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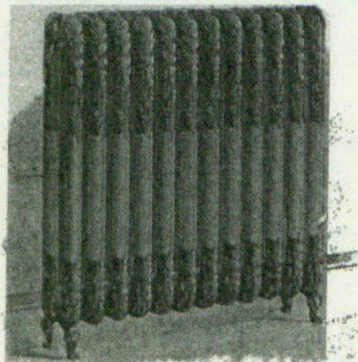
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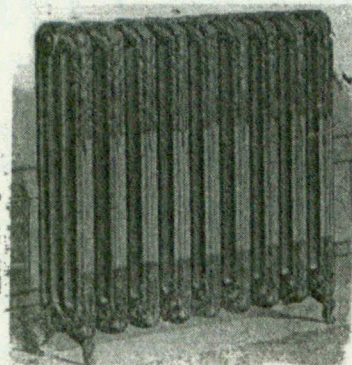
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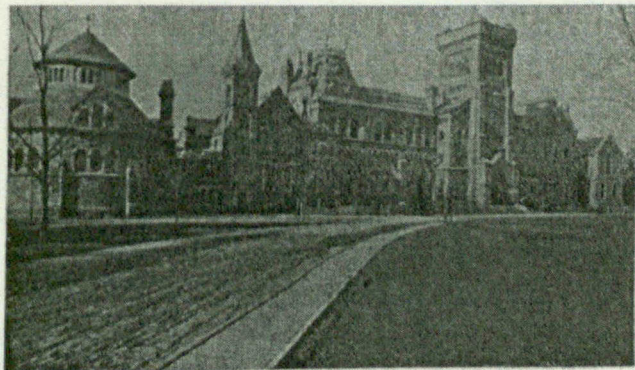
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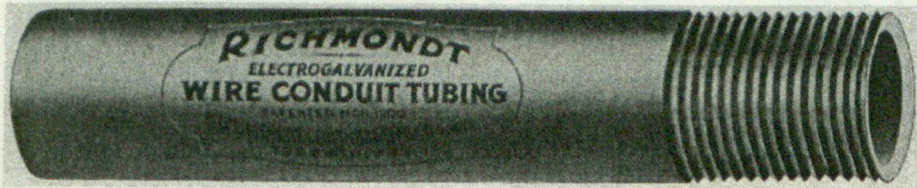
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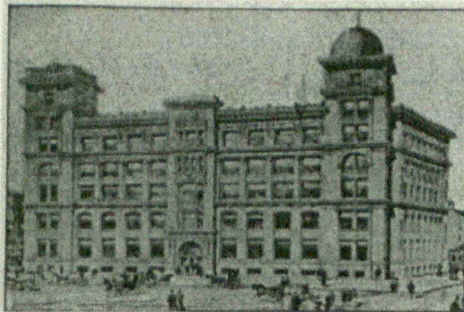
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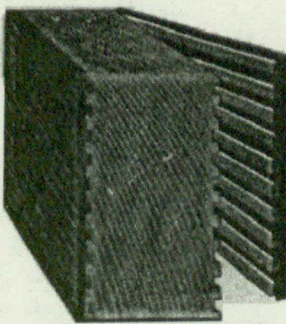
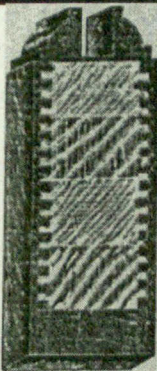
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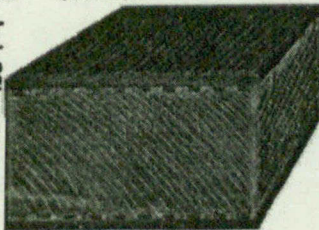


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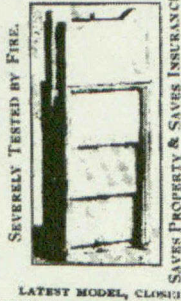
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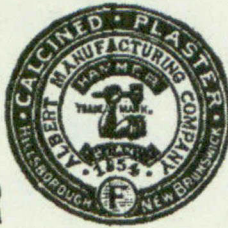
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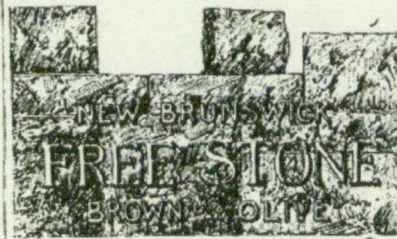
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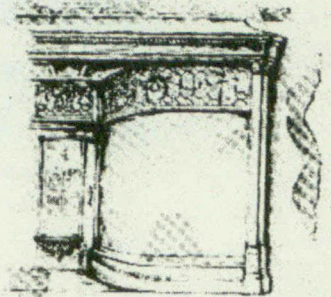
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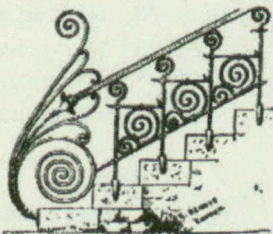
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MAY, 1902.

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Interior.—By G. S. Lemasnie.

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Cottage for Wm. Wadds, Esq., Rossland, B.C.—John T. Honeyman, architect.
Wesley Methodist Church, Vancouver, B.C.—Wm. Blackmore & Sons, architects.

ADDITIONAL ILLUSTRATIONS IN ARCHITECTS' EDITION.

Photogravure Plate.—St. Michael's Cathedral, Toronto.—W. T. Thomas, architect.
Residence of Lieut.-Col. Pellatt, Sherbourne St., Toronto.—Beaumont Jarvis, architect.
Designs for Furniture.—By G. S. Lemasnie.
Porta Delta Carta, Doges Palace, Venice.—By W. A. Delano, New York.

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SPECIAL CONTRIBUTORS.

PROF. S. H. CAPPER, R.C.A., Department of Architecture, McGill University, Montreal
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Spruce Lath.

THERE is said to exist a slight prejudice against the use of spruce lath on the ground that sometimes they discolor the plaster. Recent inquiries from leading contractors in the Maritime Provinces would seem to disprove this contention. Messrs. B. Mooney & Sons, of St. John, write that they have never seen any stain or discoloration from spruce laths, and that, when clear of sap and wane, they give good satisfaction. In the eastern markets, including Boston, New York, and Philadelphia, spruce laths made from slab stock bring higher prices than any other. It is claimed that pine laths containing knots or balsam

will discolor the plaster, whereas this drawback is not met with in the case of spruce. As the merits of spruce laths become more generally known a greater demand for them will develop.

The Decay of Stone

Alarm has been caused the citizens of Glasgow by the discovery that the stone work and especially the costly carving on the municipal buildings is showing marks of rapid decay. The buildings were erected but a few years ago at a cost of about \$2,500,000, stone from a newly opened Bannockburn quarry being used. As a test of the stone it was allowed to lie for a year in the builder's yard before being placed in the building. Although it stood this test satisfactorily, it began to decay in situ. The reason has not been discovered. Much older buildings in the same locality are in a good state of preservation. Instead of cutting out whole capitals of pilasters, as was at one time proposed, only the decayed portions are being cut away and a silicate solution applied for purposes of preservation. £600 has already been expended on this work.

Dangers of Steel Construction.

General Soysmith, head of one of the most prominent contracting firms in the United States, in a recent address before the Chicago Real Estate Association predicted

the early collapse of many of the tall buildings of that city in which imperfect steel construction has been employed. In the earlier buildings of this class, the steel framework instead of being imbedded in concrete, was simply cased with stone or brickwork, leaving crevices through which moisture might enter and corrode the metal. Under such conditions corrosion proceeds very rapidly, and the corrosion of one fifth of the substance of the metal of a supporting member at any given point, would in general, cause its failure. In view of General SooySmith's warning it is urged that an immediate examination should be quietly made of buildings of the class to which he has referred, and measures taken to prevent an accident which would involve loss of life and so weaken public confidence in the stability of such structures as to seriously depreciate their value. Such an examination would also be likely to disclose facts of which architects should be possessed.

Reform in Architectural Competitions

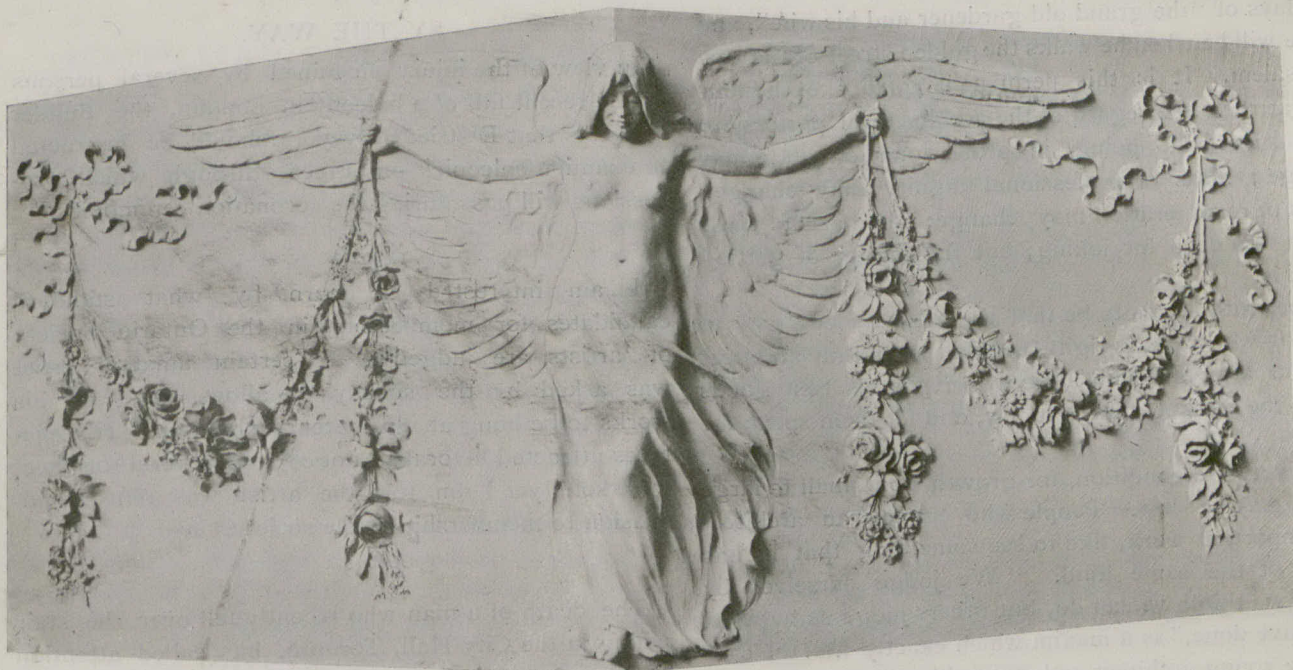
By request of a number of prominent British architects, the Royal Institute will appoint a special committee to receive suggestions and formulate a plan whereby necessary reforms may be effected in the method of conducting competitions. In view of the unsatisfactory results of several important competitions held recently in England, the conclusion has been reached that in undertakings of a technical or complicated nature more than one referee is required. It is suggested that in such cases there should be two—one to be chosen because of undoubted ability as a designer the other for his special knowledge of the particular problem to be considered. In case these two should be unable to agree to an award it is proposed that they be empowered to elect a third architect as umpire. It is suggested that a list of architects in whom competitors have confidence be supplied to the president of the Institute, from which list a choice of referees could be made. It is urged that in cases where the promoter of a competition fails from any cause to carry out the undertaking it should be agreed that a substantial money payment should be made to the author of the selected design on about the same scale as if he has been commissioned direct to prepare plans without any competition.

