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Place of next Convention, Chicago, August, 1893.

Death of Colonel Richard T. Auchmuty.

It is given to but few men to inaugurate, lead and become so identified by years of devoted application to a great purpose as to stand as a synonym for that work, as the name of Col. Richard T. Auchmuty will always be held in regard to trade schools. His death, July 18, is beyond regret, but the foundations of his work are so firmly laid, and he has interested so many minds in the direction in which he labored that the work will go on, and the up-building of trade schools in this country will be distinctively a monument to this great-hearted projector. Colonel Auchmuty was an architect by profession and at the beginning of the war was a partner of James Renwick, of New York. Entering the service he was appointed assistant adjutant-general of volunteers in the Army of the Potomac, and afterward promoted to the rank of colonel, serving until the close of the war in the war department at Washington. He never resumed the practice of his profession, but has always been identified with charitable work. His great success in establishing the trade schools in New York, and his influence upon those established in Philadelphia and elsewhere and the remarkable results which have followed his system are known to everyone who has turned his attention in the direction of manual training.

Architects' Congress and Institute Convention.

The programme for the World's Congress of Architects, which convenes at Chicago during the week commencing July 31, will include the sessions of the twenty-seventh annual convention of the American Institute of Architects. There will be held at the same time the congresses of engineers and also artists, and the opening session will probably be a general one of the arts and sciences connected with building. While many distinguished architects from foreign countries will be present, the sessions will be largely representative of American architects and the larger focus of interest directed upon the architecture of the World's Columbian Exposition. In endeavoring to facilitate to the utmost the inspection of buildings the sessions will probably be short and but one each day. The members of the Illinois Chapter of the American Institute of Architects will constitute themselves hosts as far as possible and in every way contribute to the enjoyment of visitors. The Grand Pacific Hotel has been made official headquarters of the American Institute, while the rooms of the Institute of Building Arts, at 63 Washington street, will be a pleasant place for meeting and registry for architects, the display of building materials there being especially interesting to foreign architects. At the several sessions of the congress distinguished architects will be invited by the chairman, Mr. D. H. Burnham, to preside. In entertainment the committee in charge have not reported definitely, but promise agreeable diversion. The proceedings of the congress will be issued by the World's Congress Auxiliary in pamphlet form. The business meetings of the Institute will be held on Monday and Tuesday. The formal opening of the congress will occur at 2:00 P.M. on Monday. About thirty papers will be read during the sessions of the congress, of which there will be one each day during the week. The subjects will range from structural steel to polychromatic treat-

ment, and the readers from the United States to Japan. It is not expected that the attendance will be large, but the results of the record will be vital and lasting.

Two World's Fair Chiefs Resign. Indicative of the final completion of the World's Columbian Exposition buildings and their decoration is the resignation upon July 1, of the chief of design, Mr. Charles B. Atwood, and Mr. F. D. Millet, chief of color. Mr. Atwood came into his connection with the Fair soon after the first general conception had been decided upon, and his work throughout his administration has been governed by a high intelligence and a perfect knowledge of the nature of design. While his office was to pass upon all designs offered for any erection within the Exposition grounds, his work did not rest here, for his abilities as a designer were too valued and the demand for their use too great to allow his work to remain with the inspection of the designs of others. The Art building having been left out of the list at first formulated and divided among the members of the architectural board this was placed in the hands of Mr. Atwood, and the architectural world knows how successfully he accomplished his task. Following this came a multitude of smaller but no less important designs. The Peristyle, with the Music hall and Casino at either end, is his, and in design is not less praiseworthy than the Art building, the balustrades, the pedestals for all statuary, the columns around the grand basin, all were designed by him and all bear the work of exceptional ability in the designer, not only as individual works but in their harmonious relation to their surroundings. Mr. Atwood will take a needed rest and then will appear in private practice. Mr. Millet, who succeeded Mr. Prettyman as chief of color at a time when the coloring of the buildings was in an experimental state, has filled that office with the best of judgment and with practical conception of every problem the work involved. Only one or two examples of Mr. Millet's talent as a painter are found in the frescoes of the building, but in these he has shown an ability equal to that with which he selected painters and designs. Mr. Millet's biography includes the life of a journalist, a soldier and a painter. In this last office, which he filled so satisfactorily, his ability as an organizer became most prominent, his workmen at the close presenting him with a handsome testimonial of their appreciation of the justice with which they were uniformly treated while under his direction.

Columbian Exposition Finances to date. Descriptions and photographs have given to the world some conception of the vastness of the Columbian Exposition enterprise, those who have visited it have found that all previous estimates had to be enlarged, but the only "scale" by which accurate measurement can be obtained is the report of the treasurer, just issued. This report, which shows that the construction expenditures and obligations under contracts (the latter reaching about a million and a quarter dollars), are \$17,516,581. The gate receipts July 1 aggregated over two million dollars, and the receipts for the first half of July aggregate more than one million dollars; thus the million and a quarter indebtedness is now removed and subsequent receipts will apply on stock and other obligations. \$4,390,254.70 were expended in general operating and preliminary organization expenses, which makes the total cost of the construction \$21,906,-

835.70. The operating expenses have been a little over \$1,200,000 for the first two months of the Fair, and now that these have been largely reduced the average expense will, in the opinion of the Council of Administration, be about \$15,000 per day. The board of architects who designed the buildings were paid \$121,830, with incidental fees amounting to \$37,728; the draftsmen's wages were \$172,421, and their material, etc., \$14,628, a total of \$356,607 for architects' services. The landscape architects' services cost \$22,720. The sculpture cost \$350,250, which was divided between about ten sculptors and their assistants. This will, figured broadly, place the total cost of the designing of the buildings, which cost seventeen and one-half million dollars, at \$729,577, or about four and two-tenths per cent upon the cost. It will be remembered that the board of architects when first organized, established the fee for designing to be paid to each individual member at \$10,000, and the most significant deduction from this summing up of the total expenses is that even upon works reaching into the millions, five per cent upon the total cost is not exorbitant, and that in the case of the Exposition buildings about six-sevenths was expended for what would be termed office expenses.

Politics Ruins Public Architecture. While the architects of all countries are viewing the unexcelled panorama exhibited by the "White City" of the Columbian Exposition, they will be astonished that in a country where so artistic a conception can be evolved by native artists—that is so rich in architectural talent—that they find a condition indicative of the direct opposite when they turn to the architecture that belongs to the public. They turn to the largest public building in the West and they find it crude in design, which they may forgive, but a veritable ruin in construction, and learn that this condition has existed since its walls were first completed. In looking for causes they find the entire public policy regarding things architectural based upon politics and the lobby. A policy that appoints a supervising architect from among those who will work for \$4,500 a year and then through interest rather than merit, and led by a President who discharges the best servant the department ever had and one whose knowledge, extending over a quarter of a century, was vitally necessary, because some politician wanted his place for a favorite. This system not only obtains in the local office at Washington but reaches to the furthest boundaries of the country. The latest example of this worse than schoolboy management of public affairs is the recent removal of the superintending architect of the government building at St. Paul. A thorough architect of more than local reputation and a gentleman, Mr. Cass Gilbert, is removed because his opinions in politics were said to be different from that of the party in power. It matters little that his successor, Mr. Bassford, is an architect of ability, for the ridiculous position in which such acts as these and the results of the general policy which governs them places our government may well astonish visitors from foreign countries, where their public architecture is the most creditable. But there an architect is not chosen for his political opinions, and instead of improving, the disposition to pursue this policy has never been so great as it is with the present head of the government who in philistinism is only equaled by his imitator, the chief executive of New York state.

DIRECT METHODS IN ARCHITECTURAL PERSPECTIVE.

BY CHARLES E. ILLSLEY, A.M., C.E., ARCHITECT.

CHAPTER VI—Continued.

FROM these phenomena, which might almost be called optical illusions, but for the fact that no one is deceived by them, it follows that in a picture which shows things as they appear rather than as they are, every receding line must be drawn toward that vanishing point to which every line parallel with it converges. Indeed, linear perspective might be fairly well defined as the science and art of locating vanishing points.* These being obtained, we have only to ascertain a single point of any line whatever, and it can at once be drawn by joining this point with the proper vanishing point. Vanishing points in perspective diagrams are often designated by V, with a small letter attached, as Vr for vanishing point of lines running to the right, and Vl for those running in the opposite direction.

84. It has been remarked (Section 71) that a correct perspective would be obtained by joining with lines the points where visual rays pierce the plane of the picture. These rays are shown in Fig. 99 (reproduced from the June issue of THE INLAND ARCHITECT). The visual ray from the top of the nearest cross pierces

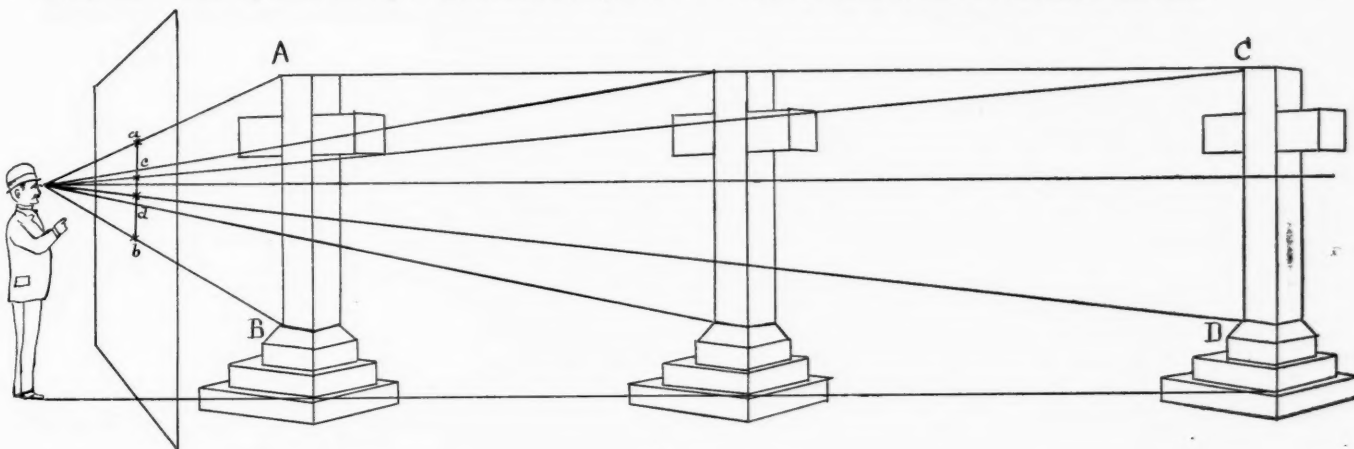


FIG. 99.

the picture plane at *a*; the ray from its base pierces at *b*. Therefore the line *ab* in the picture plane is the perspective of the edge *AB* of the nearest cross. In like manner we find *cd* in the picture plane to be the perspective of the same edge of the farthest cross. Moreover, the line *ac* in the picture plane is the perspective of the horizontal line *AC* joining the tops of the crosses. Were the point *C* more distant, it is evident that its perspective *c* would be lower; were it infinitely distant, its perspective would fall to the horizontal line from the eye which represents the normal line of vision (Section 74). The point where the normal line of vision meets the plane of the picture is commonly called the *Point of Sight* of the perspective. The same term has another

the dotted line represents the normal line of vision, the single lines are plans of visual rays from the eye to points on the rails *A, B, C, D*, etc., taken for convenience so that the distance *CD* is twice the distance *BC*, and four times *AB*. The visual rays are conceived to be vertically above the lines *SA, SB, SC*, etc., which are their plans (Section 19), just as the eye of the observer is vertically over *S*; the rails themselves are conceived to be on a plane at the level of the foot of the observer. Hence the visual rays are considered in reality to slant from the eye down to the rails. This will not affect the plans of the rays, but it must be noted that the rays pierce the picture plane at varying heights exactly over the points *a, b, c*, which are, therefore, the plans of these points of piercing. The points themselves will be referred to by their plans, *a, b, c*, etc.

The point *A*, where the rail itself meets the picture plane, is its own perspective, *b* is the perspective of *B*, *c* of *C*, etc. In like manner *A' b' c'*, etc., are perspectives of points on the lower rail. Hence *Ab* is the perspective of the length *AB* of the rail, *Ac* is the perspective of *AC*, and *Ad* of *AD*. We thus find that the perspectives of our rails on either side are directed toward the point of sight (Section 84) and approach it more and more closely as we take points more and more distant on the rails.

86. Fig. 105 is similar to Fig. 104 except that there is a double track and both are oblique to the plane of the picture. Our dotted line, parallel with the rails, now denotes an oblique line of vision (Section 74) and the point *V* where it pierces the picture plane is an oblique point of sight or vanishing point. It will be easy to see how of necessity the visual rays from distant points of the rails must pierce the picture plane nearer and nearer to *V*, while they can never pass it and will actually reach it only when the point of the rail from which the ray proceeds is infinitely distant.

It may also be noticed that while the perspectives of the rails approach the point of sight and draw nearer and nearer as the length of the rail increases, the rate of approach rapidly dimin-

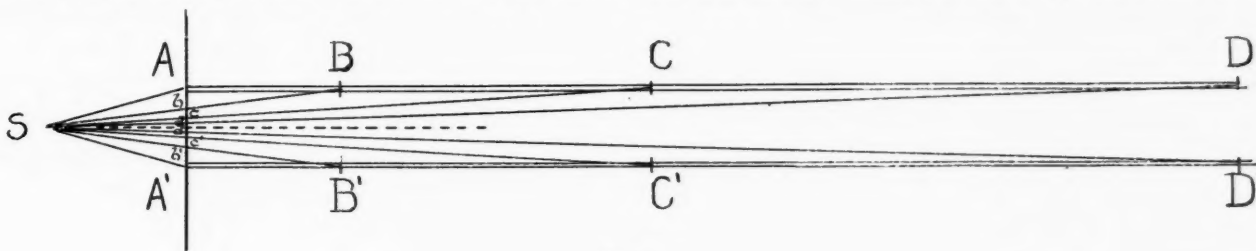


FIG. 104.

ishes. In Fig. 104 the perspective of *AB* is *Ab*, which is one-half of the distance from *A* to the point of sight. But *b c*, the perspective of *BC*, is about one-third of *Ab*, although *BC* is twice *AB*. *CD* is four times *AB*, but its perspective, *cd*, is scarcely visible.

Now, since Figs. 99, 104 and 105 represent general principles applicable to any conceivable line of vision and every conceivable system of parallels, we find by the geometric process of tracing the paths of visual rays to the eye that the perspective of any receding line must be drawn toward that point where a line of vision parallel to it pierces the picture plane. If the receding line be normal to the picture plane (Section 74) this point is the point of sight; if oblique, the point is an oblique point of sight, or vanishing point (Section 79).

87. The term *receding lines* has been used hitherto somewhat

* This definition should be qualified by the remark that among the methods about to be described are numerous expedients for drawing receding lines directly without resorting to vanishing points.

† It has been proposed to call this point the Center of the Picture, meaning not so much its geometric center as its center of interest. This is apt to produce more confusion, however, than the retention of the old term, Point of Sight, usually denoted by the familiar initial *P*, and commonly defined as the point on the horizon of the picture directly opposite the eye of the observer. It is sometimes also called the Principal Vanishing Point, designated as before by *P*.

freely to designate such as are not parallel with the plane of the picture, and therefore, seem to "run into the picture," as is sometimes said. In perspective we consider but two classes of lines, those parallel with the picture plane and those not parallel, the perspectives of the former being parallel with the lines themselves and the perspectives of the latter converging toward vanishing points. Strictly speaking, of course, every line is a receding line, for there

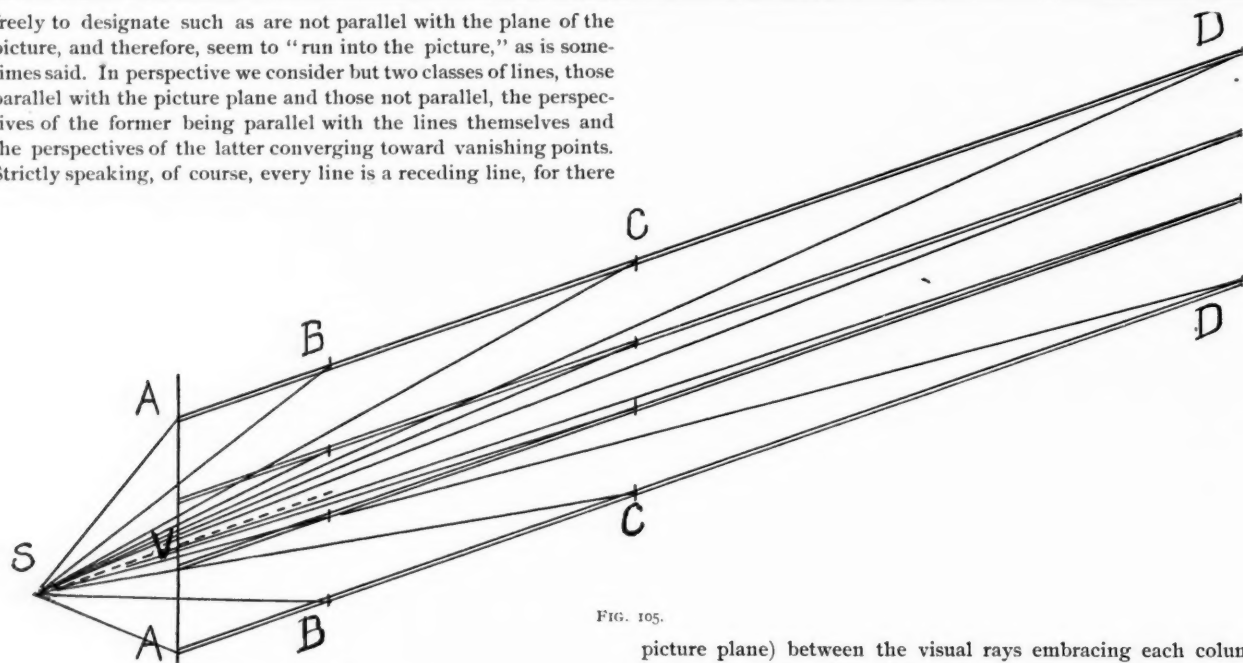


FIG. 105.

will be one point of it nearer the eye than any other, and beyond this point the line will recede as it extends in either direction.

88. There is likewise an error involved in the assumption that objects appear to the eye as if they were depicted on a transparent plane, called the plane of the picture (Section 24). In fact they must be considered as displayed on the inner surface of a concave sphere, of which the eye is the center, whose surface is equally distant in every direction, and on which all apparently straight lines are really circles or parts of circles. Where objects have considerable lateral extension the error of constructing their perspectives on a plane surface becomes noticeable, and has compelled a method of adjustment variously called cylindrical or

picture plane) between the visual rays embracing each column becomes actually wider with each advance. The intercept a is nearly three times as wide as e ; hence in our perspective the most distant column will be drawn nearly three times as thick as the nearest one. The correct relative widths of these columns would

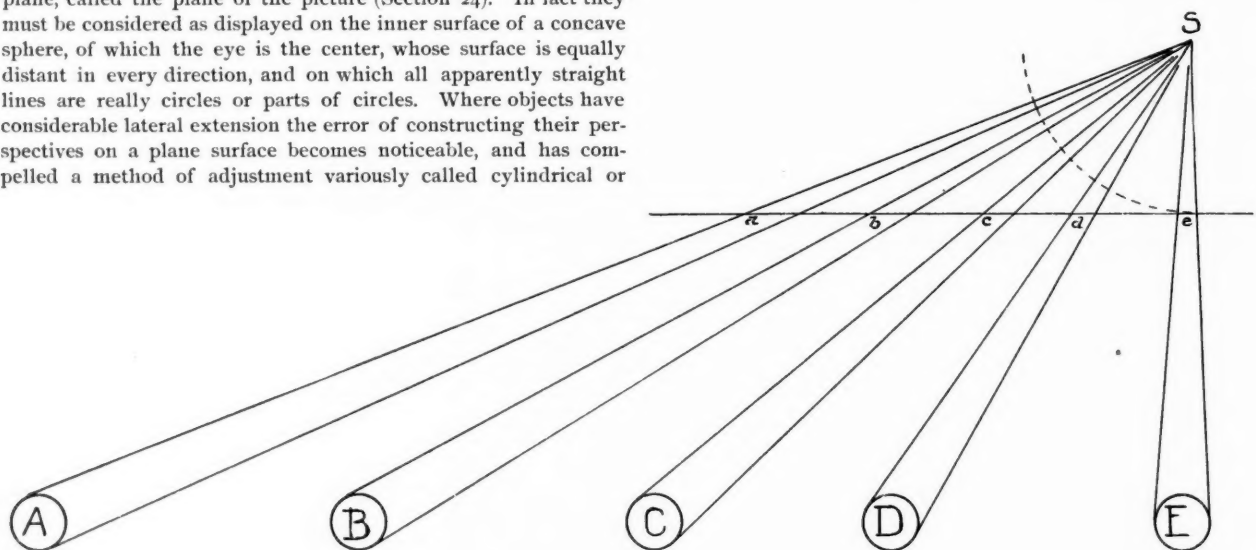


FIG. 106.

panoramic perspective. In illustration of the above, Fig. 106 represents in plan (Section 19) a row of columns, A, B, C, D, E, of uniform diameters, with their perspectives obtained upon a picture

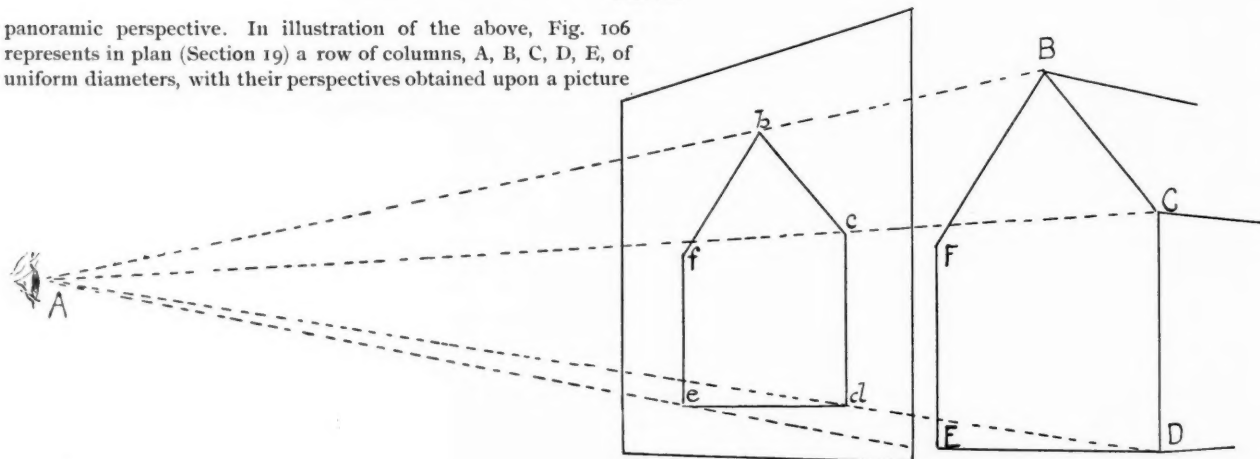


FIG. 107.

plane ae , from a standpoint S . While the more distant columns should be narrower in perspective than the others, it will be seen that they will actually appear wider in our picture. As we proceed from E toward A the intercept on our line ae (representing our

be obtained upon a circle, as shown by the dotted line, with S for its center and radius Se .

