks. The curtains, of a thick handsome quality of Madras, show the same colors almost concealing the grey ground, and they are suspended from fluted brass poles.

The furniture is unique in style, and has proved a triumph of ingenuity over moderate resources. A carpenter made a straight open frame in slender cross-pieces of pine nicely smoothed, for a sofa, and the clever mistress of the house covered each piece first with canton-flannel and then with old-red velours.

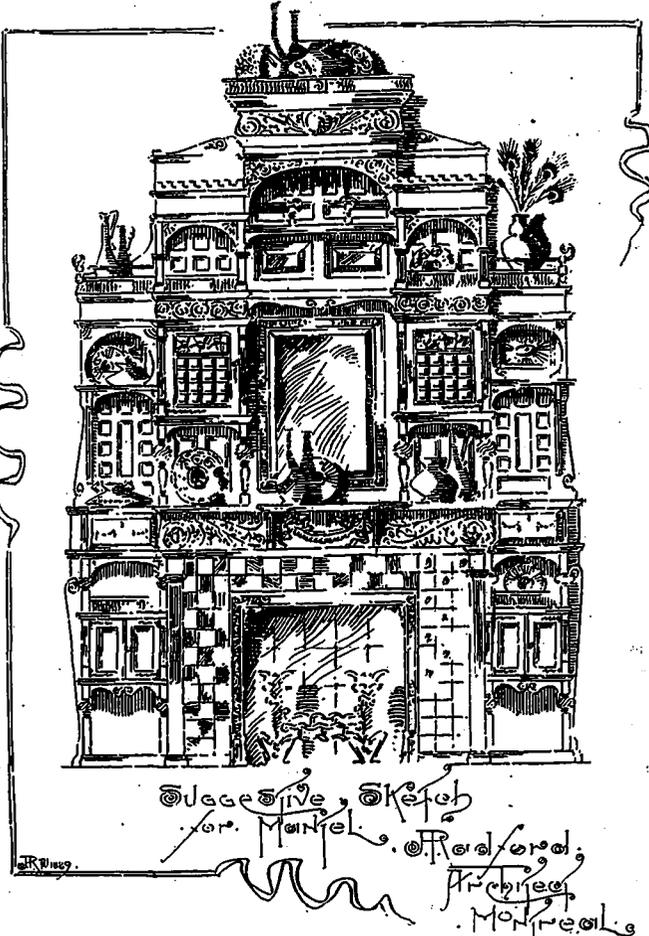
This sofa was just the shape of a cane settee, and when finished, the little open effect was very pretty.

A small mattress, on which the support across the top of the back

and arms was edged with velours was neatly tufted, formed the seat, and the handsome fringe. It was so successful that an arm chair to match was speedily manufactured with equal satisfaction.

A smaller sofa is made of a packing-box, with the lid set up against the wall. This is divan shape, and it is covered with the same red velours and finished around the seat with fringe. It looks well and is decidedly comfortable.

The remainder of the furniture is varied in style and coloring. A very pretty reception chair of rattan has been silvered and furnished with cushions of old-pink plush tied with pink and grey ribbons, while two silvered *toto-a-toto* chairs have cushions



Progressive Sketch
for M. N. L.
J. G. Ross
Montreal

of grey satin on which wild roses are painted. The mantel is built up quite high with plain cherry shelves, which hold some pretty bits of china, etc., that did not have to be bought. There are a few good pictures—not included in the \$1,000—two or three pretty little tables, a low book-case of very humble foundation entirely covered with the red velours, each shelf being edged with fringe put on with brass-headed nails, an artistic-looking lamp, etc.

The handsome portiere at the double doors leading into the hall is of double-faced red velours: plainly made, and between the parlor and library there is only a wide screen reaching about half-way up, but some pretty Japanese lattice-work in cherry crosses the top of the opening and comes down at the sides. The actual money cost of this room was about \$240, but much of the work was done by the lady of the house.

A library sounds rather formidable with limited means, but in this case, it is one of the costliest gathering places in the house. There is certainly nothing stiff about it, and the dull red of the parlor is even more lavishly used here than there. The walls, carpet and wood-work are the same, as this gives a look of greater space, and looks better when both rooms are thrown open, but the chair and lounge coverings are of dull-red leather, and the oblong writing-table has a top of the same material. Brass nails are liberally used, as the room is a middle one and dark, and the one shelf that runs around the chimney has brass vases and candlesticks holding red candles.