Labor Conditions. THE opening of the building season this year has been marked by more than the usual number of strikes embracing bricklayers, carpenters, painters, plumbers, and last of all the architectural structural ironworkers. Most of the disputes have been adjusted for the present season at least on a compromise basis, without much loss of time. The higher standard of wages which has been fixed in the various trades, has blocked quite a large percentage of building projects which would otherwise have gone forward this season. As an example a contractor who submitted tenders for four buildings states that only one of the four was proceeded with on account of the tenders being too high. The opinion prevails that the ever increasing demands of the unions for higher pay and shorter working hours, coupled with other restrictions almost too numerous to mention, will prove to be one of the most potent influences in bringing to an end the present period of prosperity. The broadening of the franchise has placed

great political power in the hands of the labor leaders, which they have not been slow to exercise. As a result legislative bodies are pandering to them as never before, and are in danger of losing sight of the national welfare, which demands equal justice to all classes and the protection of capital as well as labor. It should not be forgotten that the interests of both are identical and that any advantage given the one over the other can only be temporary. We should take warning by the experience of our sister colonies of Australia where the results of the labor laws are thus described in a letter by Mr. D. H. Ross, a Canadian, to Sir Richard Cartwright, Dominion Minister of Trade and Commerce: "The labor laws throughout the Commonwealth and New Zealand are of such character that the careful business man or capitalist seeking an investment would hesitate indefinitely before placing his business and capital under the sole control of the labor unions, which are so strong at the present time that they practically hold the balance of political power, and throw in their support with either party, Government or Opposition, which will agree to carry out their so-called labor reforms. A manufacturer's business is under their control to the extent that they dictate its policy, the number of employees permitted, the number of apprentices, their hours of labor, their rate of wages, their days of vacation, how the factory shall be lighted and ventilated, and so on, ad lib. Owing to these tyrannical labor laws, boot manufacturers in Melbourne, who, previous to the federal tariff were protected to the extent of \$1.20 per pair on men's boots, were scarcely able to make both ends meet. In Wellington, N.Z., it was recently stated that a large boot manufacturer there had decided to close his factory and become an importer, and boot operatives have recently arrived here from New Zealand looking for employment."

The Coronation Stone.

THE near approach of the coronation of King Edward the VII lends interest to the following particulars regarding the history of the famous coronation stone: That this stone was formerly in use in Ireland for the Coronation ceremony, that it found its way into Scotland—certainly earlier than the reign of King Kenneth, 834—that it was then removed to the Abbey of Scone, where for 450 years all the kings of Scotland were crowned upon it, and that it was brought to England by King Edward I. in 1296 after John Baliol, the Scottish King, had been defeated at Dunbar, are well ascertained historic events. There used to be a tradition that the stone was of meteoric origin, but Dean Stanley settled this matter when in his "Memorials of Westminster Abbey" he included a paper written by Professor Ramsay, called "A Geological Account of the Coronation Stone," in which it is said: "The stone is a dull reddish or purplish sandstone, strongly resembling that of the doorway of Dunstaffnage Castle, which was probably built of the stone of the neighbourhood. It is extremely improbable that it was derived from the rocks of the hill of Tara, from whence it is said to have been transported to Scotland, neither could it have been taken from the rocks of Iona. That it belonged originally to the rocks round Bethel is equally unlikely, while Egypt is not known to furnish any strata similar to the red sandstone of the Coronation Stone."



PORTION OF CHIMNEY HOOD FOR DRAWING ROOM IN RESIDENCE OF MR. F. B. FETHERSTONHAUGH, DESIGNED AND EXECUTED BY THE ELLIOTT & SON CO., TORONTO.

A STUDY OF THE BASIS OF PROFESSIONAL ETIQUETTE.

Not long ago a speaker, at one of the English architectural meetings, spoke in a congratulatory way of the time being past when a leader of the profession (the allusion was evidently to Sir Gilbert Scott) would go about with a portfolio of churches under his arm, to call on building committees. On the other hand, we hear that in the United States, nobody dare wait for a job to come to him; that Michael Angelo himself, if he lived in Chicago or New York, would have to hustle for work. Which of these two tendencies is in the direction of progress?

What is all this hustling about? What is there about hustling that should recommend it to clients? The hustler is not hustling for his client's interest but for his own. A scholarly designer like Sir Gilbert Scott must have been a very high-class hustler. His kind of work implied personal attention to it. Yet there is a story of his going to a church opening, and, as he was being driven up to the church, turning pale and whispering to his confidential clerk, who was with him, "They have got the wrong church."

The typical hustler works *for* work not *at* it, and what the client wants is some one who will work *at* his work.

Of course the hustler works at his client's work in the sense of getting it through. He must have a good staff. That is partly what he is hustling about. It almost seems sometimes as if there is a point of view from which it is the staff which may be said to have a hustler, who spends his time upon the street to find work enough to pay them. Staff work, in fact, is the result of this system.

There is a certain medium class of commercial work for which staff work does well enough, and a certain class of client to whom it is a satisfaction to feel that his work is being handled in what he would call a business like manner; i. e. put through without fuss, in the shortest possible time, and looking when done like other new buildings of its kind. As a matter of fact the work is done in a business like manner. Let us give the style of practice all the credit that is due to it,

in the best examples. The architect runs a plan factory. It has factory merits and factory defects. The merits are certainly a comfort to a client whose interest in his building is commercial; and the defects do not matter much from his point of view. But how about delivering over the whole field of architecture to this system? It is bound to result in staff architecture, that is to say in factory architecture; and factory architecture is not good enough for good work. Any body who knows what real planning is like will know that the case of Sir Gilbert Scott will be often repeated in a metaphorical sense. The right problem may be under consideration but the wrong plan will be produced. It is true that H. H. Richardson did not draw himself, but his mind was on design all the time; he was devoted entirely to his work. It is true on the other hand that Mr. Ernest George (as he stated when receiving his R.I.B.A. gold medal) does nothing else but draw. He represents, that is to say, the possibility of a first-class man taking care of the design, while some one else gets the work and attends to the business connected with it. But Mr. George is as exceptional in his way as Richardson was. Under ordinary circumstances, if work has to be worked for, the big man of the concern will be devoted to that, as indeed he is now, and the architectural level must fall. That is bad for architecture, but what we are concerned with just now is that it is bad for the owner of architecture—the client. If this estimate of the consequences of hustling is sound, clients have no cause to smile upon the practice.

How about the architects themselves? The profession professedly abhors the practice; and, at the end of the tariffs of fees, there is a clause defining professional etiquette in a way that practically excludes work hunting. But there commonly is a jocular way of speaking about the practice that implies uncertainty of purpose. At the bottom of this is uncertainty about the moral basis, a feeling that perhaps the new is the true and that old fashioned scruples are perhaps old fashioned for cause, like horsecars and the old, old systems of fifteen years ago. Morals however do not change. A gentleman is the same now as he was in

the days of "the grand old gardener and his wife", and as he will be when he walks the golden street of the new Jerusalem. It is this permanent quality of honour that attracts the regard of the architectural profession. The superficial points in professional etiquette may change; ideas of professional dignity may change; ideas of remuneration may change; the basis of these is not too deep for ioking; but the matter of getting work is.

The truth seems to be that there is only one way of getting work that is right, and that is that an architect should always do his best work: put his best goods upon the market, that is to say, and let them speak for him.

It is a hard condition, for growth from small to large work may be slow. People who employ an architect for important work, like to see something that he has done of the same kind. "We judge ourselves by what we think we can do, but others judge us by what we have done," is a maxim which exactly fits the case of the young architect and states his difficulty. Competition (a question by itself) is accepted as a means of making a rapid step between small work and large. But, competitions or not, the step is sure to come in time to the really able, and usually before long; so that, though, like all other right conduct, some patience and faith and self-government are implied, the condition, though severe, is not more than a man should accept.

Why is this the condition of honourable practice? Because the moment a man reaches out for work he is reaching out for somebody else's work. If the work would not naturally come to him, it would naturally go to someone else. He reaches out for it; uses a "pull," asks, persuades, or merely works the magnetism of his personal presence—highly magnetized for the occasion—and the deed is done; he has knifed a neighbour.

This is the bottom fact that makes the profession uneasy about going about to get work. It is the disregard of others that is the dividing line between honourable and dishonourable practice. When another architect is already engaged, it is easy to recognize that he has rights and the better members of the profession are strict about not interfering there. It is a more uncertain state of affairs when work is in the air, and seems to be only waiting to be grasped. It is agony not to grasp it, but there is always a sense of shame before other members of the profession in doing so—and is not this the cause, that it has to be taken from some other member of the profession. If it is our's we may wait for it; if it is not our's whose is it? Somebody else's. Then for "taken from some other member of the profession", we may read, "stolen from some other member of the profession". It seems strange that men should think their duty to their wife and family obliges them to steal from some other man's wife and family. And this in a Christian land. Surely before we adopt the (reputed) American practice we should pause to think where we are going.

W. A. LANGTON.

The most magnificent work of architecture is the Taj Mahal, in Agra, Hindustan. It is octagonal in form, of pure white marble, inlaid with every sort of precious stone. The work took 22,000 men 20 years to complete, and though there were numerous gifts and the labour was free, the cost was £3,200,000.

BY THE WAY.

In view of the injury sustained by several persons by the recent fall of a balcony in London, the Builder suggests that District Surveyors should be instructed to examine balconies on streets through which processions will pass during the coronation ceremonies.

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I am interested to learn by what standard candidates for membership in the Ontario Society of artists are judged? A certain amateur artist was asked by the society to allow some of his works to be hung at the recent exhibition. His pictures attracted favorable notice and several of them were sold, yet I am told the artist was refused admission to membership in the society.

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The death of a man who recently fell over the stair railing in the City Hall, Toronto, has called attention to the proper height for such railings. The coroner's jury appointed to enquire into the cause of the accident returned a verdict of accidental death, but expressed the opinion that the railing was too low, and to insure safety should be made higher. On the contrary the architect of the building, Mr. E. J. Lennox, states that the railing corresponds to what has always been regarded as the standard height, namely 2 feet 6 inches. The matter is one which architects would do well to enquire into, lest some day they find themselves in the position of defendant in an action for damages.

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A young architect came to me the other day with a grievance which I am sure is shared by many citizens of Toronto. He had been out with his camera with the purpose of getting pictures of some of the best examples of domestic architecture in Rosedale, the annex, and other residential districts. In almost every instance he found a telephone or electric light pole, a real estate agent's sign or some such disfigurement so placed as to make it impossible to secure a satisfactory photograph. There is little encouragement given the citizens to build tastefully so long as unsightly poles and signs can be planted in front of their doors. It is time that the telephone company should follow the example of the electric light company which of late, in the best residential localities, has been steadily putting its wires underground.

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The property owners on Spadina Crescent, in one of the principal residential districts of Toronto, recently made the discovery that a livery stable was to be established in their midst. When they had set about getting up a petition to the Council, they learned that the limit of time allowed for filing a protest had expired. They are consequently without redress. This is but another instance of the hardship to which property owners are subjected because of the defective character of the city building by-laws. Owners of property should not be required to be constantly on the watch against encroachments upon their rights. The by-laws of the city should afford them protection. Under the existing by-laws, factories and other objectionable buildings can be erected anywhere, regardless of their effect on the beauty of the locality and the value of surrounding property.

ARCHITECTURAL LEAGUE OF AMERICA.

The fourth annual convention of the Architectural League of America will be held in Toronto on the 29th, 30th and 31st inst. About fifty delegates are expected. The League was originally organized to facilitate club work and exhibitions, but has since broadened its field. The principal topics of discussion this year will be Architectural Education and Municipal Improvement.

The Toronto Architectural Eighteen Club, being hosts of the occasion, are holding their annual Exhibition open until after the convention and also arranging to show the delegates and their friends around the city and give an entertainment on the last evening of the convention.