89. The same principles would apply to vertical lines, of course, all of which in nature must in fact seem to converge if actually

parallel. But the labor and difficulty of making perspective views would be greatly increased by any attempt to take into account the theoretical convergence of vertical lines; and in architectural work the horizontal and other lines parallel with the plane of the picture are usually so short that the error involved in making their perspectives parallel with the lines themselves rarely offends the eye. Still it is well to bear in mind the fact that for reasons of convenience our perspective practice is "conventional" and more or less inaccurate in the respects mentioned above.

90. Fig. 107 represents a picture plane parallel with the end of a house, all whose lines therefore are parallel with the picture

pass through and vanish in the point where a line of vision parallel with the real line (Sections 76 and 86) pierces the picture plane, the methods of architectural perspective mainly rest. In illustration of the best modern practice among architects, Fig. 108 is taken from Plate I of "Perspective for Beginners," by F. A. Wright, architect.*

The plan of the house is placed above the sheet on which the perspective is to be drawn, and so adjusted that a prominent corner shall just touch the line which represents the plane of the picture. The elevations to be used are drawn at either side. On the perspective sheet a standpoint, P^s , is selected, and lines drawn

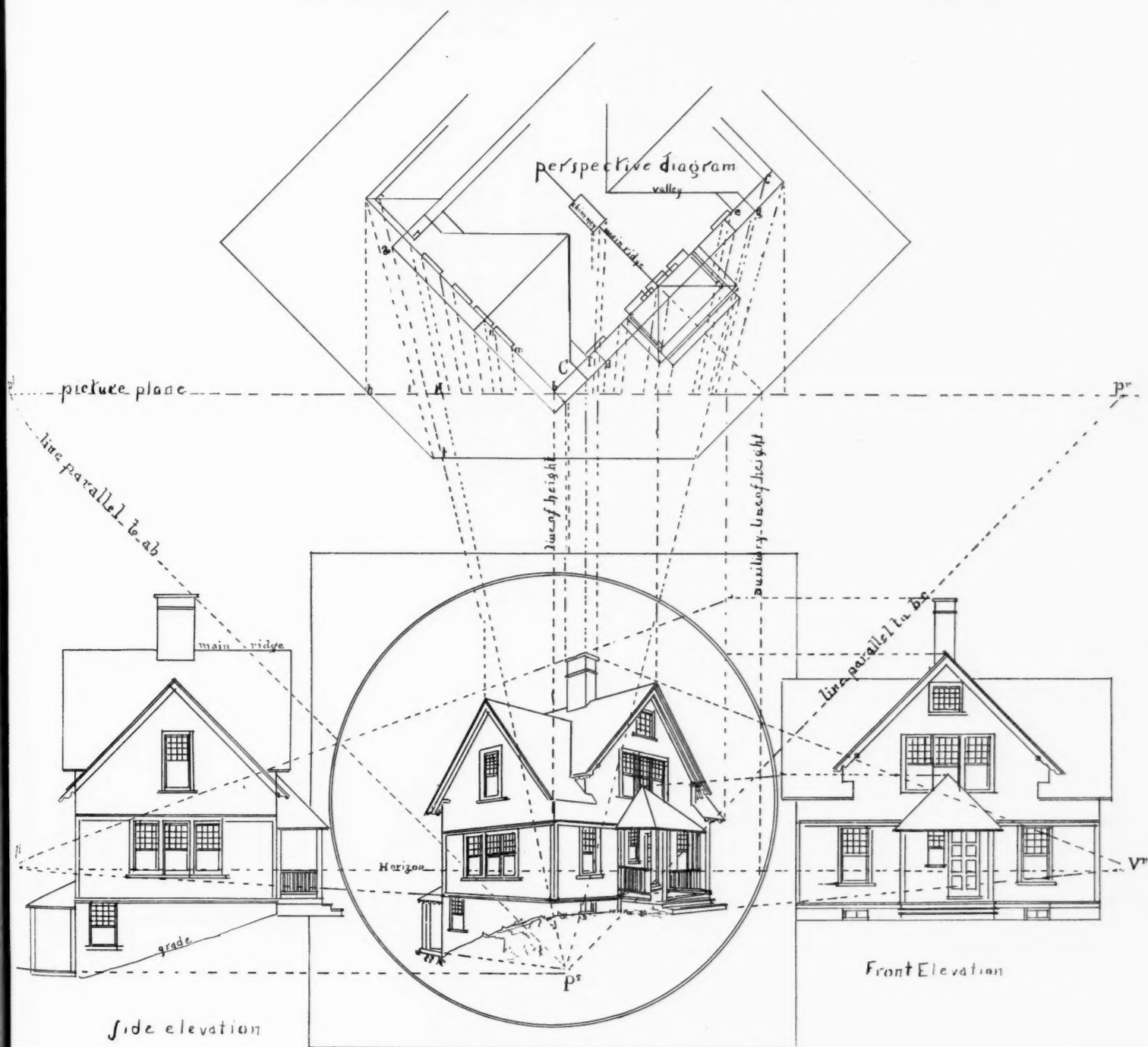


FIG. 108.

plane. The small letters b, c, d, e, f , designate the perspectives of corresponding points in the house. ABC is a triangle in which the line bc represents the section of the triangle by a plane parallel with its base BC . The intersection of any triangle by a plane parallel with its base is parallel with the base. Hence bc , the perspective of BC , must be parallel with BC , and likewise with all the other perspectives cd, de, ef, fb .

91. Upon these two principles, that if lines are parallel with the picture plane their perspectives are parallel with themselves, and that all other perspective lines, if prolonged far enough, will

as shown radiating from P^s to the various points of the plan. These lines (dotted) are the plans of visual rays (Section 85). Through the points where they cross the "picture plane," vertical lines are drawn which form the perspectives of the corners, etc., of the house. The receding lines of this house are chiefly in two systems, each making an angle of forty-five degrees with the plane of the picture and running right and left. For each system a vanishing point is required. Each is found by drawing a line through P^s at forty-five degrees right and left with the picture

* William T. Comstock, New York, publisher.

plane. One line, $P^s pl$, is the plan of an oblique line of vision parallel with all horizontal lines in the left side of the building; the other, $P^s pr$, is a line of vision parallel with its right side. The horizon is denoted by $Vl Vr$, and the left vanishing point of horizontals, Vl , is on the horizon exactly under pl . Vr is correspondingly on the horizon under pr . All horizontal lines in the left face of the building converge in the perspective toward Vl ; those in the right face converge toward Vr .

The heights from the elevations at either side are taken over to various "lines of heights" and transferred to the perspective of the respective lines by lines converging to Vl and Vr . These processes are shown in part by dotted lines—a greater number would confuse the plate.

92. This method has the advantage over all others of being universally applicable. It is believed to answer for the solution of every problem in linear perspective which can be solved at all. But for the general purposes of architectural design it is comparatively crude, indirect, cumbersome and liable to error. The selection of the point of station, P^s , the drawing of radial lines (plans of visual rays, Section 85) and the transfer to the perspective sheet of the points where these rays pierce in plan the plane of the picture, are generally unnecessary, and they are unscientific in the same sense in which it is unscientific to work out by counting on the fingers problems which with the multiplication table can be solved at once.

93. For the ordinary requirements of architectural practice the perspective sheet itself will yield all the data necessary without the use or mention of standpoint and picture plane, and without the drawing in advance of either elevations or plans. Since, however, the plans are arranged chiefly with regard to convenience and to constructive features, there is little occasion for studying them out in perspective, and, were this done, they would be unintelligible to clients until translated. Hence they are best elaborated in the usual way. But from this point the exteriors can be designed to best advantage primarily in perspective, and in most cases this can be done with entire ease by short, direct and precise methods and without recourse to any data which the perspective sheet itself does not furnish.

94. The same methods provide for the no less important problem of translating into orthographic plans and elevations the designs first elaborated in perspective. To draw elevations and then put them into perspective "to see how they will look," as is the traditional and time-honored custom, instead of first drawing the perspective till its looks are satisfactory and then translating it into plan and elevation, is sinister bungling in place of dexterous skill. If the elevations when thrown into perspective do not please, the process must be repeated again and again. With inexperienced draftsmen this is a laborious and often very unsatisfactory operation.

95. As a rule the elementary principles of perspective and their natural developments furnish to the architect ample data for working out on the perspective sheet itself without resort to any other, all his exterior or interior designs, and this can be done readily and accurately with any desired alteration and adjustment till the effect is satisfactory: then this can be translated directly into plan and elevation with equal certainty and ease. Moreover, in most cases this can be done without developing any new theorems, by merely applying in a new direction a few simple principles of descriptive geometry. Since the established method furnishes a certain, though laborious and unskillful solution of perspective problems, draftsmen everywhere seem to have been satisfied to use it, instead of developing the higher resources of perspective science.

It should be added that the direct methods are not only shorter in many cases and more convenient, but by reason of their directness they are less liable to error than the usual procedure.

(To be continued.)

THE enlarged solar print of J. Carroll Beckwith's decoration for one of the domes of the Liberal Arts building at the World's Fair, published among the others in the July *Century*, was sent to Mr. Beckwith, in care of his banker, by the *Century* while he was traveling in Egypt. It followed him to the first cataract of the Nile, where it was retouched by him on board his dahabiyeh, remailed to the Century Company, and reached its destination in good condition in something over six weeks from the time it left New York.

ARCHITECTURE AT THE WORLD'S COLUMBIAN EXPOSITION.

PART I.

ARCHITECTURE has been by common consent admitted to be the most prominent feature and crowning glory of the Exposition. This was assured long ago when the late John W. Root was appointed consulting architect to the Board of Directors. While none of the plans that he suggested, either for the lake front site or that which was subsequently accepted, were carried out, they were the groundwork of the discussions of the board of ten architects, chosen upon the nomination of himself and Mr. Burnham, who subsequently designed the main buildings. He was with them in their councils, and was ably seconded by the veteran landscapist, Frederick Law Olmstead. The main features of the whole scheme were decided upon before his sudden death, and have been adhered to throughout. There have been no changes, but many additions to it. Of the latter, the Peristyle flanked by the Music hall and Casino, the Fine Arts Palace and the Festival hall, are the principal features.

No part of the Exposition has been so much written about or illustrated as its architecture, and by that it will be best remembered. Heretofore, at all international fairs, the architectural treatment of the main buildings has been a secondary consideration in their construction. The best available artistic talent has not been sought or obtained. Such buildings have generally been the work of engineers, and architecture has only been invoked as a cloak to hide what was hideous and offensive. In some cases, as at Philadelphia, an architectural effect was sought for, but as competition was resorted to the natural result was failure. There was a reasonably good effect in the architecture of the main building at Philadelphia, but in all the others it was extremely bad. The beauty of the first exposition building at London, in 1851, the "Crystal Palace," as it was rightly called, was more a matter of accident than otherwise. It did not pretend to be other than a great conservatory, but it was designed by a man who was a great genius in his way, and not a professional architect. He has been immortalized by it. While it was not in any sense an architectural structure, it proved to be a great educator and called attention to the fact that there were great capacities for beautiful effects in other materials than brick and stone. Its influence has ever since been felt in architectural development. The first exposition in Paris, on the Champs-Élysées, gave us a façade in the best typical French style of the period, which has been preserved. The last Paris exposition was an attempt to do architecturally what has been a success at Chicago, but the best available talent was not employed. Engineering, as always before, was predominant, and but for the fact that the group was helped greatly by the Trocadero having been incorporated with it, there would have been little to exert an influence or perpetuate a memory. It is natural that France should be content with the glories of her architecture, ancient and modern, and rest on her laurels. Hence the projectors of her last great effort did not feel that incentive which actuates us today to use the art of architecture as a great educator. They could point to their monuments dating from the Roman period to the present day as exemplars of all that was great, good and beautiful.

But the directors of the World's Columbian Exposition did not err in selecting their earliest advisers—nor did they fail to carry out to the utmost extent every suggestion offered to them. There has been no bickering or halting. The architects selected for their work have all done their best. The engineering work, magnificent in itself, is all subordinated to the architectural work. There have been no blunders, no scandals. The work is complete and finished. The sculpture is in place on the buildings and the decorative paintings are now revealed. Only recently the scaffoldings in the dome of the Art Palace have been removed, and the competition between the designers of the interior of the domes of the Administration and Art buildings, before the jury of the world, is the greatest the world has ever seen. Thus far but little has been said or printed about the interiors of these structures. The exteriors have caught the eye first, but these interiors have entailed the greater study. They are now ready for all students of art to enter. They will be treated of in these pages hereafter more in detail.

As has been said already, it was the settled purpose from the day that John W. Root was appointed as consulting architect, to make everything at the Exposition an exhibit. This has been

accomplished. The architecture of the buildings is the leading and most prominent exhibit. In order to make this general, a censorship was set up in the construction department over all state, foreign and concessionary buildings, over all effects of color and treatment of grounds, and this has been carried out in almost every case. Of course there are a few exceptions, and it has been impossible to prevent a limited number of architectural monstrosities from appearing in the park; and these we can afford to pass in silence. But the main idea was readily taken up by most of the states and foreign countries.

Among the states those that have done greatest honor to themselves and the Exposition are New York, California, Ohio, Massachusetts, New Hampshire, Iowa, Virginia, Idaho, Colorado, Texas and Louisiana.

Many of the foreign governments were not slow to appreciate the importance of the Exposition as a contest in architectural design. In this Germany has taken the lead, with a building which in its main features is a typical German Stadthaus of the fifteenth century; but in its construction, nearly all of the materials were wrought in and brought from Germany—nearly every method of building now in use in that country is exemplified.

England sent the designs of an Elizabethan manor house, by one of her ablest architects, which were faithfully executed by Chicago mechanics.

The Swedish building is a typical one, grandly picturesque in design, built entirely of Swedish materials, among which are incorporated as exhibits some examples of the modern manufactures of that country, which will be of interest to all architects.

Japan has constructed a typical building to illustrate three periods of ancient Japanese architecture entirely as an exhibit and a present to the city of Chicago, all of which has been described in these papers.

Even Ceylon, an English dependency, has erected a building which is of great interest on account of the native carvings that it contains.

It is our intention to illustrate the Exposition by a select collection of photogravures of completed buildings and parts of buildings, which have been specially photographed for the purpose. A few of these appear in the present number, and they will be continued as our space admits.

The architectural setting of the exhibits, both American and foreign, will be another feature of our illustrations. A vast amount of study has been given to many of these, and the memory of them ought to be perpetuated.

If it is possible to do so, we will illustrate also a number of architectural night effects, which the arrangements of the Exposition for lighting make practicable.

(To be continued.)

FIFTH ANNUAL COMPETITION FOR THE ROBERT CLARKE TESTIMONIAL.

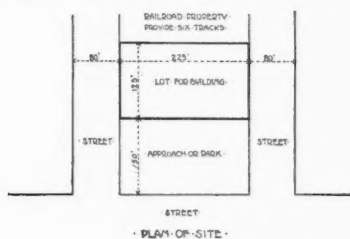
THE conditions for the fifth annual competition for the Robert Clarke testimonial, under the auspices of the Chicago Architectural Sketch Club, of Chicago, which have just been issued, are as follows:

CONDITIONS:

The author of each design must execute all drawings without assistance, and non-adherence to these conditions will cause the rejection of the design or designs in question.

The competition is open to architectural draftsmen under thirty years of age, residents of the United States, and not practicing architects.

The awards will be made by the Adjudicating Committee on the "Robert Clarke Testimonial" competition, and are: First



prize, gold medal; second prize, silver medal; third prize, bronze medal.

The prize drawings are to become the property of the Chicago Architectural Sketch Club.

PROGRAMME:

A design for an elevated railroad terminal station for suburban traffic, in the business center of a large city.

The building is to have three general stories, the first or ground floor to contain a lobby, stairways, offices and all necessary conveniences.

The second floor is to be on a level with the platform, and to contain one general waiting room, one waiting room for women and one for men, toilet rooms, ticket office, depot master's office and necessary stairway to reach the railroad company's offices on the third floor.

The building can be smaller than the lot outlined on the accompanying diagram, and the space in front is to be used as an approach or park.

The drawings are to consist of the following, their arrangement and the number of sheets being left to the discretion of the competitor:

First or ground floor plan, second floor plan, front and side elevations, transverse or longitudinal section, perspective and block plan.

Size of sheets to be 22 by 28 inches.

Plans, elevations and section to be drawn to a scale of $\frac{1}{16}$ of an inch to a foot, pen and india ink rendering. The perspective to be drawn from an $\frac{1}{8}$ scale plan, rendering optional.

The drawings are to be marked with a motto or *nom de plume*, and accompanied by a sealed envelope marked in the same manner, containing the name and full address of the author, with the place and date of birth, and must be delivered flat to Hugh M. G. Garden, secretary, Chicago Architectural Sketch Club, at the club rooms, 913 Masonic Temple building, Chicago, on or before Monday, October 2, 1893. Charges to be prepaid. All drawings other than those receiving prizes will be returned at the expense of the contributor.

W. L. B. JENNEY, Chairman;
SAMUEL A. TREAT,
CHARLES A. COOLIDGE,
D. H. BURNHAM,
LORADO TAFT,

Adjudicating Committee on the Robert Clarke Testimonial.

HEATING AND VENTILATION OF RESIDENCES.

BY JAMES R. WILLETT.

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TO FIND THE GRATE AREA.

FIND the value of "Q" for each room and then their sum will give the value of "Q" for the whole house. Consider this "Q" as radiator surface and take out the corresponding grate area from Table II, hereinafter given.

It is important to keep a low fire in a hot-air furnace since the heated metal comes in direct contact with the fresh air and may, as it is called, "burn" it. Therefore it is better to take as large a grate area as is called for by table. A powerful furnace does not need to be run up to a high temperature and will not burn any more coal than a small furnace will that is run at a high temperature.

The most desirable pattern of furnace to use can only be ascertained by examining them.

In order that the heat generated by the fire may be communicated to the air in the hot or fresh-air passages of the furnace, it is necessary that the surface between the fire or smoke passages of the furnace and the hot, or fresh-air, passages of the furnace shall be large in quantity. The more the better. It can scarcely be too much.

This leads to more or less winding around of these passages, with usually also a direct and short passage intended for use when a fire is first started, but which should be closed by means of a damper as soon as the fire is fairly under way, and the draft forced to take a circuitous route.

If the furnace has not circuitous passages, but only direct communication with the chimney, then there will be less opportunity for the heat to communicate itself to the fresh-air passages, and more of the heat will go up the chimney, in which case the grate would need to be larger.

The desire is to wind the smoke-passages about through the fresh-air passages so there will be an opportunity for a large portion of the heat which is in the smoke flues to be communicated to the air in the fresh-air passages before the smoke passes up the chimney. But the passages must be arranged so as not to readily choke up by soot, and so that they can be cleaned out.

The firepot of the furnace is usually of cast iron, but it would undoubtedly be better if the firepot was surrounded by fire tile or brick so that the air in fresh-air passage may not be exposed to the iron surface at a red heat, as is often the case in cold weather.

The furnace should be placed on the side of the house against which the prevailing winds strike (north and west) and in other respects as near central as practicable.

If the supply of fresh air to furnace is to come wholly from the fresh-air inlet, then it will be found at times that it is difficult to heat the house.

Some other means, therefore, must be taken to supply additional air to the furnace. The best way, perhaps, is to have a duct running from a register opening in the floor of the hall, near entrance door, down to the bottom of the furnace. This duct should not enter the furnace opposite to the fresh-air inlet opening, but should enter parallel to the fresh-air inlet. Otherwise,

the air from one inlet might pass out of the other. The partition between the two inlets should extend some distance into the furnace, so as to prevent this from occurring. The register in the first floor communicating with this—what we shall call "circulating pipe"—should not have valves upon it. And the hot-air pipe from the furnace to the hall should also have a register face without valves. This will allow of a constant circulation of air and prevent the house from getting cold.