The fire-place has brass andirons and fender, and just opposite, there is a long low book-case of six cherry shelves, with a scarf-cover for the top of olive-green felt trimmed with bands of the red velours and a little embroidery in dull pinks and reds. The doorway into the dining-room has a portiere of the same olive felt, with a deep frieze, a quarter of a yard below the top, of bands laid exactly on the basis in dull-red, pink and blue. The cost of this room is about \$150.

Beyond is a rather small dining-room, which is still less costly, as there is not much space to cover. The walls are of a dull-red, and the floor covering is a large oblong—the shape of the room—of felt, in the same color but a deeper tint. The six chairs in cherry, with seats of olive leather, were bought at auction for \$2 each, and the two arm chairs for \$5, making a total of \$22. The buffet was another bargain at \$15; the carpet did not cost over \$10; the curtains, in soft, olive-green serge did not cost over \$4 a window, poles and all. The dining-table was bought with the chairs for \$8, and it has a very pretty cover matching the frieze of the portiere.

Besides these necessary articles, there are some few odds and ends, making the expense in all about \$65.

The pretty stair-carpet is continued all the way up the third-story stairs, and the second floor has the usual arrangement of two large rooms, one small one and a bath-room. The front rooms allow a small dressing-room and a good-sized bedroom opening into each other, and here the wood-work is in natural cherry—light brown with a suggestion of pink in it—and the walls have a pale-pink paper. The bedstead is made of pine entirely covered with a beautiful cretonne having pink roses on a grey ground, and this cretonne is used for the other furniture covering also, the only article on which it does not appear being the low wide bureau that matches the wood-work. A square of very pretty Brussels carpeting, which also shows roses on a grey ground, was picked up as a remnant at the low price of \$15, and the curtains are of cheese-cloth, very full and soft, with some of the roses and leaves from the cretonne straying over them at irregular intervals. These sprays were applied with flour-paste and ironed while damp, looking as though they were painted on this cheese-cloth.

It is a lovely room, and its entire cost, with all necessary appointments, was in the neighborhood of \$75.

The back room is full of sunshine, and has the same undressed cherry wood-work. Blue seems the natural coloring, and blue it is, so far as wall-paper, carpet, and various trimmings are concerned. The furniture consists of an iron bedstead painted white, and having a coverlet and bolster of blue sateen, a dressing-table covered with cheap white lace over blue, a chest of

drawers painted white to match the bedstead, and decorated with brass handles, a two-shelfed table covered with blue sateen and edged with lace, like the coverlet, a box-lounge, with pillow, covered with blue and a lace overdress like that on the dressing table, a low arm-chair attired in the same way, a rocker in white-painted willow with blue cushions, a foot-rest to match, and window curtains of some thin white woolen stuff with blue cross stripes. A few old wood cuts, in plain frames of natural cherry, decorate the walls, and the carpet is an ingrain in small white daisies on a blue ground.

This pretty room cost about \$90.

The little dressing-room, with a plain, but convenient dressing-table, floor-covering and other necessities, added about \$36 more to the bill of expenses.

On the third-floor, the front rooms were in Turkey-red with ash wood-work, and the back one, in similar wood-work, had furniture covering of blue and white cretonne. On the matted floor of the front room, which had a glow of red in it, there was a large centre rug of silk and woolen strips woven like a rug carpet. The effect was particularly good with the Turkey-red, and the cheese-cloth curtains were lined with this bright-hued material. The wall-paper in both rooms was a pale olive, but in the back room, it was a yellow-cream with dashes of gold in it.

The entire cost of this floor was \$150—leaving \$150 for up-stairs hall and stair-carpet, the bath-room, kitchen, and various odds and ends. Good management and ingenious handiwork were brought into play to furnish a fair-sized city house on so small a sum with some degree of taste, and small articles were "picked up" here and there at very low prices. The result was a very pleasing one, and may be repeated with variations.

A SPECIMEN OF SANITARY PLUMBING.