The draft programme for the convention, which of course is in some degree subject subject to change, is as follows :

THURSDAY, MAY 29th.

- 9 a.m.—Meeting of the Executive Board at the Queen's Hotel,
- 9 a.m.—Registration of delegates, alternates and visitors at the Ontario Society of Artists' Galleries.
- 10 a.m.—Calling to order of first meeting by President of Toronto Architectural Eighteen Club.
 - A.—Roll call of representatives.
 - B.—Appointment of Committee three on Records and Publicity.
 - C.—Election of Speaker and Secretary of Convention.
 - D.—Election of two auditors to examine and report upon the Treasurer's accounts.
 - E.—Reading of Communications.
 - F.—Annual Report of Executive Board.
 - G.—Treasurer's Report.
 - H.—(1) Report of Committee on Publicity and Promotion, Lawrence V. Boyd of Philadelphia, Chairman.
 - (2) Report of Committee on Code of Ethics and Competitions, Julius F. Harder of New York, Chairman.
 - (3) Report of Committee on Exhibition Circuit, Walter F. Kleinpell of Chicago, Chairman.
 - (4) Report of Committee on Foreign Exhibit-Committee not filled.
 - (5) Report of Committee on Current Club Work, Ernest J. Russell of St. Louis, Chairman.
 - (6) Report of Committee on Education, Julius F. Harder, of New York, Chairman.

AFTERNOON SESSION.—2 P. M.—Discussion on Educational Questions under the following eight headings set out by the Educational Committee and allotted to the various Clubs :

- 1.—INTRODUCTORY.—Three functions of the science of education;
 - (a) The information of knowledge.
 - (b) The discipline of human faculties.
 - (c) The nurture of character and individuality.
- 2.—(d) Is a National American Art University a desirable or necessary institution?
 - (e) Should the art education of the nation be centralized in one great school, and therefore the present schools be united with such central school, and detach from their present associations with other fields of instructions?
- 3.—(f) Should the National Government have connection with and jurisdiction over a National art university, or should the organization and control be similar to that now existing in American universities?
 - (g) Would the artistic growth of the nation reach its highest development without a great National centralized university?
 - (h) Could the present centers of art education scattered in reference to locality and influence, and developing more or less independently attain to as high a total of efficiency and accomplishment?
- 4.—(i) Is the time ripe for a great American University of Art?
- 5.—(j) What should be included in its curriculum?
 - (k) Should art artisanship, namely, the art-crafts be included?
 - (l) Should a national university be one primarily for the arts and crafts, and secondarily for the fine arts?

- (m) Are the concrete or applied arts superior to the abstract or luxurious arts?
- (n) Are the concrete or applied arts entitled to more immediate consideration than the abstract or luxurious arts?
- 6.—(o) Does architecture belong in the category of the accepted fine arts, or is it more properly related to art craftsmanship?
- 7.—(p) Does the one great centralized national university, or do the many smaller provincial schools exert the stronger and better influence over the student body?
 - (q) Which of the two systems gives the greatest freedom and promise for the development of individuality?
- 8.—(r) Can a system of self-education by means of club association be permanently established?
 - (s) Is such a system demanded by present conditions?
 - (t) Would such a system, seriously undertaken, self-supporting, and maintaining itself by methods of self-government, be productive of commensurate results both of quantity and quality?
 - (u) What should be the plan and scope of such a system of club and inter-club self education.
 - (v) Can a connection be established between such a system and the architectural educational institutions?
 - (w) What should and could be the nature of such a connection?

EVENING SESSION—8.30 p.m.—Municipal Improvement Committee's Report.

Lantern Slides of improvements to City of Washington with lecture on same by Mr. H. K. Bush-Brown of New York, Chairman of this Committee.

FRIDAY, MAY 30th.

- 9.30 a.m.—Address on Landscape Architecture by Geo. F. Pentecost, Jr., of New York.
 - Paper by Frederic Law Olmsted, of Brookline, Mass.
 - Paper on "Civic Aesthetics" by Charles Mulford Robinson, of Rochester, N. Y.
- 2.30 p.m.—Sail on Lake Ontario. Group photograph in front of Toronto University.

EVENING SESSION—8.30 p.m.—Lecture on Mural Decoration by H. B. Pennell, of Boston.

Lecture on Municipal Improvement at the St. Louis Exhibition, by Albert Kelsey.

SATURDAY, MAY 31st.

- 9.30 a.m.—Address on "Architectural Practice in America", by Dwight Heald Perkins, of Chicago.
- AFTERNOON SESSION—2 p. m.—(K) Unfinished business and new business. (L) Appointment of Standing Committees. (M) Election of President of League and place of the Executive Board. (N) Designation of place of next Annual Convention. (O) Adjournment.
- EVENING SESSION—8.00 p. m.—Banquet or Smoker and programme of entertainment.

WIND VELOCITIES AT VARIOUS HEIGHTS.

From photographs and measurements of the waterspout seen off Cottage City, Mass., in August, 1896, Prof. Bigelow has recently calculated the wind velocities, etc., as follows, in miles per hour :

Height above Sea Level.	Diameter of Tube.	Velocity of Rotation.	Vertical Upward Velocity.
Feet.	Feet.	Miles.	Miles.
4,193	3,402	14.1	0.04
3,901	506	94.4	2.50
2,999	250	189.0	9.90
1,802	178	268.0	19.80
1,201	158	300.0	24.70
479	144	333.0	29.70
0	134	354.0	34.60

Dimensions and velocities like these characterize the largest tornado tubes and, together with the fall of internal pressure by the amount of three or four inches, readily explain destructive efforts such as those observed at Louisville and St. Louis recently.

The Council of the Royal Victorian Institute of Architects have adopted a scheme for a course in architecture, and cognate subjects to suit the requirements of art-craft pupils. The course will take three years at three nights per week, and the subjects will include architectural drawing, lectures, including sanitation, gas, water supply, quantities, and strength of materials, practical, plane, and solid geometry, and applied mechanics.

THE PROTECTION OF BUILDINGS AGAINST LIGHTNING

A paper of much practical value on this subject was recently presented by Prof. Reynolds, of the Ontario Agricultural College, Guelph, before the Mutual Underwriters' Association of Ontario. The author showed that trees, especially those with pointed tops such as poplars, elms and pines, being good conductors, act as protectors of nearby buildings. To the presence of trees in the streets he attributes the great exemption from damage by lightning of building in towns and cities as compared with country districts. In the country, owing to the cutting down of the trees, the damage by lightning is greater than 50 or even 30 years ago. Trees should however, not be too close to the buildings to be protected—not nearer than from 10 to 20 feet—as otherwise there is danger of a side flash from a tree striking the building and causing damage.

"There is perhaps, no tree which is a more efficient protector against lightning than the spruce used for ornamental hedges; that is just the thing for the purpose. This forms a natural protector against lightning. It is always in repair, and lasts practically for all time, and besides being a means of protection, its natural beauty adds to the permanent value of the property on which it is grown."

As regards artificial means of protection Prof. Reynolds recommended lightning rods, provided they were made of proper material, in proper form and rightly put up. If these conditions were not observed they became a source of danger instead of a protection. Copper conductors should be used weighing eight ounces to the foot, in flat form and attached to the building by proper insulators. In the opinion of the author the more points extending upwards from the conductor, the better. These points should be five or six feet high, and not more than 40 feet apart. It is essential that they be bright and sharp, as a bright point seems to have more attraction for lightning than a dull one. Aluminum is recommended as a material for points, because that material will not rust; it is always bright, and is a better conductor than iron.

"One of the most important points of all in providing for this sort of protection is in having a proper ground connection. It is an easy matter for a careless or dishonest agent to put the ground wire just a little below the surface; it is then out of sight, and he thinks out of mind as well. Wire buried just below the surface, in dry ground so far from being a means of protection, is a cause of danger, because the lightning, attracted by the points on the roof, is carried down the conductor, and if it is not then dissipated in damp ground, it is apt to fly off into the building. Protection can be ensured by seeing that the ground wire is connected with earth which is always moist. The depth necessary will depend upon the character of the soil and the location of the building. It may not be necessary to go over three feet, or it may be necessary to go ten feet; what is imperative is that the ground wire shall be connected with soil that is never dry. To this end it is best to put the ground wire in during dry weather. It is necessary to have more than a single wire in the ground. It is required to take such measures as will provide for the distribution of the current at the bottom. This can be provided for by flattening out an old copper boiler in sheet form and soldering that to ground wire;

or take a number of stands of barb wire and connect these with the ground wire below the surface.

In the opinion of Prof. Reynolds the rodding of a building should be the subject of inspection at the time that the work is done, and provision should be made for periodical inspection after the rodding. Where this is done, there should be given something in the way of preferential rates to those who take this means of protection.

Sixty-five per cent. of the buildings struck in Ontario last year were barns. Of the buildings struck and burned, 80 per cent. were barns, one reason for this no doubt being that barns are nearly all frame, while many house are of brick or stone.

FIREPROOF CONSTRUCTION AND THE FIRE LOSS.

An appeal has been issued by Mr. Edward Atkinson the well known insurance expert, of Boston, for funds with which to establish an experiment station in the Massachusetts Institute of Technology. Mr. Atkinson has been prompted to take this step by having witnessed while in Europe last year, the benefit resulting from the experiments carried out in London under the direction of the British Fire Prevention Committee, whose work has frequently been referred to in these pages. As President of the Boston Mutual Fire Insurance Co. Mr. Atkinson has given the subject of methods of building construction in relation to fire prevention in textile factories much consideration, and has succeeded in effecting a large reduction in fire losses in such factories. He is now desirous of securing similar results from all classes of buildings.

Regarding the enormous fire loss in the United States, he says: The ash heap of the United States in the year 1901 exceeded one hundred and fifty million dollars (\$150,000,000). If to this is added the excess of expense in conducting Insurance Companies, and the expense in water works and fire departments, all mainly due to the existence of avoidable danger in our great cities, we may compute the fire tax of this country in an average year at not less than two hundred and fifty million dollars (\$250,000,000), probably more. That sum is more than the normal expense of conducting the United States Government in all its branches, omitting interest and pensions. It is equal to twenty (20) per cent. of the capital which can be added in a good year to the capital of the nation. It is considerably more than the annual appropriation for common schools; more than double the sum annually expended for the support of all our universities, colleges and technical schools, and yet there is no school where the elementary principles of prevention of loss by fire forms any part of the instruction.

In addition to the direct losses sustained by property owners and the insurance companies, enormous loss is inflicted upon the working class who are least able to bear it.

Methods of fire prevention as applied to buildings are deserving of much greater consideration than has thus far been given them on this continent.

An influential deputation, representing the Institute of Architects of New South Wales, recently waited upon the Under Secretary of Works, to impress upon the Government the desirability that designs for public buildings of a national character should, in future, be thrown open to competition.

CONCERNING STAINED GLASS.

In a lecture on this subject, before the Sheffield Society of Architects and Surveyors, Mr. A. Jeffery said that the first stained glass executed in England was in the time of King John. Previous to this all glass came from Italy, which even at this date boasted of eminent artists. The old masters taught us many lessons, and much could be learnt from them. We should try and embrace all the good qualities of the old men, ignore their shortcomings, and try to improve on what had been done before us. After the sixteenth century stained glass died out, and did not again revive until the nineteenth century. Mr. Jeffery went on to explain that a window should be part of a building, and should not be treated as a picture or wall decoration. If a man attempted a picture he spoiled his material as glass and made a very bad picture. As to the different methods of manufacture English glass was superior to foreign, both in material and workmanship. The most important point in a window was permanency, and only the most permanent of colours should be used, at whatever cost. Speaking of domestic glass, he did not think modern style was a passing fancy, but that it had come to stay, but like all other transitions in art at the outset it seemed to have been let loose, and we appeared to be seeking after something we could not quite grasp. The style, however, would ultimately settle down and find its own level. He was eagerly looking forward to the time when there would not be so much commercialism in connection with artistic crafts, and he hoped architects in the near future would come more into contact with the craftsmen, and by their joint ideas succeed in raising the standard of work.