There is another advantage: when the weather is but slightly cold, the house is apt to become too warm, and the registers would probably be closed. There being no egress from the air heated in the furnace, it is apt to become dangerously hot, and thereby cause the house to take fire. By means of a circulating pipe and a hot-air pipe to the hall, neither register having valves to it, the circulation cannot be wholly stopped, and the hot air is thereby prevented from attaining a dangerous temperature.

The area of this circulating pipe should be one-half of the cross sectional area of fresh-air duct.

Rooms that are distant, horizontally, from the furnace are very difficult to heat. This difficulty has given rise to what is called a "combination method" of hot water and hot air; the hot-water apparatus being used to heat the rooms which are distant, horizontally, from furnace. The boiler is placed inside of the furnace just above the fire, and from it hot-water pipes lead to radiators which are located in the distant rooms.

The Perfection Furnace Pipe Company, of Toledo, Ohio, have also published a sheet of cuts of their pipe. The Ruttan Manufacturing Company, of Chicago and Cleveland, have also published some pamphlets exhibiting their work.

A great deal of information can be had from some of the trade catalogues, but many of them need much discrimination in their use, as they are to a degree filled with laudations of the particular ware that is for sale, rather than with correct information on the subject of furnace heating.

CONCLUSION.

In order to bring this address within a reasonable compass, it has been necessary to omit many things that you should know. Copies of specifications and drawings of some work actually executed, will remain with your worthy professor of architecture who will, doubtless, give instruction to anyone of you who desires further information.

The recent introduction of the incandescent electric light bids fair to do away with the use of illuminating gas and with the corresponding vitiation of air. It is to be hoped that the use of that electric light will spread rapidly.

It is not necessary to carry the calculations into long decimals. A logarithmic table of four places from Nos. 10 to 99 is sufficient; such a table is given in Carnegie's pocket-book for I beams, etc.

HEATING QUANTITIES—HOT-AIR FURNACE.

BUILDING :		LOCATION :							DATE :
Frank Hamilton.									
FIRST STORY.		Room No. 22, Stair Hall.	Room No. 23, Toilet.	Room No. 24, Parlor.	Room No. 25, Sitting.	Room No. 26, Dining.	Room No. 28, Butler's Pantry.	Room No. 32, Kitchen.	
R =	83	6	54	60	49	10	82	Q's	116
F =	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	12
	33.2	2.4	21.6	24.0	19.6	4.0	.....	.....	75
	83	6	54	60	49	10	Too distant	.....	84
							from	.....	96
RF =	116.2	8.4	75.6	84.0	68.6	14.0	furnace.	.....	20
J =	1.0	1.4	1.0	1.0	1.4	1.0	.....	.....	1st story .403
	.....	33.6	.....	.....	274.4	.....	.....	.....	2d " .250
	.....	84	.....	.....	686	.....	.....	.....	Total Q .653
Q = RFJ =	116.2	11.76	75.6	84	96.04	14.0	.....	.....	or Grate area
= sq. in. cross-sectional area	12-inch pipe	7-inch pipe	10-inch pipe	12-inch pipe	12-inch pipe	7-inch pipe	.....	.....	= 653 sq. in.
Diameter of leader adopted.....	12-inch	7-inch	10-inch	12-inch	12-inch	7-inch	.....	.....	.....
SECOND STORY.		Room No. 40, Chamber.	Room No. 41, Stair Hall.	Room No. 42, Chamber.	Room No. 45, Chamber.	Room No. 47, Chamber.	Room No. 50, Bath.	Room No. 54, Servant's Chamber.	
R =	20	49	46	43	38	19	45	Q	33
F =	1.2	Transferred	1.2	1.2	1.2	1.2	Too distant	.....	55
		to 1st	.....	.....	.....	.....	from	.....	52
RF =	24.0	story.	55.2	51.6	45.6	22.8	furnace.	.....	64
J =	1.4	.....	1.0	1.0	1.4	2.	.....	.....	46
	9.60	.....	.....	.....	18.24	45.6	.....	2d story .250 Q	
	24	.....	.....	.....	45.6	.....	.....	Transferred	
		.....	.....	.....	.....	.....	.....	to 1st story.	
Q = RFJ =	33.60	.....	55.2	51.6	63.84	.....	.....	.....	
= sq. inches cross-sectional area	7-inch pipe	.....	9-inch pipe	8-inch pipe	9-inch pipe	8-inch	.....	.....	
Diameter of leader adopted.....	7-inch	.....	9-inch	8-inch	9-inch	7-inch	.....	.....	

The greater portion of the residence is heated by hot-air furnace and the hot-water apparatus is subsidiary thereto; consequently, the grate is far larger than would be required for the hot-water boiler alone, and the hot-water boiler being inside the furnace is necessarily small. In cold weather if the fire be pushed, the water apparatus being small, steam is likely to be generated and the water driven out of the apparatus. To remedy this, it is necessary that the radiator surface should be large compared with the boiler surface, and the pipes full size, so that the water may be readily cooled off and the formation of steam prevented. Valves should not be used, as the circulation should not be stopped.

Some boilers are constructed so that they can readily be made smaller, and thus the heating surface in the boiler reduced. This is effected by removing certain parts of them which are made so that they can be detached.

Plate XVI shows a house heated by a hot-air furnace. It is the same house that is given in Plates IV, V, VI, VII, VIII, XIII.

Mr. John Millar and also Mr. Harcourt Mott, each of them separately, were good enough to make designs for heating this building by furnace. The difference between the designs was slight, and did not vary materially from the results of the rules given.

The above table is the calculation for the furnace for this house. The values of "R" being taken from example already given under hot-water heating, as it is the same house.

There have been but few writings on the subject of furnaces by disinterested parties. In Putnam's "Open Fireplace," page 108, there is an interesting and instructive article on hot-air furnaces, which you should read.

The Excelsior Steel Furnace Company, of Chicago, have published a catalogue containing much correct detailed and practical information, together with cuts of furnaces and their fittings.

The student who desires to learn how he should design a heating apparatus, should read some of the books on the subject, especially those which have been written by men engaged in the actual execution of work.

The books by Mills, Baldwin, Hogan, Schumann, Hood, Briggs, Box and Woolf are of special value.

For general knowledge the young architect should read portions of Parke's "Practical Hygiene," Buck's "Public Health," Billings' "Ventilation and Heating," and Fothergill's "Town Dweller."

Besides reading these books, it is necessary that he should acquire a knowledge of how the trade carry out such works; the trade sizes of the various materials used, etc. He can best acquire this by conversing with practical men like steamfitters, etc., by observing their work and familiarizing himself with their methods. Such men can give a young architect information of value, and prevent him from making designs calling for sizes, shapes, etc., which will be unnecessarily costly, and which will also betray his ignorance of the actual methods of doing such work.

There are some trade catalogues, etc., that are valuable for the amount of information they contain. The "Abram Cox Stove Company," of Philadelphia, has issued a very large and valuable one on hot-water heating. The "Richardson & Boynton Company," of New York, has issued a pamphlet of "Instructions" on the same subject, and some furnace catalogues are valuable as mentioned under the heading of "Hot-Air Furnace Heating."

I am under many obligations for much valuable information to practical men. Thanks are especially due to A. L. Hay, Carlile Mason, John Woodman, James H. Davis, P. S. Hudson, Charles H. Patten, John Millar, George Phillips, Harcourt Mott, John J. Spear, F. W. Lamb, and to others of Chicago; also to Messrs. Kruse & Barker, of Milwaukee.

TABLE I.

Table of minimum temperatures, and of values of $\frac{I-E}{E} = \frac{70-E}{70}$ "E" being taken as 10 degrees higher than minimum temperature.

PLACE.	Minimum Temperature, Degrees.	Value of $\left(\frac{70-E}{70}\right) 0.9$
Duluth, Minn.	-38	1.25
St. Paul, "	-32	1.18
Milwaukee, Wis.	-25	1.09
Burlington, Vt.	-20	1.03
Chicago, Ill.	-20	1.03
Detroit, Mich.	-20	1.03
Indianapolis, Ind.	-18	1.00
Albany, N. Y.	-17	0.99
St. Louis, Mo.	-16	0.98
Buffalo, N. Y.	-13	0.94
Cleveland, Ohio.	-13	0.94
Pittsburgh, Pa.	-12	0.92
Portland, Me.	-12	0.92
Boston, Mass.	-11	0.91
Louisville, Ky.	-10	0.90
Cincinnati, Ohio.	-7	0.86
New York, N. Y.	-6	0.85
Philadelphia, Pa.	-5	0.83
Washington, D. C.	-5	0.83
Baltimore, Md.	-2	0.80

TABLE II.

The required grate area can be taken from the following table, which gives the requisite square inches of grate area for each 100 square feet of radiator surface.

Total sq. ft. of Radiator Surface in building.	Sq. inches Grate Surface.	Total sq. ft. of Radiator Surface in building.	Sq. inches Grate Surface.	Total sq. ft. of Radiator Surface in building.	Sq. inches Grate Surface.
100	120	800	630	1,500	1,040
200	208	900	693	1,600	1,100
300	288	1,000	754	1,700	1,150
400	362	1,100	813	1,800	1,210
500	433	1,200	872	1,900	1,260
600	501	1,300	930	2,000	1,310
700	567	1,400	986		

TABLE III.

OVERHEAD HOT-WATER METHOD.

Values of "F" for direct radiation in different stories.

STORY.	Two-Story House.	Three-Story House.	Four-Story House.
First	1.2	1.25	1.30
Second	0.8	1.00	1.20
Third		0.75	0.90
Fourth			0.60

TABLE IV.

HOT-WATER HEATING.

Sizes of pipes corresponding to radiator surface supplied by them.

Diam. of Pipe, Inches.	Maximum sq. ft. of Radiator Surface that it will supply.	Diam. of Pipe, Inches.	Maximum sq. ft. of Radiator Surface that it will supply.
1	40	3	560
1 1/4	70	3 1/2	810
1 1/2	110	4	1,110
2	220	5	1,900
2 1/2	360	6	3,000

It is best not to use anything less than 1 1/4-inch pipe for radiator service.

TABLE V.

STEAM HEATING—LOW PRESSURE—ONE-PIPE METHOD.

The diameters of pipes necessary to supply radiators can be taken from the following table, which is meant for vertical portion of branches. The horizontal portion of branches should be made one size larger. Do not use any pipe less than one inch diameter. The sizes of mains can also be taken direct from this table.

Diameter of Pipe, Inches.	Maximum square feet of Radiator Surface that pipe can supply.	Diameter of Pipe, Inches.	Maximum square feet of Radiator Surface that pipe can supply.
1	30	3	615
1 1/4	55	3 1/2	915
1 1/2	90	4	1,280
2	200	5	2,230
2 1/2	370	6	3,520

TABLE VI.

TRADE SIZES OF "LEADERS" (ROUND PIPES) AND THEIR CROSS-SECTIONAL AREAS.

Diameter, Inches.	Area of Cross Section, Square Inches.	Diameter, Inches.	Area of Cross Section, Square Inches.
7	38	16	201
8	50	18	254
9	63	20	314
10	78	24	452
12	113	30	707
14	154		

No leader is used less than 7 inches.

TABLE VII.
HOT-AIR FURNACE HEATING.
TABLE OF SIZES AND DIMENSIONS OF SAFETY DOUBLE HOT-AIR STACKS.*

Size of stack, as listed, in inches.	Actual size of outside stack.	Actual size of inside stack.	Capacity as compared with that of leader with pitch of 1 inch to 1 foot.	Equivalent in leader with pitch of 1 inch to 1 foot.	Sizes of leader which should be used with each stack.	Area of said leader in square inches.	Size of registers and register boxes which should be used with each stack.	Cubic feet of space (approximate) that can be heated with each register, with leader and registers of size given.	Equivalent of said space on floor of rooms 10 feet high.	Area in inches of registers with space occupied by bars deducted.
4 by 8	3 3/8 by 7 3/8	3 1/4 by 7	35	6 1/2	6 by 8	38	6 by 8	500	6 by 8	35
4 " 10	3 3/8 by 9 3/8	3 1/4 by 9	43	7 1/2	8 " 10	50	8 " 10	850	8 " 10	45
4 " 12	3 3/8 by 11 3/8	3 1/4 by 11	48	8 1/4	8 " 12	55	8 " 12	1000	9 " 12 1/2	55
4 " 14	3 3/8 by 13 3/8	3 1/4 by 13	53	9	9 " 12	63	9 " 12	1250	10 " 14	60
4 " 16	3 3/8 by 15 3/8	3 1/4 by 15	58	9 1/2	10 " 14	68	10 " 14	1650	12 " 17	70
4 " 18	3 3/8 by 17 3/8	3 1/4 by 17	63	10	12 " 15	78	12 " 15	2000	14 " 19	82
4 " 20	3 3/8 by 19 3/8	3 1/4 by 19	67	10 1/2	12 " 17	85	12 " 17	2300	14 " 19	85
4 " 22	3 3/8 by 21 3/8	3 1/4 by 21	71	11	14 " 20	113	14 " 20	2600	15 " 20	90
4 " 24	3 3/8 by 23 3/8	3 1/4 by 23	75	11 1/2	16 " 22	125	16 " 22	3000	15 " 20	95
4 " 26	3 3/8 by 25 3/8	3 1/4 by 25	79	12	18 " 24	135	18 " 24	3400	16 " 22	100
4 " 28	3 3/8 by 27 3/8	3 1/4 by 27	83	12 1/2	20 " 26	154	20 " 26	3800	18 " 24	110
4 " 30	3 3/8 by 29 3/8	3 1/4 by 29	87	13	22 " 28	173	22 " 28	4200	20 " 27	120
4 " 32	3 3/8 by 31 3/8	3 1/4 by 31	91	13 1/2	24 " 30	192	24 " 30	4600	20 " 27	125
4 " 34	3 3/8 by 33 3/8	3 1/4 by 33	95	14	26 " 32	211	26 " 32	5000	22 " 29	135
4 " 36	3 3/8 by 35 3/8	3 1/4 by 35	99	14 1/2	28 " 34	230	28 " 34	5400	24 " 30	145
4 " 38	3 3/8 by 37 3/8	3 1/4 by 37	103	15	30 " 36	250	30 " 36	5800	26 " 32	155
4 " 40	3 3/8 by 39 3/8	3 1/4 by 39	107	15 1/2	32 " 38	270	32 " 38	6200	28 " 34	165
4 " 42	3 3/8 by 41 3/8	3 1/4 by 41	111	16	34 " 40	290	34 " 40	6600	30 " 36	175
4 " 44	3 3/8 by 43 3/8	3 1/4 by 43	115	16 1/2	36 " 42	310	36 " 42	7000	32 " 38	185
4 " 46	3 3/8 by 45 3/8	3 1/4 by 45	119	17						
4 " 48	3 3/8 by 47 3/8	3 1/4 by 47	123	17 1/2						
4 " 50	3 3/8 by 49 3/8	3 1/4 by 49	127	18						
4 " 52	3 3/8 by 51 3/8	3 1/4 by 51	131	18 1/2						
4 " 54	3 3/8 by 53 3/8	3 1/4 by 53	135	19						
4 " 56	3 3/8 by 55 3/8	3 1/4 by 55	139	19 1/2						
4 " 58	3 3/8 by 57 3/8	3 1/4 by 57	143	20						
4 " 60	3 3/8 by 59 3/8	3 1/4 by 59	147	20 1/2						
4 " 62	3 3/8 by 61 3/8	3 1/4 by 61	151	21						
4 " 64	3 3/8 by 63 3/8	3 1/4 by 63	155	21 1/2						
4 " 66	3 3/8 by 65 3/8	3 1/4 by 65	159	22						
4 " 68	3 3/8 by 67 3/8	3 1/4 by 67	163	22 1/2						
4 " 70	3 3/8 by 69 3/8	3 1/4 by 69	167	23						
4 " 72	3 3/8 by 71 3/8	3 1/4 by 71	171	23 1/2						
4 " 74	3 3/8 by 73 3/8	3 1/4 by 73	175	24						
4 " 76	3 3/8 by 75 3/8	3 1/4 by 75	179	24 1/2						
4 " 78	3 3/8 by 77 3/8	3 1/4 by 77	183	25						
4 " 80	3 3/8 by 79 3/8	3 1/4 by 79	187	25 1/2						
4 " 82	3 3/8 by 81 3/8	3 1/4 by 81	191	26						
4 " 84	3 3/8 by 83 3/8	3 1/4 by 83	195	26 1/2						
4 " 86	3 3/8 by 85 3/8	3 1/4 by 85	199	27						
4 " 88	3 3/8 by 87 3/8	3 1/4 by 87	203	27 1/2						
4 " 90	3 3/8 by 89 3/8	3 1/4 by 89	207	28						
4 " 92	3 3/8 by 91 3/8	3 1/4 by 91	211	28 1/2						
4 " 94	3 3/8 by 93 3/8	3 1/4 by 93	215	29						
4 " 96	3 3/8 by 95 3/8	3 1/4 by 95	219	29 1/2						
4 " 98	3 3/8 by 97 3/8	3 1/4 by 97	223	30						
4 " 100	3 3/8 by 99 3/8	3 1/4 by 99	227	30 1/2						

* This table is copyrighted by the Excelsior Steel Furnace Company, of Chicago, and is here copied by the kind permission of A. W. Giessner, the president of said company.

TABLE VIII.

LIST OF SIZES OF REGISTERS GENERALLY USED.

Size of Register, Inches.	Gross Area, Square Inches.	Size of Register, Inches.	Gross Area, Square Inches.
6 by 8	48	12 by 15	180
8 " 10	80	12 " 17	204
8 " 12	96	14 " 20	280
10 " 12	120	16 " 24	384
10 " 14	140	20 " 24	480
		21 " 29	609

OUR ILLUSTRATIONS.

A Denver Residence. McCurdy & Puls, architects.
 The Ursuline Convent, Cleveland, Ohio. C. F. Schweinfurth, architect.
 House for Henry D. Barber, Polo, Illinois. J. L. Silsbee, architect, Chicago.
 Residence of H. K. Hatch, Cleveland, Ohio. C. F. Schweinfurth, architect.
 Terrace for John H. Brown, Detroit, Michigan. Edward C. Van Leyen, architect.
 House for J. L. Cochran, Edgewater, Illinois. George W. Maher, architect, Chicago.
 Academy for the Sisters of St. Benedict, Duluth, Minnesota. G. A. Tenbusch, architect.
 Residence for C. T. Purdy, Oak Park, Illinois. Patton & Fisher, architects, Chicago.
 View in Hall, residence of R. H. Shoemaker, Cincinnati, Ohio. James W. McLaughlin, architect.
 St. Stephen's Roman Catholic Church, Philadelphia, Pennsylvania. Frank R. Watson, architect.
 Sketches of the exterior and interior of the "Coffee House," Hull House, Chicago. Pond & Pond, architects.
 Chicago College of Dental Surgery, Dental Department of Lake Forest University. Willett & Pashley, architects, Chicago.
 Agricultural Hall, State Agricultural College, Ames, Iowa, Josselyn & Taylor Company, architects, Cedar Rapids, Iowa.
 Premiated Competitive Design for the Iowa State Building (as first located), World's Columbian Exposition, Chicago. Josselyn & Taylor Company, architects, Cedar Rapids, Iowa.
 The New Rawson building, Cincinnati, Ohio. James W. McLaughlin, architect. It will be thoroughly fireproof throughout, steel skeleton construction and brick and terra cotta on exterior. Estimated cost about \$60,000.

Photogravure Plate: Norwegian building, World's Columbian Exposition. W. Hausteen, of Norway, architect. The building is constructed entirely of wood, and is an exhibit of the Norwegian system of construction. Idaho state building. Cutter & Poetz, architects, Spokane. Constructed of stone and mammoth logs.

PHOTOGRAVURE PLATES.

(Issued only to subscribers to the *Photogravure edition*.)

The clock in the Building of Manufactures and Liberal Arts, World's Columbian Exposition. Mr. A. Sandier, of the construction department, architect. Designed under the direction of Mr. Atwood, designer in chief. The clock is finished in staff throughout and treated in white and gold. The clock is an exhibit and is supplemented by a chime of bells. This is the principal work of Mr. Sandier, whose other designs are the Clambake Building and the Children's Building.

Fine Arts Palace, center of south front, World's Columbian Exposition, Jackson Park, Chicago. C. B. Atwood, architect. This view is taken across North Pond, from the boat landing at the northeast corner of the Illinois Building. It will be seen that the statue of Fame has been removed from the top of the dome and the statue of Minerva in front of the Peristyle has been completed. Mr. Atwood's design is seen at its best from this point. The walls of the Art Palace are built of brick on a concrete foundation. They are furred off on the outside and plastered. The columns and entablatures are of wooden framework covered with staff. The dome was first covered with canvas and well painted. It was then covered with scales made of staff. The steps leading to the building are all made of concrete resting on a foundation of steel beams and brick arches.

New York State Building, World's Columbian Exposition, Interior of Portico Looking East. McKim, Mead & White, of New York, architects. The state of New York selected as its architects the firm that had already been appointed to design the Agricultural building. Besides these they are represented on the grounds by the Puck building and the exhibit of the White Star Steamship Company, both located north of the Horticultural building. New York and Pennsylvania were given the best sites on the north side of the Art Palace, while Illinois and California were given the best sites to the south. The New York building is not a typical New York or American building. It is rather an adaptation of a famous Italian palace, and as such is quite as interesting as a study as any other type would have been. It is a complete club house, and contains all the features of such institutions, the state of New York having made its exhibition only in the main building.