A CASE came up for decision in one of the Toronto Courts the other day, which served to show the unscrupulous character of some individuals doing business in this city as plumbers, and the necessity for strict regulation of plumbers and careful official inspection of their work. A engaged B to do a job of plumbing in his house. One of the things B agreed to do was to put in a 4 inch iron soil pipe, extending up through the roof. Instead of this, however, he put in a 4 inch lead pipe to connect with the closet, and on top of this placed a three inch lead vent pipe extending through the roof. The "joint" at the meeting of the 4 inch pipe with the three inch pipe, was described by a witness as something wonderful to behold. So "tight" was it, that a person's finger might easily have been inserted between the pipes. The pipes had been crimped in the way a tin-smith treats stove pipes that will not join, but nothing in the shape of a wiped joint had been attempted. A, upon discovering the condition of affairs, called upon B to properly fulfil his contract. This B refused to do, whereupon A hired another plumber to do the work, and sued B for the cost of the same. In court, B stated under oath that his work had been done in accordance with the usual practice of the best plumbers. The judge appears to have taken this statement *cum grano salis*, and decided in favor of the plaintiff.

Experiments are being conducted by Mr. F. Stuart Miller, C. E., with a view to the purification and utilization of the sewage of the City of Toronto. It will be the wish of every citizen who understands the condition of affairs, that Mr. Miller may succeed in his object.

The Grand Trunk railway is said to be preparing to make a practical experiment with an electric car-heating apparatus invented by Mr. Roe Fuller, an employee in the Grand Trunk shops at Portland, Me. It consists of a dynamo placed in the baggage-car, power being taken from the moving axles. A metal bar is placed in a tank of water in each car. Pipes from the tank extend all around the car. The metal bar is to be heated by an electric current, thus heating the water in the tank.



THE TORONTO PLUMBING BY-LAW.

THE Plumbing By-law has been a source of much unnecessary effort on the part of the committee having it in charge. It has been altered several times since it was first passed, and from all appearances it will be altered many more times before it will meet with the approval of all the parties interested. One would think that two or three competent persons having a knowledge of what is required would be able to put this by-law into a workable form in a few days. The committee has had it under a process of improvement several months. It will be improved in some points, but injured in others. Whether the good will balance the bad, it is hard to say at the present time. A by-law of this description should be framed by those who understand the technical questions involved, under instruction of the committee having the matter in charge. What can be expected when one half the men on the committee know absolutely nothing about sanitary matters? There is also too much consideration shown for interests which are not directly interested no matter what form the by-law may take. The by-law should be framed for the protection of the citizens, and for no other purpose, and other interests must suffer if they stand in the way of the citizens' good.

We have heard complaints that the revised by-law has done away with the examination and licensing of journeymen plumbers. Well, if such is the case, it is a step in the right direction. The master plumbers should be held responsible for all work done under them, and they should not be afforded the loop-hole of stating that the work complained of was done by a licensed journeyman plumber. To our mind it is impossible to examine a journeyman plumber to discover the value of the man, except at very great trouble and expense. A man may pass a theoretical examination and not be able to do a decent job of work, or he may fail on an examination as to the theory and yet be a first-class workman, capable of doing the best of work under competent direction. We would like to see the men registered, so that it would be possible to trace any scamped work home to the man who did it, and then be able to punish him for his criminal carelessness or indifference. The Examining Board should be reduced in number. Three capable men are sufficient to examine all who may come before the Board. There is no reason why so many interests should be represented, and these representatives paid at the rate of \$5 per meeting out of the funds of the city. If these organizations wish to have representatives on the Board, let them pay their expenses. One good man could do the work as well as a dozen, and three should be more than ample.

We wish to draw attention to some points in the proposed revised by-law which we consider objectionable. The clause which allows of the trap being done away with on the house drain is a little premature in this city. Our sewers are not perfect enough for such a scheme; and when adopted, provision should be made in some way or other to prevent a few soil pipes doing all the work, to the possible injury of those living in the houses having these too-efficient ventilating soil pipes, or in those houses near them. The scheme is a good one under certain conditions, but they do not exist in this city at the present time, nor will they for some few years to come.

The clause about weeping drains we do not understand. It can be made to mean that no weeping drains are to be laid inside a house, which we do not suppose is the intention. That a weeping drain should not connect directly with the house drains, is a good provision; but that the trap should be placed so that it is accessible for flushing, is unnecessary. If the weeping drains are properly put in there is no necessity for flushing the trap, and any arrangement which depends upon such attention is defective and should not be allowed.