DECORATION.

Lecturing before the Institute of British Decorators, in the Manchester School of Art, on "Decoration: its Methods and Materials," Mr. G. C. Haite remarked that the connection between architecture and decoration was of the greatest importance, and decorators should carefully study their relationship. Unfortunately in many cases of domestic decoration, with which one had to deal, there was no architecture worthy of the name; and to that extent, the decorator had nothing to work upon. There were people who ridiculed the idea of law in decoration. Applied art, however, depended on law. The essential principles, underlying everything else, were fitness and beauty. Decoration was subject to many limitations, and often these limitations conferred positive advantages. Take, for instance, the Moorish prohibition of the imitation of nature. As a result of that, we had the use of many forms showing very beautiful results. The limitations imposed by lines in lead light work were an absolute necessity, yet once recognised, what possibilities arose in their use. In stencilled ornament the fact of having to use ties imposed certain limitations. When properly employed, ties became a very effective part of the ornament. Coming to essentially modern forms of decoration, there appeared to be two schools of thought in existence, one of which would prohibit many examples of manufactured goods, believing that the true sphere of the decorator was in the production of ornament in the flat, and the other recognising that the goods made ready to hand were a product of the time, meeting real needs, and their use, therefore, quite legiti-

mate. The first idea implies that every executant should be a designer, and he was in favor of this, if the men could only be found. We must differentiate, however, between a designer and a house-painter, for design required a master hand. He would urge upon all decorators the desirability of having private designs prepared for them by competent designers.

CHURCH OF ST. JEAN, MONTMARTRE.

The new church of St. Jean, at Montmartre, which is being built to replace the old Church of St. Pierre, adjoining the immense basilica of the Sacre Cœur, has again got into difficulties with the administration, and the Prefet de Police has given orders to the architect to stop the work of construction at once, and to proceed to demolish the building, which is now nearly completed. This church has already attracted considerable attention in architectural and building circles, first on account of the novel style of architecture which M. de Baudot, the well-known Diocesan architect, has given to his design, and again by reason of the nature of its construction, entirely in armoured brick and cement, called the Cottancin system. The Prefet de Police requires the immediate demolition of the church under a penalty of £4 per day of delay, simply because a proper demand for permission to construct was not made by either the architect or the vicar of the parish. The latter, considering that he had the right to build in spite of the Prefet, continued the work. It appears, however, that the Prefet is exceeding his rights, and that the vicar will win the day, for, according to the law relating to building rights, no demand for permission to construct a church on one's own property is necessary. The case is exciting great interest in Paris, for nearly £16,000 of building work has already been done on the church.

THE USE OF PORTLAND CEMENT.

Mr. H. H. Humphreys' in an exhaustive paper presented before the London Architectural Association traced the history of Portland cement and dealt with the question of testing. "The use of concrete in connection with expanded metal or with iron or steel rods has, I believe," said the author, "a great future before it, as the additional strength obtained by the introduction of the metal is vastly in excess of what mere theory would lead us to expect. In Germany and France and the United States this class of work is frequently met with, but up to the present time no very large amount has been carried out in this somewhat conservative country. It is bound to come, however, and considering the condition of what is generally called the 'skilled' labor market, it will be well if some substance (which it is possible to make by unskilled labor) can be substituted for brickwork, as we may then hear that brick-layers are once more pleased to lay more than 400 or 500 bricks per diem. There may be a drawback, however, in using this armoured concrete, for unless the iron or steel, rods, joists, &c., are thoroughly protected, they will rust with great rapidity, and not only will their own strength rapidly disappear, but in addition to this the expansion of the metal in process of oxidation will cause disruptive forces to be set up in the heart of the work."

Prof. S. H. Capper, delivered an interesting lecture on Westminster Abbey before the members of the Province of Quebec Association of Architects on April 15th.

CORRECTION.

The Pite Competition design for park gate published in the April number of the CANADIAN ARCHITECT AND BUILDER was incorrectly credited to Messrs. Thos. McLaren and Andrew Sharp, A.R.I. B.A., Mr. McLaren's name alone should have been given as being the author of the design.

ARCHITECTURAL EXHIBITION.

The second annual Exhibition of the Toronto Architectural Eighteen Club will be held in the Ontario Society of Artists' galleries from the 19th to 31st inst. It will principally consist of photographs with quite a sprinkling of drawings; the latter, however, will be a secondary feature of the Exhibition.

An illustrated catalogue will be issued at the opening of the Exhibition and will contain fifty full page illustrations of the most noted exhibits, and will endeavor to, if possible, outdo last year's issue in every respect.

LEGAL.

It is learned by the American Architect that a curious and important case has just been decided by the New York Court of Appeals. Some twelve years ago a block of three apartment houses was built on three contiguous twenty-five foot lots in New York by the owner of the three lots, who made the walls between his houses party walls. Not long ago, one Schaefer contracted to buy one of the lots with the house standing on it. After he had agreed to buy, he learned that the party wall, for a distance of twenty-seven feet, was entirely on the adjoining lot. He sued the person from whom he had agreed to buy for damages on the ground that he had not a complete house on the lot in question, since the support of a portion of the beams was on neighboring property. This view was confirmed by the Supreme Court, but the Court of Appeals held a different opinion, saying that the original owner of the three lots, by resting the beams of one of the houses on what was supposed to be a party wall, but which was really on the adjoining lot, created thereby a servitude on the latter lot, so that Schaefer was thereby entitled to rest his beams on the wall in question as long as it should stand; and, as his house was so much wider in consequence, he was benefited rather than injured, by the mistake.

One of the general conditions usually annexed to the articles of agreement between employer and contractor is to the effect that all additions, omissions, or variations made in carrying out the works for which a price may not have been previously agreed upon are to be measured and valued and certified for by the architect, and added to or deducted from the amount of the contract, as the case may be. The failure to insert such a clause says the London Builders' Reporter, resulted in a case being brought to the Chichester County Court on the 12th inst. Mr. H. A. Smith, builder, of Selsey, sued Mrs. S. Dent for the sum of £38 15s. 6d. for work done. The plaintiff contracted to erect a bungalow at Selsey for the sum of £740. While the works were in progress several alterations were made which resulted in the above claim, in addition to £20 already paid for as extras. Among other things, it was stated that plaintiff had to put on fresh grates; that he had to remove a cesspool which had been dug beneath one of the principal bedroom windows; to effect alterations in a gable to the roof and to repair the thatch, which was blown about by gales of wind, and to do certain extra work to chimney flues. Plaintiff's explanation as to the extraordinary situation of the cesspool was that he had first spoken to the architect on the matter. He charged £14 6s. for removing it to another part of the grounds. The defendant alleged that the contract had been unsatisfactorily carried out, and that the £20 already paid would cover all extra expenses. Mr. F. Swinburne, the architect, denied responsibility for the cesspool being constructed under the bedroom window. Evidence was also brought forward as to the unsatisfactory manner in which the contract had been carried out, considering the big price paid. The judge said there was no necessity for an action if it had been stated that the architect was to be sole judge. He disallowed entirely the charge made for removing the cesspool, and strongly

commented on the position which plaintiff originally chose for the construction of the cesspool without the authority of the architect. The plaintiff was awarded £7 15s. 6d. in addition to the sum already paid.

NOTES.

Miss Kathleen Beverly Robinson, teacher of modelling in the Toronto Technical School, has won the first prize of \$50 in connection with the competition for designs for crest for the King Edward Hotel.

Mr. C. H. Blackhall recently delivered an address before the Detroit Architectural Club on "The Architect That Might Be." He emphasized the five essential qualities of the successful architect.—Artistic perception, the personality and character of an educated gentleman, common sense, the sense of construction and business ability.

"Perhaps one way to forget style" says Mr. J. J. Burnett, A.R.S.A., President of the Glasgow Institute of Architects, "is to sink ourselves in human needs, for that, after all is the basis of all architectural expression. Refinement of mind and thought are to be used quite unconsciously in the service of our fellow-men, and when that is so there is no room to think of style at all; the first duty would seem to be to make buildings meet the necessities."

At the annual meeting of the Central Ontario School of Art and Design, held recently, the following gentlemen were elected as officers and directors for the ensuing year: President, Bernard McEvoy; vice-president and treasurer, W. Revell; secretary, George C. Downes; auditor, James Smith, R.C.A.; directors, R. Y. Ellis, Robert McCausland, Eden Smith, Alderman S. G. Curry; J. D. Kelly, F. H. Brigden and George A. Howell.

By appointing Mr. Marshall, Director of Archæology in India, Lord Curzon has given the best practical expression of his wish and intention to do all in his power for the conservation of ancient monuments in India. The directions with which Mr. Marshall begins his work are very explicit, and it may be taken for granted that they will serve all purposes, including that referred to in the recent memorial from the British Indian Association, which is chiefly solicitous about the buildings appertaining to the Hindu religion in Bengal.