California State Building, World's Columbian Exposition center of east front. A. Page Brown, of San Francisco, architect; P. B. Wight, of Chicago, consulting architect. This is a type of the old Mission Buildings erected by the Padres in Old California between the year 1750 and the beginning of the present century. The features of several of these interesting structures, which are still in a good state of preservation, have been introduced. The center of the east front most resembles San Antonio of Padua, about 1771, and San Louis Rey, about 1798, while the towers shown in the photogravure resemble Carmel about 1771. The building is used mostly for exhibits of the products of the soil and mines of California, but also contains a gallery of paintings by California artists that is fully up to the average of the American paintings in the Art Palace. Under the dome is a palm tree sixty feet high and said to be 120 years old, surrounded by a terra cotta fountain made in California, and designed by Mr. Brown.

Victoria House, British headquarters, World's Columbian Exposition, Jackson Park, Chicago. Colonel Edis, architect. This building, like the German headquarters, is placed near the beach on a slight elevation. The view is taken from the bridge over the lagoon, which passes it on the south. It is built of permanent materials on a foundation of piles, and is in no respect a temporary building. The exterior was built after the English designs by a Chicago contractor with Chicago materials. The first story is of terra cotta and red pressed brick. The second story is timber construction filled in with brick and plastered. Much of the plaster is in stamped patterns too delicate to be shown on the picture. The roof is covered with slate. The interior woodwork, of exquisite design and execution, was mostly worked in England. As this building occupies the site of the old refreshment pavilion, it would seem proper that it should come into possession of the park commissioners for the same purpose.

Headquarters of Exhibition Building, Germany—Views from the northeast and southeast—World's Columbian Exposition, Jackson Park, Chicago. Karl Hoffaker, architect. This building fronts on the old park road that skirts the lake. It is a permanent structure built on a foundation of concrete and stone, and it is to be hoped that it will remain as one of the memorials of the great exhibition and a permanent adornment of Jackson Park. It could be used as a museum of art without alteration, or might with slight changes be turned into a restaurant, which is much needed in the park. With the exception of the foundations the brick and some of the floor joists, all the materials were brought from Germany wrought and ready to put up. Everything in the building is of a permanent and substantial character. No meretricious or imitative materials have been used. It illustrates not only the styles that prevailed in the fourteenth and fifteenth centuries, but in its construction all the methods of building employed in Germany. The central arcaded hall is of steel frame construction, inclosed in brick and finished in stucco, and is an adaptation of a method that originated with ourselves. The exterior brickwork is stuccoed in the German manner, and the whole is frescoed with handwork—no stencils being employed—in a manner to which our illustration does not do justice. The wooden framework seen on the exterior is all part of the construction. It is filled in with brick and plastered flush with the timber. The interior roof construction is a study from which we could profit for all time if the building could always remain where it is. The roof is covered with hand-made glazed clay tiles in many colors and designs. Altogether the building is the most valuable contribution to the Fair that has been made by any foreign government.

ASSOCIATION NOTES.

KANSAS CITY CHAPTER, A. I. A.

At the June meeting of Kansas City Chapter of the American Institute of Architects, held the 3d inst., Mr. F. E. Hill read a paper aimed to set the southwest, the cyclone, and architecture right before the world. That section of the country, and especially Kansas, he argued, has an undeserved reputation for heavy winds because the winds there encounter a class of buildings loosely thrown together, with no attention paid to masonry or superstructure, and not the outgrowth of an architect's brain. The stories told of storms in that section often border on the miraculous; but close investigation, says Mr. Hill, shows that they are no severer than those of other sections of the country and Europe. The lesson he draws is that the southwest should give more attention to the methods of construction which are practiced in older communities here and abroad. The building law of Kansas City is up to standard, says Mr. Hill, and had the present law been observed prior to 1886 the cyclone of that year would not have disturbed, or at least destroyed, a single building in the city. Farmers are the ones especially urged by Mr. Hill to take precautions in the construction of their homes if they would escape death and disaster.

MOSAICS.

RICHARD J. MURPHY, who has held the office of press secretary of the Columbian Exposition since the establishment of the bureau and to whose practical ability and genial presence much of the success of the newspaper department is due, has resigned the office and will become acquainted with architects as a member of the firm of Joseph Sherwin & Co., the structural contractors. The firm is located at Room 140 in the Adams Express building, Chicago, are members of the Builders' and Traders' Exchange, and are recommended to architects when calling for estimates. Mr. Murphy is a gentleman worth knowing.

THE July *Century* contains Mr. George Kennan's reply to the recently published defense of Russia made by the Russian Secretary of Legation at Washington. The illustrated articles in this number include a description of "The Most Picturesque Place in the World," by Mr. and Mrs. Joseph Pennell,—the name of the place not being disclosed; Edmund Gosse writes of the famous actress, Sarah Siddons, and Salvini tells some interesting stories in his autobiography; John La Farge writes of the art of the Japanese; "Famous Indians" are described, with reproductions of notable medallion portraits by Olin Warner; Thomas Bailey Aldrich tells of some quaint old Portsmouth characters; an article on the World's Fair contains a great number of interesting engravings including a full-page picture by Castaigne of the MacMonnies

fountain; and a delightful article by Mrs. Oliphant on "The Author of 'Gulliver'" contains portraits of Dean Swift, "Stella," Sir William Temple, and others. Dr. Allan McLane Hamilton's article on "Mental Medicine," in which he discusses "The Treatment of Disease by Suggestion," shows a leaning toward a scientific form of mind-cure. A story by Arlo Bates, "The Intoxicated Ghost," is a novel treatment of an old theme.

A NOTICEABLE sign of progression, especially in the residence districts, in Chicago, is the disposition to remove the wooden sidewalks and replace them with cement. This style of walk has become so common around new buildings, particularly hotels and apartment houses, as to almost entirely take the place of stone. This is owing to the extra durability and also because of the honesty with which the work is done by the Western Cement Paving Company, whose offices are at 508 Opera House building, Chicago. There is no better sidewalk obtainable than that laid by this company.

ARCHITECTS visiting Chicago and wishing to locate near the Exposition grounds cannot do better than to engage rooms at the World's Inn, a fireproof hotel of eight hundred rooms, conducted upon the European plan, located at the corner of Madison avenue and Sixtieth street. This is close to the Sixtieth street station of the Illinois Central Railway and is near one of the entrances to the grounds. An excellent café is connected with it, and as all is under the management of one of the famous Lelands the World's Inn cannot fail to give the greatest satisfaction. The rate is a uniform two dollars per day.

VISITORS to the Congress of Architects cannot spend an hour more profitably than in the inspection of the ceramic mosaic floors and Lustre ceramic mosaic walls and ceilings in the Auditorium Hotel Annex and the special ceramic mosaic floor just placed in the Chicago Athletic building. Both buildings have many points of interest, as the work done in the hotel is the first of its kind done in this country. It was placed by the Henry Dibblee Company, of Chicago, and as their salesrooms, at 150 Michigan avenue, almost adjoin the Athletic building the visit might be made more profitable by calling there and asking for a member of the firm to direct the inspection.

UNDER the floor of the Mining building, at the Columbian Exposition, is a compact model pumping station which visitors never see. It is accessible only from a small door in the outside wall of the building placed out of the ordinary path of spectators. This station pumps water through the sewerage system of the Exposition and has a capacity of 5,500 gallons a minute. It is furnished with three centrifugal pumps of the Gould type, one of 4,000 gallons capacity, one of 2,000 gallons capacity, and one of 600 gallons capacity. The largest pump is driven by a 35 horse-power motor, the middle-sized one by a 20 horse-power motor, and the smallest by a 10 horse-power motor. The small pump is for use when but little work is needed, the medium-sized one for ordinary occasions, and the large one for emergencies.

SYNOPSIS OF BUILDING NEWS.

Architects are invited to furnish for publication in this department monthly or occasional reports of their new work before the letting of contracts. Reports of buildings costing less than \$5,000 are not published.

Chicago, Ill.—Architect W. T. Leshner: For Maurice Jones, on Dearborn street south of Thirty-eighth street, a three-story store and apartment house; size 25 by 85 feet; to have a front of Bedford stone, interior finish in white pine, oil finish, all the modern plumbing, bells, tubes, heating, etc. For Adam Seufert, on North avenue, west of Kedzie avenue, a three-story and basement store and flat building; size 25 by 86 feet; to have a handsome stone front, No. 1 clear white pine finish, and the modern plumbing; cost \$15,000. For P. Dawson, on Superior street west of Franklin street, a three-story and basement flat building; size 24 by 76 feet; to have a pressed brick and stone front, and the best of modern improvements. For S. W. Roth, on Lake street, west of Parker place, a three-story and basement store and flat building; size 30 by 66 feet; to have a pressed brick and stone front, all modern improvements, bells, tubes, etc. For same owner, on Carroll avenue west of Central Park avenue, a three-story and basement flat building; size 30 by 66 feet; to have a front of pressed brick with stone trimmings, all the modern plumbing, etc. For S. W. Roth, on the northwest corner of Harding avenue and Lake street, a three-story and basement store and apartment building; size 58 by 126 feet; to have a handsomely designed front of stone and pressed brick. All the modern improvements will be put in; the cost will be \$40,000. For August Schaefer, at 665 North Clark street, a four-story hotel; 50 by 84 feet in size; to be of pressed brick and stone front, have electric light, hardwood finish, the best of sanitary and modern conveniences, steam heating, etc.; cost \$25,000.

Architect J. A. Bongard: For Charles Winter, on Seminary avenue, a three-story flat building; size 22 by 60 feet; to have a stone front, Georgia pine interior finish, bathrooms, closets, mantels, etc.

Architects Hallstrom & Peterson: For C. A. Youngquist, on Grand place and Garfield avenue, a three-story and basement flat building; size 22 by 50 feet; to be of pressed brick and stone front, have all the sanitary improvements, hardwood finish and mantels. For John Hallbeck, on Seminary avenue, near School street, a three-story flat building; size 24 by 50 feet; to be of pressed brick and stone front, have bathrooms, closets, mantels, etc.

Architects Turnbull & Postle: For Samuel Harris, at 945 Jackson boulevard, a two-story residence, 29 by 53 feet in size; to be of rock-faced stone basement and pressed brick front; have hardwood finish and mantels, the best of plumbing and hot-water heating. Also two-story brick barn.

Architects Snyder & Nothnagel: For G. F. Phlegley, at 1398 Jackson boulevard, a two-story flat building; size 24 by 54 feet; to have a stone front, the best of sanitary and modern improvements, electric bells, speaking tubes, furnace heating, hardwood finish and mantels.

Architect W. H. Drake has completed drawings for the medical school to be erected on Dearborn street south of Twenty-fourth street, for the Northwestern University; it will be a four-story and basement building, 106 feet deep and 68 feet wide; have a pressed brick and stone front, steam heating, electric light and all improvements.

Architect J. M. O. Van Osdel: For Charles E. Rector, on Oakenwald avenue near Forty-sixth street, a four-story apartment house, 50 by 100 feet in size; to have a front of pressed brick, stone and terra cotta, heating, etc.; cost \$40,000.

Architect H. T. Park: For W. P. Ketcham, on the northwest corner of Central Park avenue and Adams street, a three-story apartment house, 81 by

134 feet in size; to be of pressed brick and stone front, have all improvements and cost \$50,000. For Doctor Peckinbaugh, on Washington boulevard west of Garfield Park, a four-story Sanitarium, 40 by 57 feet in size; to have a front of pressed brick and stone, the best of sanitary improvements, heating, etc.

Architect S. S. Beman: Making drawings for the Chicago Naval Academy, to be erected on South End Park between Fifty-first and Fifty-second streets; it will be a three-story and basement, 150 by 225 feet in size; to be of pressed brick, stone and terra cotta; will put in gymnasium, bowling alley, billiard room, machine shop, etc.

Architect Joseph Bettinghofer: For Frank Deppe, at 1163 Clark street, a three-story and basement flat building, 25 by 74 feet in size; to be of stone front, have all improvements, and cost about \$15,000. For G. Roth, on Menomonee street, a four-story and basement store and flat building, 56 by 47 feet; to be of stone and pressed brick front, first story to be of stone; to have all sanitary improvements, mantels, etc. For Peter Colljung, at 103 Orchard street, a three-story and basement flat building, of pressed brick and stone front; to have all the sanitary improvements. For Henry Heers, a two-story and basement flat building; to be of pressed brick and stone front and side, and have all the sanitary and modern improvements. For Jacob Thurness, at 39 Kemper place, a three-story and basement flat building; to be of pressed brick and stone front, have sanitary, plumbing, etc. For F. Schneider, on Belmont avenue, a frame house; to have all the improvements.

Architect George Grussing: For A. J. Koch, at 894 Walnut street, a three-story flat building; to have a stone front, oak interior finish, etc. For Dennis Considine, at 1385 Fulton street, a three-story flat building; to have a stone front, oak finish, sanitary improvements, heating, etc. For A. V. Weiss, a three-story addition to building, on Whipple street near Van Buren; to be of stone front, have mantels, plumbing, laundry tubs, etc.

Architects Ruchl & Gatterdam: For Henry Richard, on Turner avenue near Ogden avenue, a two-story flat building; to have a stone front, hardwood finish and mantels, bathrooms, closets, etc. For Thomas Rowan, at California avenue near Ogden avenue, a three-story and basement flat building, 50 by 62 feet in size; to be of stone front, have all the modern sanitary plumbing, mantels, etc. For Nic Hartmann, on Madison street near West Forty-third street, a three-story and basement store and flat building; to have a pressed brick and stone front. For M. Spillane, on Jefferson street near Wilson avenue, a three-story store and flat building; to have a pressed brick and stone front.

Architects Kley & Lang: For Arnold Landgraf, on Richmond street, near Lenwood avenue, a two-story and basement flat building; to be of pressed brick and stone. For August Lindemann, at 520 West Division street, a three-story and basement store and flat building; to have a front of stone and pressed brick. For Emmaus Congregation, on Harvard street near Kedzie avenue, a two-story and basement school and flat building; to be of pressed brick and stone front. For John Hansen, on Mariana Place, a three-story and basement flat building; to have a front of pressed brick and stone. For T. Frieshe, on Leavitt street near Division street, a three-story and basement flat building; to be of Connecticut brownstone and St. Louis pressed brick. For Lutheran church, at Willow Springs, German congregation, a frame church, 34 by 58 feet in size; to have a stone basement, galvanized iron ceilings, stained glass windows, pews, plumbing, etc. For John H. Piper, on Walnut street, near California avenue, a two-story and basement flat building; to have a front of Bedford stone and St. Louis pressed brick, hardwood interior, bathrooms, closets, mantels. For T. H. Lyons, a two-story and basement store and hall building; of pressed brick and stone, corner of Holt street and West North avenue. For Herman Juhake, at 355 West Erie street, a four-story and basement store and flat building; of pressed brick and stone front, with copper bays, all sanitary improvements, mantels. For Fritz Kay, at 732 Girard street, a three-story flat building; of pressed brick and stone front, to have bathrooms, closets, mantels, laundry tubs, etc.

Architects Marston & Hotchkins: For Thomas Ryan, at Sheridan Park, Ravenswood, a two-story basement and attic residence, 30 by 50 feet in size; to be of pressed brick and stone front, have hardwood finish and mantels, electric light, heating, laundry tubs, etc.; cost about \$10,000.

Architect J. L. Merriam: For B. S. Allen, at 223 South Leavitt street, a two-story and basement flat building, 25 by 56 feet in size; to be of pressed brick and stone front, have all the modern improvements, and cost about \$8,000.

Architects Ostling Brothers: For Mrs. Catherine Twick, at Cathlamet street near Southport avenue, a two-story and basement residence, 27 by 50 feet in size; to have a stone front with slate mansard roof, hardwood finish and mantels, the best of open plumbing, heating, laundry tubs, etc. For M. Lindholm, making plans for a three-story and basement apartment house, 21 by 58 feet in size; to be erected on Seminary avenue near School street. It will be of rock-faced stone basement, and above of brick; all the sanitary and modern conveniences will be put in. For Mrs. Berry, on Deming court near Larrabee street, a three-story and basement flat building, 27 by 80 feet in size; to be of stone front, have hardwood finish, all the sanitary improvements, heating, etc.; cost about \$15,000.

Architect C. W. Nothnagel: For McColby Brothers, of Chicago Heights, six two-story frame houses, 22 by 42 feet in size; some will have stone basements, some brick and others on posts.

Architect Theodor Lewandowski & Co: For Joseph Schweda, on Ashland avenue near Milwaukee avenue, a four-story flat building, 22 by 85 feet in size; to have a front of pressed brick and stone, sanitary plumbing, etc. For Mueller & Scholer, on Clifton avenue, a four-story and basement apartment house, 72 by 134 feet in size; to have two fronts of pressed brick, stone and terra cotta, the best of modern plumbing, electric light, etc. For the Diehl Brewing Company, at Defiance, Ohio, a six-story brew-house; to be of pressed brick and stone front; also, six-story stockhouse, 117 by 50 feet in size; wash-house, three stories; size 25 by 40 feet; to be of pressed brick and stone front, steel construction. Also making drawings for the British-American Brewing Company, of Windsor, Canada, for a brew-house, to be four stories, and boiler house; size 25 by 50 feet; to be of pressed brick and stone front. For Nicholas Fagan, at Lincoln avenue, a two-story basement and attic residence; size 27 by 55 feet; to have a stone front, hardwood finish and mantels, the best of sanitary plumbing, etc.

Architect Julius Speyer: For F. P. Dempsey, on Hoyne avenue, a three-story flat building, 25 by 70 feet in size; to be of pressed brick and stone front, have hardwood finish and mantels, and all the sanitary improvements. For P. DuPont, at Argyle Park, a two-story frame store and flat building; size 25 by 80 feet; to have a brick basement, the sanitary improvements, etc. Also, finished plans for a three-story flat building, 25 by 70 feet in size; to be erected on South Halsted street near Fifty-seventh; pressed brick and stone front and all improvements.

Architects Schroeder & Koster: For Richard Lyman, a three-story and basement, flat and store building; size 22 by 70 feet; to have a pressed brick and stone front, sanitary plumbing, mantels, etc. For Philip Koehler, at Fifty-seventh street and Wabash avenue, a three-story and basement flat building, 50 by 70 feet in size; to have a cut stone front, sanitary improvements, hardwood finish, mantels, etc.

Architect C. F. Hermann: For Joseph Hess, at 515 Sedgwick street, a three-story store and flat building, 25 by 50 feet in size; to have a stone front, bathrooms, closets, mantels, etc.

Architect J. C. Brompton: For W. H. Schuler, at Dixon, Illinois, two two-story frame residences, 24 by 42 and 34 by 60 feet; to have hardwood finish and mantels, the sanitary plumbing, furnace, etc.

Architect E. H. Turnock: For B. F. Sweet, at Western Springs, a two-story basement and attic residence, 26 by 44 feet in size; to be of frame with stone foundation, have all the sanitary improvements and furnace.

Architect Julius H. Huber: For S. Hartwell, on Newport avenue, a two-story basement and attic residence; size 65 by 45 feet; to be of stone all round, have hardwood interior finish and mantels, heating, electric light, etc. For Mrs. Wagner, at 365 North Clark street, flat building; to be made into store building; pressed brick and stone, new plumbing, etc.

Architect A. G. Ferree: For Russell Brothers, on Louis street near Sixty-first street, Englewood, two two-story houses; to be of frame with stone basements, have bathrooms, closets, etc. For M. Harrower, on Sherman street near Seventy-fourth street, a two-story frame house; to have the modern improvements. For V. Hallam, on Center avenue and Seventy-fourth street, a two-story store and flat building; size 44 by 50 feet; to be of pressed brick and stone front, have bathrooms, closets, mantels, etc. For M. J. Flaws, on Ada

street near Sixty-third street, a two-story flat building, 84 by 56 feet in size; to have a front of pressed brick and stone, all the sanitary and modern improvements. For T. J. Conroy, on Ada street, a two-story flat building, 22 by 46 feet in size; to have a front of stone and pressed brick, bathrooms, closets, mantels, etc.

Architect W. K. Johnston: For J. L. Emerson, at Titusville, Pennsylvania, a two-story frame residence, stone basement, all the sanitary improvements, furnace, etc. For Thatcher M. Adams, of New York, a two-story frame cottage, 38 by 40 feet in size; to have stone basement, etc.

Architect Joseph P. Hettinger: For W. Eisfeld, on Southport avenue near Webster, a two-story store and flat building; size 24 by 52 feet; to be of stone basement and pressed brick and stone front, have all the sanitary plumbing, etc. Also at the same place for same owner, a two-story barn; size 45 by 45 feet; to be of pressed brick and stone front, etc.

Architects Huehl & Schmid: For Moody & Reed, a three-story addition to stable; to be of pressed brick and stone; size 25 by 180 feet; at 1399 North Clark street.

Architect James Burns: For P. J. Casey, on Indiana street, near Ashland avenue, a three-story stable; size 48 by 100 feet; to be of common brick. For the same owner, a three-story store and flat building; size 24 by 100 feet; to be of pressed brick and stone front, have all the sanitary improvements, mantels, etc.

Architect F. B. Townsend: For Mrs. Helen C. Adams, at Buena Park, a two-story basement and attic residence; size 30 by 55 feet; to be of frame with stone basement, have hardwood interior finish and mantels, laundry tubs, electric bells, speaking tubes, etc.

Architect C. H. McAfee: For William Fain, at the corner of Laffin and Thirteenth streets, a three-story and basement store and flat building; size 24 by 60 feet; to have a pressed brick and stone front, bathrooms, closets, mantels; cost \$11,000.