"Air pipes may be of standard wrought iron with steam fittings. Sheet metal will not be allowed." Will some one explain what the above means? We confess we do not know.

Does "air pipes" mean the pipes ventilating the trap, or does it mean some other set of pipes? If it was not for the statement that "sheet metal will not be allowed," we would suppose that ventilating traps were referred to; but as we have never heard of sheet metal being used except in scamped work, we cannot see the necessity of a clause to that effect. W. would not allow of wrought iron pipes being used, as we believe it to be much inferior to cast iron and lead for the ventilation pipes of traps.

The provision that all cocks, etc., should have the maker's name stamped on them, is a good one. The one to the effect that they should be tested is of no value, as it does not say who is to test them, and if tested, what benefit will accrue without the man making the test is an official of the city, and has authority to reject those fittings not up to the standard, and stamp those which stand the test. In Manchester all fittings are tested by a city official, a small fee being charged to cover the expenses of the department.

The paragraph which calls upon the master plumbers to give certain information to the Water Works Department, is uncalled for. The Water Works Inspectors should be able to attend to such matters, and if not, they should be compelled to.

Paragraph XIX is so worded that no one can understand what it means. It will certainly allow of a great many different interpretations. We are not in favor of relieving a master plumber from making good any defective work which he may have done. The object of appointing an inspector is to prevent bad work being done, and not to relieve plumbers of responsibility for any inferior work which they may have done and which may escape the notice of the inspector. We should judge that the city could be held responsible for any defective work which might show itself after the expiration of the thirty days if the City Engineer gives a certificate of acceptance relieving the plumber of further responsibility.

The last clause in the by-law, "To provide for the appointment of Plumbing Inspectors, Plumbing Examiners and their duties," is incomprehensible to us. There is nothing in the by-law providing for the examination and licensing of journeymen plumbers, and yet this clause provides for an examination before the Board of Examiners under certain conditions.

We hope that the committee, after so much hard work and delay, will bring forth a by-law which will not require changing for two or three years. We have had so many by-laws, that one is puzzled to know which one is in force, without taking the trouble to make special inquiries.



CONTRACTS OPEN.

- SANDWICH, ONT.—The building of a dry dock here is spoken of.
- DUART, ONT.—Plans are being prepared for a brick school house.
- MONTREAL.—A factory is to be built here by the Howard Pulpware Co.
- KEEWATIN, ONT.—Another new church is to be erected here next spring.
- PICTON, N. S.—The establishment of a system of waterworks is being agitated.
- HAMILTON, ONT.—The Orange Association of the Hamilton district will build a hall.
- DELORAIN, MAN.—A new English church will be built as soon as spring opens.
- ST. CATHARINES, ONT.—The Lincoln Pulp Mill Co. will erect a mill to cost \$10,000.
- ARDREA, ONT.—The Presbyterians will probably build a new church next summer.
- BELMONT, ONT.—The Presbyterians are talking of building a new church here next summer.
- VICTORIA, B. C.—A large number of substantial buildings are to be erected this season.
- BOBAYGEON, ONT.—\$3,000 will be raised to build an additional wing to the South school here.
- ST. LAMBERT, QUE.—The question of water supply is being discussed by the citizens of this place.
- MOOSOHIM, N. W. T.—The Watson Manufacturing Company are considering the building of a large warehouse.—A court-house, jail, police barracks, and other public buildings will be erected by the government.—A new \$10,000 hotel is talked of.

WINNIPEG, MAN.—W. E. Sanford & Co., dry goods merchants, will erect a new warehouse in this city.

MILLBROOK, ONT.—The plans of Mr. Belcher, of Peterboro', have been accepted for a \$4,300 school building.

BRANDON, MAN.—Leading citizens are agitating the question of the establishment of a system of water works.

WIRATON, ONT.—It is understood that the Government will shortly ask tenders for harbor improvements at this place.

ELMIRA, ONT.—The congregation of St. Paul's Lutheran Church will build a new church. Estimated cost, \$5,500.

KINGSTON, ONT.—The Oddfellows are preparing stock lists for an Odd-fellows Temple, with a building fund of \$40,000.

KINGSTON, ONT.—Plans and specifications for the new dry dock are being prepared, and tenders will be asked for shortly.

WATERFORD, ONT.—The Congregationalists have purchased a site on which they intend to erect a commodious brick church in the spring.