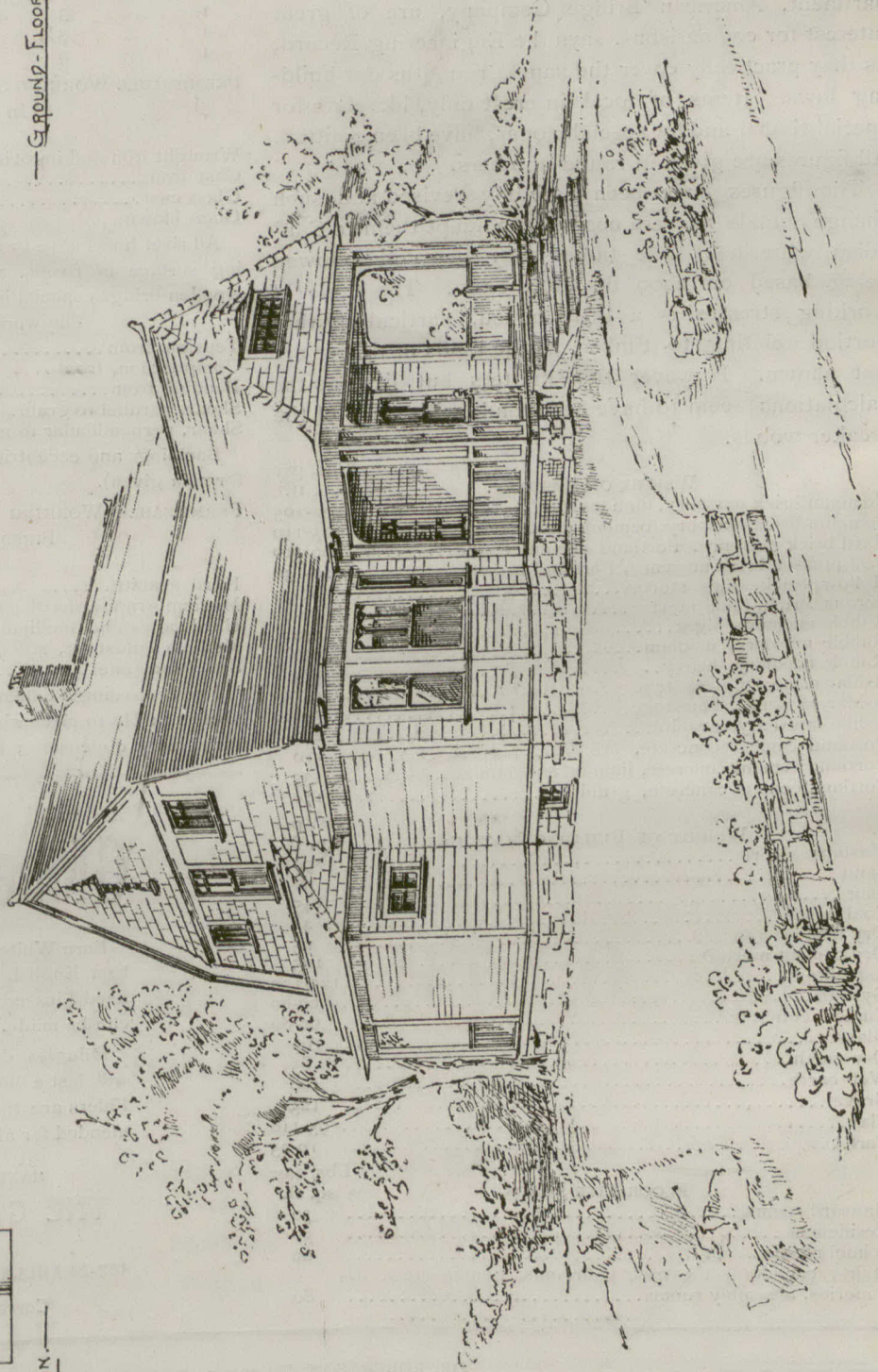
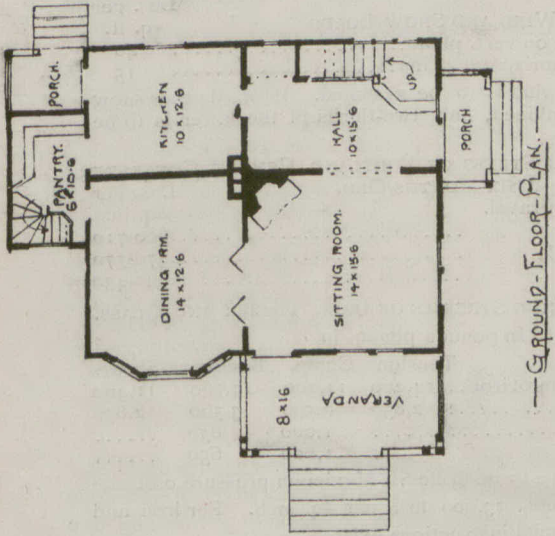
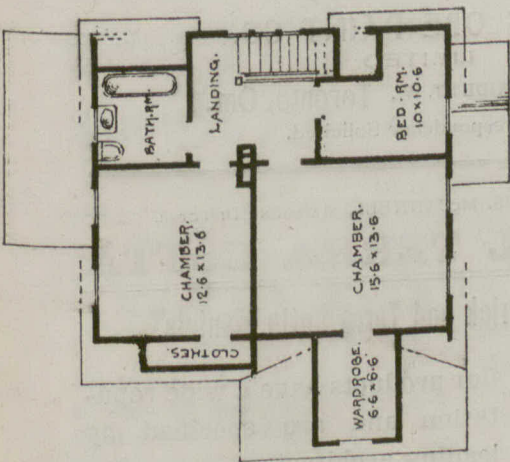
In reply to a correspondent the London Architectural Record gives the following as the requirements for successfully photographing architectural subjects:—We may briefly say, that the main requirements of an architectural photograph are that its vertical lines shall be vertical, its horizontal lines horizontal, its arches and windows shown complete and not cut in halves or quarters, its focus equal over the whole picture, its foreground, middle-distance and sky harmoniously arranged, and its composition truthfully rendered.

The management of the Louisiana Purchase Exhibition to be held in St. Louis, offer prizes of \$2,500 for a design for a symbol or emblem to be used for the seal, stationery and advertising matter of every kind relating to the Exhibition. No rules are laid down as to lettering, sentiment, size or style of the design. The only stipulation is that it shall be symbolical of the great historical event which the Louisiana Purchase Exposition is to commemorate—the acquisition by the United States in 1803 for \$15,000,000 from France, of 1,042,000 square miles of territory.

The horizontal mouldings serving as a sort of cap or cornice to the piers or arches, and on which the archivolt or curved mouldings and *faciæ* surrounding the arches themselves rest, are known as an impost. Like these latter, the impost is made plainer or richer, according to the order employed or to the general character of the design. And when the archivolt of the arches are omitted, either the impost is omitted likewise or a plain band substituted for it. This is generally done, says the Builders' Reporter, in basements beneath an order, they being usually rusticated, and the joints of the rustics sufficing for decoration and giving the requisite architectural expression. Imposts are contrary to the genius of the Pointed style, but, except in the case above alluded to, essential in Roman and Greco-Roman architecture. We have, however, a few instances in which impost has been omitted, and the archivolt of the arch continued vertically down the edges of the piers. This was a favourite practice with Soane, both in his designs and many of his executed buildings, and it was also adopted by Burton in the arches of the Ionic screen and opposite gateway, Hyde Park Corner, Piccadilly; but the effect is by no means happy, especially in external architecture, though it may be tolerated in buildings on a small scale, or which make no pretensions to correctness of style.

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GARDEN FRONT

LOADS AND WORKING STRESSES FOR BUILDING WORK.

The committee appointed in 1899 by the Austrian Society of Engineers and Architects to report on "Specifications for the loading of structures, and the working stresses of materials of construction" has just (January, 1902) published the results of a two years labor. The following figures compiled from the report by Mr. F. C. Kunz, assistant to vice-president, Engineering Department, American Bridge Company, are of great interest for comparisons, says the Engineering Record, as they practically cover the same ground as our building laws. Items of local interest only, like data for special timber and for special stones, have been omitted. All figures are given in round numbers.

The figures have been carefully revised and such changes made as were necessary to adapt them to Canadian materials. The tables may be safely followed being based on 2200 lbs. to the ton. The table of working stresses is a little mixed, particularly that portion relating to timber, as the kinds of timber are not shown. However this matters but little as the calculations seem to have been made with some of the weaker woods.

	Lbs. per cu. ft.
WEIGHT OF MASONRY.	
Common brick masonry, lime mortar.....	100-105
Common brick masonry, cement mortar.....	105-110
Hard brick masonry, Portland cement mortar.....	100-110
Best pressed brick masonry, Portland cement mortar.....	120-130
Hollow brick, lime mortar.....	80-90
Porous brick, lime mortar.....	70-80
Rubble masonry, light.....	140
Rubble masonry, medium.....	150
Rubble masonry, heavy.....	175
Ashlar masonry, sandstone.....	130-155
Ashlar masonry, limestone.....	125-160
Ashlar masonry, granite.....	200
Portland cement concrete, brick.....	110
Portland cement concrete, lime or sandstone.....	135
Portland cement concrete, granite.....	170

	Lbs. per cu. ft.
WEIGHT OF BUILDING MATERIAL.	
Masonry debris.....	90
Sand.....	90
Slag.....	45
Coal ashes.....	45
Dry lime mortar.....	95
Dry cement mortar.....	105
Asphaltum.....	125-130
Gypsum.....	60-80
Cinder concrete.....	60-80
Glass.....	160
Dry earth.....	85
Wet earth.....	100
Gravel.....	125
Clay.....	95-110
Turf.....	10-25

	Lbs. per sq. ft.
FLOOR LIVE LOADS.	
Mansard rooms.....	30
Residences.....	50
School rooms.....	60
Stairs, corridors, theatres, ballrooms, gymnasiums, armories, assembly rooms.....	80

Offices, light storage, above first floor.....	90
Offices, light storage, first floor.....	115
Ice storage (ice 3 ft. high).....	155

	Lbs. per sq. ft.
WIND AND SNOW LOADS.	
Hor. wind pressure on vert. plane.....	40
Snow pressure on horizontal plane.....	15

Only horizontal wind is to be assumed. If wind and snow loads are used combined, only two-thirds of the latter is to be considered.

Cement	Sand ; gravel.	SIX MONTHS OLD.	Lbs. per sq. in.
1	3	.....	600-710
1	3½	.....	470-570
1	4	.....	340-430

PERMISSABLE WORKING STRESSES OF IRON, TIMBER AND GLASS.

	In pounds per sq. in.			
	Tension	Comp.	Bending	Shear.
Wrought iron and ingot iron..	14,200	14,200	14,200	11,400
Cast iron.....	2,850	8,530	3,560	2,850
Glass cast.....	.....	1,000	850	.....
Glass blown.....	.....	1,000	650	.....

All rivet holes have to be drilled. Maximum pressure on bearing surface of rivets, 23,000 lbs. per sq. inch. For iron and wooden bridges special instructions exist.

The working stresses of timber.

Tension, from.....	1,140 to 1,420
Compression, from.....	850 to 1,000
Bending from.....	1,140 to 1,420
Shear, parallel to grain.....	140 to 210
Shear, perpendicular to grain.....	280 to 420

Buckling and eccentric loading have to be considered. (No formula given).

PERMISSABLE WORKING STRESSES OF DIMENSION STONES AND PIERS. In tons per sq. ft.

	I	IIa	IIb	IIc
Hard granite.....	100	60	50	25
Medium granite, hard limestone.....	70	40	30	..
Hard sandstone, medium limestone.....	50	30	25	..
Medium sandstone, soft limestone.....	35	20	15	..
Soft sandstone.....	15	10	.....	.....

I refers to single dimension stones, with a factor of safety of about 15; IIa to piers whose height does not exceed 6 to 8 times their least dimension; IIb to piers whose height does not ex-

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ceed 8 to 12 times their least dimension ; and IIc to piers whose height does not exceed 12 times their least dimension. For all stones except granite, which are kept continually wet, these figures do not apply.

PERMISSIBLE WORKING STRESSES FOR OTHER MASONRY.
In tons per sq. ft.

	a	b	c
Common brick, lime mortar.....	5	7.5	10
Common brick, Roman cem. mortar.....	7.5	5	..
Common brick, Port. cem. mortar.....	10	7.5	5
Rubble, lime mortar.....	4	..	..
Rubble, Roman cem. mortar.....	5	..	..
Rubble, Port. cem. mortar.....	8	..	..
Coursed rubble, Port. cem. mortar.....	10	..	..
Hard brick, Port. cem. mortar.....	12	8	6
Best pressed brick, Port. cem. mortar.....	20	15	10
Concrete for foundations :			
Roman cement 1, sand and gravel 5.....	5	..	..
Concrete for walls :			
Portland cement 1, sand and gravel 3.....	18	..	..
" " 1, sand and gravel 5.....	12	..	..
" " 1, sand and gravel 8.....	8	..	..
" " 1, sand and gravel 10.....	6	..	..

In these groups a refers to walls not under 18 inches thick and piers whose height does not exceed 6 times their least dimension; b to walls under 18 inches thick and piers whose height does not exceed 6 to 8 times their least dimension ; and c to piers of at least 12 inches smallest dimension, whose height does not exceed 8 to 12 times their least dimension.

PERMISSIBLE WORKING STRESS IN MASONRY ARCHES UP TO 30-FOOT SPANS. In tons per sq. ft.

	Compr.	Tension
Common brick, lime mortar.....	6 3/4	0
Common brick, Roman cem. mortar.....	70	0
Common brick, Port. cem. mortar.....	10	1
Hard brick, Port. cem. mortar.....	12	1
Best pressed brick, Port. cem. mortar.....	20	0
Concrete, Port. cem. 1, sand and gravel 3....	18	3
Concrete, Port. cem. 1, sand and gravel 5....	12	2
Concrete with iron (Melan, Monier, etc., systems), Port. cem. 1, sand and gravel 3....	21	8
Dimension stones, (except soft sandstone) in Portland cement mortar.....	25	1

The figures are based on a mortar of 1:3.

Permissible working stress for stone stairs can be taken as one-fifth of the ultimate stress for bending.