Architects Handy & Cady: For Z. G. Simmons, at Kenosha, a two-story basement and attic residence; size 38 by 60 feet; to be of frame with stone basement, have hardwood interior and mantels, furnace, etc.; cost \$10,000.

Architect J. N. Tilton: For estate of Thomas Suffern, on Augusta street, west of Robey, three two-story flat buildings; size 20 by 50 feet each; to be of stone fronts, have pine interior finish, and all the sanitary arrangements. For David Ryan, at 518 West Taylor street, a three-story and basement flat building; size 23 by 63 feet; to have a stone front, bathrooms, closets, mantels, hardwood finish, etc.

Cincinnati, Ohio.—Reported by Lawrence Mendenhall. It is extremely difficult to arrive at a satisfactory reason for the dull times existing in all branches of mercantile life. Theories are plentiful, but the true facts are still to be found out. Some cry "trusts," some "silver bill," some "tariff" and some "speculation." I am inclined to the last, and money, instead of flowing in the legitimate channels of trade, is diverted into another full of barriers, namely, that of making margins good. The building trade feels this withdrawal as soon as any branch, and both profit and cost are cut down in construction estimates. This is wise business policy and will produce a healthy tone to mercantile life. If it is a "survival of the fittest," let us arrive at that point in as easy a way as is possible. Let us all go on the principle that "we had better laugh than cry," or in other words, keep a cheerful countenance.

Architects Des Jardins & Hayward report plans for Gen. W. B. Shattuck, Madisonville, Ohio; materials: frame, shingle roof, hardwood, mantels, grates, furnace, stained glass, blinds, etc.; cost \$10,000. Also, for the Sanitarium Company, College Hill, Ohio, a new building to replace the one destroyed by fire; materials: brick, slate and tin roof, steam heating, gas, plumbing, iron work, blinds, etc.; size 83 by 179; three stories; cost not given.

Architect A. O. Elzner has drawn plans for a residence for Hermann Goepfer, Esq., Cincinnati, Ohio; materials: pressed brick, slate roof, furnace, stained glass, gas, plumbing, mantels, grates, blinds, etc.; cost \$17,000.

Architects Crapney & Brown report plans for a mortuary chapel at Waynesville, Ohio; materials: stone, slate roof, stained glass, marble tiling, hardwood finish, etc.; cost \$10,000. For Monterey Industrial Company, Monterey, Mexico, five buildings, namely: saw mill, main building, warehouse, dryhouse and office; machinery will be wanted for the plant; cost \$75,000. This speaks well for Cincinnati talent.

Architect A. S. James, Blymyer building, Cincinnati, Ohio, has prepared plans for a school building at Silverton, Ohio; materials to be brick, and building will be very substantial.

Architect G. W. Drach reports: For Mrs. M. Y. Schmidlapp, a double house; materials: pressed buff brick, slate roof, grates, mantels, blinds, gas, plumbing, etc.; cost not stated.

Architects Sweeney & Robinson report: For Mr. E. P. Heave, a residence; materials: frame, slate roof, furnace, grates, mantels, gas, plumbing, etc.; cost not stated.

Cleveland, O.—The financial depression is being felt by many Cleveland architects. Much work that was well under way has been stopped, the owners deciding not to go ahead until money matters have improved.

Architects Lehman & Schmidt report: The Central Police station for Cleveland, 125 by 160 feet in size, three stories and basement, of brick and terra cotta, slate roof, steam heat and gas light. The cost will be \$100,000. The building will be built in two wings for cells, one for men and the other for women. The children's prison will be in the middle of the building. The balance of the building will be fitted with offices, police quarters and police courtroom. Work will be begun in the near future.

Architect George H. Steffens reports: Plans well under way for a residence, on Kensington street, for J. A. Bidwell; frame, 36 by 70 feet; slate roof, gas, hot-water heat, all modern improvements and hardwood finish; cost \$16,000. A house, reaching completion, for J. C. Weideman, on Lake avenue, brick and frame, 45 by 75 feet, electricity throughout, hot water, hardwood finish and parquetry floors throughout.

Architects Coburn & Barnum report: A stone residence for which ground has just been broken, for Rev. Father Becker, at the corner of Woodland avenue and Brown street; 41 by 72 feet in size; slate roof, steam heat, gas; cost \$14,000. They are also preparing plans for a Y. M. C. A. building, to be built for the Newburg Y. M. C. A., of brick and stone, three stories and basement; about 54 by 114 feet in size; slate roof, steam heat, electric light; cost to be about \$25,000. The building will be fitted with a gymnasium, running track, offices, parlors, recreation and reading rooms, checkroom, association hall, committee and class rooms and storeroom on first floor.

Denver, Colo.—Architect H. T. E. Wendell: For Theo Halland, a two-story brick residence; size 40 by 40 feet; cost \$6,000. For Jesse McDonald, a two-story dwelling; size 58 by 102 feet, brick; cost \$2,000. Also, for A. S. Ripley & Son, a two-story business block; size 50 by 125; cost \$20,000.

Architects Lee & Boal: For Steel & Shear, one two-story brick dwelling; size 35 by 44 feet; cost \$7,000; and three two-story brick residences, 27 by 52 feet each; cost \$18,000.

Architect John Roberts: For A. M. Jacobson, repairs to business block; cost \$13,000.

Architect J. G. Link: For O. B. Scohy, three two-story residences; size 28 by 30 feet; cost \$15,000.

Architect W. P. Fath: For R. W. Flemming, a two-story brick residence; size 33 by 50 feet; cost \$6,500.

Architect F. C. Eberly: For the Arapahoe Company, a one-story stone addition to county courthouse; size 100 by 210 feet; cost \$110,000.

Architect E. Hodgson: For C. E. Thomas, a two-story brick residence; size 32 by 56 feet; cost \$18,000.

Architects Jackson & Rivinius: For Mrs. E. F. Adams, a two-story double brick house; size 50 by 52 feet; cost \$6,000.

Architects Phillips & Thomas: For W. M. Wirt, a two-story residence, brick and stone; size 36 by 49 feet; cost \$10,000.

Detroit, Mich.—Architect William S. Joy: For Warren & Farley, a terrace of three residences, three-story brick with stone trimmings; to cost \$18,000. Also a three-story brick and stone residence; to cost \$10,000. For C. W. and W. B. O'Brien, a two-story frame residence; to cost \$6,000.

Architect E. C. Van Leyen: For Patrick Spilance, a two-and-a-half-story brick residence; to cost \$6,000. For the Coronado Beach Improvement Company, Tecumseh, Ontario, a three-story frame hotel; size 260 by 150 feet, with

all modern improvements; cost \$100,000. For John Greinel, two two-and-a-half-story brick residences, and remodeling house, at corner of Jones and Third streets; cost \$18,000.

Architects E. A. Walshe & Son: For J. E. Clough, a two-and-a-half-story brick and stone residence; to cost \$12,000.

Architect John R. Gentle: For self, a block of two-story frame houses; to cost \$10,000. For W. W. Robinson, a two-story brick double residence; cost \$9,000. For Mrs. Isaac Owen, a two-story brick residence; cost \$7,000.

Architect A. E. French: For J. W. Noller, Claremont, Virginia, a large brick sawmill and power-house; cost \$20,000. For Henry Williams, a two-and-a-half-story brick residence; cost \$5,000.

Architects Rogers & Macfarlane: For A. S. Brooks, a terrace of three-story brick houses; cost \$30,000. For Dr. R. A. Jamieson, a two-story brick residence and office; cost \$6,000.

Architects Donaldson & Meier: For William Crow, a two-story brick residence; cost \$9,000. For Andrew McLellan, a two-story house; brick; cost \$8,000.

Kansas City, Mo.—Architect Adriance Van Brunt: For the Garden City Normal School Association, a normal school building at Garden City, Missouri, of brick, three stories; to cost \$6,000.

Architects Hogg & Ross: For F. G. Altman, F. J. Baird and E. Shukert, a three-story and basement business block, on Grand avenue, above Eleventh street, of brick and stone; to cost \$35,000. In this combination building Mr. Altman will own forty-eight feet and the others twenty-four feet each.

Architects Vrydagh & Shepard: For G. A. Barton, a residence at Twenty-sixth street and Troost avenue, two stories and attic, of brick; to cost \$15,000.

Architect G. M. D. Knox: For Rev. J. F. Lee, a residence in Armourdale, Kansas, two stories, of brick; to cost \$7,000.

Architect A. B. Cross: For G. Blank, a store and dwelling at Napoleon, Missouri, two stories and basement, of brick; to cost \$7,000.

Architects Matthews & Sanders: For the city of Warrensburg, Missouri, a city hall, two stories, of brick with stone trimmings; to cost \$10,000. For E. W. Hayes, a residence at Fourteenth street and Garfield avenue, of brick and wood, two stories; to cost \$6,000. For H. H. Stowell, a residence at Thirtieth street and Warwick boulevard, two stories, of brick; to cost \$5,000. For J. A. Tucker, a frame residence at Florence, Kansas; to cost \$5,000. For John Taylor, a brick addition to his dry goods store at Eleventh and Main streets, to cost \$6,000.

Architect F. E. Hill: For Grace Church, an addition to the nave of the stone church at Thirteenth and Washington streets; of stone; to cost \$15,000. For the Mount Cracker and Candy Company, a five-story and basement factory building at Ninth and Santa Fé streets; of brick; to cost \$50,000.

Louisville, Ky.—Architects McDonald Brothers report the following: Church, near New Orleans; to cost \$9,000; brick and stone. New car barns and sheds, for the Mobile Street Railway, Mobile, Alabama; to cost \$50,000; brick and stone, metal roof. A two-story addition to courthouse, Owensboro, Kentucky; to cost \$20,000; brick and stone. New dryhouse for the Weissinger Tobacco Factory, 60 by 120 feet in size; brick, metal roof; to cost \$14,000; location, Floyd and Breckinridge streets. A frame office building for the Weissinger Tobacco Factory; to cost \$5,500; 40 by 75 feet in size; shingle roof; Floyd and Breckinridge streets. Residence for Hon. J. H. Goodnight, Franklin, Kentucky; to cost \$6,000; brick and stone. Alterations in county courthouse, Louisville, Kentucky; to cost \$6,000.

Architects Clarke & Loomis report as follows: For Samuel Querbacker, a stone and brick residence, on Jefferson and Seventeenth streets; cost, \$12,500. For the Irvin Estate, eleven frame cottages; cost, \$12,200. For H. W. Barrett, a store and flat building between Second and Third streets, near Market, brick and stone; cost \$6,800. For John Alexander, a three-story brick and stone residence; to cost \$6,400. For Hon. A. E. Willson, a three-story brick and stone residence; to cost \$11,000.

Milwaukee, Wis.—Architects Crane & Barkhausen: For C. Barkhausen, a two-story flat building; size 72 by 44 feet; cost \$25,000.

Architects Ran & Kirsch: For Charles Abrisch, a two-story residence, frame and stone; to cost \$6,000.

Architects Schnetzky & Siebert: For Edwards & Schueler, a two-story brick office building; size 43 by 150 feet; cost \$10,000.

Minneapolis, Minn.—Architect Warren Hayes reports: Plans for a residence for H. B. Frey, on Twelfth avenue and Fifth street, S. E., 55 by 60 feet and two and one-half stories high; materials: gray Jasper with copper roof, hardwood finish and all improvements; to cost \$30,000.

Architects Orff Brothers & Joralemon report: Plans for a residence for J. A. Bohn, on Park avenue and Nineteenth street; to cost \$15,000; will be of Kasota stone and Milwaukee brick; it will be of the Hansatic style, 45 by 60 feet in size. Also, a country residence for J. B. Fergusson, near Lexington, Kentucky; to cost \$40,000; will be of the Italian style, 46 by 127 feet in dimensions.

Architects Barnett & Record report: Plans for a grain elevator to be erected by the state of Minnesota at Duluth; 90 by 30 feet in size, with power-house 99 by 45 feet in size and 130 feet high; capacity 350,000 bushels.

Omaha, Neb.—Architect Henry Voss: For the Courtland Beach Association, a two-story pavilion; size 130 by 80 feet; frame; cost \$12,000. For Henry Rucier, a one-story frame convention hall; size 75 by 75 feet; cost \$10,000.

Pittsburgh, Pa.—Architect Sims: For the First National Bank of Wilkinsburg, a three-story bank building; to cost \$27,000.

Architect J. E. Obitz: For Prof. Farner, a two-story residence, brick and stone; cost \$15,000.

Rochester, N. Y.—Architect J. Foster Kelly has prepared plans for the Immaculate Conception church and school; brick and stone trimmings, basement for church society rooms; cost \$30,000. Eight-room annex No. 22 School, corner Hayward and St. Joseph street; cost about \$16,000. Block in Geneva, New York, for Messrs. O'Malley Brothers; 40 by 80 feet; cost \$15,000. Addition to Catholic church, Geneva, New York. Residence at Albion, New York, for Mr. Landaur; cost \$6,500.

Architects J. Fay and O. W. Dryer report the following: Block of four apartments for Mr. W. R. Challico, on Alexander street corner Broadway; cost \$5,000. Residence for Mr. Thomas Johnson on Arnold Park; style, French Renaissance; cost \$20,000. Frame residence for Mr. Robert Liddle, Pasadena, California; cost \$10,000. House for George Schaeffer. House on Argyle street for Mr. Charles M. Thoms, marble first story, frame above.

St. Louis, Mo.—Architects Beinke & Wees: For George F. Pickel, three three-story brick and stone residences; size 64 by 52 feet; cost \$15,000.

Architect C. K. Ramsey: For D. Houser, a two and one-half story brick and stone residence; size 57 by 62 feet; cost \$30,000.

Architects J. B. Legg Architectural Company: For city, a two-story police station, brick and stone; size 100 by 184 feet; cost \$30,000. For A. Grove, a two-story brick residence; size 28 by 45 feet; cost \$7,000.

Architects C. W. Kellogg & Son: For F. M. Baldwin, three two-story dwellings; size 27 by 47 feet; brick and stone; cost \$15,000.

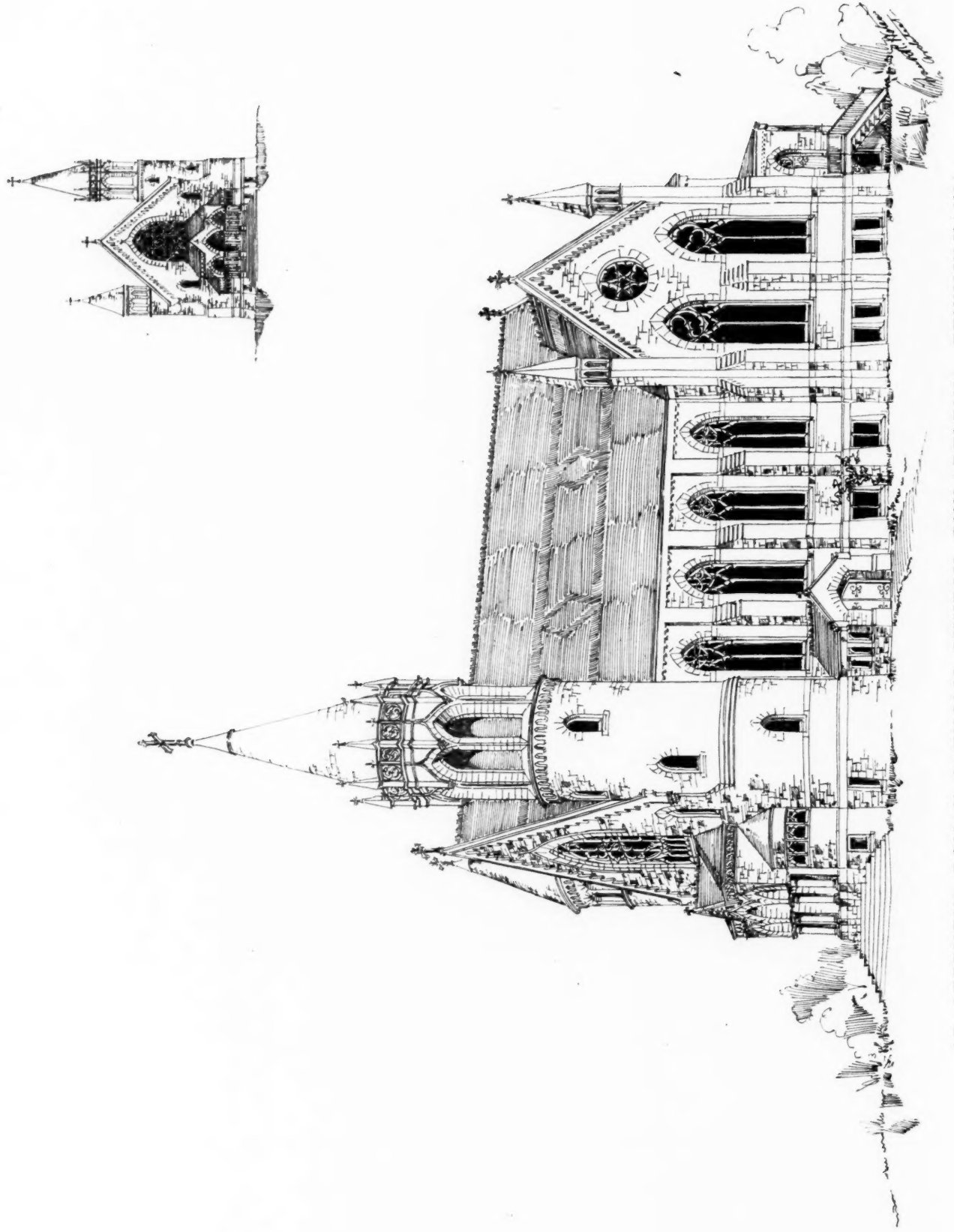
Architect W. R. Morrison: For N. S. West, a one-story brick workshop; size 20 by 30 feet; cost \$12,000.

St. Paul, Minn.—Architect William Kingsley reports: Plans for a row of tenement houses on the corner of Portland avenue and Dale street, for H. J. Conrad; to cost \$33,000. There will be six three-story houses of brownstone and pressed brick. Also, plans for two tenement houses on Tenth and Olive streets, to cost \$15,000 and \$18,000 respectively. The materials will be stone and brick.

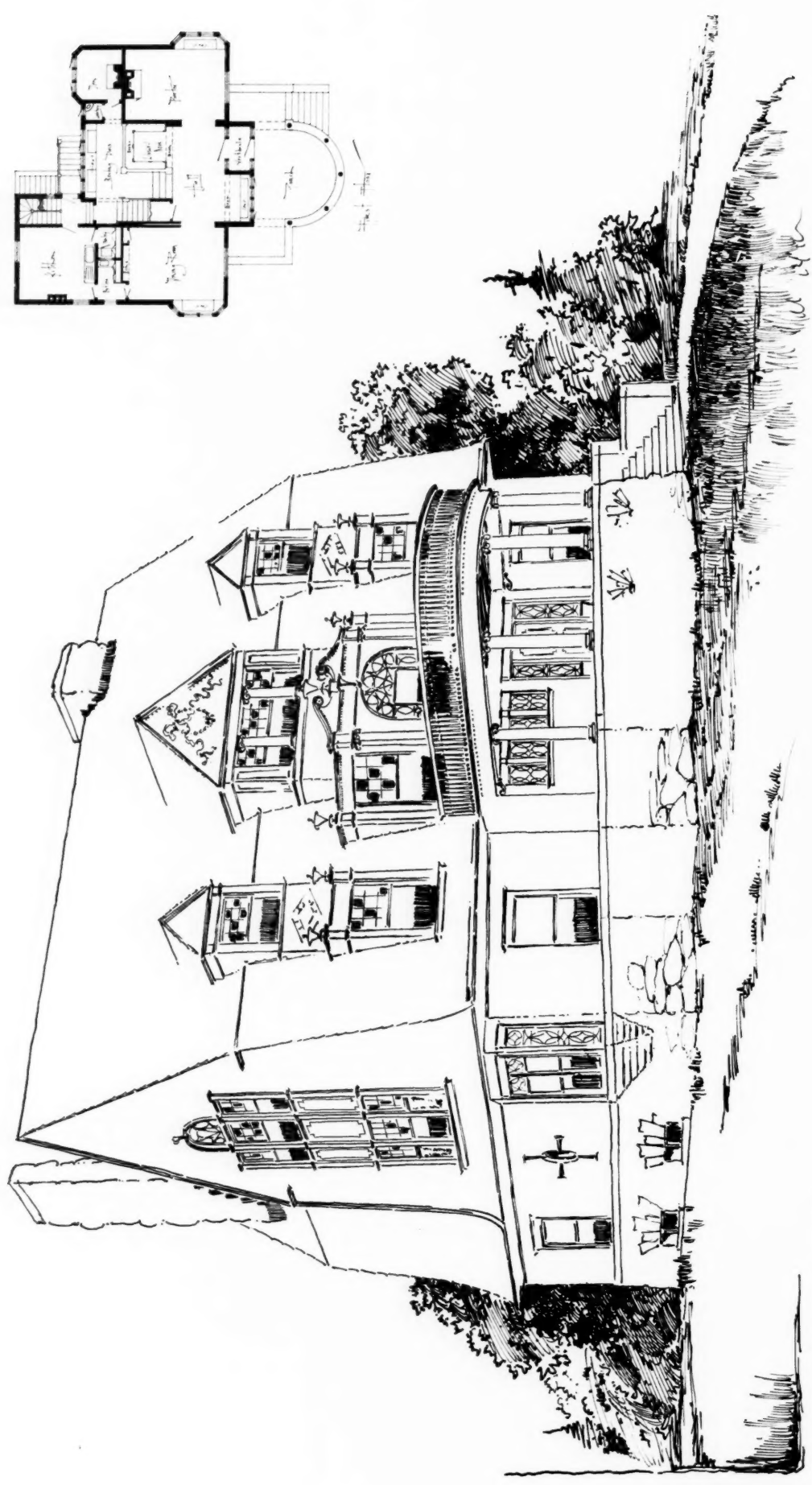
Architect C. R. Dewey: Has drawn plans for a store building on Sixth street near Wabasha; to cost \$8,000; it will be of brick, stone and copper.