PETERBORO' ONT.—The citizens are urging the Government to erect a new public building, and their representations have been favorably received.

STRATHROY, ONT.—The Minister of Public Works has stated that tenders will be asked in the spring for the erection of a new post office at this place.

COLLINGWOOD, ONT.—\$5,000 has been granted for water works, and \$20,000 for a new town hall.—A marine and general hospital will be erected in the spring.

PETERBORO', ONT.—The Board of Education has asked the council to provide \$10,000 for a new public school and \$20,000 for a Collegiate Institute building.

ST. JOHN, N. B.—It is proposed to spend \$200,000 on the extension and improvement of the water supply.—A company has been formed to build a \$20,000 hotel here.

DARTMOUTH, N. S.—The Council have decided to ask the legislature to allow them to borrow \$100,000 for the purpose of constructing a sewerage and water works system.

KAMLOOPS, B. C.—Tenders are wanted for the erection of an Industrial School at this place. Particulars may be obtained from the Minister of Public Works, Ottawa, Ont.

OWEN SOUND, ONT.—A marine and general hospital is to be erected here. The County Council has granted \$1,000 towards the object. The town clerk can give information.

BRANTFORD, ONT.—The Board of Health decided at a recent meeting to ask the city to have plans drawn up for a complete system of sewerage, the probable cost of which will be \$20,000.

VICTORIA, B. C.—\$20,000 has been so far raised by the citizens, and \$20,000 has been granted by the Provincial Government towards the building of the \$50,000 Royal Jubilee Hospital.

CARLTON WEST, ONT.—Mr. McKechnie of Dundas, has purchased four acres a little north of Carlton Station, on which to erect a large foundry and tool factory. He is bound by agreement to commence building within three months.

HAMILTON, ONT.—A new factory for the drawing of fine wires of brass, copper and all metals from which iron is made, is to be erected here.—Mr. Wm. Stewart, architect, is preparing plans for a large retail dry goods store, to be erected on the corner of King and Hughson streets, for Thos. C. Watkins.

TORONTO, ONT.—The School Board have asked the Council to provide funds for the erection of eight new schools.—A site has been secured and plans are being prepared for a music hall capable of seating 2,000 persons.—About \$15,000 will be spent in improvements to St. Andrews market building.—The following building permits have been issued from the office of the City Commissioner, since the date of our last number:—Mr. Harrison pr. 3 story bk. stores Queen St. West, cost \$6,600; C. R. Rundle, two bk. dwellings, Jarvis St., cost \$10,000; W. Mulock, two bk. dwellings, Gloucester St., cost \$14,000; Reagon & Locke, two bk. dwellings, Bathurst St., cost \$7,000; Richard Dinnick, four det. 2 story bk. dwellings Simcoe St., cost \$4,000; Mr. Hamilton, 2 1 storey r.c. add. to St. Lawrence

Foundry, cost \$3,000; Thos. Dexter, eight 3 storey bk. stores, Victoria and Queen Sts., cost \$16,000; Mr. Rosenberg, four att. 2 storey r. c. dwellings, Centre St., cost \$3,000; J. Didev, five att. 2 storey and attic bk. dwellings, Harbord St., cost 10,500; J. H. Harrison, 2 storey factory, Hagerman St., cost \$5,000; J. Carter, three att. 2 storey bk. dwellings, Park Rd., near Yonge St., cost \$3,000; Walter Page, pr. s. d. 2 storey bk. dwellings, Ave. Rd., cost \$6,600; Jas. J. Dietz, four att. dwellings, bk. fronts, Adelaide St., cost \$5,700; S. Crawford, alterations at cor. Peter and Queen Sts. cost, \$3,500.

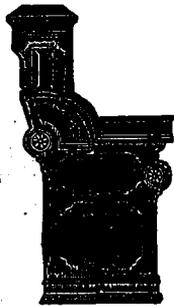
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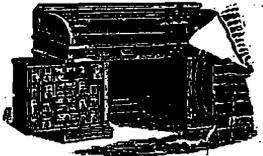
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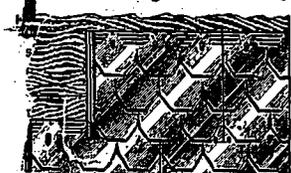
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SEALED TENDERS, addressed to the undersigned, and endorsed "Tender for Lieut.-Governor's Windows, Regina, N. W. T." will be received at this office until Friday, 8th March, 1889, for the several works required in the erection of Lieut.-Governor's Residence, Regina, N. W. T.