PERMISSIBLE PRESSURE ON FOUNDATIONS.
In tons per sq. ft.

Soft clay and wet sand.....	1.0
Ordinary clay and dry sand mixed with clay.....	2.0
Loam, hard clay and sand without clay.....	4.0
Firm coarse sand and gravel.....	6.0

Piles in loose, wet soil should not be stressed more than 350 lbs. per sq. in. of their cross-section. They should be placed not more than 3 ft. apart.

Mr. W. E. Doran, architect, was recently appointed to the Montreal Board of Harbor Commissioners.

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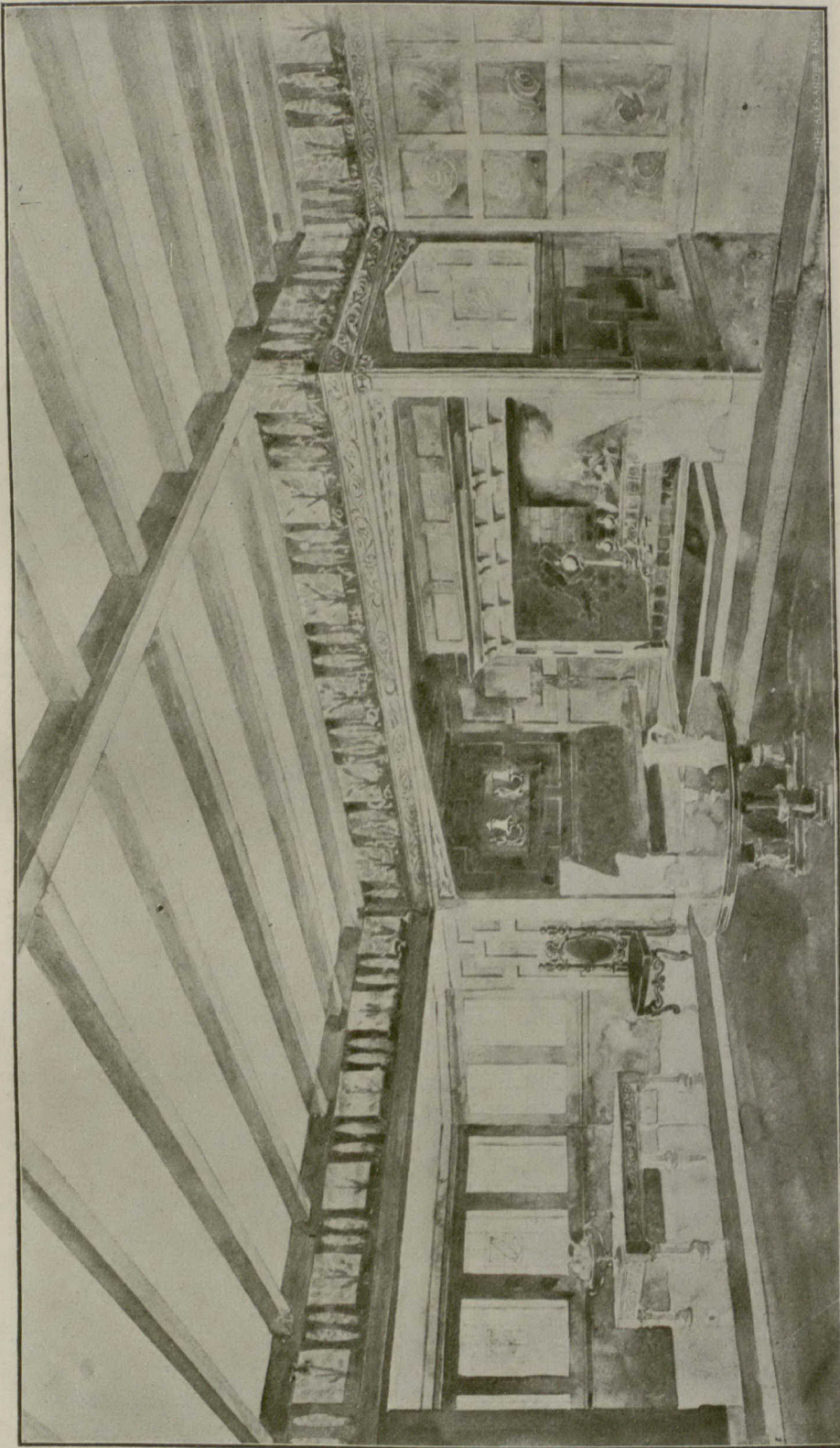
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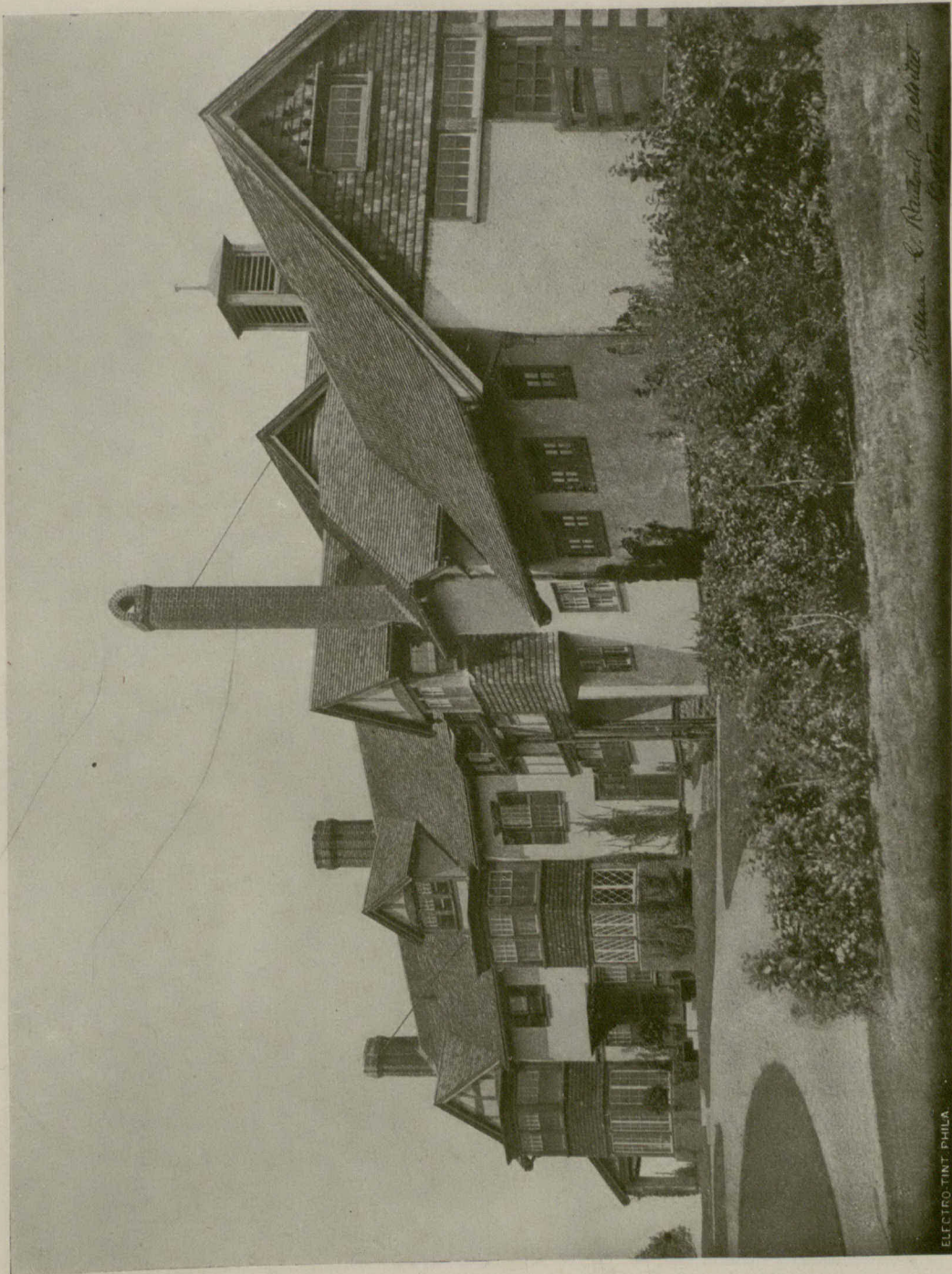
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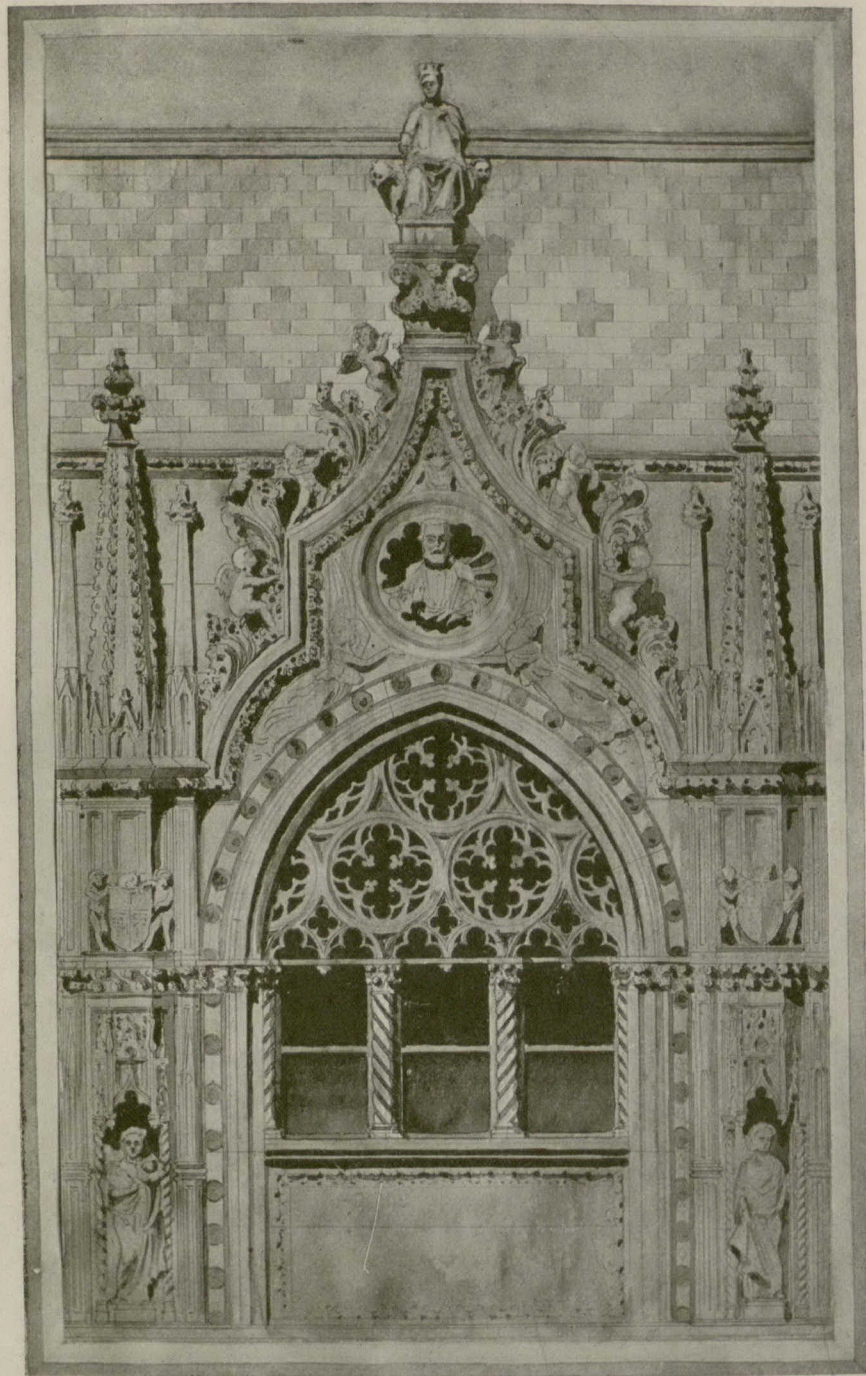