Architect C. H. Johnston reports: Plans for a residence for William F. Graves, on Summit avenue near Victoria street; it will be of frame, 50 by 80 feet in size, three stories high and of the Colonial style.

Architects Reed & Stern report: Plans for a store building for P. Cummings, on Seventh street between Wabasha and Cedar; it will be of brick and stone, three stories high, 25 by 100 feet in size, and will cost \$12,000.

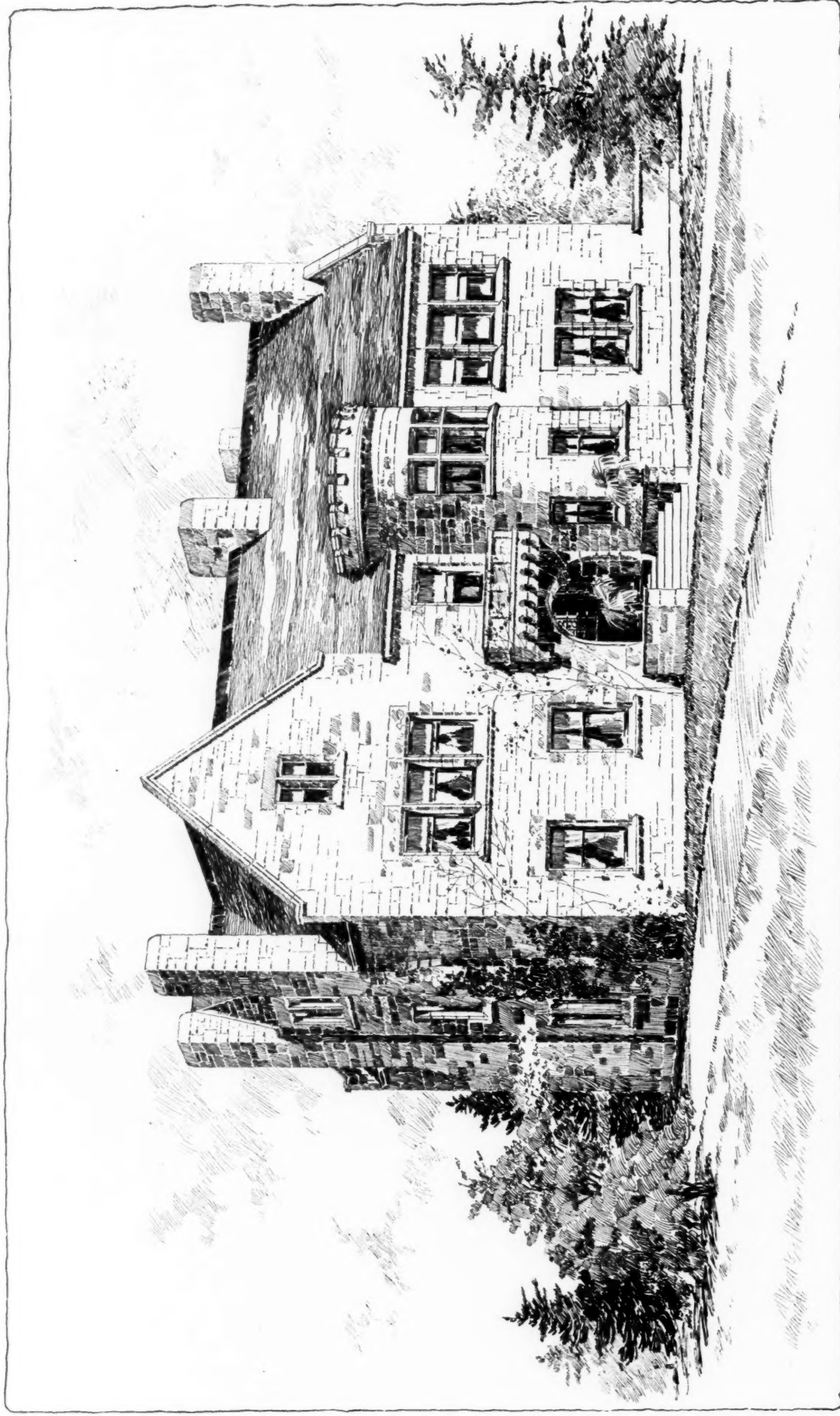


ST. STEPHENS ROMAN CATHOLIC CHURCH, PHILADELPHIA, PENNSYLVANIA.
FRANK R. WATSON, ARCHITECT.

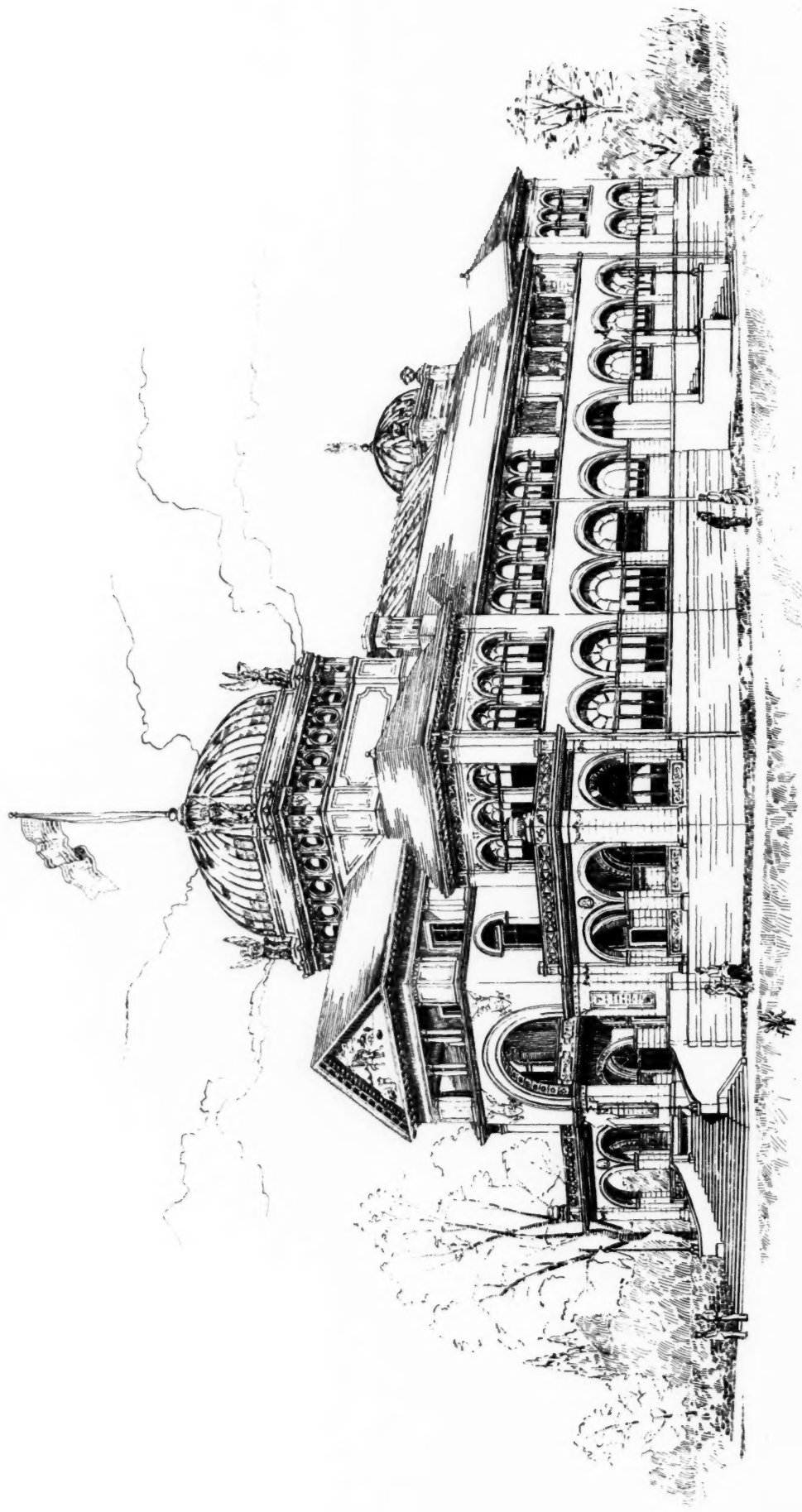


Geo. W. Maher
Architect

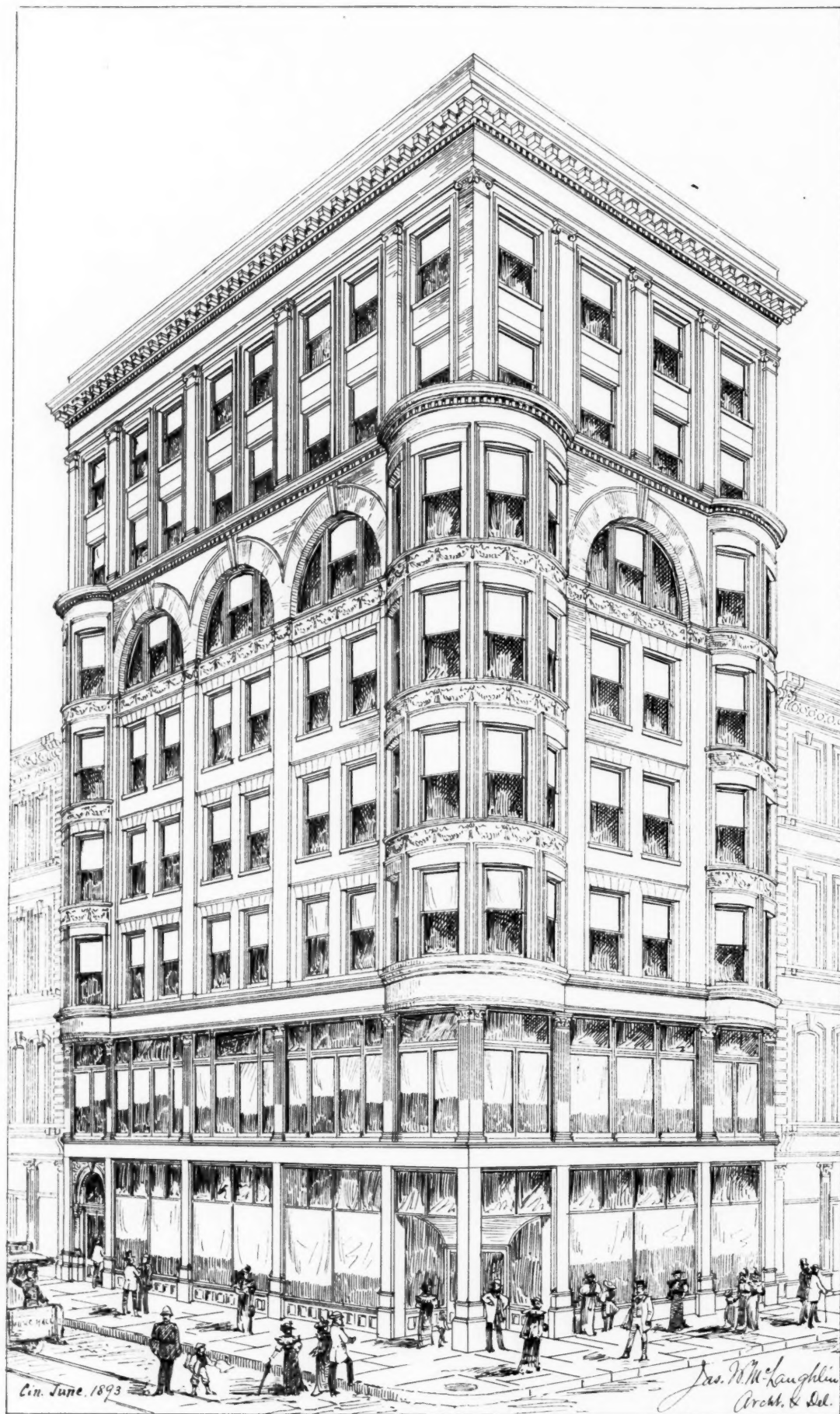
HOUSE FOR J. L. COCHRAN, EDGEWATER, ILL.
GEO. W. MAHER, ARCHITECT, CHICAGO.



RESIDENCE FOR H. K. HATCH, CLEVELAND, OHIO.
C. F. SCHWEINFURTH, ARCHITECT.

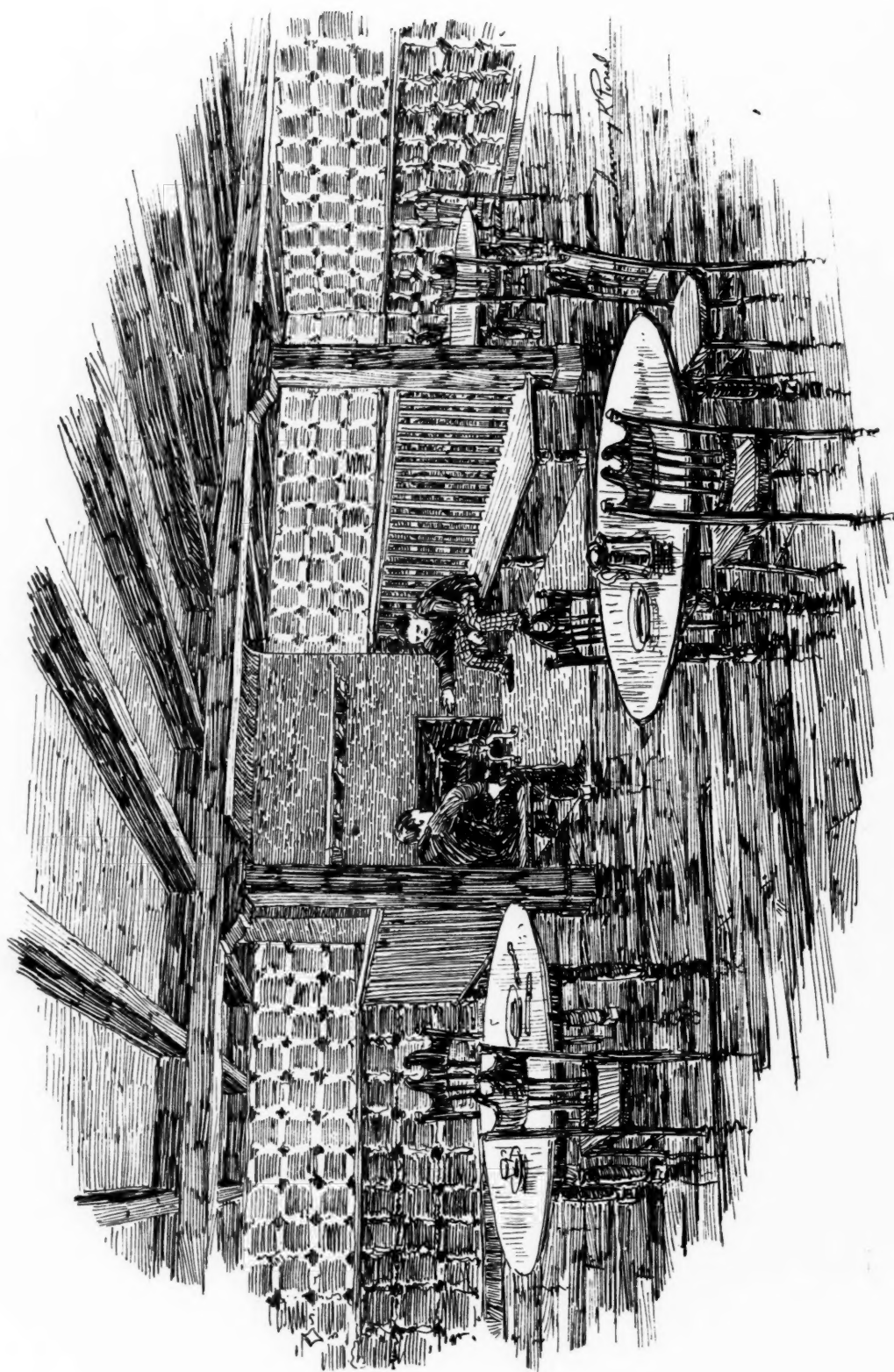


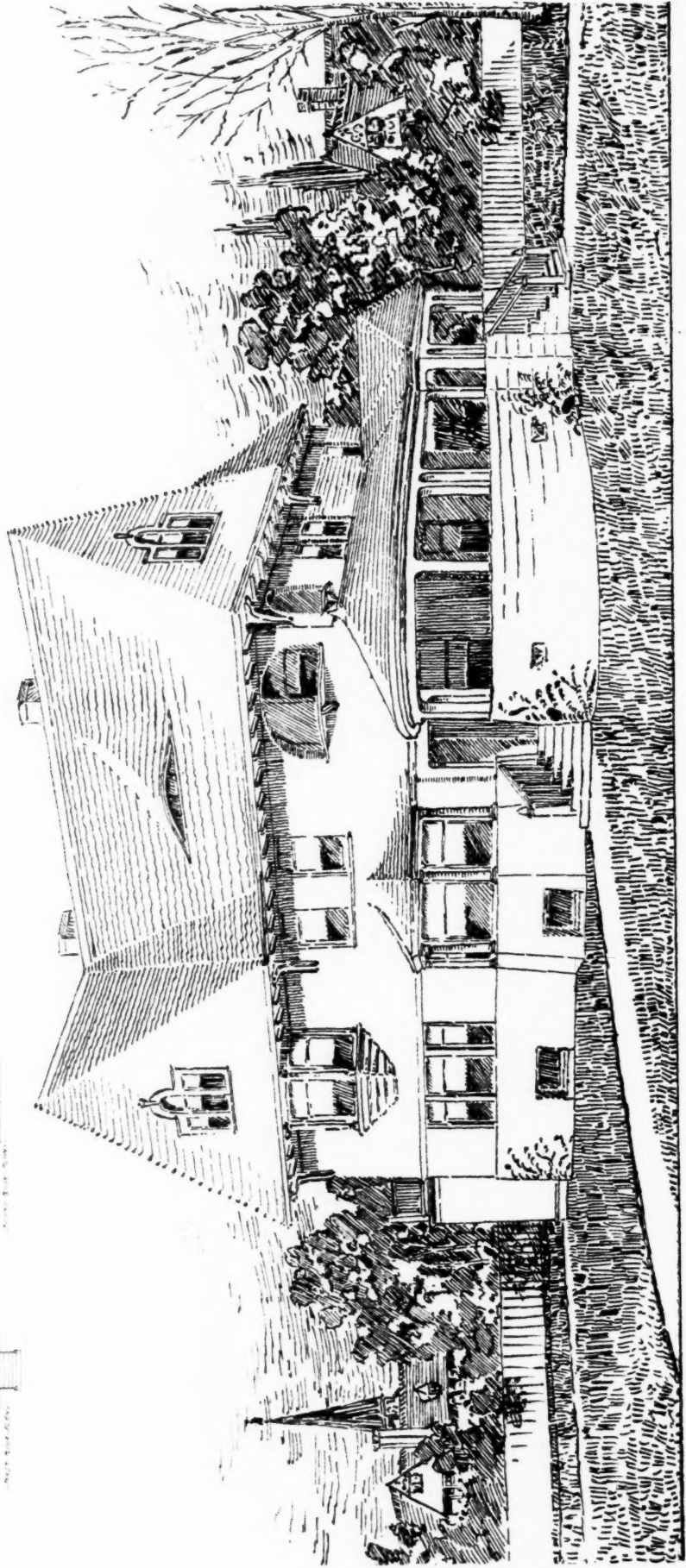
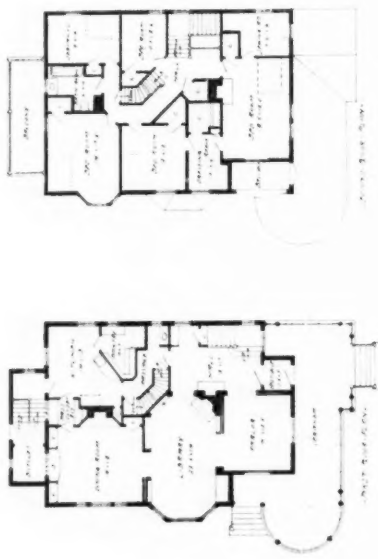
PREMIATED DESIGN FOR THE
IOWA STATE BUILDING
AS FIRST LOCATED
JOSSELYN AND TAYLOR & ARCHITECTS
WORLD'S COLUMBIAN EXPOSITION
CEDAR RAPIDS, IA.