Specifications can be seen at the Department of Public Works, Ottawa, and at the office of Mr. J. Peters, Clerk of Works, Regina, on and after Friday, 8th February, 1889, and tenders will not be considered unless made on form supplied and signed with actual signatures of tenderers.

An accepted bank cheque payable to the order of the Minister of Public Works, equal to five per cent. of amount of tender, must accompany each tender. This cheque will be forfeited if the party declines the contract or fail to complete the work contracted for, and will be returned in case of non-acceptance of tender.

The Department does not bid itself to accept the lowest or any tender.

By order,

A. GOBBEL,
Secretary.Department of Public Works,
Ottawa, 4th February, 1889.

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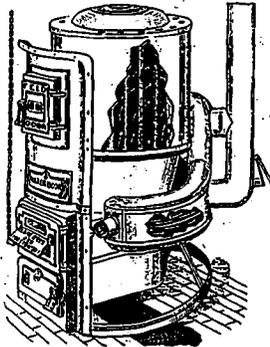
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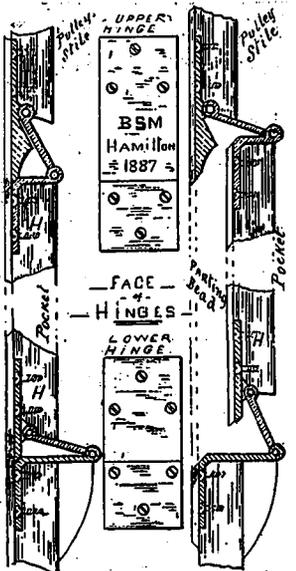
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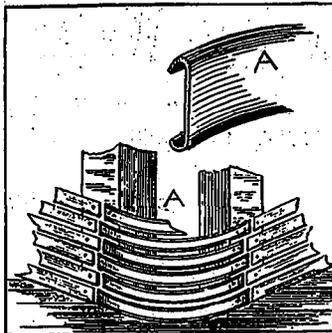
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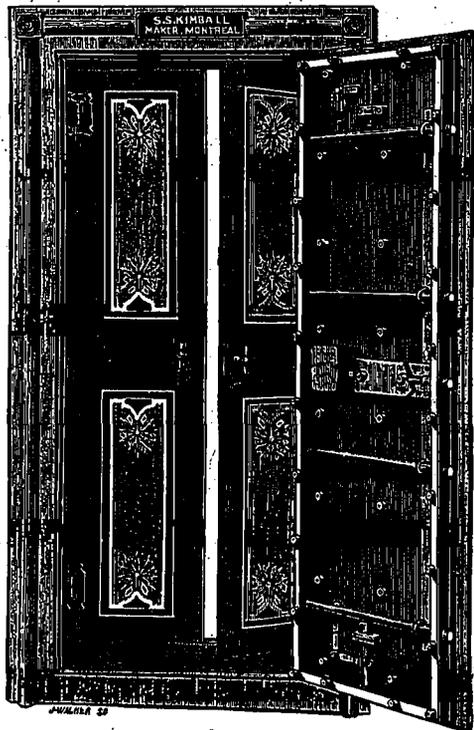
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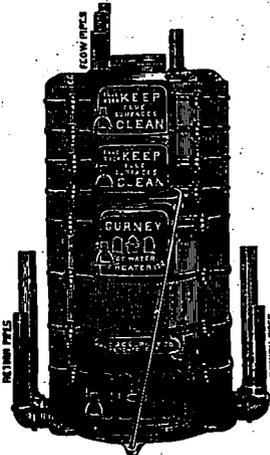


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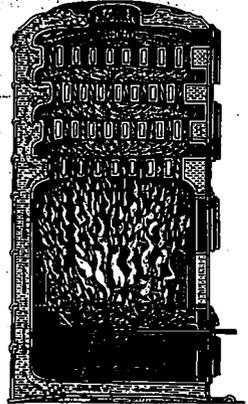
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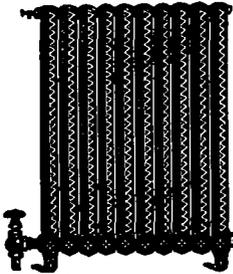
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