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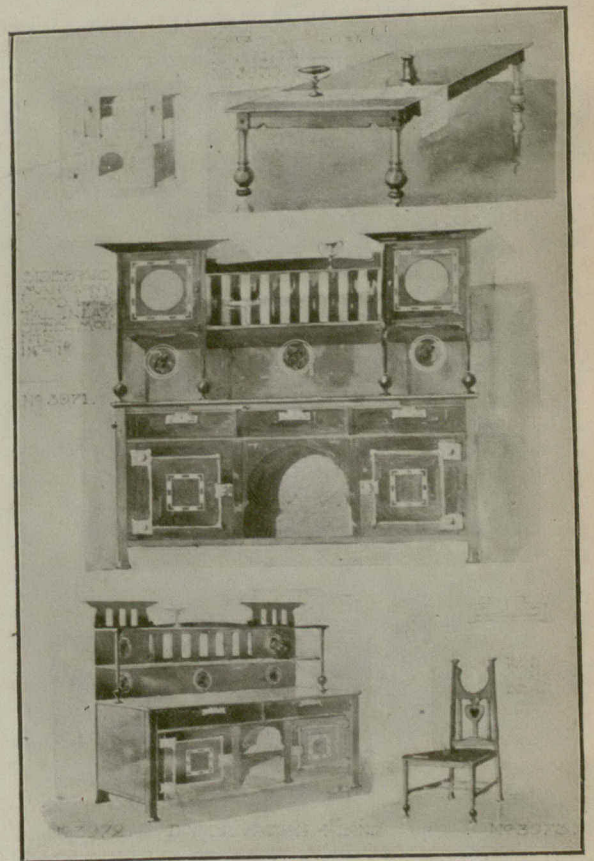
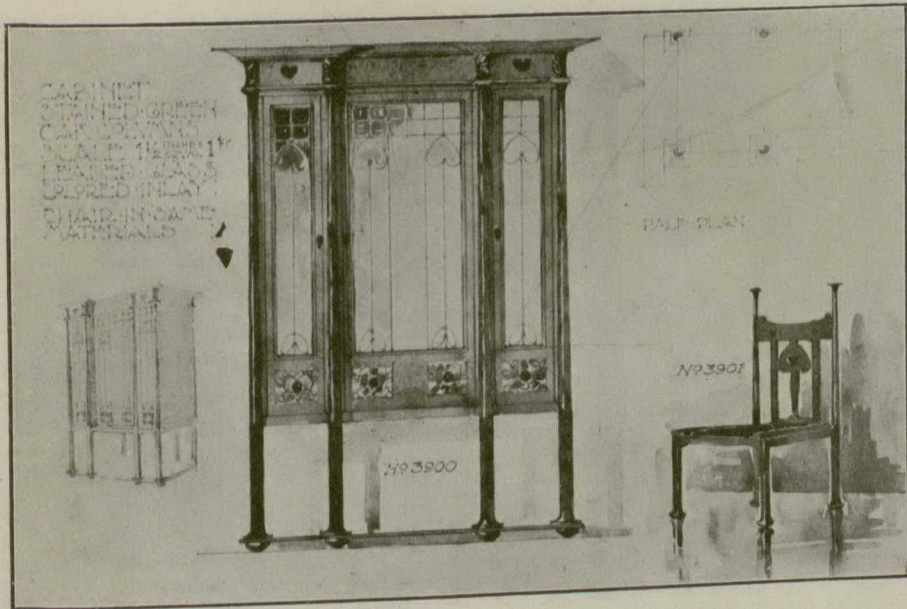
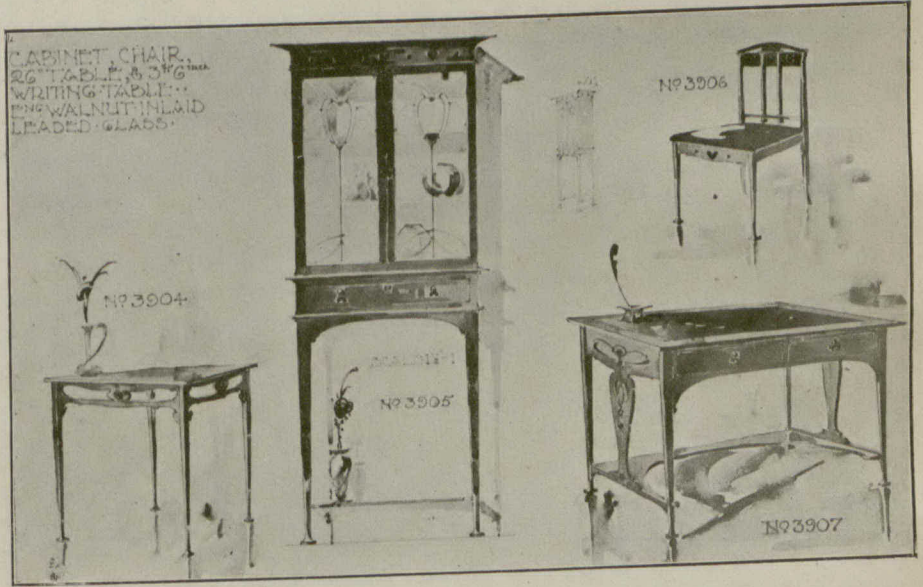
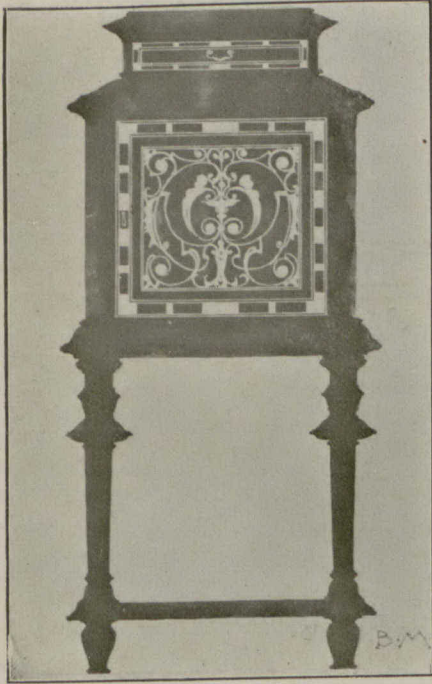


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NOTES.

A meeting of the representatives of the local lime manufacturing companies was held in Toronto last week at which the advisability of substituting coal for wood fuel, was considered.

The imperial Plaster Co. have succeeded to the business of Mr. W. A. Bradshaw, and are erecting a new factory near the King street subway, Toronto, for the manufacture of Fibrous Plaster. It is the intention to also establish a factory in Montreal. The Company have taken an option upon a gypsum quarry situated between Dunnville and Cayuga, with the object of manufacturing plaster of Paris, which is an important ingredient of fibrous plaster.

There are a great many methods of lighting a church or other large auditorium now in vogue, some of them very good attempts at successful lighting, but the system that never seems to fail, and has scored over 20,000 successful installations in churches alone in all parts of the world, is that of the famous Frink reflector, manufactured by I. P. Frink, Pearl st., New York, familiarly known to thousands as "The Great Church Light," a title gained by nearly half a century of work in this line.

A building is now in course of erection in Birmingham, England, that represents some novel features in construction. The

plot has remained unoccupied for many years because the tunnel of the Great Western Railway runs three feet beneath the surface of the ground and will not bear any more weight than is at present upon it. The architect has now planned a building which meets these objections. The building is three stories in height and 25 feet of it will project over the tunnel, carried on huge cantilevers, six in number. A mass of concrete, 16 by 15 feet, and weighing 160 tons, hangs suspended from the other end of the cantilevers as a counterpoise.

A thoroughly artistic piece of work is the brochure of 76 pages, entitled "Gillows: A Record of a Furnishing Firm during Two Centuries". It is an entertainingly written history of a celebrated English firm of furniture designers and manufacturers, and contains numerous illustrations of their skilful work. The business was founded in Lancaster about 1695, by Robt. Gillow, a joiner, and has attained large proportions and a world-wide reputation. The factories of the firm are still at Lancaster, with show rooms in Oxford street, London. The latter were established about 1740 in what was then almost in the country. The record of this firm is unique. It embraces an important period in English history and the most important developments in furniture design.

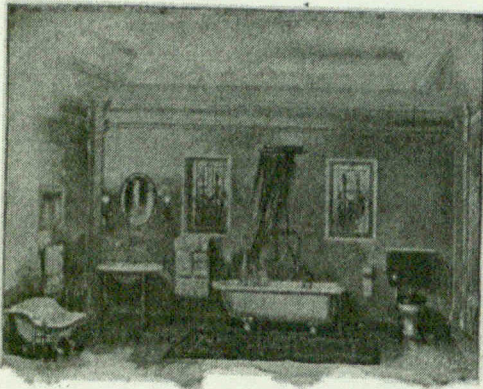
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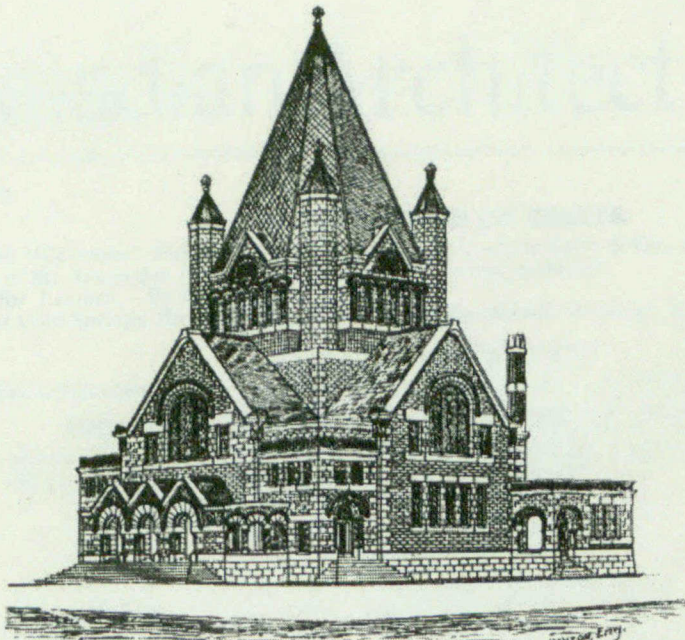
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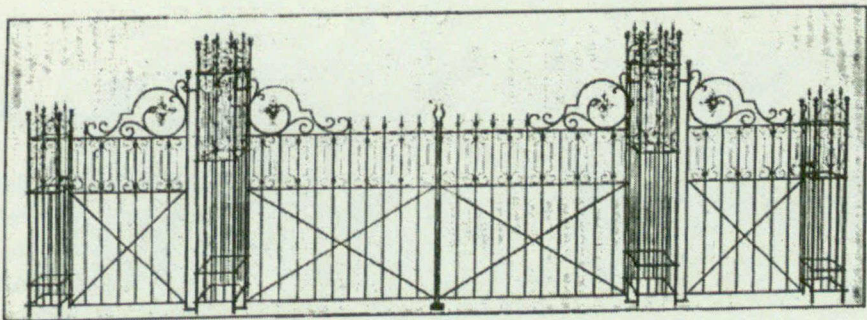
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VICTORIA BUILDERS' EXCHANGE.

On Thursday, April 23rd, the contractors and builders of Victoria, B.C., held a meeting the object being to form a Builders' Exchange. There was a large attendance and it was agreed to organize and form an Exchange to be known as the Victoria Builders' Exchange. The following officers were appointed: W. D. McKillican, chairman; E. W. Whittington, secretary; Thos. Catterall, treasurer.