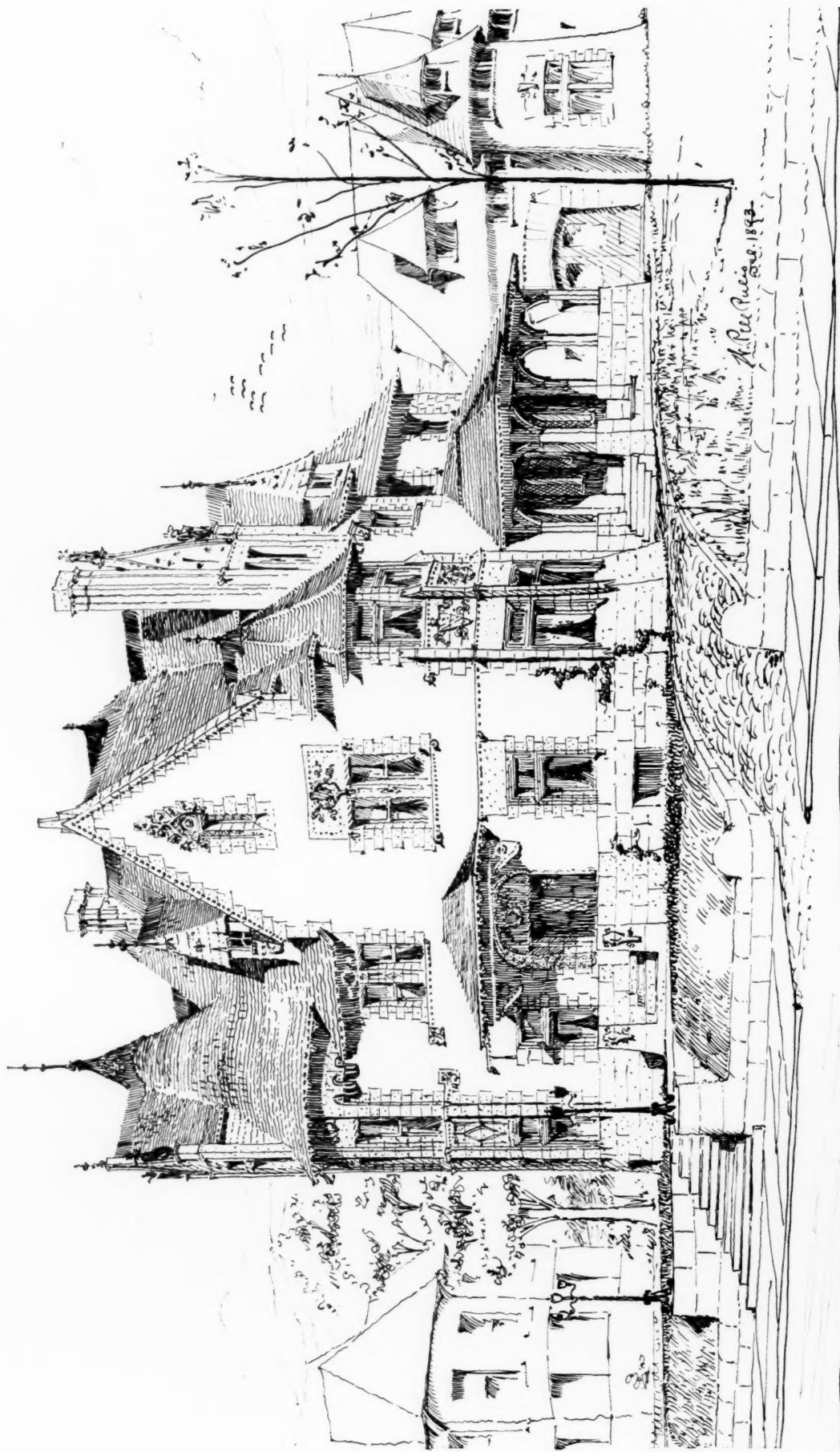
THE NEW RAWSON BUILDING, CINCINNATI, OHIO.

JAMES W. McLAUGHLIN, ARCHITECT.





RESIDENCE FOR C. T. PURDY, OAK PARK, ILLINOIS.
PATTON & FISHER, ARCHITECTS, CHICAGO.



A. DENVER RESIDENCE
M^CCURDY & PULIS ARCHTS.
~ INDUSTRIAL BLDG ~



NORWEGIAN BUILDING, WORLD'S COLUMBIAN EXPOSITION.

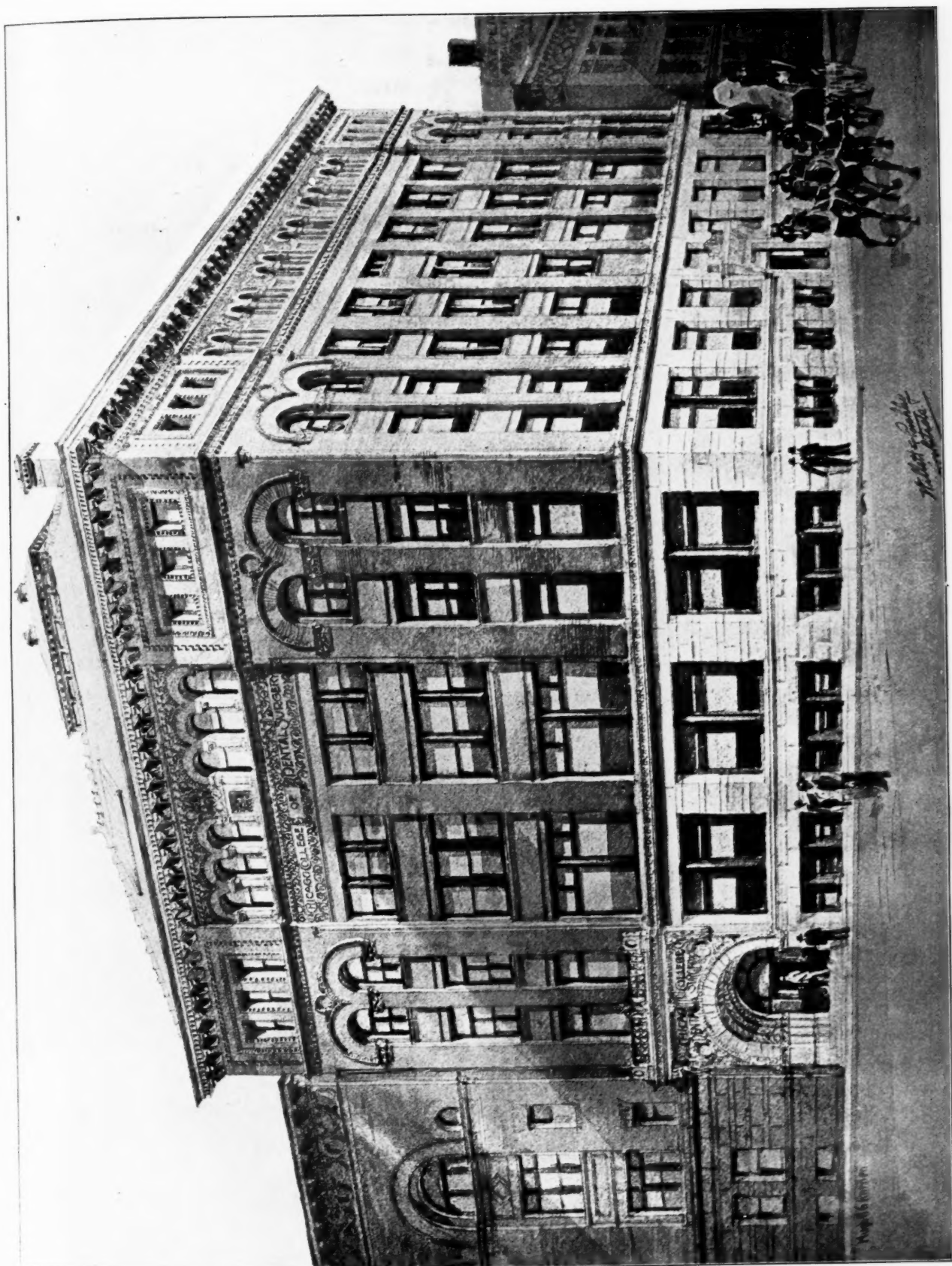
W. HAUSTEEN, ARCHITECT, NORWAY.



INLAND ARCHITECT PRESS.

IDAHO STATE BUILDING, WORLD'S COLUMBIAN EXPOSITION.

CUTLER & POETZ, ARCHITECTS, SPOKANE.

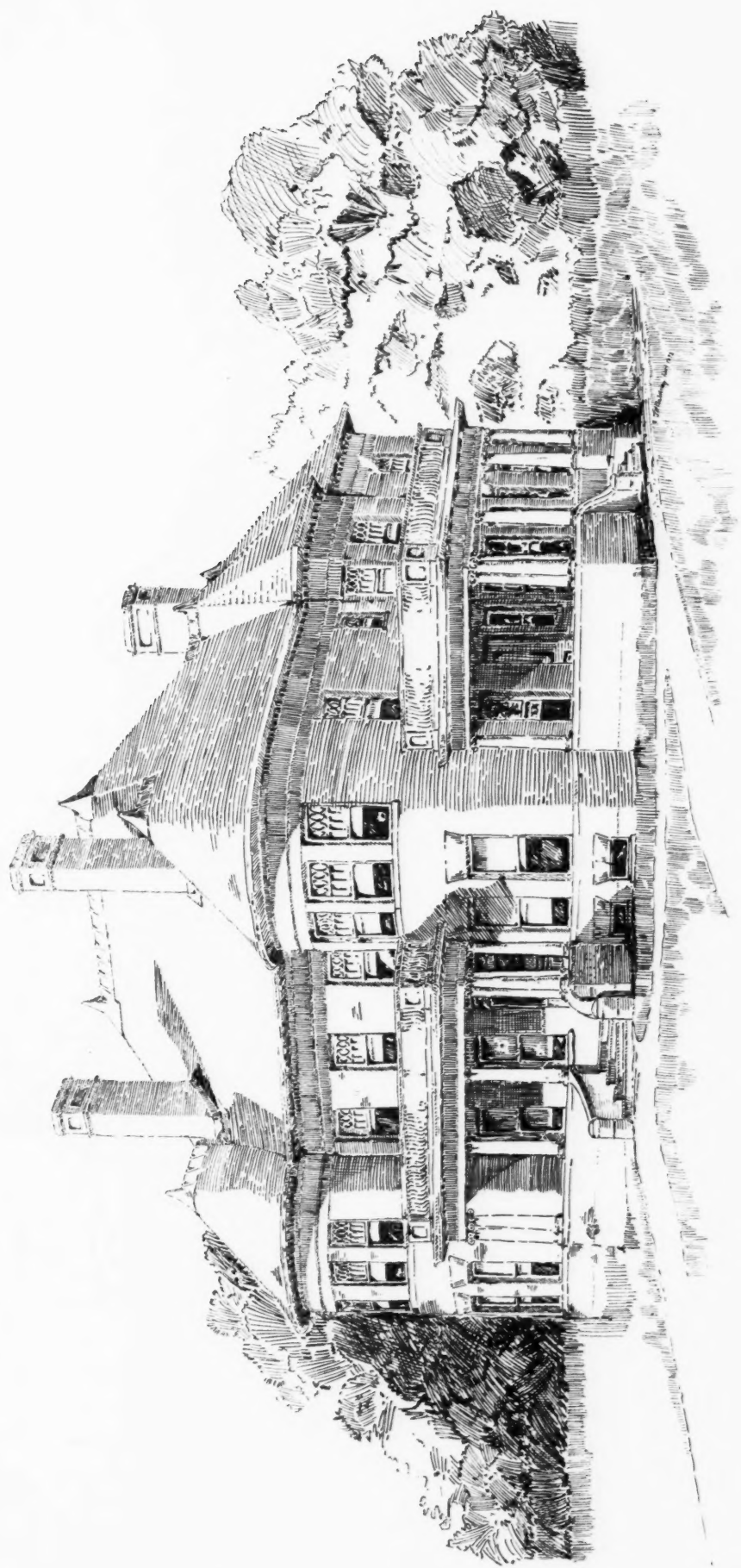


CHICAGO COLLEGE OF DENTAL SURGERY.

(Dental Department of Lake Forest University.)

WILLETT & PASHLEY, ARCHITECTS, CHICAGO.

1904

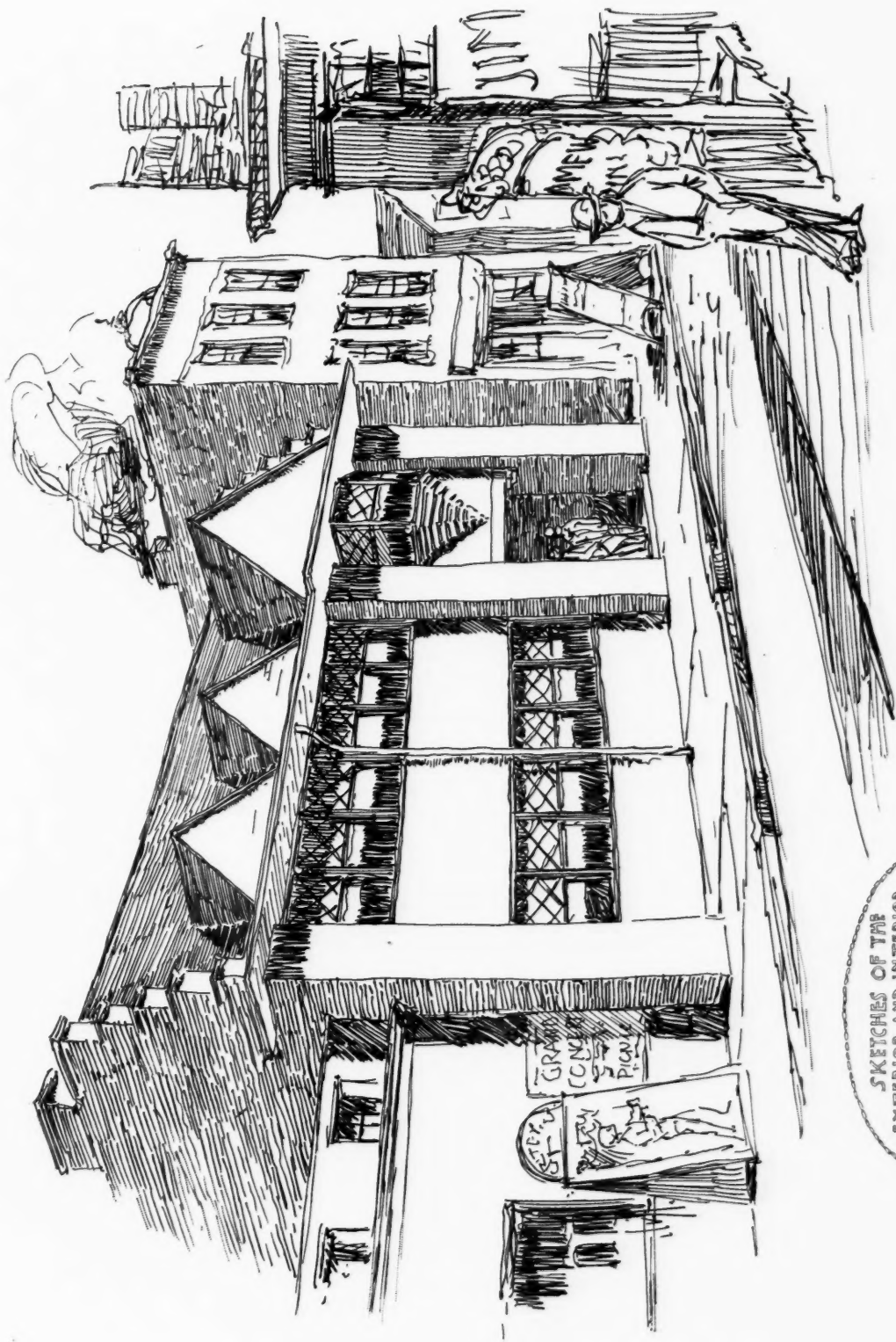


HOUSE FOR HENRY D. BARBER, POLO, ILLINOIS.

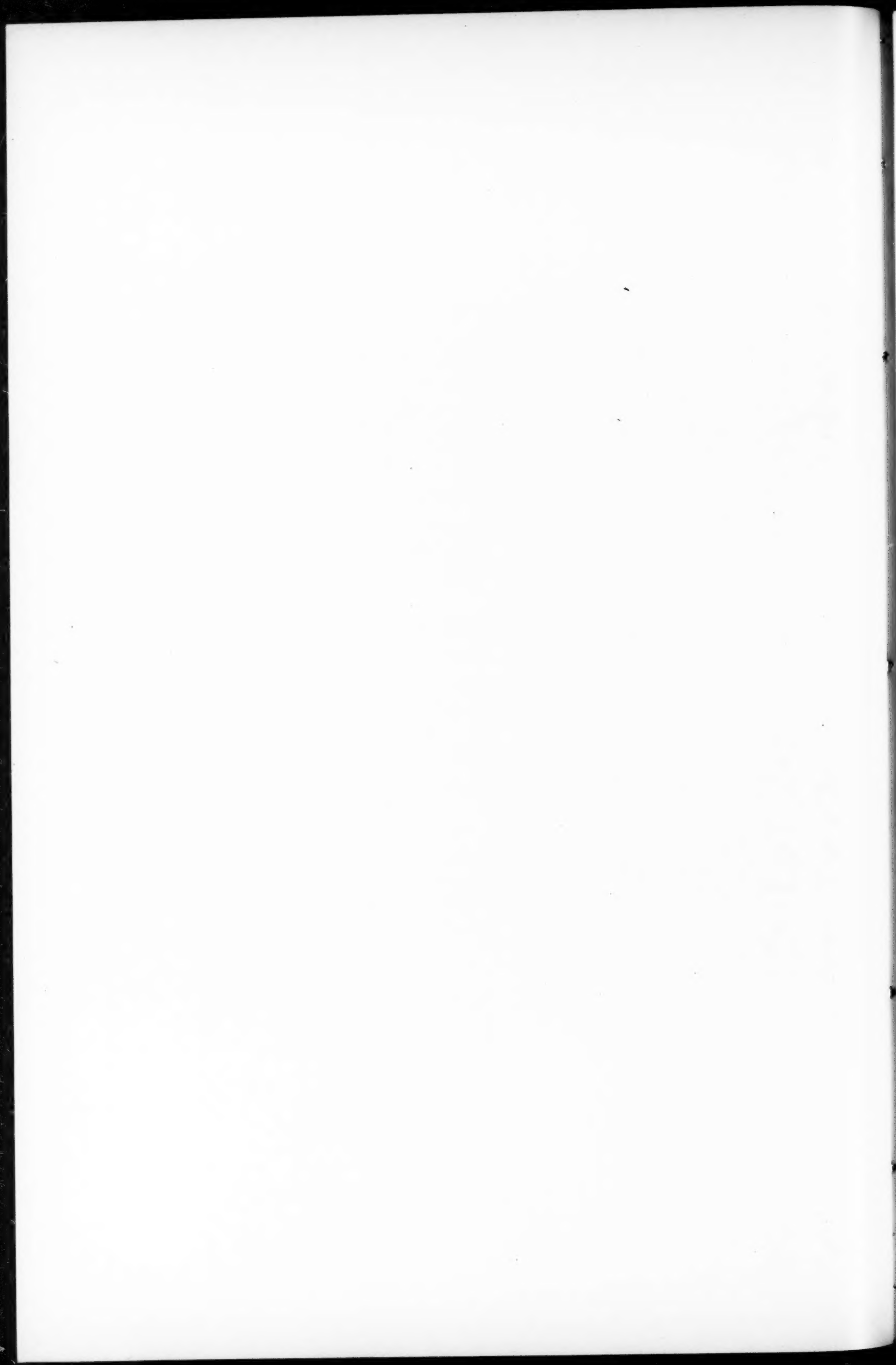
J. L. SILSBEE, ARCHITECT, CHICAGO.

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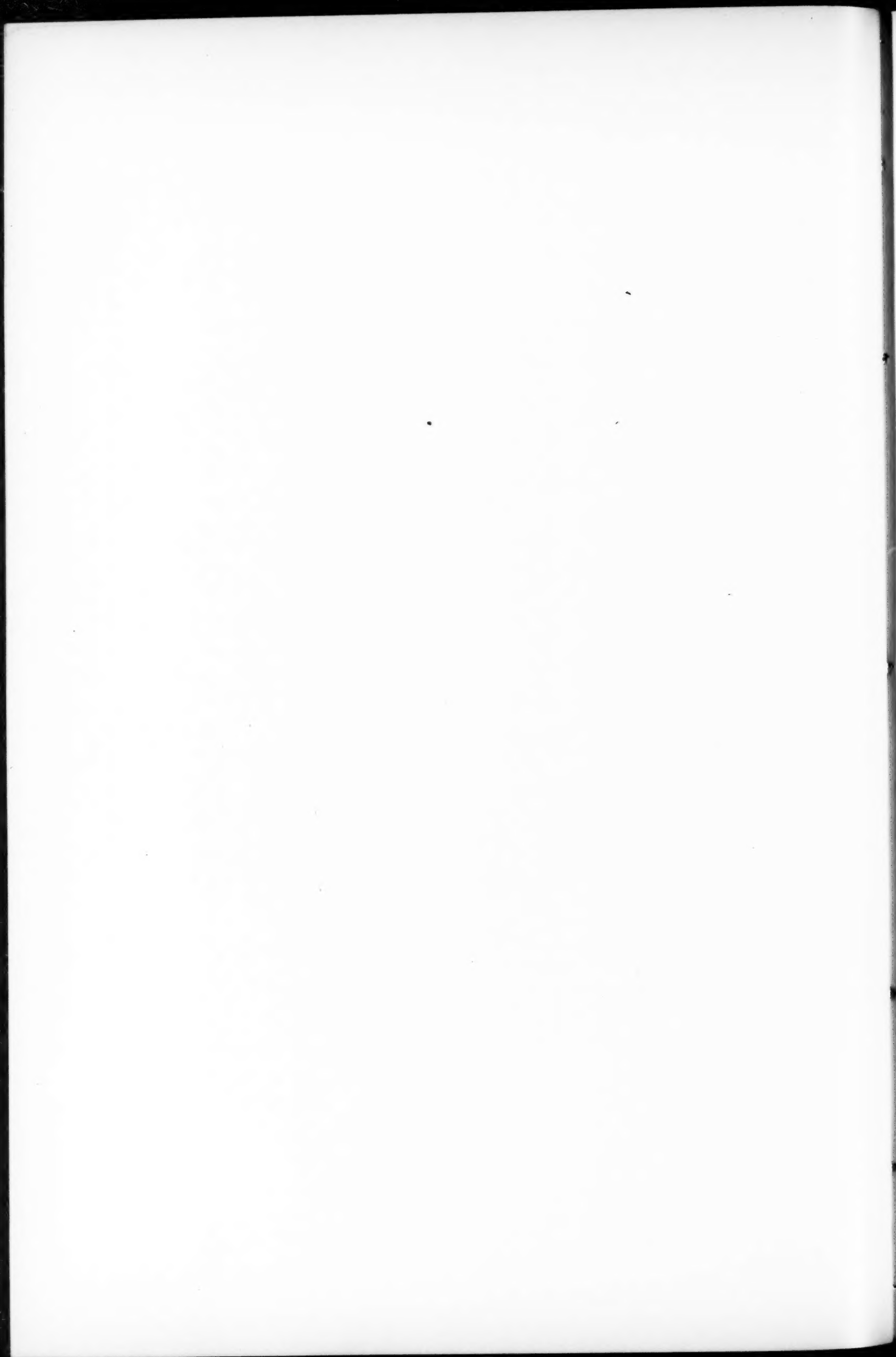


SKETCHES OF THE
EXTERIOR AND INTERIOR
OF THE "COFFEE HOUSE"
HULL HOUSE CHICAGO
POND AND POND
ARCHITECTS



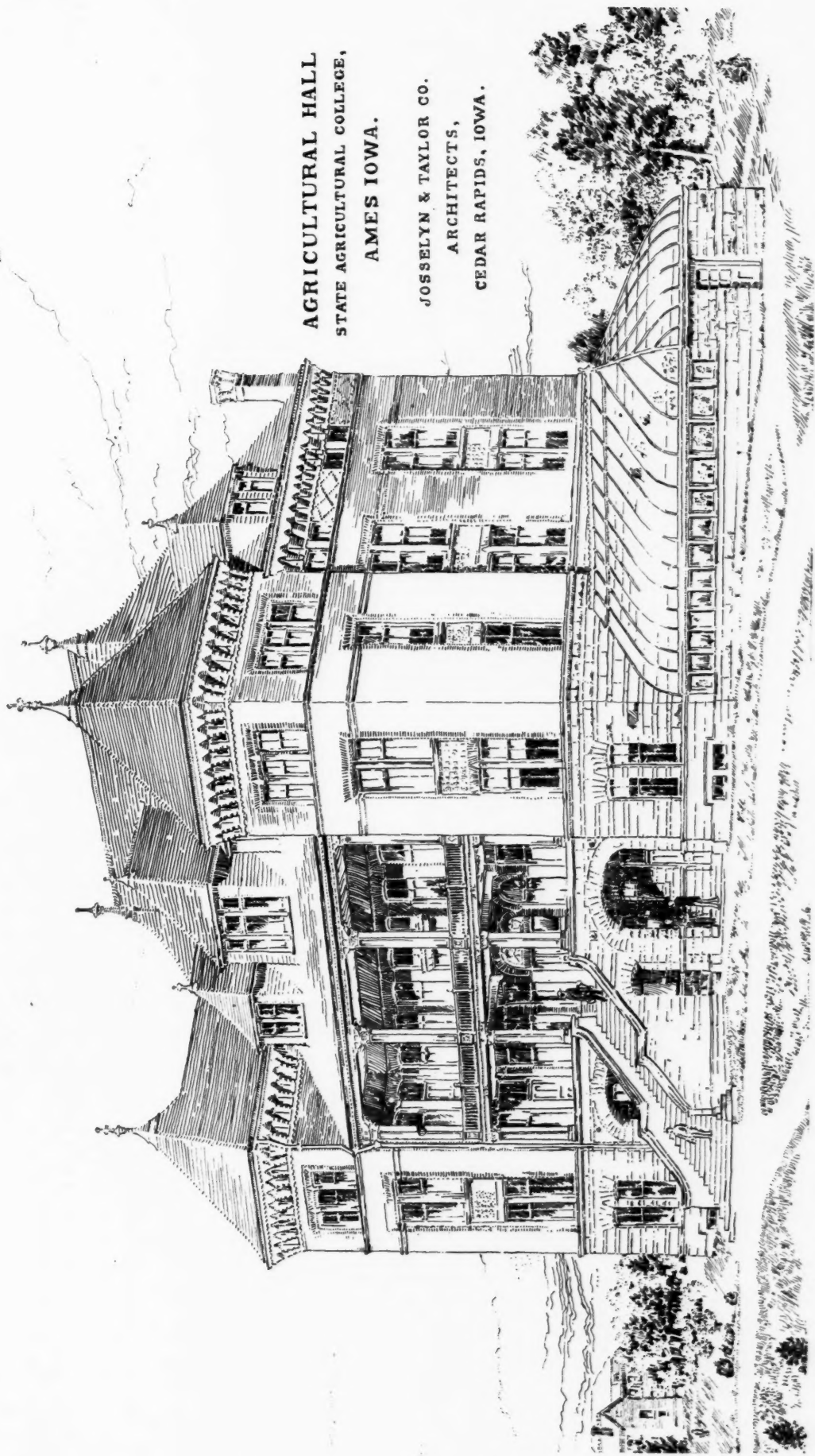


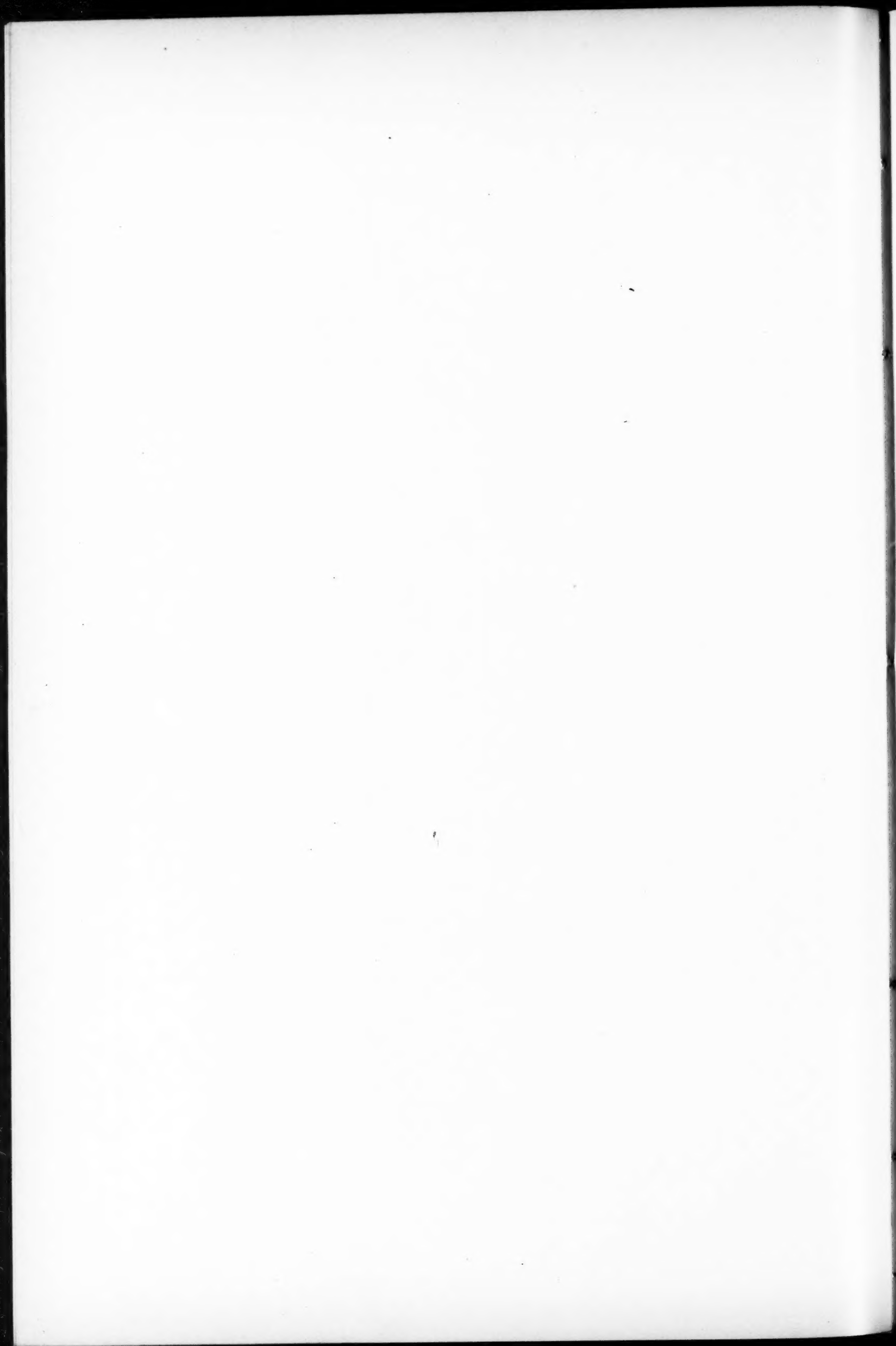
VIEW IN HALL, RESIDENCE OF R. H. SHOEMAKER, CINCINNATI, OHIO.
JAMES W. McLATCHIN, ARCHITECT.



AGRICULTURAL HALL
STATE AGRICULTURAL COLLEGE,
AMES IOWA.

JOSELYN & TAYLOR CO.
ARCHITECTS,
CEDAR RAPIDS, IOWA.





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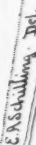
JOHN·H·BROWN·ESQ.

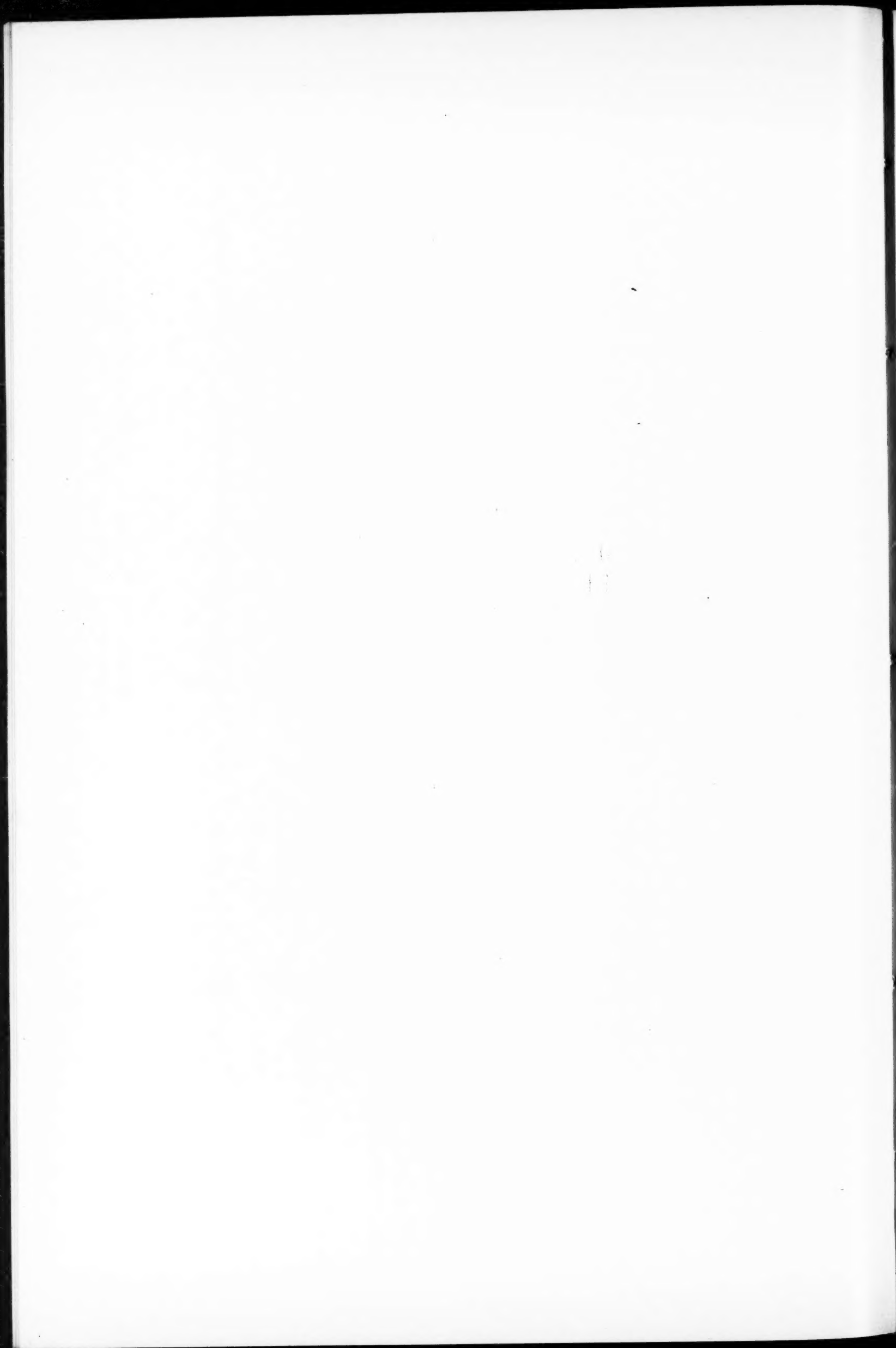
COR. PARK & ELIZABETH ST'S.

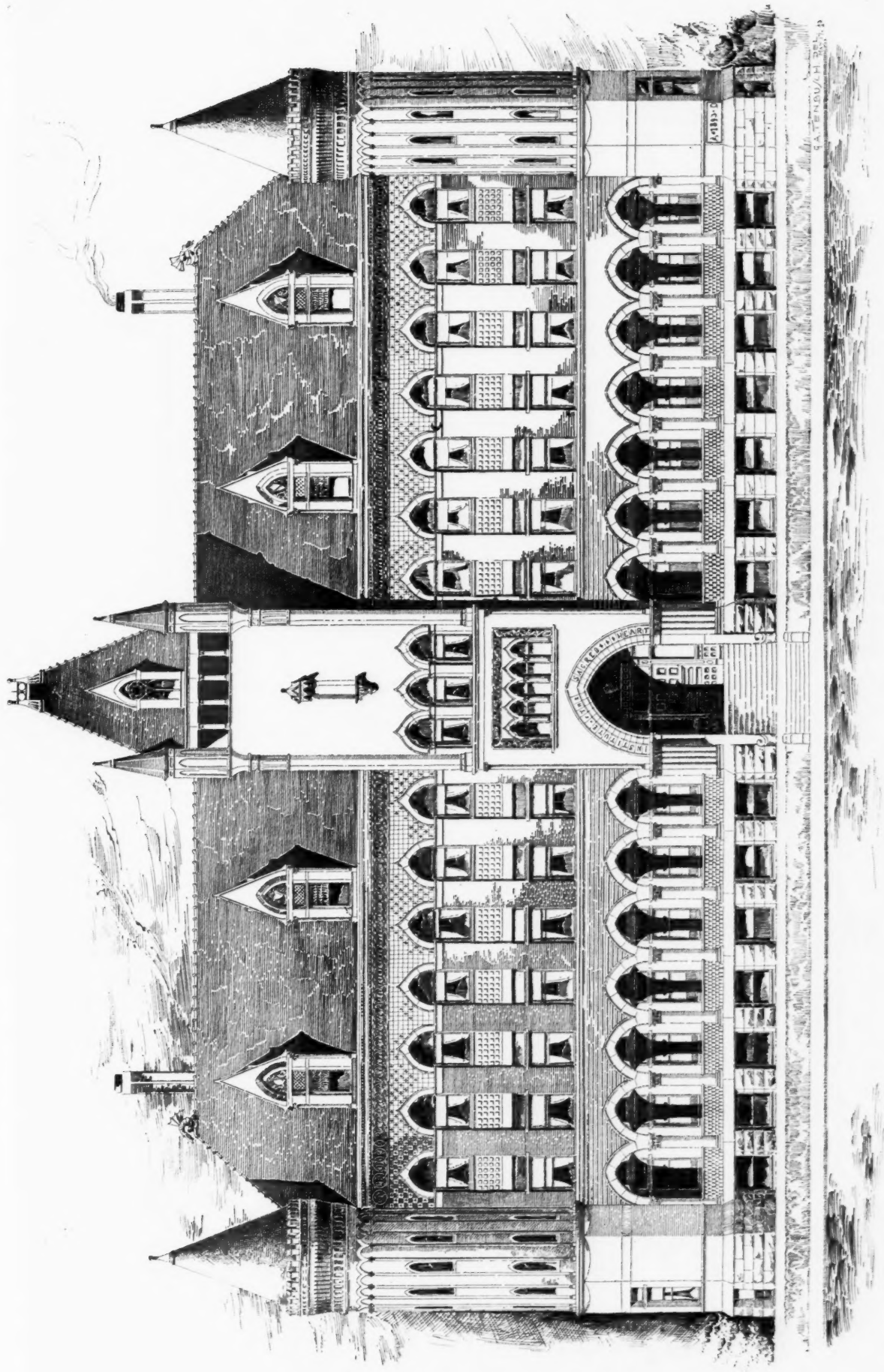
EDW. C. VAN LEYEN.

ARCHITECT.

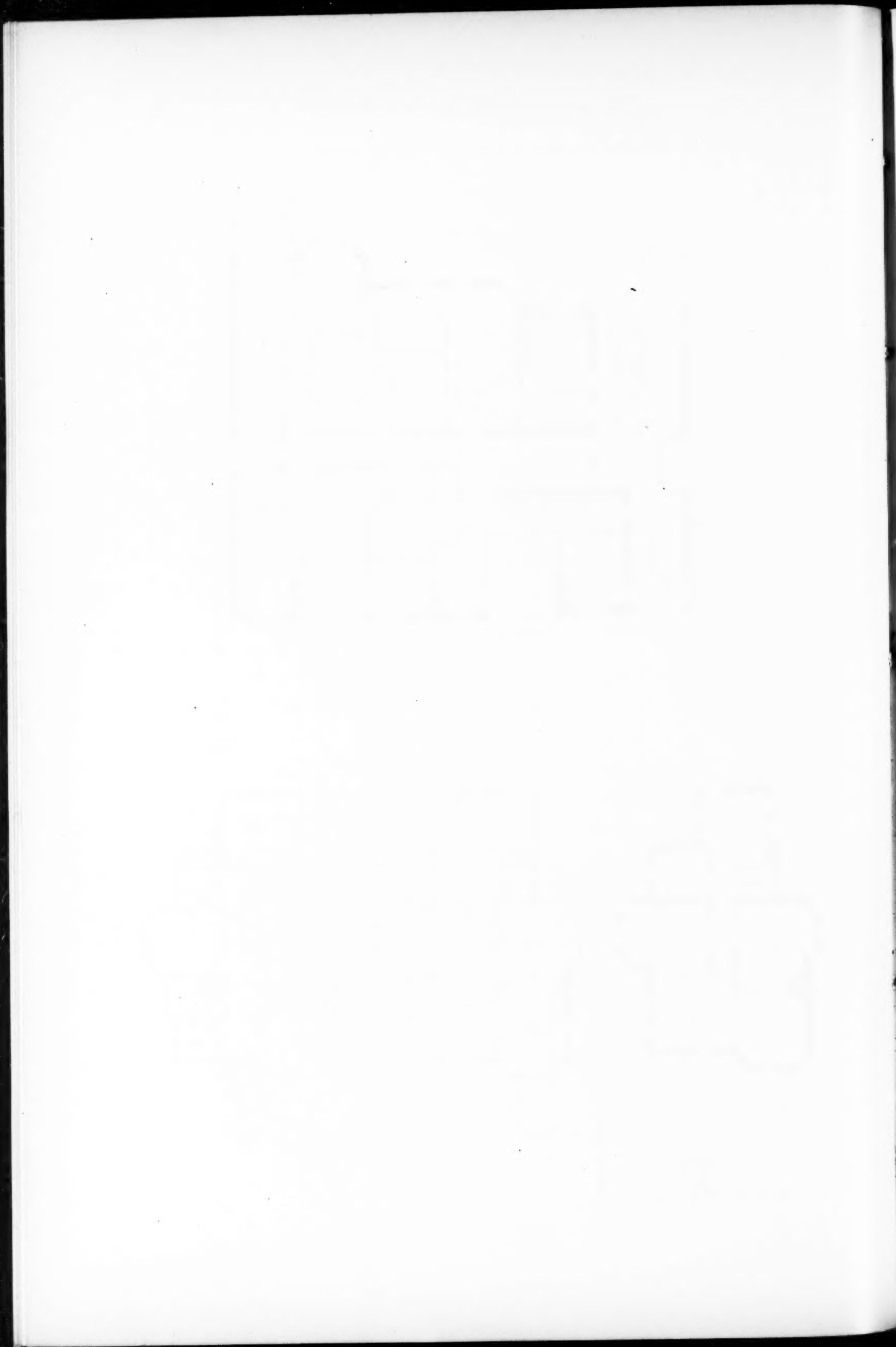
DETROIT. MICH.







ACADEMY FOR THE SISTERS OF ST. BENEDICT, DULUTH, MINNESOTA.
G. A. TENBUSCH, ARCHITECT.



ADDITION TO NEEDHAM BUILDING, SHOWING STEAM HEATING.

PLATE XV.



SECOND STORY PLAN

HOT-AIR FURNACE HEATING.

Residence for Frank Hamilton. Furnace Heating.

PLATE XVI.