NOTES.

Our readers will no doubt be interested in the announcement in this number of the Canada Supply Co. of Windsor, Ont., referring to an entirely new departure in roofing materials in Canada.

A second and enlarged edition of Fred T. Hodgson's book on Estimating Frame and Brick Houses has been published by the David Williams Company, of New York and is sold at \$1.00 per copy. The book contains numerous scale drawings and other illustrations.

The Otis Elevator Company, of New York, have announced their intention of putting up a large factory in Canada for the manufacture of Otis elevators. Pending the selection of a suitable location, and the erection of a factory, they have leased the elevator plant of the Leitch & Turnbull Company, Limited, at

Hamilton. It is understood that when the new factory is in operation, the Leitch & Turnbull Company will act as Western selling agents for the Otis Company.

The statue of Liberty Enlightening the World, which stands at the entrance to New York Harbour, was the first work which brought M. Eiffel into notice. When several admirers of America in France resolved to present it with a colossal statue that would be symbolic, M. Bartholdi, the sculptor, was invited to prepare the model. After many consultations it was determined that the figure should consist of a number of plates of copper, which were to be riveted together so as to form an exterior covering for a skeleton consisting of lattice girders. The designing of the interior structure was left to M. Eiffel, and his success led to his connection with the Eiffel Tower and his subsequent prosperity. But for some unknown reason says the Builders' Reporter there was no great welcome for poor Liberty when she crossed the Atlantic. She was treated as if she were a white elephant, and was made a *casus belli* between various departments. At present we believe the War Department has charge of the gift. Mariners do not care for lights of a novel kind, and the flaming torch of Liberty is said to be of no avail. Orders have therefore been given for the light to be extinguished. The copper needs cleaning, and possibly the air may have injured some of the plates. It will not be complimentary to Frenchmen if their offering, which is the biggest statue in the world, should become a ruin.

EXAMINATION TO QUALIFY FOR ASSOCIATESHIP
IN THE
ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The Royal Institute of British Architects desiring to give facilities for those in the Colonies to qualify by examination for associateship in the R. I. B. A., will hold the second examination from July 4th to 10th, 1902, in Montreal. Applications, fees and probationary work must reach London not later than May 5th, 1902. Intending candidates who must be over 25 years of age, can obtain application forms and copies of the previous examinations on application to

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Since the experiments made in 1878 by Flugge on the quantity of air that passes through the walls of a room and produces what has been called "spontaneous ventilation," it has been believed, says the Revue Scientifique, that for small rooms with reasonably tight walls, the air is renewed in the proportion of 0.077 of the volume per hour and per degree (Centigrade) of difference between the inside and outside temperatures. For instance, for a difference of fourteen degrees C, (25.2 degrees Fahr.) the entire air would be renewed in one hour. Experiments to verify the exactness of these figures have been made by H. Wolpert,

who has determined hour by hour the proportion of carbonic acid gas contained in the atmosphere of an empty room, the measured diminution enabling him to show the activity of the air, movement inward. The Bulletin des Ingenieurs Civils gives the following results: For rooms with a capacity of sixty cubic metres (about 2,000 cubic feet), with masonry walls covered with paper, the hourly co-efficient of renewal was 0.025 per degree of difference of temperature, the actual difference being 12.6 degrees C. (22.7 degrees Fahr.) For rooms with walls covered with oil-paint the co-efficient fell to 0.017, and it rose to 0.053 for ordinary whitewashed walls.

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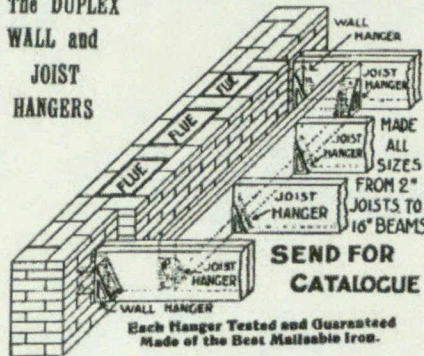
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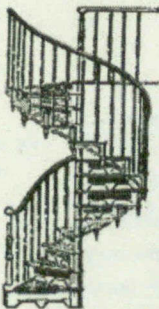
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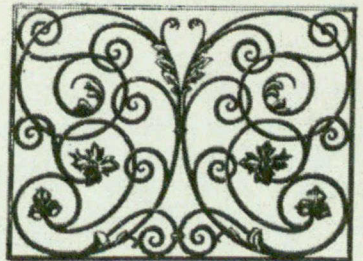
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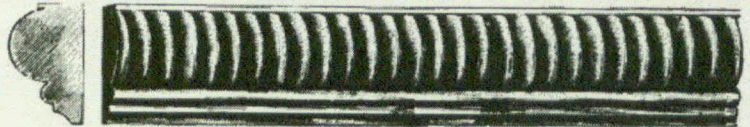


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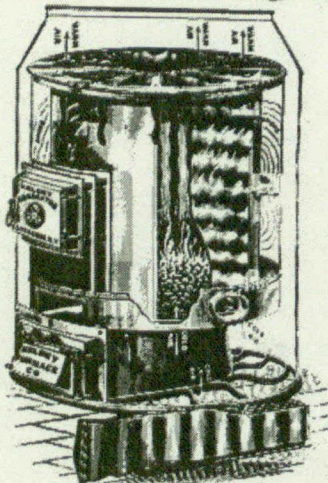


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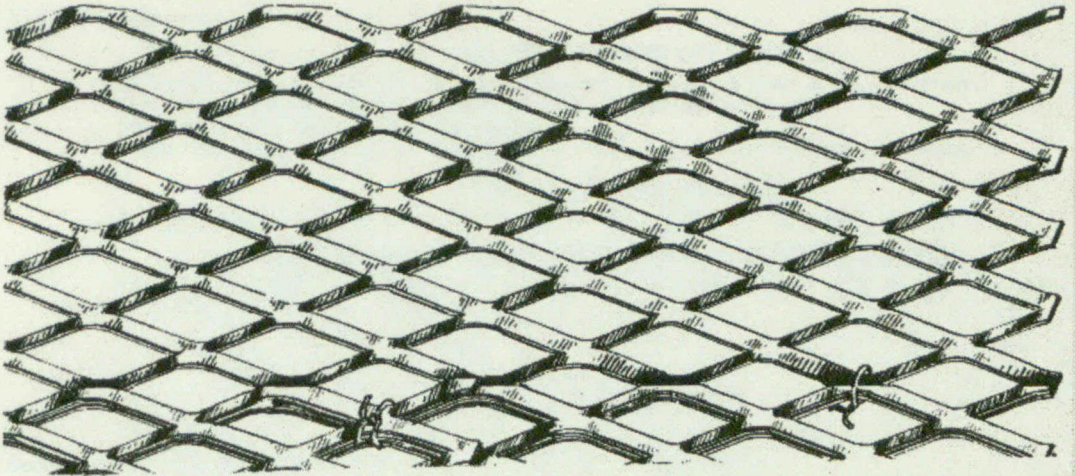
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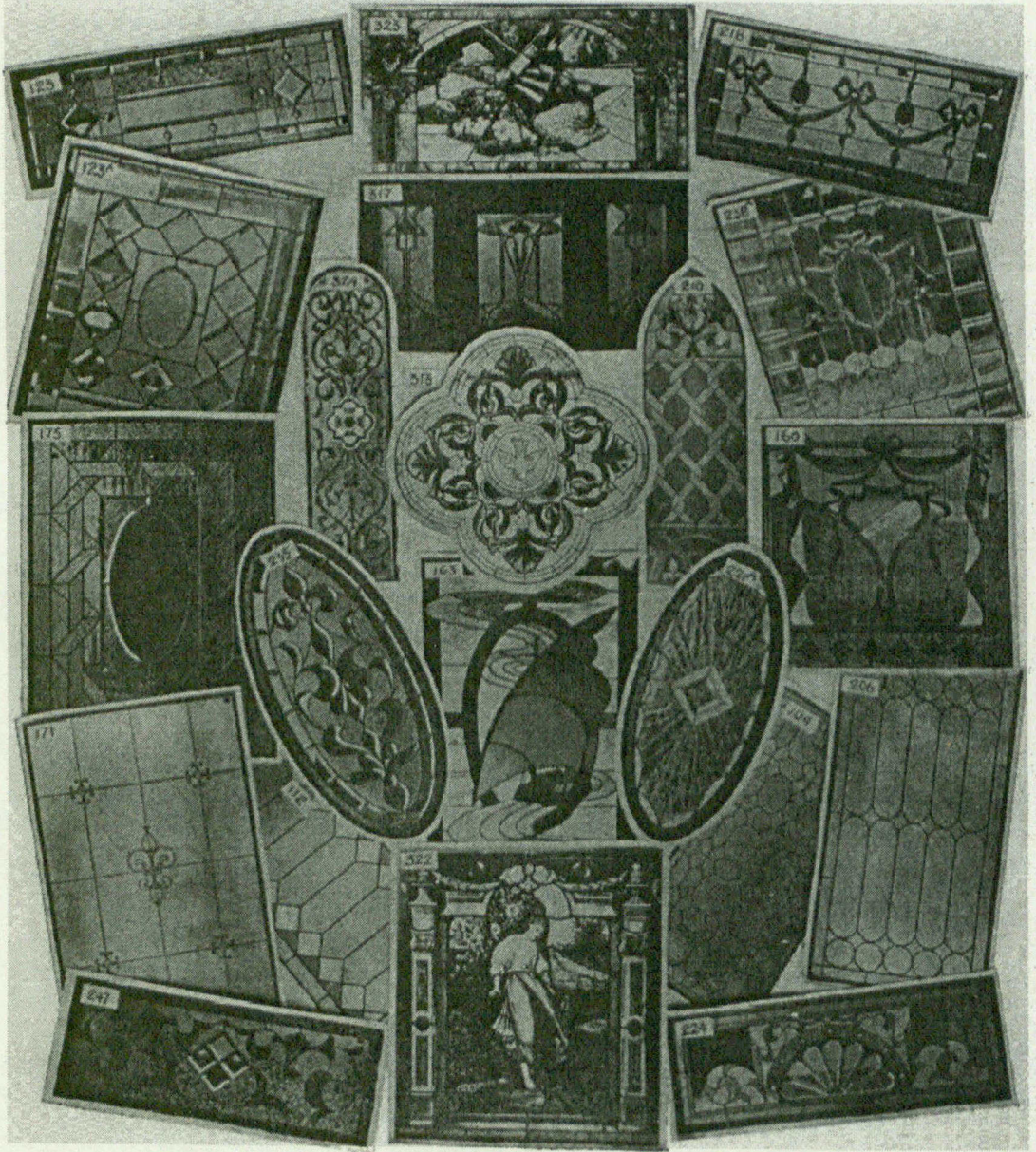
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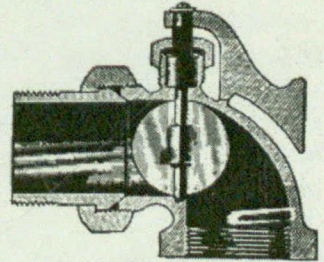
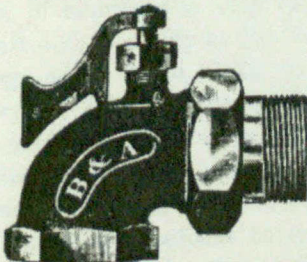
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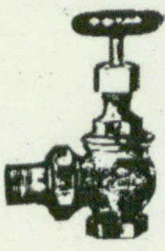
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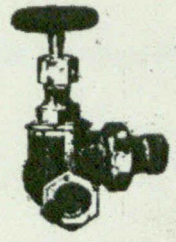
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